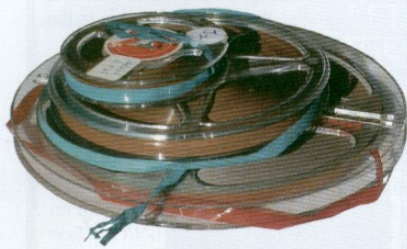


Saving voices from the attic

Many people are unaware that old recordings of ancestors' voices on tapes and records, often to be found stored in the loft, were made of impermanent materials. Records and reel-to-reel tapes become as fragile as a butterfly's wing and can crumble when handled. So, how can you preserve those priceless audio memories? Sound preservation expert **Liz Butterfield** has the solution.



Liz Butterfield and her son, Chris, work together as the audio restoration team known as 'Precious Voices'. They spend their days restoring and preserving old sound recordings for the general public.

Says Liz: 'None of the early recording methods were built to last. Right from the very earliest wax cylinders of the late Victorian era, through to the more recent audio cassettes, none of the materials used were designed for the permanent and safe storage of sound. The only 'safe' storage methods use the new laser technology. As the laser scans the CD disc, there are no moving parts to touch the actual recording surface, which is safely protected under a

layer of Perspex. The whole CD disc must be destroyed for the sound to be lost and they are pretty tough devices.'

War records

It's unlikely that your precious voices are recorded on the earliest system of all - the wax cylinder - but by the outbreak of World War II, family recordings were becoming more accessible. The Butterfields recently rescued the sound from a 78rpm record that was cut in a Cairo recording booth in 1941, by one of Monty's Desert Rats. Written in faded pencil on the label is, still just visible, the message 'To Sunshine from Daddy'. The disc itself was made from base metal, probably an aluminium alloy that had been coated with shellac.

Says Liz: 'Shellac is so easy to scratch with a stylus that it's hardly surprising that a sound engineer saw its possibilities as a recording medium. Little five-inch discs of this kind are surprisingly common in our work.'

'When times were extremely hard, the base disc was even made from pressed card. One such "paper" record we rescued was

cut in Denmark immediately following its liberation from the Nazis. It was sent by a young Danish man to his sister in England to apologise for not being able to attend her wedding, but the war made travel impossible. Since the recording was entirely in Danish, we waited with baited breath to hear if it could be clearly understood in its new format. All was well - the bilingual family could clearly hear every word.'

Handling old records

Shellac quickly dries out and becomes brittle so these old brown discs are fragile. Most have lost at least some portion of the outer message through rough handling that has caused the shellac to chip away completely.

Handling these little discs should be kept to a minimum, and then they should only be held with finger pads around the outer rim and not on the recording surface itself. They are best wrapped in acid-free wrapping tissue paper (available from all good art and genealogical supply shops) and stored in separate boxes away from other discs, to avoid knocks to the surface. A cool cupboard in a frost-free spare room is the best place to keep them.

Tape recordings

The earliest tape recordings also date from the war era. First came wire tape, then paper, and finally the cellulose tape we are familiar with today. Without the original machinery, the paper and wire recordings can no longer be heard, and machines are generally in collections at museums or with audio specialists. Even the earliest reel-to-reel tape recorders were not the same as their later, more common, models.

For a short period, constant spool speed machines were the order of the day. Later machines are geared so that the tape speeds up or slows down as the spools vary in width. But constant spool machines were only produced for such a short time that they are practically impossible to find. Liz and Chris have restored this kind of material and regard it as quite an achievement.



Reel-to-reel tapes

Reel-to-reel cellulose tapes were not meant to last and so deteriorate over time. They sometimes stretch with repeated use and once the sound is distorted it cannot be restored to its original form. And if that wasn't enough, the cellulose becomes brittle if it's kept too dry and may snap as soon as it is played. But kept too moist, the ferric oxide powder coating, into which the message is actually scratched, will begin to peel off the cellulose backing. It sticks to the back of the layer next to it and the message is lost forever. Audio engineers call it 'Sticky Shed Syndrome'.

Sometimes a temporary solution is to dehydrate the tape in a specially controlled atmosphere and temperature environment. It's a short-term solution for the tape will take up moisture again almost immediately. However, it does give a restorer a brief window of opportunity in which to transfer the tape into another format entirely.

Mould problems

Tapes stored in extremes of temperature, such as you would find in the average household loft, will deteriorate quickly. The magnetic signal encoded on the tape is weakened by the repeated heating of summer and cold of winter. The loft should never be used to store your precious recordings.

Damp can also produce mould on a tape and then it's almost impossible to get an audio restorer to touch it as the mould transfers to, and infects, the precious old machines used in the initial play through. Once there, it eats the vital parts and renders them useless.

If you still have a working reel-to-reel machine that will play your tapes, then a wise precaution would be to clean the heads after every use. A fluid such as S721H needs to be purchased from a specialist audio supplier and used in a well ventilated room, or outside if weather permits. The solution is loaded onto a cotton bud and simply wiped across the exposed tape heads. Keeping the machine's head clean can help considerably in preserving your tapes.

Mould is still a problem with vinyl and Bakelite records too, as it may have eaten into the recording groove over time and degraded it. However, carefully cleaned with the right gentle chemicals, some sound is usually available for restoration.

Storage advice

If you have old audio tapes then store them in cool, dryish conditions, free from the danger of excessive heat or damp. A dark drawer in a cool, but not damp, spare bedroom is the best. The ends of tape often become damaged because they cannot be secured on the spool.

Says Liz: 'We have had tapes arrive through the post with seven or eight feet of recording that has become unwound from the spool as it moves around in its box. It can twist and crease as the box is tossed around in the post, often destroying valuable sound. It's advisable to push acid-free wrapping tissue against the tape to hold it to the spool.'

Restoration process

An audio restorer repairs, cleans and restores old recordings to as close to their original condition as possible. Then, using original equipment or sometimes a more modern version of the same, the sound is played into a computer and then adjusted to correct any distortion as much as possible.

Explains Liz: 'Lots of wedding tapes, for example, were made by the best man who had little or no experience as a sound engineer. We can always tell it was the best man as the sound would be muffled when he held the microphone under his arm when asked to produce the ring!'

The next stage is to reduce the amount of 'hiss', 'click' and 'pop' noises, thereby improving listening quality. Even a crack in a record can be minimised. Finally, the restored recording is put onto a CD and returned with the original material to its owner.

Says Liz: 'It's fascinating and hugely rewarding work and no two recordings are ever alike.' ■

Race against time

Sadly, sometimes the only example of a person's recorded voice is on an answer machine. The latest digital devices rely on a constant power source and cannot be unplugged and sent through the post.

Says Liz: 'We were recently contacted by a gentleman whose only recording of his late wife's voice was on his telephone. Thunderstorms were forecast for his area so we advised him to dash out and buy a small minidisc recorder, or similar device, and make as many copies of the original message as he could, preferably on more than one minidisc. It was a race against time before the storms arrived and there was a risk of power cuts. But all was well and that precious snippet of voice was saved.'



● If you want to find out more about the service Precious Voices offers, check out their advert on page 51.

