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E.T.s in the Archives (Electronic Transcription Discs, That Is)

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Mixed Media: Working with Audio and Visual Materials—

Paul Eisloeffel, Assistant Editor, Nebraska State Historical Society

Goodbye and Welcome

With this issue, Paul Eisloeffel completes his term as Assistant Editor for "Mixed Media." Many thanks to Paul for three years of informative articles on some of the most challenging issues facing our profession!

Taking over is Heather Fox from the Filson Historical Society. Welcome, Heather! MACers interested in writing a column for "Mixed Media" are encouraged to contact Heather at hfox@filsonhistorical.org.

ETs in the Archives (Electrical Transcription Discs, That Is)

By Paul Eisloeffel, Nebraska State Historical Society

They are commonly one-inch in diameter and won't fit on any standard turntable. They spin at 33 1/3 revolutions per minute (rpm) rather than the more common 78 rpm, and sometimes play from the inner hub outwards. They are made of aluminum, tin, or glass—sometimes even paper—and are most often coated with cellulose nitrate plastic. In short, they aren't the kind of albums you're likely to find in a vintage record store—but you might find them in your archives. They are electrical transcription discs.

Electrical transcription discs, or "ETs," are recordings made from radio broadcasts or intended for broadcast use. In use from the late 1920s into the early 1960s, ETs are also called "broadcast" or "radio" transcription discs, or simply "platters," in the vernacular of early radio. The use of the word "electrical" to describe these unique sound documents signifies a special place in the history of sound recording: ETs were one of the first to employ electromagnetic, instead of mechanical, recording devices (such as microphones and amplifying devices). This resulted in much higher fidelity in recording and playback.

History and Production

ETs got their start in the movies. From 1926 through the early 1930s, the motion picture industry sometimes used 16-inch recordings to provide the audio for some movie sound systems. Much later, ETs were also used for education, office dictation, and field recording, but, starting in the early 1930s, their predominant use was in the radio industry. Several factors played into this entrenchment: the expanding sponsorship of radio programming, the advent of "library services" providing stock music and licensed programming to broadcasters, and increased program standardization and scheduling by broadcast networks and their ever-expanding number of local affiliates. All of this came at a time when the public relied more and more on radio as a leading source of information and entertainment.

There are two types of electrical transcription discs. "Pressings" were made in the same way as other commercial disc recordings: a master disc that held the audio information was pressed onto blanks. This was a method of mass production, and accounted for the inventory of library services and copies of broadcasts from radio networks.

The other type of ET, the "instantaneous disc," was recorded in the local radio station or sound studio. Using a kind of lathe designed for the purpose, sound was captured on blank discs by carving out the grooves that held the audio information. This was not a means of mass production; rather, each recording was unique unto itself. This method was used for recording local advertisements, station identifications, public service announcements, and sometimes local programming.[1] Instantaeous discs are particularly valuable for archival collections, due to their one-of-a-kind nature.

Figure 1: The Control Room of Omaha radio station KFAB, c. 1935, shows two electrical transcription disc machines in the lower left foreground: the nearest is a player, and behind it is an instantaneous disc recorder. Courtesy Nebraska State Historical Society.

Blank electrical transcription discs consist of a rigid substrate (base), most commonly aluminum, coated with a laminate that received the grooves either through pressing or cutting. While different substances were used as a laminate (including shellac, resin, and cellulose acetate),

most after the mid-1930s were coated with cellulose nitrate.[2] During World War II, when aluminum was in high demand for the war effort, the manufacturers of blanks switched to the use of glass as a base, which proved a good substitute, but for its fragility. Aluminum was still used for pressings sent overseas during the war.

Preservation Issues

Figure 2: This instantaneous electrical transcription disc, containing commercials for a local department store, was recorded in the studio of radio station KFAB, c. 1940. The arrow drawn on it indicates the initial placement of the stylus. Courtesy Nebraska State Historical Society.

As you can imagine from the above descriptions of the physical makeup of electrical transcription discs, they are rife with preservation issues. Glass bases can crack or break. Wax "China" pencil marks, made by local engineers, sometimes grace their surfaces. Laterally cut instantaneous discs are good for only a very limited number of plays. And like any other audio discs, they can scratch or be damaged by poor handling or the use of incorrect styli.

But the most common malady afflicting ETs is the formation of palmitic acid deposits, which derive from the castor oil used as a plasticizer in the nitrate laminate. In their early stages, deposits appear as a fine white dust. This later turns into a greasy coating. As the plasticizer exudes from the nitrate laminate, the laminate can shrink, become brittle, and pull away from the base.[3]

Then there is access to the content. The labels and notes on the original paper sleeves (if they exist) might shed some light on this, but as with other machine-dependent documents, there is no substitute for playback.[4] And playback is an especially difficult proposition for ETs, given their size, groove configurations, and possible condition issues.[5]

Most archives are not equipped to deal with the conservation and transcoding of electrical transcription discs. Fortunately for us, there are labs that are well-versed in handling and cleaning ETs and creating digital surrogates. But what can an archives do?

As with other archival materials, a stable environment is paramount. High humidity and temperature variations can bring the onset of palmitic acid deterioration, so a low and even temperature and relative humidity is best—much like that used for film-based documents like photographic negatives and motion picture film. Deterioration can also be staved off with storage in acid-free buffered sleeves, especially after cleaning. Local air exchange can help with acidic off-gassing. And well-supported vertical storage will help protect discs from the uneven pressure that can lead to cracks or breaks.

Why They Survived, and Why They Didn't

History, chemistry, and simple luck have all contributed both to the continued existence of some electrical transcription discs and the downfall of others. Their fragility and susceptibility to damage and deterioration factor highly in their absence. Aluminum-based discs were salvaged for the war effort, and countless discs were no doubt tossed in the name of reducing storage costs and providing space for newer technologies. And the specter of format obsolescence, the bane of all machine-dependent documents, would certainly have aided in any rash decisions to discard these unique—albeit decidedly high-maintenance—resources.

But despite all of this, ETs still do exist, and in great numbers. After all, they were created in vast quantity and saturated an industry that pervaded our culture. The technology was used not only locally but in national, corporate, and governmental settings. Radio and sound recording hobbyists are keen to seek them out and collect them. And many have found their way into the protective embrace of archives.

Notes

1. For economy, stations did not make a practice of recording local programming. The common exception was for entertainers or sponsors who requested copies.
2. For reasons unknown, electrical transcription discs coated with cellulose nitrate were commonly referred to as "acetate" discs.
3. Fortunately, palmitic acid deposits can be removed using the right techniques and cleaners.
4. A label and sleeve can hold information not only about content, but also about the disc's technical and bibliographical properties, like lateral or vertical cut, playback speed, inside or outside start, type of stylus to use, provenance, and copyright information.
5. The grooves pressed or cut into electrical transcription discs require special styli not common to standard turntables.