

# Wax Cylinders Hold Audio From a Century Ago. The Library Is Listening.

The New York Public Library for the Performing Arts acquired a machine that transfers recordings from the fragile format. Then a batch of cylinders from a Met Opera librarian arrived.

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The first recording, swathed in sheets of distortion, was nonetheless recognizable as a child's voice — small, nervous, encouraged by his father — wishing a very Merry Christmas to whoever was listening.

The second recording, though still noisy, adequately captured the finale of the second act of “Aida,” performed by the German singer Johanna Gadske at the Metropolitan Opera House in the spring of 1903.

And the third recording was the clearest yet: the waltz from “Romeo and Juliet,” also from the Met, sung by the Australian soprano Nellie Melba.

Accessed by laptop in a conference room at the New York Public Library for the Performing Arts, the recordings had been excavated and digitized from a much older source: wax cylinders, an audio format popularized in the late 19th century as the first commercial means of recording sound. These particular documentations originated with Lionel Mapleson, an English-born librarian for the Metropolitan Opera, who made hundreds of wax cylinder recordings, capturing both the turn-of-the-century opera performances he saw as part of his job and the minutiae of family life.

For decades, the Mapleson Cylinders, as they're called by archivists and audiologists, have been a valuable but fragile resource. Wax cylinders were not made for long-term use — the earliest models wore out after a few dozen plays — and are especially vulnerable to poor storage conditions. But with the innovation of the Endpoint Cylinder and Dictabelt Machine, a custom-built piece of equipment made specifically for safely transferring audio from the cylinders, the library is embarking on an ambitious preservation project: to digitize not just the Mapleson Cylinders, but roughly 2,500 others in the library's possession.



Mapleson's diaries studiously chronicled both his daily life and the Metropolitan Opera's calendar. Tony Cenicola/The New York Times

The machine will also allow the library to play a handful of broken Mapleson cylinders that nobody alive has ever heard. "I have no idea what they're going to sound like, but the fact that they were shattered a long time ago saved them from being played too often," said Jessica Wood, the library's assistant curator for music and recorded sound. "It's possible that the sound quality of those will let us hear something totally new from the earliest moments in recording history."

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Some of the Mapleson Cylinders had already been in the library's collection, but another batch was recently provided by Alfred Mapleson, the Met librarian's great-grandson. This donation was accompanied by another valuable resource: a collection of diaries, written by Lionel Mapleson, that studiously chronicled both his daily life and the Metropolitan Opera's calendar. The diaries provide extra context to both Mapleson's audio recordings and the broader world of New York opera. One entry from New Year's Day in 1908 noted the "tremendous reception" for a performance by Gustav Mahler. Another described the time that the Italian conductor Arturo Toscanini, "in rage," dismissed his orchestra because of noise on the roof.

"The consistent keeping of this diary is much more important than just for music," said Bob Kosovsky, a librarian in the New York Public Library's music division. "It's such an amazing insight into life in New York and England, since he went back every summer to the family."

The library acquired the Endpoint machine from its creator, Nicholas Bergh, last spring, as NPR reported then. "The Western music at that time was being recorded in the studios, so it's very unique to have someone that was documenting what was actually going on there at the theater," said Bergh, who developed the machine as part of his work in audio preservation.



Wax cylinders were traditionally played on a phonograph. Tony Cenicola/The New York Times

Alfred Mapleson soon reached out to the library about the diaries, and the collection of his great-grandfather's cylinders that had, for years, awaited rediscovery in his mother's Long Island basement. In November, they were packed into coolers and transported by climate-controlled truck to the library, where they're now stored in acid-free cardboard boxes meant to mitigate the risk of future



degradation. (On Long Island, they'd been kept in Tuborg Gold beer caddies.)

These particular cylinders were previously available to the library in the 1980s, when they were transferred to magnetic tape and released as part of a six-volume LP set compiling the Mapleson recordings. After that, they were returned to the Mapleson family, while the greater collection stayed with the library. But, Wood said, "there's people all over the world that are convinced that a new transfer of those cylinders would reveal more audio details than the previous ones."

Wax cylinders were traditionally played on a phonograph, where, similar to a modern record player, a stylus followed grooves in the wax and translated the information into sound. The Endpoint machine uses a laser that places less stress on the cylinders, allowing it to take a detailed imprint without sacrificing physical integrity, and to adjust for how some cylinders have warped over time. The machine can retrieve information from broken cylinder shards that are incapable of being traditionally played, which can then be digitally reconstituted into a complete recording.

Within the next few years, the library hopes to digitize both the cylinders and the diaries, and make them available to the public. The non-Mapleson cylinders in the library's collection are also eligible to be digitized, though Wood said that process will be determined based on requests for certain cylinders. The library's engineers are shared across departments, and with a backlog of thousands, she said, "We have to wait our turn."

The wax cylinders comprise just one aspect of the library's ongoing audiovisual archival projects. Its archives of magnetic tape were recently digitized thanks to a grant from the Andrew W. Mellon Foundation. And curators are in talks with Bergh about a new machine he's developing that can play back wire recording, a midcentury format that captured audio on a thin steel wire. Wood estimated that about 32,000 lacquer discs — a predecessor to the vinyl record — at "very high risk of deterioration" are also in the digitization queue. These discs contain all types of audio, including radio excerpts, early jazz music and recordings made at amusement parks.



The Endpoint Cylinder and Dictabelt Machine can retrieve information from broken cylinder shards that are incapable of being traditionally played. Tony Cenicola/The New York Times

“Libraries, in general, are very focused on books and paper formats,” Wood said. “We’re getting to a point where we’ve had to argue less hard for the importance of sound recordings, and that’s allowing us to get some more traction to invest resources in digitizing these.”

Alfred Mapleson said he was simply happy to put his family inheritance to good use. The cylinders were previously part of the Mapleson Music Library, a family-owned business that rented sheet music, among other things, to performers. But the business liquidated in the mid-1990s, and the cylinders had sat untouched in his mother’s basement ever since.

“There’s an important obligation to history that needs to be maintained,” he said. “We don’t want them sitting in our possession, where they could get lost or damaged.” He waved off the possibility of selling them to a private collector, where they might find no public utility: “That’s not something that would sit well with my family.”

His great-grandfather’s archives had offered him plenty to reflect on. His wife had gone through the diaries, he said, and pointed out the behavioral similarities between living family members and their ancestors. He noted, with some awe, how his grandfather’s voice — the one wishing a Merry Christmas — resembled his own children’s voices. But it was time to pass everything on, and he said he had no interest in repossessing the materials once the library had finished digitizing everything.

“It’s in better hands at the New York Public Library,” he said. The recordings had originated at the Metropolitan Opera; now, they would reside nearby forever. “Let’s keep it in New York, because this is where it all happened. I like that idea.”