

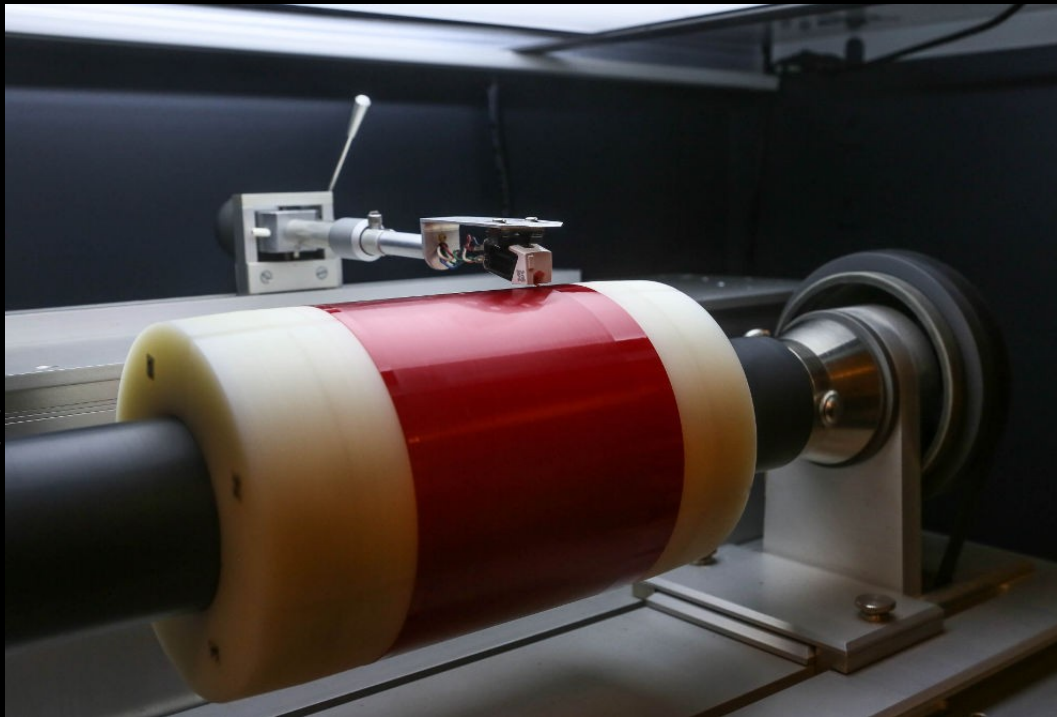
1  
Greetings from Paris !

I am Henri Chamoux, an engineer and a civil servant in France working for the LARHRA, a research division of the National center for scientific research. As an individual I am also the inventor of the «Archéophone» phonograph ; initially designed to play the wax cylinders which existed before World War I. I developed the Archeophone in 1998 and it is with this device that I digitized the Rivonia dictabelts alone, in 2015-2016.

As a result I was the first listener of the complete recording. My work on the digitization and editing took place over 1600 hrs on a 15 month period, for a total of about 230 hours of recording.

I will now try to answer a few questions : - why choosing the Dictabelt to record trials ? - why choosing the Archeophone 52 years later ? I am going to show you more about some odd sound devices and curious audio carriers in history, in order to explain the Dictabelt. I will also tell about my own impressions while listening to the Rivonia Trial.

## **Digitizing the Rivonia trial dictabelts with the Archeophone phonograph**



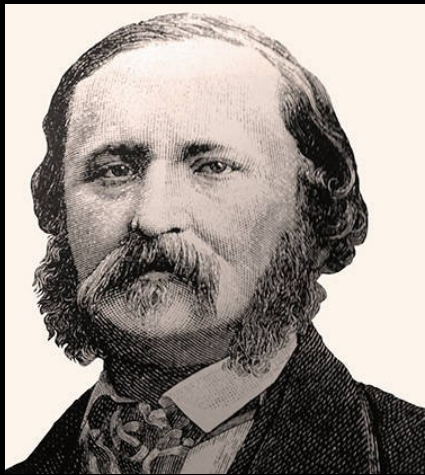
*Photo  
Moise  
Fournier  
(2015)*

**Henri CHAMOUX  
ENS Lyon - LARHRA - CNRS**

**Johannesburg - University of the Witwatersrand  
27 September 2018**

2

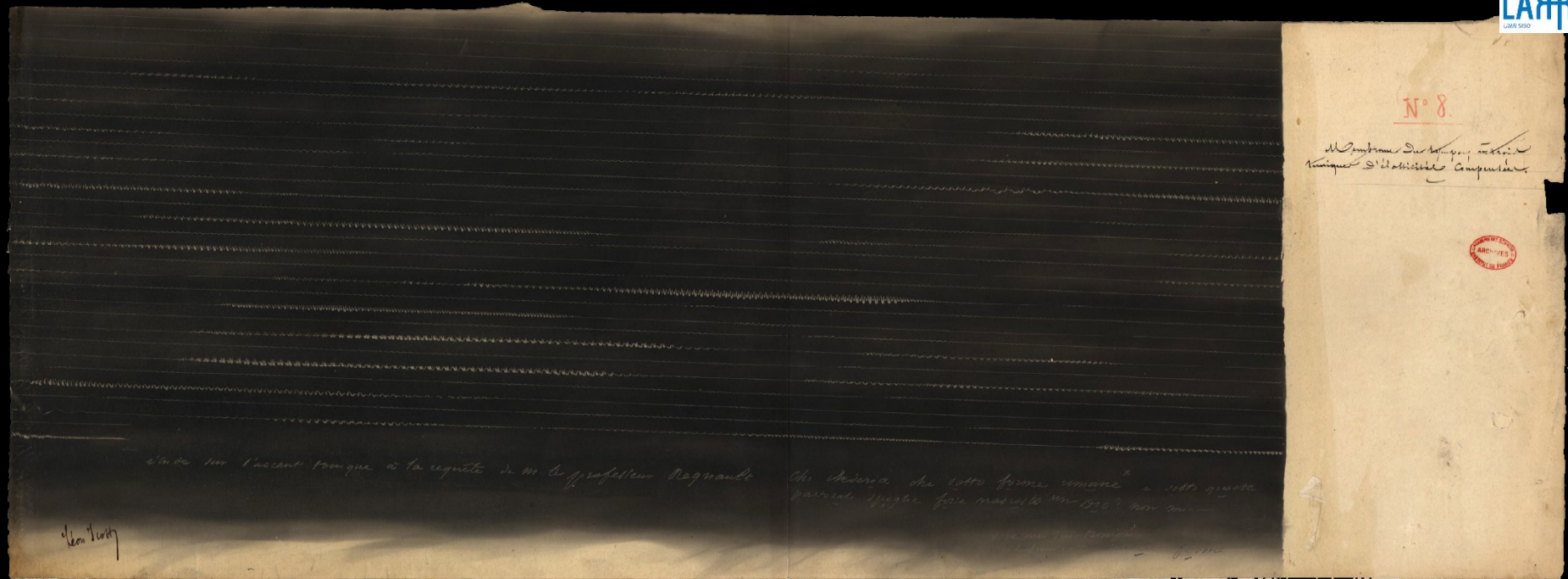
But first I wish to give a historiographical tribute to the first man who actually recorded sound : It is not Thomas Edison but a Frenchman : Édouard-Léon Scott de Martinville, 20 years before Edison. He recorded sound of paper coated with lampblack around 1860.



Édouard-Léon Scott  
de Martinville  
(1817-1879).



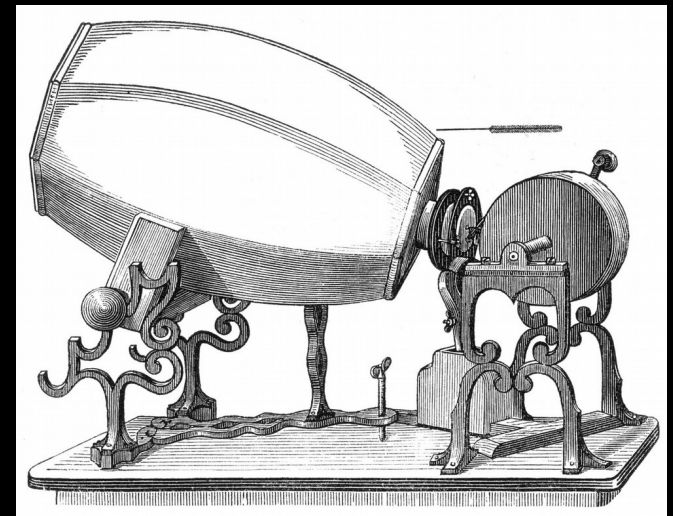
His first recording device (1857). Drawing preserved at the Académie des Sciences, Paris



Édouard-Léon Scott de Martinville, *Inscription automatique des sons de l'air au moyen d'une oreille artificielle* (1861), planche n° 8, conservée à l'Académie des Sciences. Image : [www.firstsounds.org](http://www.firstsounds.org)



3  
The blacklamp coated paper was put on a flat surface or wrapped on a cylinder in front of a horn with a membrane and a stylus. Device is a PHONAUTOGRAPH. Image at top shows the result : an unwrapped paper which contains a sound recording : a phonautogram.



Scott's phonautograph.  
Franz Josef Pisko : *Die neueren Apparate der Akustik* (Vienna, 1865), p. 73.

Édouard-Léon Scott de Martinville, drawing (1857)  
Manuscript preserved at the Académie des Sciences  
Image : [www.firstsounds.org](http://www.firstsounds.org)



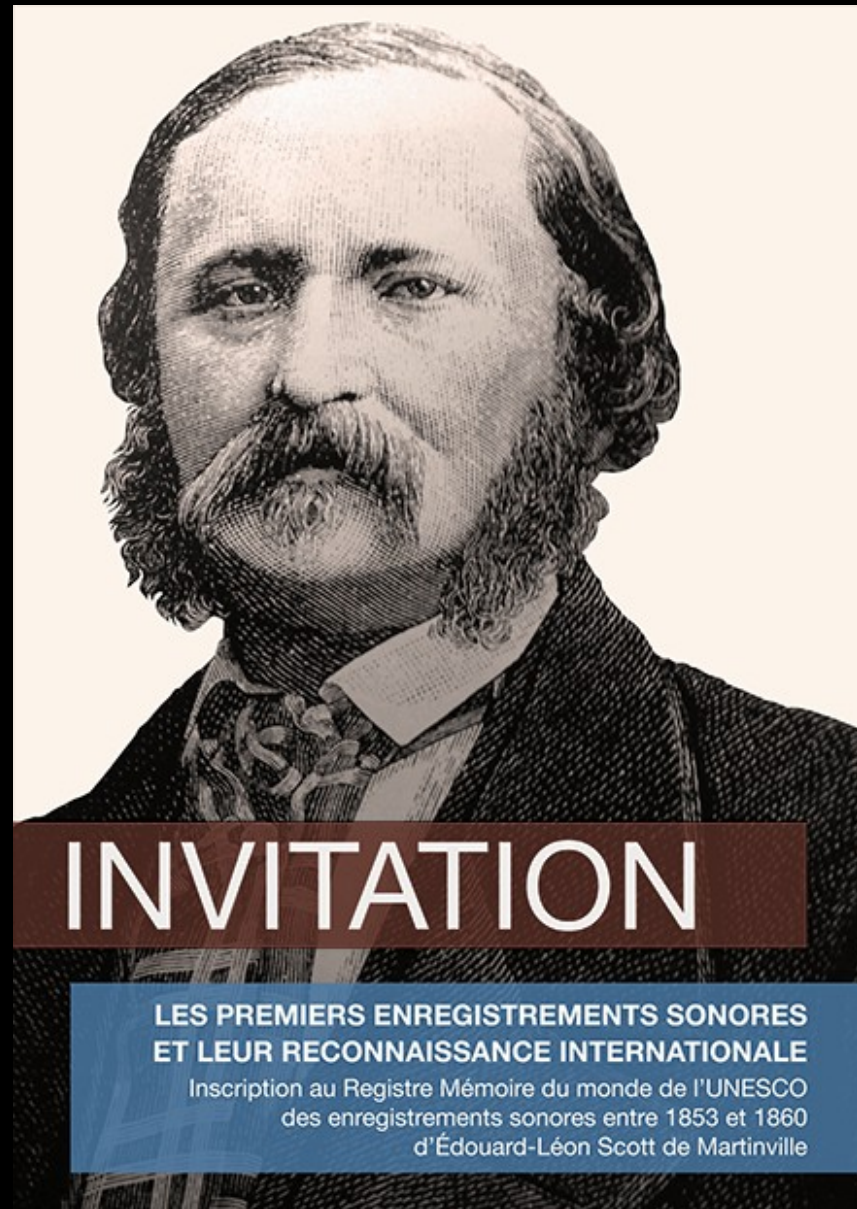
David Giovannoni, Laurent Scott de Marttinville, and Anton Stoelwinder with a reproduction of the earliest recording device, Paris, Société d'encouragement, 17 September 2016.



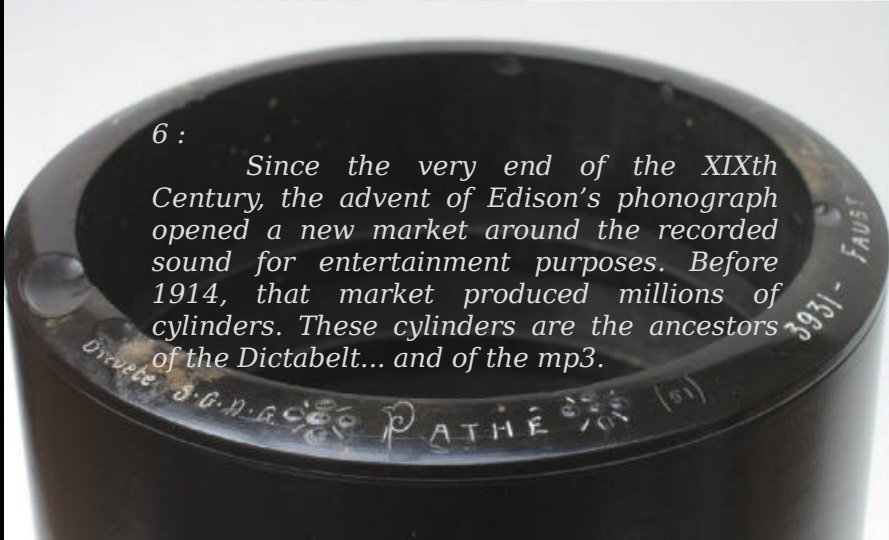
Édouard-Léon Scott de Martinville, détail of phonautogram 8 (1861), preserved at the Académie des Sciences, Paris.

<sup>4</sup> On this sound carrier made of paper, the sound is a visible white track showing waves on the blacklamp surface. Thanks to FIRST SOUNDS, an american non-profit association, the venerable Phonautograms are now scanned and deciphered and the earliest human sound recordings can now be found and heard online.

On October 9, 2015, the United Nations Educational, Scientific and Cultural Organization (UNESCO) inducted Édouard-Léon Scott de Martinville's fonds of phonautograms and manuscripts onto its *Memory of the World Register*.



5  
*Scott did not make a great profit of his invention and actually starved to death. Being considered as **humanity's first recordings of its own voice**, Scott's phonautograms are now protected by UNESCO since 2015. This is like the documentary heritage of the Rivonia Trial, which was included in UNESCO's Memory of the World Register in 2007.*



6 :  
 Since the very end of the XIXth Century, the advent of Edison's phonograph opened a new market around the recorded sound for entertainment purposes. Before 1914, that market produced millions of cylinders. These cylinders are the ancestors of the Dictabelt... and of the mp3.



50 million cylinders were made for the sole French market, from 1893 to 1914.

7

Today the fragile wax cylinder must not be played on vintage machines like this Edison phonograph. A single audition on these machines can destroy the venerable cylinders.



Source Henri Chamoux, Patrick Louvet : *The Dictabelt, a recording medium of the 1950's*, vidéo, Amédiart, 2014.

[https://www.youtube.com/watch?v=\\_nRREq3v6vY](https://www.youtube.com/watch?v=_nRREq3v6vY)

## L'Archéophone® Lecteur universel de cylindres phonographiques.

8-9

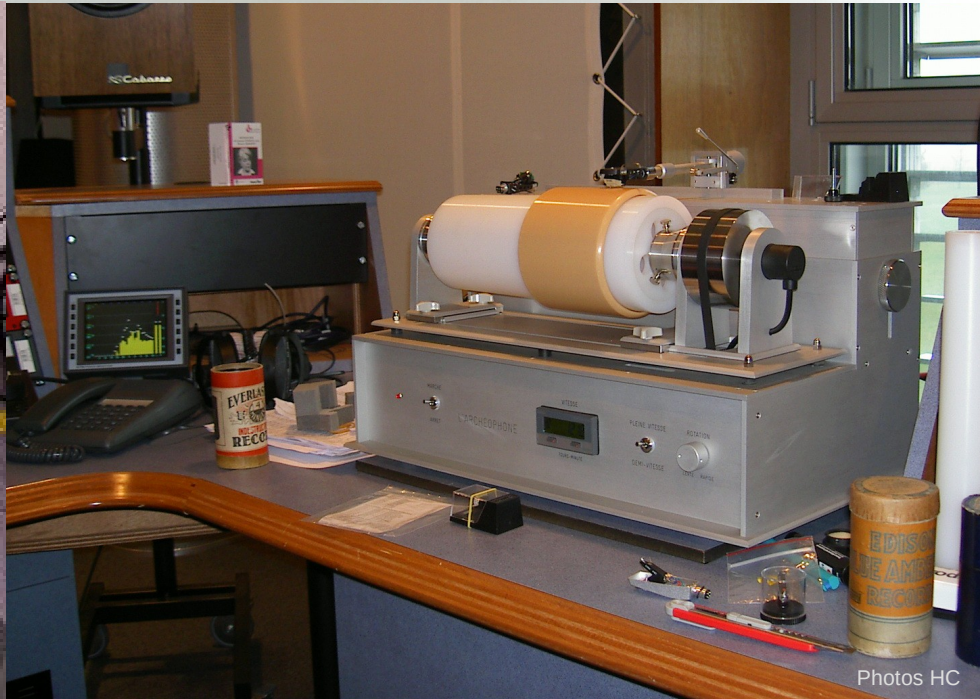
*This is why I created the Archeophone phonograph, 20 years ago, in order to play cylinders of all sizes, without any damage.*

*This device is now used in several places in the world.*



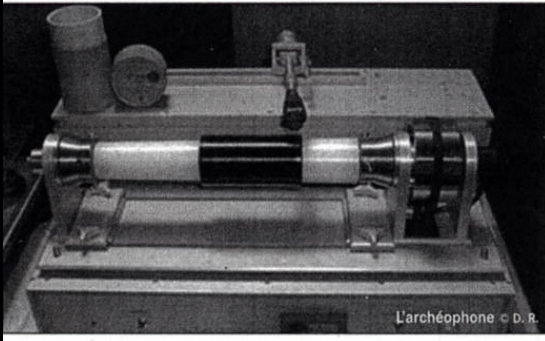
1998, au Salon international des techniques muséographiques (SITEM).





# À l'écoute des cylindres

Parmi le million de documents sonores qu'il conserve, le département de l'Audiovisuel possède environ 7000 cylindres, le premier support de musique édité. Grâce à l'acquisition récente d'un appareil de lecture adapté, ils vont enfin livrer leurs secrets.



## L'archéophone

Le département de l'Audiovisuel a récemment fait l'acquisition d'un lecteur de cylindre, intitulé l'Archéophone, mis au point et fabriqué en petite série par un collectionneur. Cet appareil, sans danger pour les documents, va enfin permettre de lire et d'écouter, souvent pour la première fois, les cylindres précieusement conservés. Leur transfert sur CD-R a déjà pu

2 Wednesday, February 28, 2001

University

The Daily Tar Heel

## Library Gets Sonic Link to Past

By ASHLEY ATKINSON  
Arts & Entertainment Editor

A new instrument housed in Wilson Library will allow archival recordings that haven't been played in 50 years to make a living contribution to America's soul history.

The library's archeophone, one of only seven worldwide, plays aging wax cylinders that are too fragile to be played on traditional cylinder phonographs. "Nobody's been able to play and listen to these for decades," said Sound and Image Librarian Steven Weiss. "The archeophone provides a new way to play them back safely."

Wax cylinders were the first medium for recorded sound, Weiss said, predating 78 rpm records.

The Academic Affairs Library's Manuscripts Department, which houses all the library's archival material, has about 60 wax cylinders. Others are scattered throughout the University. The cylinder collection includes valuable material like interviews with Thomas Wolfe's mother and field recordings of African American songs

and sermons on St. Helena Island, S.C., recorded by late sociology Professor Guy Johnson in the 1920s.

"They may be among the first recordings of African American spirituals in the country," Weiss said.

Many of the cylinders are part of the Southern Folklife Collection, one of the nation's foremost archival resources for American folk music and popular culture. The cylinders are fragile, Weiss said, and often get moldy. They can be brittle and easily cracked, and once they are damaged they are irreparable.

"The archeophone's stylus can be adjusted to place less weight on the cylinder's grooves than older players, allowing them to be played without damage."

"It's a really valuable tool that allows us to listen to these lost recordings and make them available for generations," Weiss said.

The machine also has capabilities that allow it to digitize higher-quality sound from worn or warped cylinders. "It allows you to do a number of tricks you couldn't do with the original machine to get more sound out," Weiss said.

The library had been debating the

acquisition of a new machine when the archeophone's inventor, Henri Chamoux, made an impressive demonstration at a recent archival conference at Wilson Library in May.

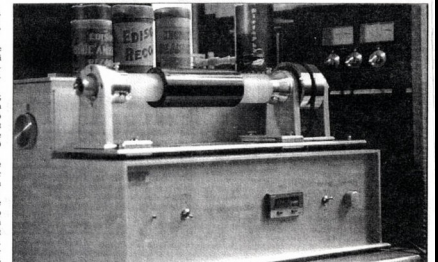
The instrument cost about \$16,000; the purchase was made possible by a gift from alumna Ben Jones. Jones also donated funds for a workstation that digitizes audio recordings, enabling the library to transfer wax cylinders to CD and eliminate extraneous noise.

The library is using the archeophone to make copies of all its cylinders for preservation, with versions available on CD for researchers and patrons to use.

The archeophone also gives the Manuscripts Department a reason to expand its collection. "We haven't been collecting cylinders because we didn't have the playback capability," Weiss said.

The library hopes to work with other South and North Carolina institutions to preserve their wax cylinders as well.

The Arts & Entertainment Editor can be reached at atkinson@tarheel.edu.



The Academic Affairs Library recently acquired an archeophone, a device that predates records and plays old recordings on wax cylinders. The device is one of only seven archeophones in the world.

Page 8 • University Gazette • January 24, 2001

## Research News

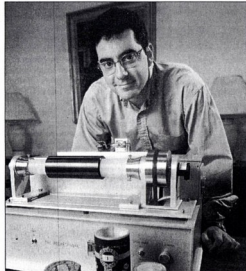
### Archeophone revives long-silent recordings

FYI Research

A new instrument will unlock a wealth of musical, oral history, and oral tradition recordings tucked away in Carolina's Southern Folklife and Southern Historical Collections. Recorded on wax cylinders that have become brittle or cracked over time, the recordings have been too fragile to be played safely on cylinder phonographs.

Steven Weiss, sound and image librarian with the Academic Affairs Library, is one of the individuals charged with preserving the cylinders. "People know that Carolina has these materials," Weiss said, "but we just couldn't chance playing the cylinders for researchers or patrons." Until now, the library's recent acquisition of an Archeophone, designed to safely play wax cylinders, allows the transfer of recordings to more stable media that can be used by researchers.

History credits Thomas Edison with the invention, in 1887, of an apparatus that recorded sound on tinfoil cylinders.



**WAXING ELOQUENT**

Steven Weiss, sound and image librarian with the Academic Affairs Library, sits behind the library's recent acquisition, an Archeophone. One of only seven worldwide, the bathe-like invention plays archival recordings with little damage to their wax cylinders, enabling transfer to more stable media. A gift from alumna Ben Jones made the purchase possible, along with a digital audio workstation that filters out background noise.

Weiss and studio engineer Jeffrey Cantrell used the Archeophone to transfer the wax-cylinder recordings of African-American spirituals and sermons made by sociologist Guy B. Johnson during the 1920s. "One of the really exciting things for us," Weiss said, "is rediscovering these recordings that haven't been played in over 40 or 50 years."

The plan is to make a preservation copy (straight transfer to open-reel tape) and a listening copy (filtered transfer to compact disk) of all wax cylinders in the collections housed in Wilson Library. "We'd eventually like to work with other institutions throughout the state and the South — institutions that lack the capability to play cylinders — to preserve their recordings," Weiss said. "Some cylinders are just collecting dust. The Archeophone would give people an opportunity to tap those resources."

In the past, the library has turned away donations of wax cylinders because it could merely preserve them. Now, Weiss and his colleagues can welcome donations of cylinders with a southern focus. "My primary goal," Weiss said, "is to pro-

10  
Today thirty Archeophone devices play cylinders in many private and public archives, universities or libraries, such as the Library of Congress of the US.



SYRACUSE UNIVERSITY

NATIONAL MEDIA RELATIONS

April 13, 2000  
Contact: John Harvith [315/443-4152]

MEDIA ADVISORY

Northeast Media Preview of the Archeophone, the first machine designed to reproduce all different sizes and speeds of antique cylinder recordings, takes place 10:30 a.m. Monday, April 17, in Syracuse University Library's Belfer Audio Laboratory and Archive

Archeophone inventor Henri Chamoux travels to SU from France to demonstrate his invention, which will become part of Belfer's collection

Only two other Archeophones are known to be in the U.S., at the University of California, Santa Barbara, and the Library of Congress

# Phonobase : Early recordings Database

## 10 000 pieces of wax, celluloid and shellac audible online

11  
 In addition a lot of cylinders recorded in France before 1914, are saved and can be heard online thanks to the Archeophone.

Gomme-laque, celluloid et vieilles cires : disques et cylindres de la Belle Époque en ligne - Mozilla Firefox

**WWW.PHONOBASE.ORG**


Recherche tout champ    Recherche avancée    Nouvelle recherche    Page d'accueil

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14 résultats trouvés

◀ 1 13 14 ▶

Titre :	Le temps des cerises
Compositeur(s) et-ou auteur(s) :	Renard, Antoine
Interprète(s) :	Maréchal, André
Fichier audio :	<a href="#">Cliquez pour écouter</a>
Photo(s) :	
Support d'enregistrement :	Disque
Format :	21 cm saphir etched (enregistrement acoustique)
Lieu d'enregistrement :	Paris, France
Marque de fabrication, label :	Pathé
Numéro de catalogue :	1125
Numéro de matrice :	22802-E
État :	Exc++
Vitesse (tours/minute) :	90
Matériel employé au transfert :	Garrard 401 SME 3012, pointe 2.0ET sur Stanton, Elberg MD12 : courbe flat, passe-bas 3k, Cedar X declick, decrackle, dehiss
Date du transfert :	30-09-2012

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[www.phonobase.org/audio/AC-2010/2012\\_5840.mp3](http://www.phonobase.org/audio/AC-2010/2012_5840.mp3)

12

*Around the year 1910, the phonograph began to enter the office use and became a business machine.*



Blind stenographer from the Overbrook School for the Blind using a dictaphone (Philadelphia, 1911).

13-14

*The Dictaphone Corporation, a sister Company of the Columbia Graphophone C° is created in 1922.*

*Dictaphone devices are designed for secretaries to transcribe the mail in offices. They develop in the 1930s mostly.*




*Transcribing, publicité de la Columbia Phonograph Co (1922).*

**THE TREND TO  
 DICTAPHONE  
 SWEEPS ON**

Dictaphone Corporation ads in 1937

**That your phone calls** can be put on the record while they happen with Dictaphone—thus making orders given or taken mistake-proof and alibi-proof. You'll be interested to see how *easily* and naturally this is done.

**Say it to the Ediphone!**




Let Edison help plan your summer business. The Ediphone will prove the one dependable assistant through the season of vacations and conversations when office time is at a premium. Be free to come and go. Early or late in the cool of the day clean up your mail and the notes of your trips with an Edison Secretary—always at your desk.

And your stenographers will welcome this better organization of their time. They can handle the mail without substitutes if you give them Ediphones to regulate their duties, saving you the costly experience of substitute help.

Our National Service will prove this at your desk and guarantee the continued satisfaction of your entire office. Hundreds of old customers, nearby, will tell you so. Telephone "The Ediphone," your City, or write for our book, "Getting Action."

Ediphones are now furnished in colors

THOMAS A. EDISON, INC.  
HEAD OFFICE: 300 MADISON AVENUE  
LABORATORY & GENERAL OFFICES  
ORANGE, N. J.  
LONDON OFFICE: 104 Pall Mall St. London, W. 1



**Ediphone**  
Edison's New Dictating Machine

1928



Actress Colleen Moore listening to a message on Ediphone (1928).

Time, September 10, 1938

**NEW ENCLOSED EDIPHONE**  
for your desk



**Amazingly small, yet it does a giant job by clearing your mind of details!**

The Edison Laboratories put the newest Voicewriter on your desk. Modern! Compact! Smart looking! And you will enjoy using it—not because it takes up less room than a sheet of business paper—not because it's completely enclosed—not because it has a Safety Signal Light which winks at you to prevent mistakes—no, not because of Truvox recording which captures your own true voice.

You will use it because it enables you to do a bigger and better job. Because it gives you more time to do things that really count. For an Ediphone is always there. You pick up the receiver and speak your mind. Order things done. Answer letters. Post future dates. Record random ideas. The Ediphone never goes out to lunch—never knows when 5 o'clock comes.

Ask to see this new desk Ediphone. It's as simple to use as your telephone. Phone the Ediphone (your city) or write Ediphone Division, Thomas A. Edison, Inc., W. Orange, N. J., for all the information without any obligation.

**SAY IT TO THE Ediphone**  
EDISON VOICewriter


COMPLETELY enclosed—a "new high" in handsome desk design.

TRUVOX recording—a new invention which captures your true voice.

EXCLUSIVE Safety Signal Light for fool-proof operation.

Ediphone Edison Voicewriter (1938)

VOICE-WRITE WITH THE



**Ediphone**

PREFERENCE FOR EDIPHONE PERSISTS

1937

15  
Edison Company follows suit and creates the competing device under the name Ediphone, but he does not seem to dominate the market.



Marius Barbeau (1883-1969), anthropologist, ethnologue and folklorist from Quebec in 1950, while transcribing a field recording cut on a Dictaphone wax cylinder.

16

*In fact these business machines are subject to unexpected applications, especially with ethnologists or musicologists who use dictaphones for their field recordings. Still in the 1950's, they make use of the outdated wax cylinders.*



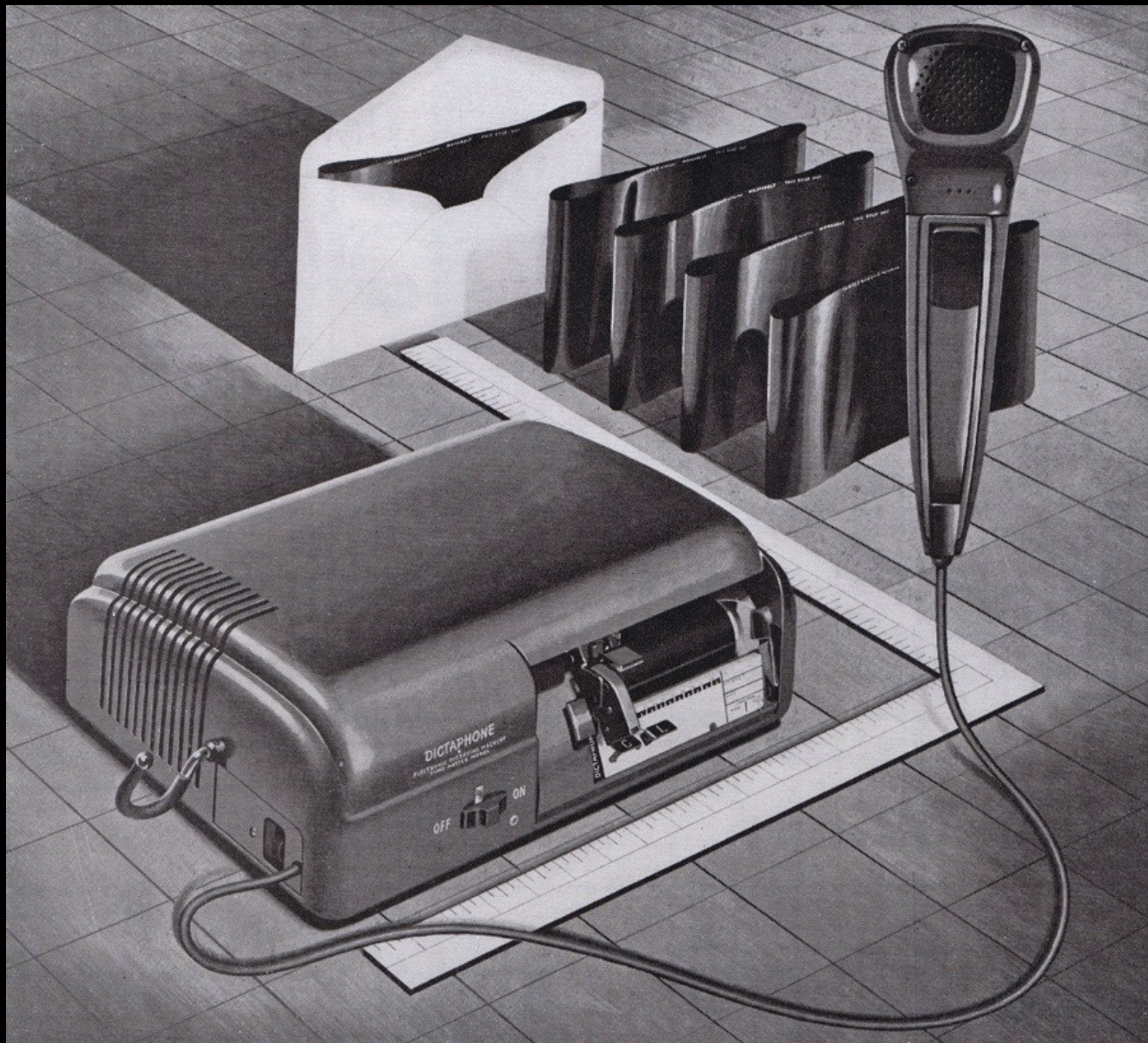
Ciarán Bairéad (1905-1976), Irish folklorist, writer and scholar, while transcribing a field recording made on an Ediphone wax cylinder, in 1957. Photo Leo Corduff, Galway University.



17  
Then appeared the dictabelt. By inventing and putting on the US market a flexible cylinder which can be flattened and put in an envelope, the Dictaphone Corporation hits a big blow.

The player/recorder device is still called a Dictaphone but the sound carrier is a thin translucent and floppy plastic cylinder instead of a wax cylinder.

First marketed under the name MEMOBELT, it became short after the DICTABELT.



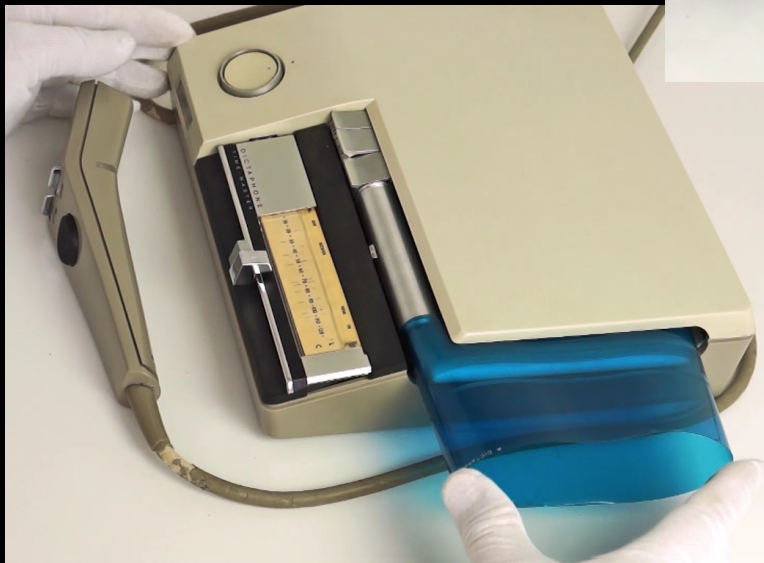
### *Memobelt, Dictaphone Corporation (1947)*

A thin translucent and floppy plastic cylinder.  
Lenght 89 mm - Thickness 0,13mm - Diameter 95,5mm.

18

Imagine in these machines a flexible cylinder, on the surface of which the grooves are cut with the recorded sound. This thin closed loop of plastic is stretched by two rollers and rotated while operating.

Dictabelt : these floppy cylinders with special properties were still in use until 1975.



Images from  
Henri Chamoux and Patrick Louvet :  
*The Dictabelt, a recording medium of  
the 1950's*. Video, 2014. On Youtube :

[https://www.youtube.com/watch?v=\\_nRREq3v6vY](https://www.youtube.com/watch?v=_nRREq3v6vY)

*Reason 5 : visible recording.  
See exactly where you are  
on the record at a glance.  
Easy to find your place for  
playback.*

*19-23  
The advertising is clearly aimed  
at the CEO or at the  
entrepreneur.*

*But the most striking among the  
assets of the device according to  
these ads is the notion of visibility  
of what is recorded...*

# 6 reasons why Dictaphone's Dictabelt record makes your job easier!

**6** **Clearest recording** saves time in transcription because your secretary hears every word perfectly.

## 5

**Visible recording.** See exactly where you are on the record at a glance. Easy to find your place for playback.

## 4

**Unbreakable plastic record** is permanent, non-erasable.

## 3

**Mail Dictabelt records** like an ordinary letter...they're feather-light, flexible, and post-card size.

## 2

**File Dictabelts** for permanent voice record, or for future transcription.

## 1

**Save money on Dictabelts.** Just 4¢ for average day's dictation. You always record on a new surface. No "multiple handling" of records.



**The Dictabelt record**...exclusive advantage of the Dictaphone Time-Master dictating machine.

When you are considering a dictating machine to save you time, money and work, remember the *Dictabelt* record. It's a convenience and an economy you get only with the Dictaphone Time-Master... leading dictating machine around the world.

For more information and a free *Dictabelt* record, write Dictaphone Corporation, 420 Lexington Avenue, New York 17, N. Y. In Canada, Dictaphone Corporation, Ltd., Toronto, Ontario.

**DICTAPHONE**  
CORPORATION

DICTAPHONE, TIME-MASTER AND DICTABELT ARE REGISTERED TRADE-MARKS OF DICTAPHONE CORPORATION

*6 reasons why Dictaphone's Dictabelt record makes your job easier, advertising (1955).*

[...] The recording surface is visible while you record : no risk of any accidental destruction of your dictation [...]



Ce manchon de plastique rouge est le support-  
 son Dictabelt, un des avantages exclusifs de la  
 machine à dicter Dictaphone (1) Time-Master.  
 Aucun autre support de dictée ne lui vient à la che-  
 ville pour la souplesse, l'économie, la simplicité à l'usage.



## DICTAPHONE

MARQUE DÉPOSÉE

Exclusivité et garantie GROG & C<sup>ie</sup>  
 37, avenue George-V, Paris (8<sup>e</sup>)-BAL. 63-50 (12 lignes);  
 à Lille, 25, rue J.-Gisèle, tél. 57-11-54  
 Prière citer "Vendre".  
 Vous pouvez aussi demander un essai gratuit  
 de 8 jours si vous êtes à Paris, ou Lille.

Voici pourquoi :

Les Dictabelts ont à l'écouter une pureté de cristal, qu'aucun  
 autre support de dictée ne peut atteindre. Les Dictabelts  
 sont faits de plastique incassable, léger et flexible. Ils  
 sont inaltérables : aucun risque de destruction acciden-  
 telle de la dictée. La surface d'enregistrement est visible  
 pendant que vous dictez : vous savez toujours où vous  
 en êtes. Le Dictabelt est d'un prix dérisoire et cependant  
 il absorbe une journée moyenne de dictée.

Si votre travail vous amène à rédiger quoi que ce soit,  
 vous le ferez mieux, plus vite et plus facilement avec  
 Dictaphone Time-Master et Dictabelt.

(1) Marque déposée par Dictaphone Corporation, New-York.

### GROG & C<sup>ie</sup>

37, avenue George-V, PARIS (8<sup>e</sup>), BAL. 63-50 (12 lignes)  
 25, rue Jacquemars-Gisèle, LILLE.

Nous désirons :  
 — une documentation sur la machine à dicter Dictaphone ;  
 — (ou) une démonstration sans engagement ;  
 — (ou) un équipement à l'essai, gratuitement pendant huit jours.

Nom .....

Société .....

Adresse .....

VENDRE 1-11-56

Dictaphone, marque déposée, advertising in  
 French language (1959).

[...] They record visibly, so you can't lose your place[...] so dictation can't be lost or erased.



with the Dictabelt record, you "write" as easily as you talk



The Dictaphone TIME-MASTER dictating machine and Dictaphone's exclusive DICTABELT record.

JUST think out loud. The Dictaphone TIME-MASTER does the rest. No other dictating machine is so easy to use.

Every word is recorded instantly and unmistakably on Dictaphone's exclusive DICTABELT record. DICTABELTS slip on and off in a second. They record visibly, so you can't lose your place . . . permanently, so dictation can't be lost or erased. Your secretary hears every word so clearly that she works lots faster and more accurately.

DICTABELTS are postcard size, flexible and unbreakable. They can be mailed or filed as easily as ordinary letters. And they're the

most economical dictating medium of all.

Think of the time you'll save every day. When work comes up—or an idea strikes—you record it instantly. No waiting for your secretary to take shorthand, no desk-top pile-up.

Why not discover how to get all the best out of yourself? Try the new Dictaphone TIME-MASTER and DICTABELT record on your own desk this week. No obligation. Just call your local Dictaphone office or write Dictaphone, Dept. W, 420 Lexington Avenue, New York 17, N. Y. Ask about our rental plan, too.

**DICTAPHONE CORPORATION**

Service available the world around

In Canada, write Dictaphone Corporation, Ltd., 204 Eglinton Ave. East, Toronto . . . In England, Dictaphone Company, Ltd., 17-19 Stratford Place, London W.1. Dictaphone, Time-Master and Dictabelt are registered trade-marks of Dictaphone Corporation.

Publicité Dictaphone Corporation, Saturday Evening Post, 1957.



## How a **RED** belt can keep you in the **BLACK**

*[...] Permanence : can't be erased accidentally.  
Visibility : you see your recording take place, easily find your place.*



One Dictaphone TIME-MASTER with Dictabelt record can add \$1,250 a year to your profits.

Only the plastic Dictabelt can offer you such *confidence* as you dictate. *Fidelity*—your secretary can't mistake it. *Permanence*—can't be erased accidentally. *Visibility*—you see your recording take place, easily find your place.

The new TIME-MASTER dictating ma-



chine with Dictabelt can gain an hour a day in communications—an executive's most important job. For a \$10,000-a-year man, this is \$1,250 gained yearly.

Together, the Dictabelt and TIME-MASTER make the finest system for business communications in the world . . . and the best *value* you can buy.

No time wasted waiting for your secretary . . . pick up the microphone and talk your work away. All necessary controls are on the mike. Phone any of Dictaphone's 200 local offices for a free demonstration at your desk.

### THE NEW, ALL-TRANSISTOR **Dictaphone** TIME-MASTER

Dictaphone, Time-Master and Dictabelt are registered trademarks of Dictaphone Corp., 730 Third Ave., N. Y. 17, N. Y.; 204 Eglinton Ave. E., Toronto, Canada; 17-19 Stratford Pl., London W.1, England.

*How a red belt can keep you in the black,  
(USA), 1959.*

**The "sound you can see" means savings you can see!** If you let a Dictaphone Time-Master dictating machine take dictation for your secretary, you save money.

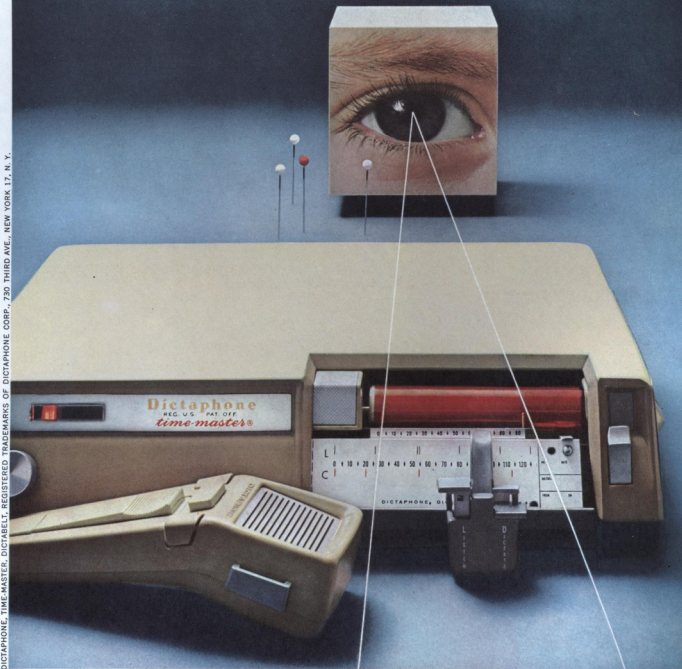
In terms of dollars and cents, this advanced method will record your messages far more economically and conveniently. And it will free your secretary for a multitude of other duties.

For the Time-Master utilizes the most practical recording medium ever developed for

dictation—the unique Dictabelt Record, the "sound you can see." Recording is on visible tone grooves. You always know exactly where you are. There's no rehandling, you get a fresh surface every time for just pennies.

As the most experienced name in the field, Dictaphone Corporation is best qualified to help you reduce a very substantial drain on profits. Why not have a Dictaphone Representative survey your needs today?

DICTAPHONE, TIME-MASTER, DICTABELT, REGISTERED TRADEMARKS OF DICTAPHONE CORP., 730 THIRD AVE., NEW YORK 17, N. Y.



**Dictaphone®** the sound you can see

**The « sound you can see »,** ad for the Dictabelt dictaphone, *Fortune*, October 1961.



Previous post:

[Violence in Danville: Preservation of a Civil Rights Legacy](#) From Russia with Love: How a [portrait of a Russian Ambassador came to be hanging in the Virginia State Capitol](#)

Next post:

## SOUTHSIDE BURNING!: REFORMATTED RECORDINGS PRESERVE HISTORIC TESTIMONY

5 February 2013

**Editor's Note:** On Sunday 4 February 2013, the *Richmond Times-Dispatch* ran a [front page article on the 1963 Danville civil rights demonstrations](#). The Library of Virginia has case files for more than 250 individuals who were charged with various offenses during these protests. This blog post originally appeared in the December 2003 issue of *The Delimiter*, an in-house Library newsletter. This entry has been slightly edited.

The fortieth anniversary of the [1963 Danville civil rights demonstrations](#) passed earlier this year [2003] with merely a brief mention in the press. In the summer of 1963, violence erupted in Danville, Virginia, as the Danville establishment led by Police Chief Eugene G. McCain struggled to keep Jim Crow order during a series of civil rights demonstrations led by local and national black leaders. Of the 45 demonstrators arrested in front of the city jail on 10 June, nearly all required medical attention at the hospital for injuries that some defendants testified were the result of being pistol-whipped or struck with nightsticks. As evidenced in the [Civil Rights Demonstrations Cases legal files on microfilm and audio compact discs at the Library of Virginia](#), sporadic demonstrations continued until late August 1963 despite the violence.

In the late summer of 1999, the Danville Circuit Clerk of Court transferred the legal files of the Civil Rights Demonstration Cases to the Library of Virginia for processing due to security concerns and preservation issues. Jay Gaidmore, the archivist charged with organizing and describing the collection, wrote in his [Spring 2001 Delimiter article](#) that the collection spanned the years 1963–1973 and included “bills of particulars, bond records, correspondence, court dockets, court orders, Dictabelts, evidence, judgments, petitions, photographs, receipts, subpoenas, and transcripts of testimony that document the legal aspects of the civil rights demonstrations from the Danville Corporation Court to the Virginia Supreme Court of Appeals.” After processing had been completed, a grant secured from the Virginia Circuit Court Records Preservation Program allowed for the subsequent microfilming of these court files. By early spring 2001, the microfilm collection had opened to patrons and students of the Civil Rights Movement.



While this new visual civil rights resource now was open to researchers, archival efforts to preserve the audio contents on the collection’s 130 Dictabelts were only in the initial stages. During the Danville Corporation Court civil rights trials, a Dictaphone machine operated constantly (even in closed judge’s chambers) and the resulting Dictabelts contained a full account of the court proceedings heard from 13 December 1966 to 6 April 1967. Prevalent in courtrooms and insurance offices in the 1960s, the Dictabelt was the acetate-based medium for the once-popular Dictaphone machine, a groove and stylus-type recording device introduced in 1947 but virtually non-extant and rarely used by the late 1970s. After inserting a Dictabelt into the machine, a pair of mandrels rotated the belt-shaped medium while a lead screw guided a stylus across the belt. The stylus, driven by the amplified signal from a microphone, cut a groove in the belt and thus stored a signal that could then be played back on the same machine. While this method produced fairly high-quality recordings of the court proceedings, a Dictaphone machine in good working condition is a particularly rare find today. The Library and the Clerk’s office recognized that if action were not taken to convert these antiquated sound files, the audio testimony might be lost forever. A grant from the [Virginia Circuit Court Records Preservation Program](#) enabled the Library to convert the dictabelts to compact discs. Completed in July 2003, the compact

24

*This feature is the probable reason why some Courts of Justice, beginning with the state of Virginia, USA used the dictabelt for trial recordings : no editing possible, no erasure, not cheat.*

*This is on the exact opposite of what can occur with magnetic recording tapes, which were already of common use with tape recorders everywhere during the same period.*

Dictabelt used in Virginia courts. *Southside burning: reformatted recordings preserve historic testimony* – [www.virginiamemory.com](http://www.virginiamemory.com)  
Website of the Archives at the Library of Virginia.





Agatha Christie recording on Dictabelt (1955).  
This is the way she produced orally one of her last novels. Photo  
by Hubert de Segonzac, October 1956.

25  
*So, what is the common ground between crime novelist Agatha Christie, President Kennedy, and the systematic recording of lawsuits ? But it's the Dictabelt of course ! Kennedy used to record himself his telephone conversations with this device, while Agatha Christie used the dictabelt as a memo to build her stories.*



### Solid state Dictabelt mandrel for the Archeophone phonograph (2007)

26 - Just like with the wax cylinders which should not be played on vintage phonographs, one must never replay Dictabelts on Dictaphones, as they can damage them. This is why I developed a special mandrel to play Dictabelts on the Archéophone phonograph, as if they were wax cylinders.

My first attempt was done in order to play Agatha Christie's voice, which is in a private collection in Paris.

Photo HC

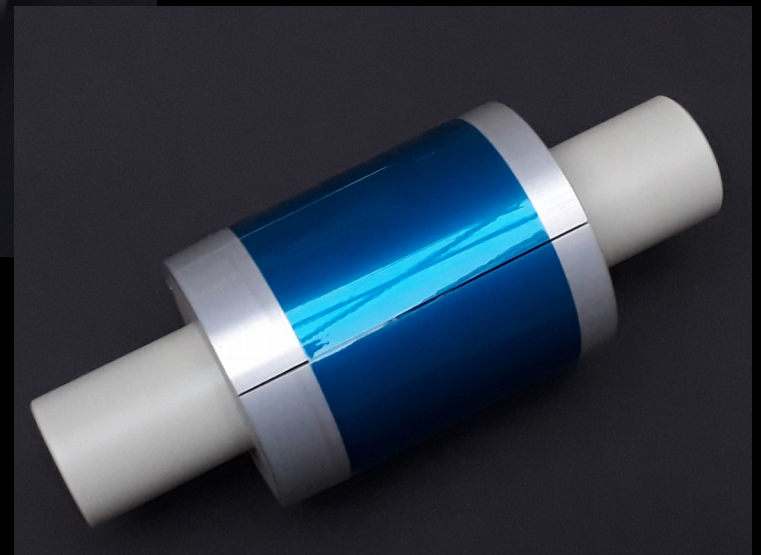


Dictabelt mandrel with a variable diameter for the Archeophone phonograph (2012)

Photo HC

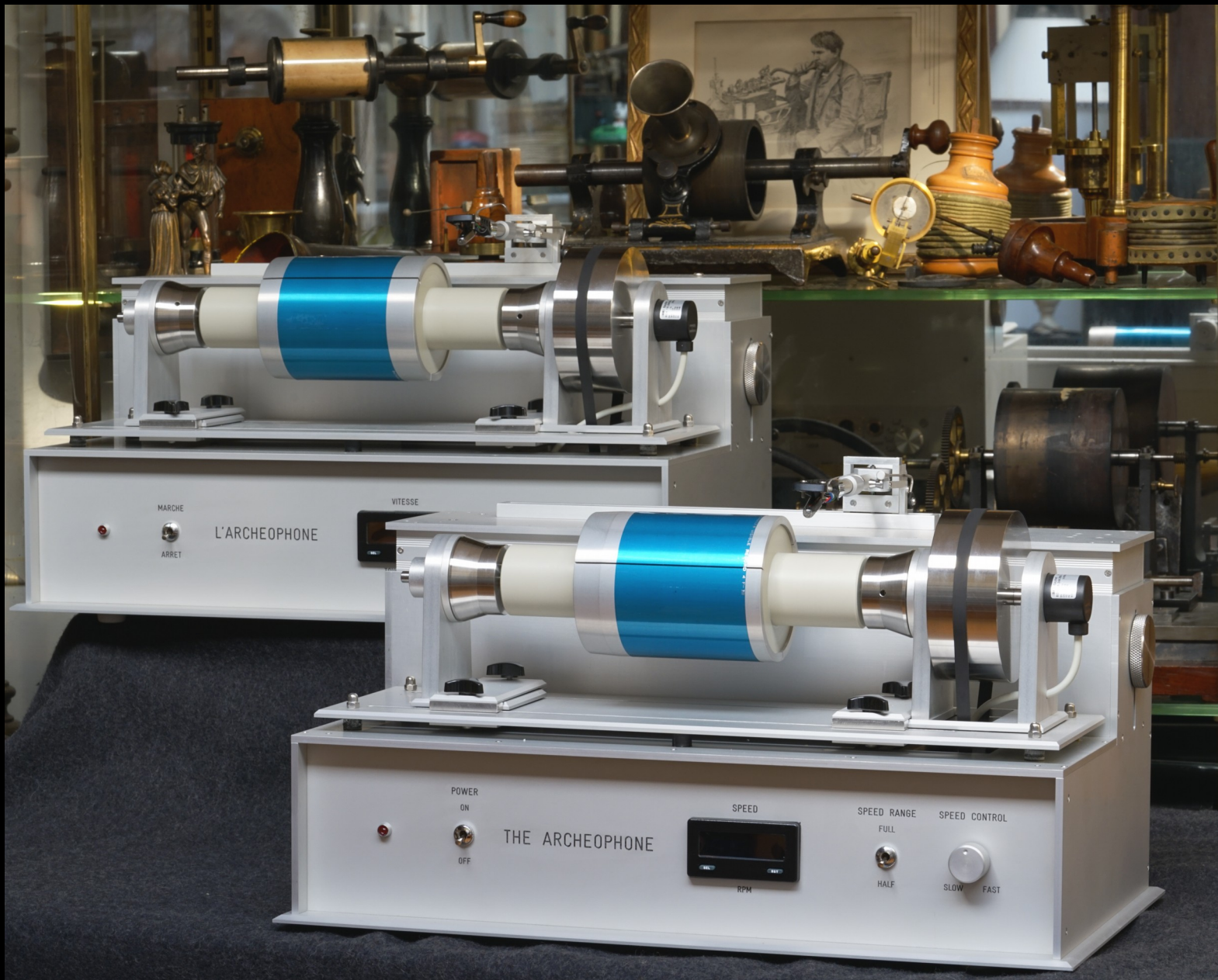
27 - Later I developed a special mandrel with a controlable diameter to better fit the Dictabelts on it.

28  
*This is another version of this mandrel as I make it  
 henceforth.*



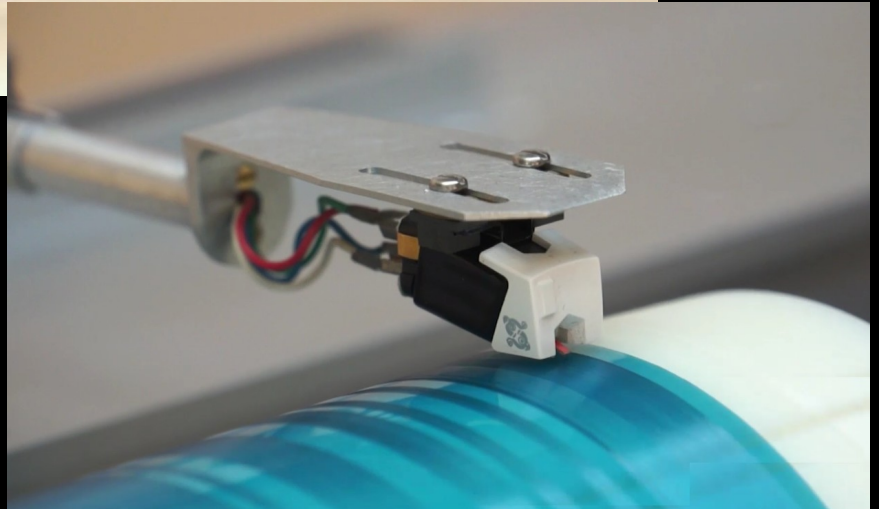
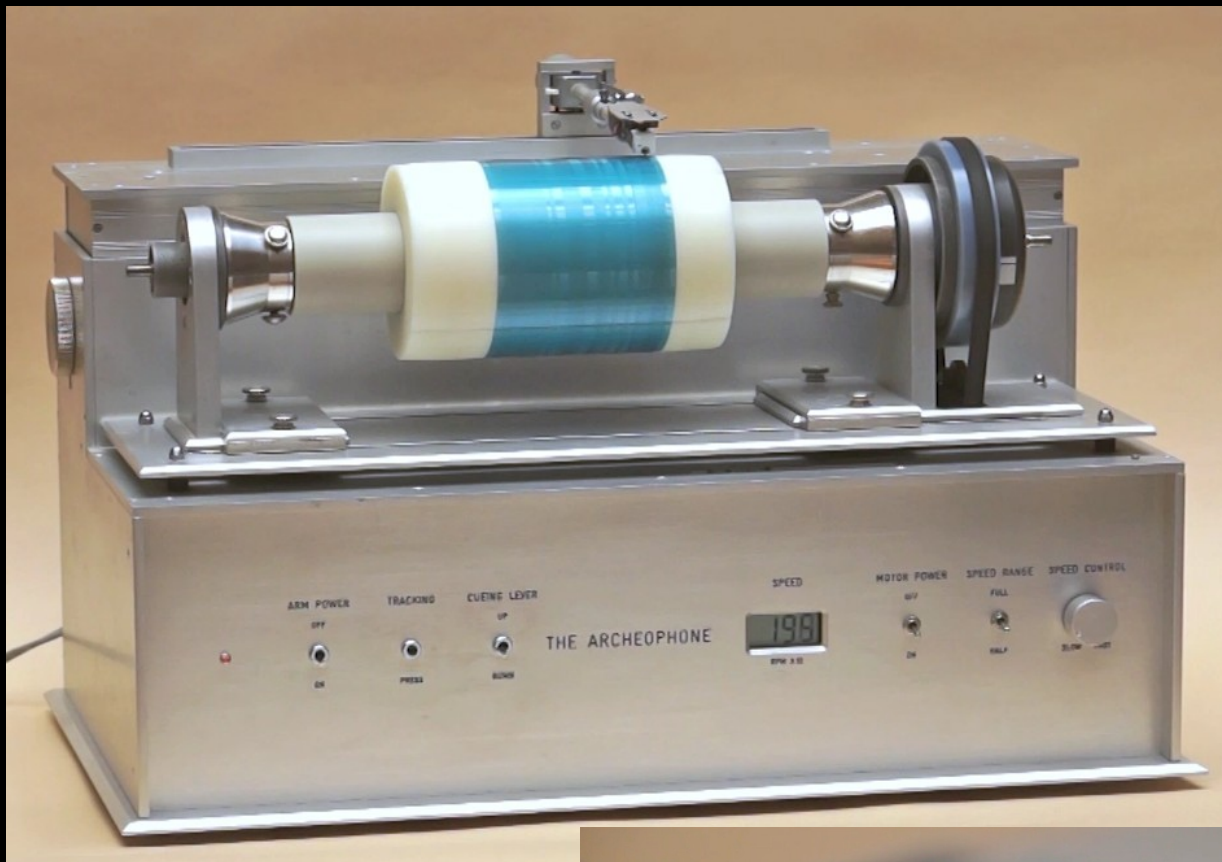
Photos HC

Dictabelt mandrel with a variable diameter for the Archeophone phonograph (2015)



The two Archeophone phonographs delivered to NARSSA in the fall 2017

30  
*Bent on such mandrels, a brittle Dictabelt with creases, foldings or other accidents in the recorded grooves, is much easily playable with no damage to it.*



31

The 230 recorded hours of the Rivonia Trial are recorded on 591 dictabelts stored together in six archival albums.

When the National Archives and Records Service of South Africa addressed to France, through the INA, for the digitization of these sounds, I was able to propose the best technical solution, on behalf of the modest laboratory I work for, the LARHRA. As a result I did the job as a subcontractor of INA and became the lucky first auditor of this recording.

Vuyo Jack, Elisabeth Barbier, Pretoria, 10 October 2014.



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## France in South Africa and in Lesotho

### French Embassy in Pretoria

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### Handover of the Rivonia Trial dictabelts to the French Government [fr]

On Friday October 10 2014 Madame Elisabeth Barbier received the dictabelts of the Rivonia Trial from the Department of Arts and Culture which will be sent to France for digitisation and restoration. Acting Director General of Arts and Culture Mr Vuyo Jack handed over the valuable recordings to Madame Barbier





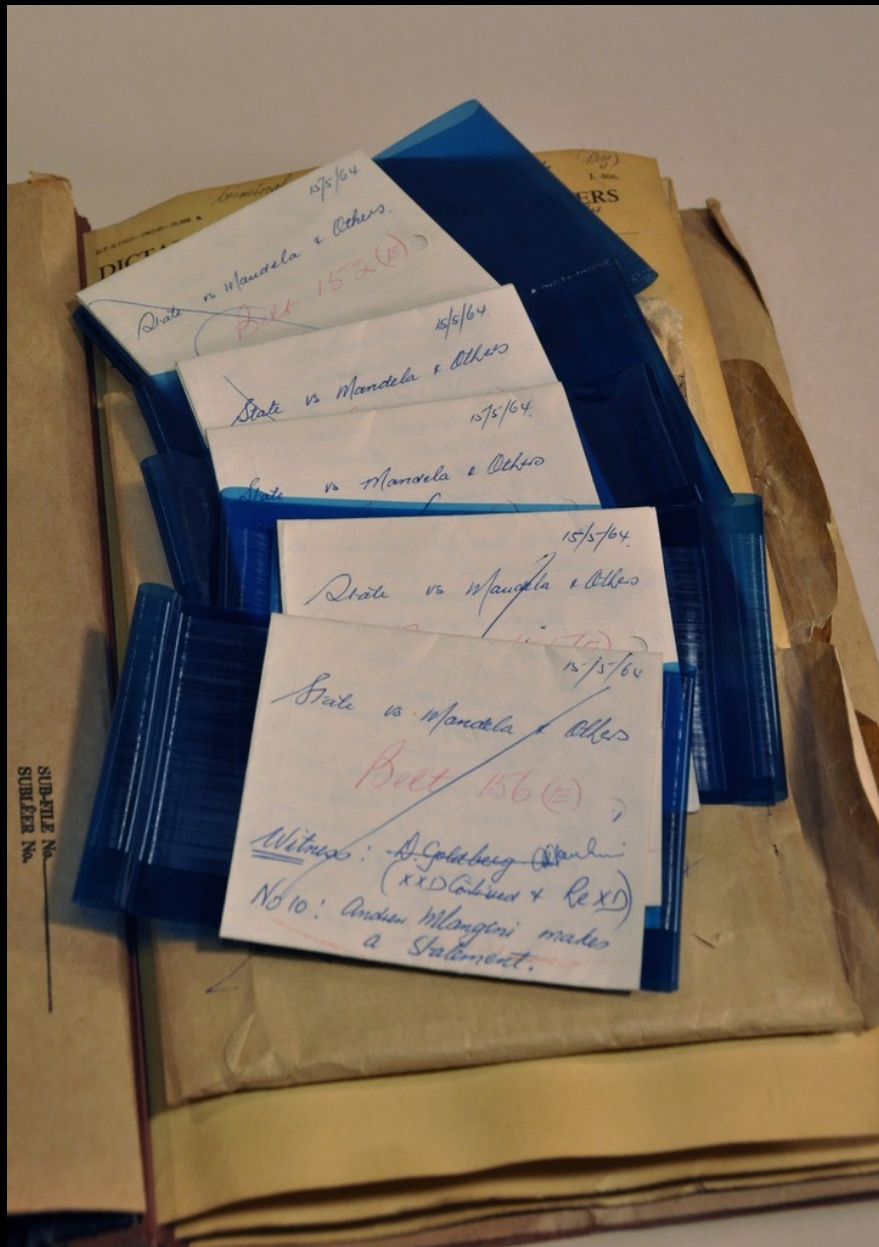
Two of the six albums containing the dictabelt floppy cylinders of the Rivonia Trial (détail).

32

*But why the Dictabelt in South Africa? The US and France abstained from voting on the UN resolution against the Rivonia trial. But the United States had provided all the necessary material, American equipment, for the trial recordings in South Africa. When listening to the Rivonia trial, one can hear the word **Communism**, resonate several hundred times which can account for the origin of this audio equipment.*

Photo HC

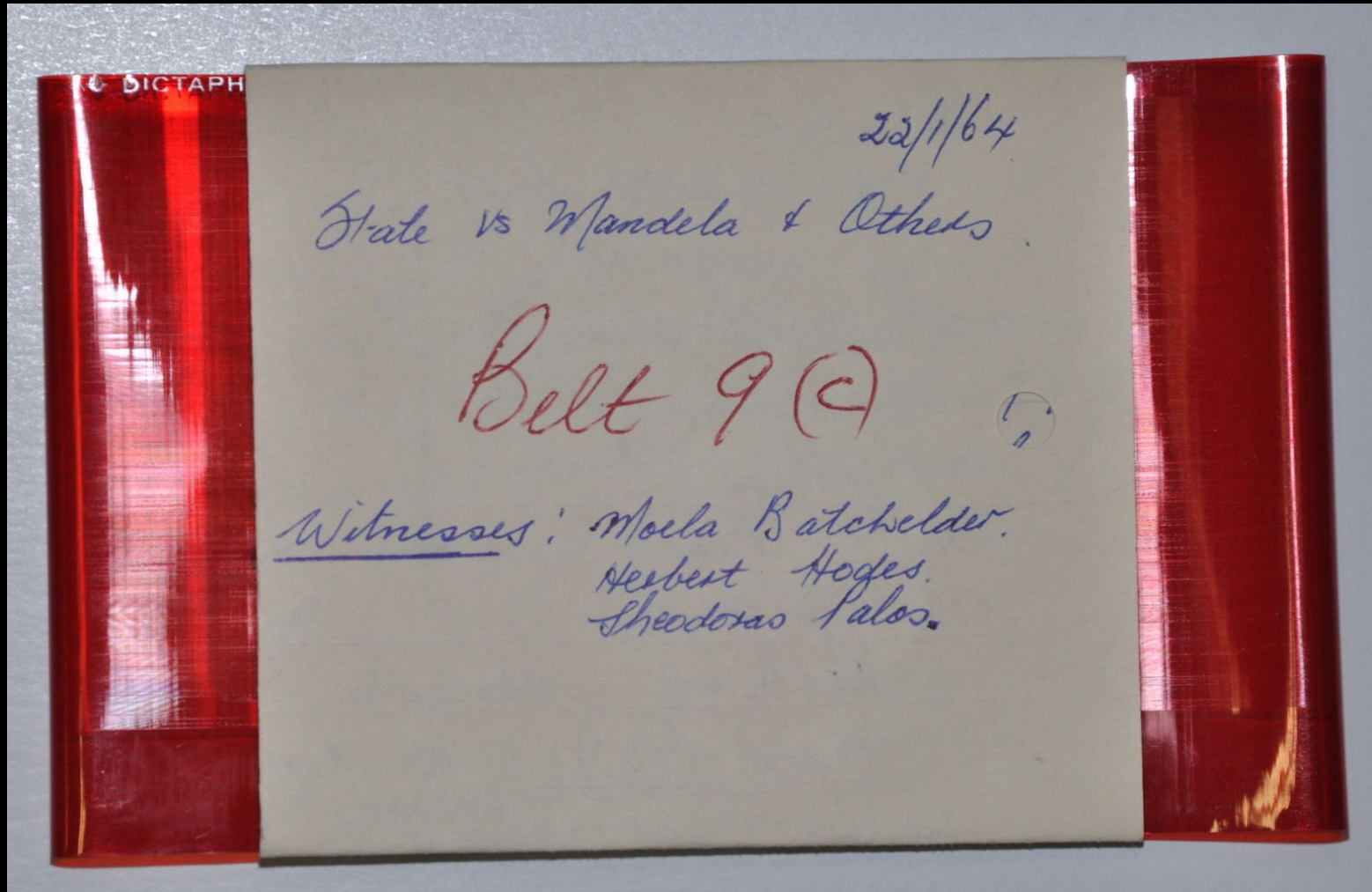




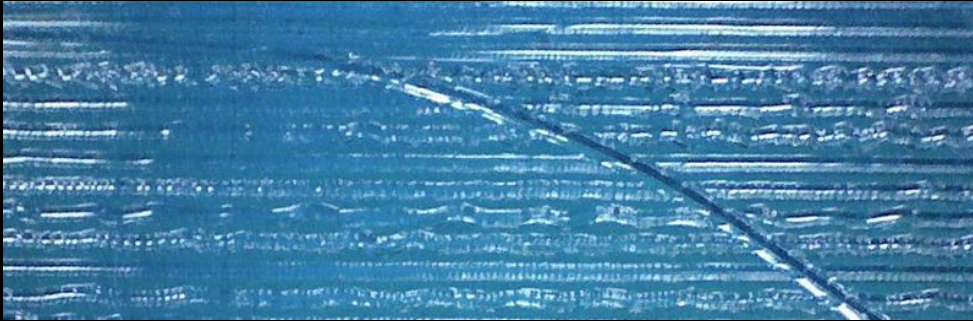
One album page and its Dictabelt floppy cylinders of the Rivonia Trial.

33

This shows how Dictabelts are stored at NARSSA, with their written synopsis on corresponding paper leaflets all put together in envelopes pasted on album pages.



One of the 591 Dictabelt floppy cylinders of the Rivonia Trial with its datasheet.



Rivonia Trial, close-up view of the parallel turns of the groove – with a big scratch here – from a cylinder of April 20, 1964.

35

*I wish to show this visual comparison between a phonautogram of Scott and a close-up view of the sound cut of Mandela's voice: to illustrate here the birth and the disparition of a technique, 100 years apart. Interestingly, the Rivonia trial is the very last historical recording of importance worldwide that is actually cut into a palpable material, at a time when any original sound recording to be preserved or broadcasted was done on magnetic media. Despite the presence of numerous crackling noises, which are reminiscent of vinyl records, the audition of the unrestored digitized Rivonia Trial collection is already loud and clear and quite satisfactory. Nevertheless, the audio restoration made at INA is a valuable improvement.*

Édouard-Léon Scott de Martinville,  
détail of phonautogram #8 (1861),  
preserved at the Académie des  
Sciences, Paris.



COMPTE RENDU

# La France offre à l'Afrique du Sud les archives numérisées du procès Mandela

Jacob Zuma s'est vu remettre par l'Elysée les bandes-son restaurées du procès Rivonia par lequel le militant anti-apartheid avait été condamné en 1964 au bagne à vie.

Par Amaury Hauchard  
LE MONDE | Le 11.07.2016 à 19h00



A l'occasion de la visite officielle du président sud-africain Jacob Zuma à Paris, François Hollande lui a remis, lundi 11 juillet, à midi, les archives sonores du procès Rivonia par lequel Nelson Mandela a été condamné au bagne à vie le 12 juin 1964. Que sont ces archives ? Comment ont-elles été restaurées par la France ? Que symbolise ce geste diplomatique officiel ?

36

*France has been instrumental in bringing back to life the Rivonia dictabelts. And beyond the communication exercises that described the event in publications, it is necessary to emphasize the most human aspect of this particular recording :*

## L'homme qui a numérisé le procès de Mandela

SOCIÉTÉS NUMÉRIQUE

Ingénierie. Cinquante-deux ans après le procès de Nelson Mandela, les 230 heures de l'audience ont enfin pu être numérisées et remises à l'Afrique du Sud grâce à l'Archéophone, une invention d'Henri Chamoux.

PAR PHILIPPE NESSMANN

Voilà un demi-siècle, le leader anti-apartheid Nelson Mandela était condamné à la prison à perpétuité par la Cour suprême de Pretoria. Les audiences du procès n'avaient encore jamais été intégralement numérisées pour des raisons de fragilité du support original. C'est désormais chose faite, grâce à l'ingéniosité d'Henri Chamoux, ingénieur d'études à l'ENS de Lyon affecté au Lartra : « Toute la difficulté, explique celui-ci, tenait au support d'enregistrement : le Dictabelt. Conçu en 1947 par la société Dictaphone, le support d'enregistrement en vinyle souple,




**La France en Afrique du Sud et au Lesotho**  
 Ambassade de France à Pretoria

Remise des enregistrements sonores numérisés du procès de Rivonia à l'Afrique du Sud



arts & culture  
Department  
Arts and Culture  
REPUBLIC OF SOUTH AFRICA

Le 17 mars 2016, l'Institut national de l'audiovisuel (Ina) a officiellement remis à la République d'Afrique du Sud les derniers enregistrements sonores numérisés du procès de Nelson Mandela et des leaders de l'ANC (« Rivonia Trial »). A cette occasion, un accord de partage de compétences a été signé avec le Ministre sud-africain des Arts et de la Culture.



37

*... they were eight companions who spent a quarter of a century in jail before emerging as winner of apartheid.*

*Here together are the three survivors during the official delivery of the digitized unrestored recordings.*

*As the first listener of the whole set, I lived every minute of the Rivonia Trial or at least what was recorded of it : straining my ears on these dialogues in English, checking at each instant the correct progression of the groove, was a unique experience. It first sounded like an ordinary trial with the deep and quiet tone of judge Quartus de Wet (1899-1980) who rarely speaks, contrasting with the voice of attorney-general Percy Yutar (1911-2002) who is constantly heard with a specific tone crescendo at the very end of each of his questions. Yet this audition was mostly a highly emotional one, with the discovery of the voices of numerous second rank witnesses, some of them being absolutely terrified.*

Ahmed Kathrada, Andrew Mlangeni, Denis Goldberg, Pretoria, 17 March 2016.



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## La France en Afrique du Sud et au Lesotho

Ambassade de France à Pretoria

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### Remise des enregistrements sonores numérisés du procès de Rivonia à l'Afrique du Sud





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EN AFRIQUE DU SUD  
EMBASSY OF FRANCE  
IN SOUTH AFRICA



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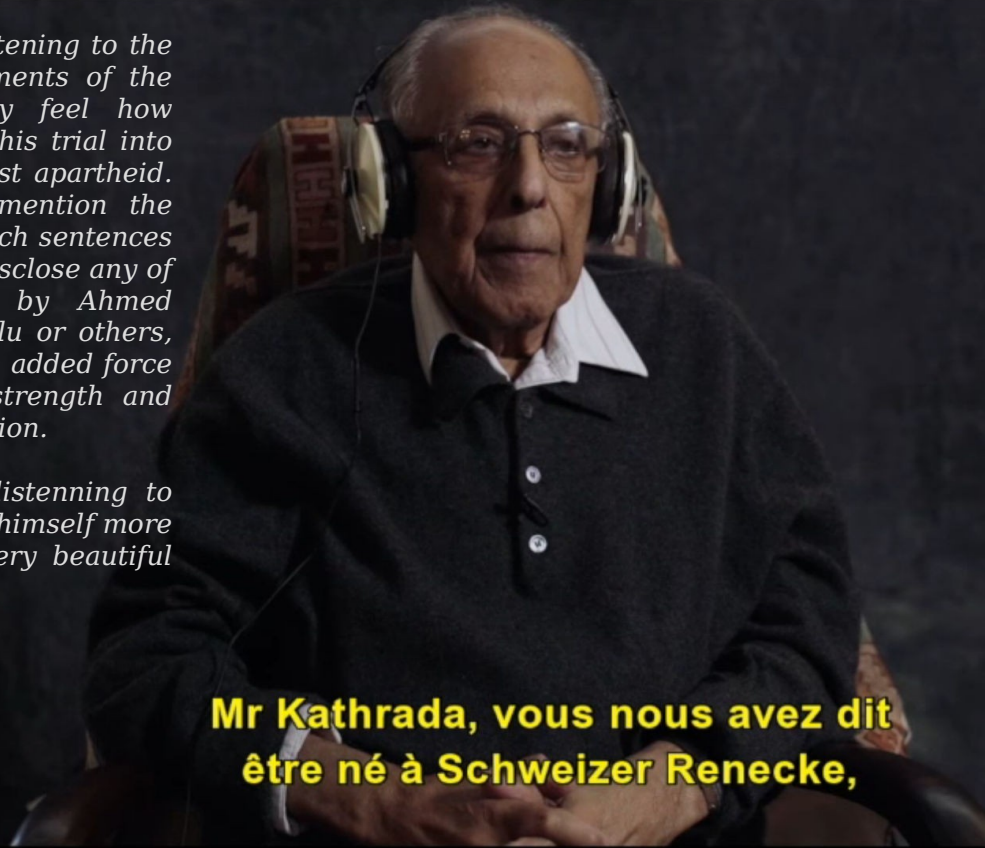
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38

*On the other hand while listening to the patient answers and statements of the accused, one can actually feel how strongly they transformed this trial into a tribune for equality against apartheid. For instance one should mention the numerous occurrences of such sentences as : "I am not prepared to disclose any of my friends", pronounced by Ahmed Kathrada or by Walter Sisulu or others, just to prove again, with the added force of their own voices, the strength and value of these men of exception.*

*Here is Ahmed Kathrada listenning to the unrestored recording of himself more than 52 years later in a very beautiful film documentary.*



**Ahmed Kathrada**  
*Accusé n°5*  
*26 ans de prison*

**Mr Kathrada, vous nous avez dit  
 être né à Schweizer Renecke,**

During an interview, Ahmed Kathrada (1929-2017) is listening to his own voice during the Rivonia Trial, 52 years after, in 2016...

Image taken from the documentary film by Nicolas Champeaux and Gilles Porte : *The State Against Mandela and the Others* (1h46min, presented in Cannes in May 2018, released in October 2018).

Excerpts online : [https://www.youtube.com/watch?v=MHWA\\_lkADrc](https://www.youtube.com/watch?v=MHWA_lkADrc)

39

*I insisted on some early historical and technical aspects, which may appear as being of a secondary interest. But if I designed a device to play Dictabelts it was only thanks to my prior knowledge and thanks to my contributions made on early sound carriers. And I believe this had to be visible here.*

*As milestones in human history Scott's phonautograms and the Rivonia dictabelts are now available online for everyone to listen to and saved for posterity, in the era of the digital humanities.*

*Yet it will remain very important to document and provide detailed descriptions about what were the original sound carriers, how they did look like, how they worked and how they were digitized. Because it is probable that tomorrow's researchers will not have access to the original documents. Therefore they will have no idea of the how and why.*

*I also wanted to show the distance between the industrial project of a maker - a business machine for office use - and the actual use of its products - to record trial recordings.*

*Now let's watch a very short fragment of this documentary film / Let's listen to a fragment of unrestored Ahmed Kathrada's voice.*

To download these slides :

<http://www.archeophone.org/dictabelt>