

The Rise, Fall, and Return of Vitaphone

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It was billed as “the event that will revolutionize motion pictures.” Advertisements promised that it “will thrill the world.” On August 6, 1926, at the Warner Theatre in Manhattan, Warner Bros. introduced the world to Vitaphone, the latest attempt to combine moving images with sound. For a \$10 admission fee (plus tax), audiences were treated to a program of six shorts featuring synchronized music and dialogue, followed by the premiere of the John Barrymore film *Don Juan* with a soundtrack recorded by the New York Philharmonic. Whether Vitaphone’s debut really thrilled the world or not is debatable, but there’s no denying that it revolutionized motion pictures. Vitaphone became synonymous with sound films—whether they actually “talked” or not—and transformed Warner Bros. into one of the most powerful studios in Hollywood. Then, after the entire industry had finally converted to sound, Vitaphone suddenly disappeared and was quickly forgotten. Decades later, a chance discovery and the efforts of several dedicated enthusiasts would bring Vitaphone, or at least the memory of it, back to life.

Early Failures

Attempts to combine moving images with sound began as soon as the cinema was invented. Most involved playing a phonograph at the same time that a film was projected. In Europe, disc-based systems with derivative names like biophon, cronophone, elgéphone and kosmograph were developed in the early 1900s. None of these early systems proved successful because of their inability to keep sound in perfect synchronization with the picture, coupled with the fact that proper amplification to allow a theatre full of people to hear the sound was not yet possible.¹ In 1913 Thomas Edison re-introduced the cylinder-based system called Kinetophone (much improved from its original 1895 design), in which a phonograph placed near the screen

¹ *A Century of Sound: The History of Sound in Motion Pictures — The Beginning: 1876 – 1932.*

was synchronized to the projector by a complicated series of belts and pulleys. Not surprisingly, this system frequently broke down, and when a fire in 1914 destroyed all the equipment, Edison decided to move on.²

In 1921 Orlando Kellum introduced a sound-on-disc system he called Photokinema, which was similar to the Kinetophone but synchronized the phonograph and projector electrically rather than mechanically. D.W. Griffith learned of the process and used it to add short sound segments to his feature *Dream Street*, making it the first feature film to use recorded sound. It failed to make an impact, however, and the sound portions were quickly dropped. Photokinema's reliance on acoustically recorded discs made its fidelity inferior compared to the electrically recorded discs that were soon developed by Western Electric.³

One way to ensure synchronization was to place the soundtrack in the film itself, optically, rather than relying on a separate phonograph. Inventor Lee de Forest, whose Audion tube in 1906 was the first device for amplifying electrical current, filed his first patents for a sound-on-film system in 1919. It was not until he teamed with inventor Theodore Case in 1921, however, that development on the system that came to be known as Phonofilm began in earnest. The first public showing of Phonofilm shorts in April 1923 received harsh reviews for its poor sound quality.⁴ Despite continued improvements and some minor successes, including a series of sound cartoons produced with Max Fleischer in 1924, the Phonofilm process never gained traction. It was not until Case broke off from DeForest and teamed with William Fox in 1926 to

² Ibid.

³ Ibid.

⁴ Donald Crafton, *The Talkies: American Cinema's Transition to Sound, 1926-1931* (Berkeley: University of California Press, 1997) 32-34, 63-66.

form Movietone that sound-on-film finally reached maturity, but that just happened to be the same time that a new sound-on-disc system made its debut and sent shockwaves through the industry.

Vitaphone Development

Western Electric—the American Telephone & Telegraph Company’s manufacturing and research subsidiary—had been developing technology for the electronic recording and reproduction of sound throughout the 1910s and early 1920s. They had purchased the rights to Lee DeForest’s Audion tube and consistently improved upon it. Their work resulted in innovations that included the microphone, loudspeakers, and an electric cutting head for phonographs, which allowed for greatly increased audio fidelity. Combined with improved methods of synchronization, these technologies made a sound-on-disc system for motion pictures feasible.⁵

Western Electric actually worked on both sound-on-film and sound-on-disc systems concurrently, and had working examples of both by 1924. They elected to use sound-on-disc for actual production, in part because of disc’s superior fidelity and the maturity of its manufacturing industry, but also because it would keep sound out of the realm of film labs, an area over which their engineers would have little control.⁶

Western Electric’s system required larger grooves, resulting in their discs being 16-inches in diameter rather than the usual 12- or 10-inches that were the standard for home use. The discs

⁵ *A Century of Sound: The History of Sound in Motion Pictures — The Beginning: 1876 – 1932.*

⁶ Crafton, *The Talkies*, 70.

spun at 33 1/3 rpm, allowing for about 10 minutes of sound per side, the standard length of one film reel.⁷ Frequency response initially ranged from 100 to 4300 cycles per second, though this was later improved to 50 to 5500 cycles per second. The stylus tracked from the center of the disc to the outer edge, and synchronization was obtained by placing the stylus at a starting point indicated on the disc, while the film was threaded up to a specific starting mark of its own. The turntable was geared to the projection motor, which prevented loss of sync. The steel needles wore down quickly, reducing high frequency response, and needed to be replaced after playing just a single side. The discs themselves, made of a shellac compound, also wore down quickly due to the heavy tone arm, and became useless after about 20 plays. The film itself was standardized to 24fps, and it was vital that no frames were lost when performing an edit, or else sync would be lost.⁸ Despite all this, when the system worked, it worked very well, and Western Electric decided it was time to commercialize it.

In 1925, Western Electric's research lab merged with AT&T's engineering department to form Bell Laboratories. Edward B. Craft, the Executive Vice President of Bell Labs, gave demonstrations of the newly-developed sound-on-disc system to Hollywood executives and other potential backers, but received little interest, perhaps due to failure of all previous attempts to introduce sound to film. Sound engineer Nathan Levinson, who regularly installed public address systems for Western Electric, happened to witness one of these demonstrations in New York. When Levinson was hired by Warner Bros. to help set up the KFWB radio station in Los Angeles, he informed one of the brothers, Sam Warner, about Bell's sound-on-disc technology.

⁷ *A Century of Sound: The History of Sound in Motion Pictures — The Beginning: 1876 – 1932.*

⁸ Robert Gitt, "Bringing Vitaphone Back to Life," *Film History* 5, no. 3 (1993), 269

His interest piqued, Sam Warner visited Bell Labs in April 1925 to see the system in person, and was so impressed that he convinced his brothers to form a joint venture with Bell Labs for the production of sound motion pictures.⁹

The fledgling Warner Bros. Studio was not yet one of Hollywood's major players, but it was rapidly expanding and looking for ways to elevate its status. Sound was one way to do this, but not necessarily for use in "talking pictures". It was the ability to help reproduce the movie palace experience—which typically included live vaudeville acts and full orchestral scores—in small theaters across the country for little cost that appealed to the studio.¹⁰ In September 1925 Sam Warner, Nathan Levinson and the Bell engineers began producing sound tests at the recently-acquired Vitagraph studio in Brooklyn. It's likely that this location inspired the name for their new company—Vitaphone—which was officially incorporated in April 1926. Warner Bros. was the majority shareholder, and Western Electric granted the company the exclusive right to use and sublicense its sound-on-disc technology.¹¹ Because it was originally a silent film studio, it quickly became apparent that the lack of sound-proofing made recording at the Vitagraph studio difficult, so in early 1926 the entire operation moved to the Manhattan Opera House (now the Manhattan Center) on 34th St.¹²

Vitaphone Triumphs

⁹ *A Century of Sound: The History of Sound in Motion Pictures — The Beginning: 1876 – 1932.*

¹⁰ *Ibid.*

¹¹ Crafton, *The Talkies*, 71.

¹² *A Century of Sound: The History of Sound in Motion Pictures — The Beginning: 1876 – 1932.*

Satisfied with the results from production at the Manhattan Opera House, Warner Bros. began planning for the public debut of Vitaphone. The April 26, 1926 edition of *The Film Daily* announced the invention of a “new musical device” which “may revolutionize the presentation of films.” The announcement cautioned that this new invention was not meant for “talking pictures,” but instead would bring to audiences “music of the symphony orchestra and the vocal entertainment of the operatic, vaudeville and theatrical fields.”¹³ Vitaphone signed license agreements with record companies and opera houses for the rights to record their contracted artists in short films. They decided to take a recently completed John Barrymore silent film—originally scheduled to premiere in February 1926—and give it a full Vitaphone score performed by the New York Philharmonic with some added sound effects. They invited Will Hays, President of the Motion Picture Producers and Distributors of America (MPPDA), to film introductory remarks for the grand premiere, which, after a few postponements, was finally scheduled for August 6, 1926 at the Warner Theatre in Manhattan.¹⁴

The program audiences saw that night was actually a fairly typical movie palace presentation; there was a monologue, a few musical acts, some skits, and then the feature. The difference this time was that none of the performers were there in person; they were seen and heard from the screen itself. For most in the audience it was their first time hearing electronically recorded and reproduced audio amplified to theater-quality, and the result was mesmerizing. Despite a few sync problems and the notable inexperience of some of the on-screen performers, overall response was enthusiastic. In fact, the musical acts received more praise than the feature.

¹³ *Film Daily* 36, No. 22 (April 26, 1926)

¹⁴ Crafton, *The Talkies*, 71-72

Giovanni Martinelli's solo from the opera *Pagliacci* was a sensation, with *New York Times* raving that "those who first heard and saw ... Martinelli fill a great hall with the vibrant sound which moved the audience as the presence of the singer could not have done more effectually, perhaps not as affectingly, were present as at the performance of a seeming miracle in which the tongue of the dumb image was made to sing."¹⁵ Even Lee DeForest, still at work on his sound-on-film Phonofilm system, praised Vitaphone's debut, calling it "the nearest approach to perfection of recording and reproducing voice and music which has ever been reached in the phonograph art," though he added that he was still "firmly convinced that the right way ... is photographing the sound waves on film rather than by means of the synchronized phonograph."¹⁶

The second Vitaphone feature, *The Better 'Ole*, opened at New York's Colony Theatre on October 7, 1926. Once again, the feature was preceded by several filmed musical acts, this time with a more popular bent. Just as before, the musical acts received more attention than the feature. One in particular, *A Plantation Act*, featured the wildly-popular entertainer Al Jolson performing his hits "When the Red, Red, Robin Comes Bob, Bob, Bobbin' Along," "April Showers," and "Rock-a-Bye Your Baby with a Dixie Melody." *Film Daily* declared that Jolson's "renditions were remarkable for their clarity and appeal. The personality which brought Jolson fame on the stage evidenced itself from the screen in no uncertain manner."¹⁷

¹⁵ "Audible Pictures," *New York Times* (August 8, 1926), quoted in Crafton, 78-79.

¹⁶ Lee DeForest, "Recent Developments in the Phonofilm," *Transactions of S.M.P.E.* 10, No. 27 (January 1927), 68-69

¹⁷ Crafton, *The Talkies*, 85-86.

In the spring of 1927, Warner Bros. moved the entire Vitaphone operation from Manhattan to the Warner Bros. studio in Hollywood. Despite their original intention to limit the use of sound in feature films to music and effects, dialogue slowly began creeping in to Vitaphone features. For the June release of *Old San Francisco*, the climatic earthquake sequence had the sound of screaming voices and the noise of crumbling buildings mixed in with the musical score, a feat that required the audio from multiple discs to be dubbed onto a single disc.¹⁸ *The First Auto*, also released in June, used the musical score to mimic the sound of human voices, and one scene included the sound of a man laughing. But what really made *The First Auto* unique was that, for the first time ever, three of the intertitles were actually spoken aloud (though they only consisted of one instance of the word “go” and two instances of the name “Bob.”) Finally, Warner Bros. decided to produce a feature that incorporated the musical performances that had made their shorts so popular. They acquired the rights to the popular stage musical *The Jazz Singer*, and signed its original lead, George Jessel, to star. When Jessel realized he would have to sing as well as act, he demanded more money. Rather than meet his demands, Warner Bros. replaced Jessel with the man who had made such a big impression the year before: Al Jolson.¹⁹

The premiere of *The Jazz Singer* on October 6, 1927 was rather subdued. Sam Warner, who worked so hard to make Vitaphone a reality, had died of pneumonia the previous day. One thing that could not be called subdued was Jolson’s performance on screen. It delivered exactly what audiences wanted, and has become inextricably linked to the birth of talking pictures. In

¹⁸ Robert Gitt, “Bringing Vitaphone Back to Life,” *Film History* 5, no. 3 (1993), 265

¹⁹ *A Century of Sound: The History of Sound in Motion Pictures — The Beginning: 1876 – 1932*.

reality, there was very little dialogue apart from the musical performances; the film still relied primarily on intertitles. The famous line “you ain’t heard nothing yet” that Jolson seemingly ad-libbed was actually a part of his regular routine, and he had previously used it in *A Plantation Act*. Even the common belief that the film was an overnight success that forced the rest of Hollywood to convert to sound is highly exaggerated; the film didn’t open nationally until January 1928, and the majority of theaters showed it silent, as only a few had been wired for sound.²⁰ Most studios waited before adopting sound production, and it would still primarily be used for musical accompaniment until 1929. While the facts don’t quite match the legend, there’s no questioning that *The Jazz Singer* was a boon for Warner Bros. and for Vitaphone. Hundreds of theaters, excited by the prospect of having Al Jolson “appear” there, decided to invest in sound equipment. The backlog became so great that many had to wait months for installation. Warner Bros. 1928 earnings were 500% ahead of 1927, and their stock went from \$21 to \$132 a share in just three years.²¹

The Jazz Singer’s success prompted Warner Bros. to add more dialogue to their features, and it was only a matter of time before a “100% all-talking” feature would be produced. That honor went to a film called *The Lights of New York*, which was originally planned as a two-reel short, but was expanded to nearly an hour in length and released on July 6, 1928. Its stilted dialogue and obvious microphone placement would be lampooned two decades later in *Singin’ in the Rain*, but what the film lacked in finesse it more than made up for in box office, taking in

²⁰ Crafton, *The Talkies*, 108-111.

²¹ *Ibid.*, 111.

\$1,000,000 on a budget of only \$23,000.²² Demand for Vitaphone product became so high that in August Warner Bros. allocated \$500,000 to refurbish the Brooklyn Vitagraph Studio, and production on Vitaphone shorts resumed there in December, in addition to the ones produced in Hollywood.²³

Vitaphone's Decline

While Vitaphone was successful as a brand, the limitations of the sound-on-disc process became increasingly evident. On the production end it was difficult to edit audio, and the disc dubbing system pioneered for *Old San Francisco* became exceedingly complex. On the exhibition side the discs needed frequent replacement due to breakage and wear, and shipping them was costly. Proper synchronization required skilled and attentive projectionists and projection assistants, adding to labor costs. Business matters also became a factor. Western Electric made a deal with Fox Movietone that allowed Fox to use Western Electric equipment for amplification, while giving Western access to Fox's sound-on-film patents.²⁴ Western Electric could now profit from both sound-on-disc *and* sound-on-film, and began manufacturing combination Vitaphone/Movietone equipment for theaters. When the other Hollywood studios finally did decide to convert to sound, they overwhelmingly elected to use Movietone or its RCA-backed equivalent Photophone.²⁵ Though its fidelity still did not match sound-on-disc,

²² *Ibid.*, 117.

²³ Crafton, *The Talkies*, 114.

²⁴ *Ibid.*, 104.

²⁵ *Ibid.*, 131-132.

sound-on-film was cheaper and easier to edit, and it didn't take long for it to become the industry standard.

By March of 1930 Warner Bros. saw the writing on the wall and switched their sound production to film. Although discs continued to be issued for several years to support the theaters that had invested in Vitaphone equipment, all the recording was now done on film.²⁶ This marked the end of the Vitaphone process, but not the brand; the name continued to appear on Warner Bros. product through the 1930s, and production of Vitaphone-branded shorts continued at the Brooklyn studio until 1939. A memo from 1941 reveals that the master matrices for the Vitaphone discs were sold as scrap metal, marking a final, ignominious end to the sound-on-disc process.²⁷ The Vitaphone Corp. continued to be the copyright registrant for Warner Bros. short subjects, including the *Looney Tunes* and *Merrie Melodies* cartoons, until its official dissolution in 1959. From 1960 to 1969, several Warner Bros. cartoons were billed as “A Vitaphone Release,” keeping the name alive for a few more years before it was finally retired for good. The story of Vitaphone had come to an end, at least for the time being.

Vitaphone Comes Back to Life

In the summer of 1987, more than two-thousand Vitaphone discs—many still in their original sleeves and never played—were discovered at The Burbank Studios Sound Department located on the Warner Bros. lot. The discs were deposited at the UCLA Film and Television Archives, where, under the supervision of Preservation Officer Robert Gitt, they were cataloged

²⁶ *A Century of Sound: The History of Sound in Motion Pictures — The Beginning: 1876 – 1932.*

²⁷ *Vitaphone News* 3, No. 4 (Summer/Fall 1997), <http://www.picking.com/vitaphone34.html>.

and preserved.²⁸ While a handful of major Vitaphone features from the 1926-29 disc era, like *The Jazz Singer*, existed in sound-on-film prints, most of the surviving film elements (including all the disc-era shorts) were silent.²⁹ Now it was possible to reunite these mute films with their long-lost soundtracks, a process that would require the participation of the Library of Congress, George Eastman House, The Museum of Modern Art and several foreign archives, all of which were in possession of various film elements. Gitt oversaw the restorations, and the first batch debuted at MoMA on November 17, 1989 as part of “The Dawn of Sound,” an exhibition of fourteen features films and twenty-nine Vitaphone shorts produced from 1926-1931. AT&T—responsible for the early development of the Vitaphone process—sponsored the exhibit, which traveled across the country for the next year.³⁰ Decades after it vanished, Vitaphone had suddenly returned to the public consciousness.

In 1991, a group of veteran record collectors and film buffs created an organization they called The Vitaphone Project. Its mission was to locate and identify the soundtrack discs that had found their way into the hands of record collectors and eventually reunite them with their film elements. They placed ads in film magazines and newsletters (including the FIAF newsletter) seeking out discs, and their efforts received coverage in periodicals including *Record Collector* and *Variety*.³¹ By 1993 a working relationship between the Vitaphone Project and Robert Gitt at

²⁸ Scott MacQueen, “Vitaphone Sound Films Resurrected,” *American Cinematographer* 71, no. 9 (Sep 1990), 35

²⁹ Ron Hutchinson, “The Vitaphone Project. Answering Harry Warner’s Question: ‘Who the Hell Wants to Hear Actors Talk?’ ” *Film History* 14, no. 1 (2002), 43.

³⁰ MoMA press release, https://www.moma.org/momaorg/shared/pdfs/docs/press_archives/6723/releases/MOMA_1989_0090_97.pdf.

³¹ *Vitaphone News* 1, No. 3 (Winter 1992-93). <http://www.picking.com/vitaphone13.html>.

UCLA was formed, and discs obtained by the Project began being used for full restorations.³²

Among the first shorts restored via this partnership were *Baby Rose Marie the Child Wonder* (1929) and Al Jolson in *A Plantation Act* (1926). In 1994 UCLA began screening the restored shorts at their annual Festival of Preservation.³³ Starting in 1996, The Vitaphone Project teamed with New York's Film Forum to program a compilation of restored Vitaphone shorts introduced by Project co-founder Ron Hutchinson, which has since become an annual event.³⁴

In the 24 years since its founding, The Vitaphone Project has located over 3,500 discs in the hands of private collectors, in addition to the 1,500 it estimates are held by archives.³⁵ It has raised nearly \$500,000 in funds, which has led to the restoration of nearly 100 shorts and more than a dozen features, with 53 additional shorts still awaiting restoration.³⁶ The cost of restoring a film through UCLA currently varies from \$7,500 to \$15,000 per reel. While Warner Bros. covers most of that cost for films they own the copyright to, they typically do not require the production of a new 35mm print, in which case the Project pays for a print to be struck.³⁷ Ron Hutchinson noted that "prior to [the Vitaphone Project's] creation, the idea of getting film

³² *Vitaphone News* 2, No. 1 (Winter 1993-94). <http://www.picking.com/vitaphone21.html>.

³³ *Vitaphone News* 2, No. 2 (Fall/Winter 1994) <http://www.picking.com/vitaphone22.html>.

³⁴ *Vitaphone News* 3, No. 2 (Spring/Summer 1996) <http://www.picking.com/vitaphone32.html>.

³⁵ "Frequently Asked Questions," *The Vitaphone Project*, accessed December 12, 2014, <http://www.picking.com/vitaphone-faq.html>.

³⁶ Ron Hutchinson, e-mail message to author, November 19, 2014.

³⁷ *Ibid.*

collectors, archives, and major studios to work together cooperatively on restorations was unthinkable.”³⁸

In addition to theatrical screenings, the Vitaphone films have found new life on home video. MGM/UA Home Video released a laserdisc boxed set in 1996 that included several restored shorts, and Warner Bros. Home Video frequently includes restored shorts as extras on their DVD releases of classic films. In 2009, Warner Bros. launched a manufactured-on-demand DVD service called The Warner Archive, which has produced several compilations of Vitaphone shorts. Over 250 Vitaphone shorts are now available on DVD, and unlike their original exhibition, they can be viewed without fear of losing synchronization.³⁹ Leonard Maltin has noted that “the Vitaphone Project—fueled by passion, not profit—has brought a rich vein of film history back to life.”⁴⁰

Vitaphone’s Legacy

Vitaphone had started the sound revolution, but this revolution did not come out of nowhere; it was preceded by years of research, development, and experimentation. Nor did it happen overnight; it took years for sound films to become standard. And ultimately, Vitaphone’s role in the sound revolution was fleeting; the technology was abandoned within five years of its debut. Yet the Vitaphone process and the films produced with it have, with a little luck and a lot of effort, endured to this day. You have to admit, that’s pretty good fate for a “failed” format.

³⁸ Ron Hutchinson, “The Vitaphone Project. Answering Harry Warner’s Question: ‘Who the Hell Wants to Hear Actors Talk?’ ” *Film History* 14, no. 1 (2002), 44.

³⁹ Ron Hutchinson, e-mail message to author, November 19, 2014.

⁴⁰ Leonard Maltin, “The Vitaphone Project Turns 20,” *Leonard Maltin’s Movie Crazy* (blog). August 2, 2011 (4:30AM), <http://blogs.indiewire.com/leonardmaltin/vitaphone>

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