Breaking the Silence: Crash Course Film History #10

Crash Course: Film History
https://youtube.com/watch?v=lY_AilCb6gk
https://nerdfighteria.info/v/lY_AilCb6gk

Hey! Hello. Can you hear me? You can? Good! That's because of something called synchronous sound. It means that the words I'm saying right now are being recorded, then matched with the video. So when you watch this, the sound of my voice is in sync with the image of me talking.

Talking. Talking. Talking. We take that for granted today, but for the first few decades of film history, it wasn't possible. Theaters had to supply music, sound effects, and narration through phonographs or live performances. And when dialogue was absolutely necessary, filmmakers had actors mouth the words, and then insert title cards - or inter-titles - in the middle of scene so the audience could read the dialogue for themselves.

It took years of guess-work, tinkering, and experimentation to make cinema sound the way it does today. But when sound finally arrived, it changed the way movies were made and watched forever. Whaaat?

You can hear me say, "whaaat" now, thanks to that.

(Crash Course Theme)

Nothing shook the foundations of the film industry like the coming of sound. By the mid-1920's, the major studios were churning out movie after movie, the star system was in full swing, and cinema had become an integral part of popular culture. But in order to sync pre-recorded sound to moving pictures, artists and engineers had to overcome a few major hurdles.

The first - and most important - was synchronization. How do you get the image and sound to match up? At the time, image and sound were recorded and played back using different devices, so there was no easy way to link them.

Second, microphone technology was fairly primitive. Sound quality wasn't good, and the mics themselves were too big to conceal. Third, the process of recording and playing back sound typically required electricity. That meant production companies would need more equipment, larger crews, and access to power.

And finally, there was the problem of amplification. Speaker technology at the time simply wasn't loud enough to fill a big theater. And the search for solutions to these problems went as far back as the 1880's.

In 1889, Thomas Edison's assistant, W.K.L. Dickson, achieved a kind of rough synchronization between the phonograph and the kinetoscope. Eventually, he came up with a device called the kinetophone that used a system of pulleys to connect the two devices. Thing is, it was buggy - everything had to be just right, or the whole system fell apart.

Luckily, at the same time as Dickson, inventors across Europe and the United States were working towards the goal of synchronous sound films. In fact, three separate synchronizing devices were on display at the Paris World Exhibition in 1900. None of them solved the whole problem, though.

The common thread all these early attempts was the phonograph. That's what they used to play back the pre-recorded sound to accompany the film. And the problem was, it was really hard to keep things in sync, you guys. If the phonograph needle skipped, or the film jammed in the projector - which happened all the time - it was nearly impossible to re-sync the two without starting it all over again.

More importantly, the phonograph relied on cylinders or discs that could only hold four or five minutes worth of sound by 1905, virtually all films ran longer than five minutes. Since the phonograph seemed like a dead end, engineers started to look for ways to record sound photographically. Whaaat?

That's right! They hoped to translate sound waves into patterns of light that could be recorded directly onto a strip of film. They called this technology sound-on-film, which is not creative naming, but it works. The first experiments with sound-on-film began in 1910 when Eugene Augustin Lauste, who worked for Dickson in Edison's lab, successfully recorded sound right next to the image track on film.

In 1919, a trio of German inventors came up with something called the Tri-Ergon process. They used a photoelectric cell to translate sound waves into electric impulses, which were then converted into light waves and recorded photographically onto the film strip.

Most notably, they innovated a flywheel into the projector that would keep the film speed consistent. This mechanism was so superior to anything else at the time - and its patent so airtight - that everyone had to pay royalties to the Tri-Ergon creators to use it.

At roughly the same time, an American inventor name Lee de Forest developed his own sound-on-film system. It was very similar to the Tri-Ergon process, but de Forest's version solved the problem of amplification.

In 1907, while working on radio broadcast technology, de Forest patented the Audion 3-Electrode Amplifier Tube. My nickname in high school. This was a vacuum tube that amplified sound and sent it into a speaker, sort of like the way a projector's lens takes an image and blows it up so you can see it on a large screen.

In 1919, de Forest realized his technology might help achieve synchronous sound, and by 1922, he'd developed the process enough to test it commercially. He formed the De Forest Phonofilm Company and set about making some of the very first sync-sound films. He called them phonofilms. Most were just musical performances, Vaudevulle acts, and speeches simply meant to showcase the technology, but a few were narrative films.

By the mid-1920's, a hundred exhibitors in the Eastern United States, Britain, and Canada had wired their movie theaters for sound, specifically to screen de Forest's phonofilms. But Hollywood wasn't ready for it yet, because the American studios were very good at producing silent movies. And they weren't convinced that it was worth the expense to change the way they made and showed films just to accommodate sound.

Studio heads thought that "talking pictures" or "talkies" were just a novelty that would fade away. That began to change in 1926, when a subsidiary of AT&T introduced the Vitaphone system. Instead of sound-on-film, the Vitaphone was a sound-on-disc process that solved the duration problem by recording the sound on multiple discs. Genuis.

At first, the studios all passed on the Vitaphone. They said, "No way!" *Punch* Then along came Warner Brothers. At the time, they were just a small studio looking to elbow their way into the big leagues. And they decided to take a chance and be the first film studio to make and show sync-sound films on a large scale. They leased the rights to the Vitaphone system - as well as the right to sublease it to other studios - and set about converting their theaters to handle sound films.

Now, originally, they didn't intend to incorporate dialogue into the sound. Their idea was simply to use it for music and sound effects. Their first effort was the 1926 film Don Juan, a sumptuous costume drama starring John Barrymore. Before the film, they played an

hour of sync-sound short films, including musical performances and a brief spoken message from Will Hays, president of the Motion Pictures Producers and Distributors of America, welcoming the world to the era of sound.

This is part of what he had to say:

Hays: "My friends, no story ever written for the screen is as dramatic as the story of the screen itself." People were blown away. They were like, "Whaaat? That guy's talking!"

Don Juan broke box office records in city after city. Film critics lavished praise on the Vitaphone system. And a Columbia Universtiy physicist said of the Hays speech: "No closer approach to resurrection has ever been made by science."

Now, this doesn't mean that the coming of sound worked out for everybody. Until now, screen actors up had been trained to act through gestures. Suddenly, dialogue - not to mention your voice and your enunciation - had real consequences. And not every silent film star was able to make the transition.

Buster Keaton, for instance, was known as the Great Stoneface for the stoic expression he wore, no matter how things were falling apart around his character. But then sound came along, and the charm of Keaton's deadpan silence was lost when he started to speak. Kinda like when I start to speak.

Sound films also threatened the musicians that played live music at movie theaters. And, of course, it was still going to cost a boatload of money to convert production studios and movie theaters to sound. Nevertheless, by 1927, the writing was on the wall. Sound was coming, and the major studios couldn't stall any longer.

That year, the "big three" studios - MGM, Famous Players, and First National - adopted the Vitaphone process and set about converting their theaters. Meanwhile, Warner Brothers had already finished building a sound studio on their lot, and began producing their next film, *The Jazz Singer*.

The plan was to make a film with music, not dialogue; but when star Al Jolson improvised a few lines, the studio agreed to leave them in. Unlike most lines I improvise for this.

Jolson: "Now, Mama. Mama, stop now. You're gettin' kittenish. Mama. Listen, now I'm gonna sing this like I will if I go on the stage. You know, with the show. I'm gonna sing it jazzy. Now, get this."

Jolson: [singing] "Blue skies, smilin' at me. Me, me, me! Nothin' but, little blue skies, do I see. Doh, doh, doh doh doh!"

And that - this incidental spoken dialogue - really sent audiences over the top. Think about it - they'd always heard music in some form while watching a film, either from live musicians or a phonograph. And they'd been spoken to, in speeches and performances like the Hays speech or the de Forest phonofilms. But they'd never heard informal dialogue spoken to other characters within the world of the film!

Suddenly, audiences were listening in on the story, and overhearing the dialogue made the story seem more real. In some ways, sync-sound completed the "illusion of reality" that began three decades earlier with the very first motion pictures. Soon, new genres emerged.

Musicals and dance movies were suddenly possible.

(Clip from The Dance of Life (1929))

Disney led the way in feature film animation, incorporating dialogue and songs into their shorts and features.

(Clip from The Skeleton Dance (1929))

Gangster movies and monster films became more popular, as sound effects and music allowed them to ratchet up tension.

(Clip from King Kong (1933))

Also, newspaper movies became fashionable as films like The Front Page and Platinum Blonde had reporters trading witty banter as they chased down stories. These films eventually led to classics like Howard Hawks' His Girl Friday, and even the great Citizan Kane. Never heard of it.

Old genres got a face-lift too. Comedies in particular found new ways to make us laugh through dialogue, instead of relying on physical humor alone. On technical side, the arrival of sound changed career opportunities for women in film as well, and not for the better.

Prior to sound, women edited more Hollywood films than men did. That's because, at the time, editing was thought of as menial labor, the grunt work of painstakingly splicing together bits of film. Then sound came along, and the technological requirements of the job multiplied. And almost overnight, film editors were responsible for assembling not just images, but the sound effects, music, and dialogue as well.

Just like that, the reign of women in the cutting room was over. They saw themselves replaced by men, who were seen as more technically minded. But women editors in Hollywood did make a comeback - from Thelma Schoonmaker, who cut every Martin Scorsese film since Raging Bull to The Wolf of Wall Street, to Lisa Lassek, who edited Joss Whedon's Avergers movies.

Today we talked about the engineering hurdles and breakthroughs that led to the arrival of reliable synchronous sound to cinema. We learned how the Hollywood studios resisted the arrival of sound films as long as they could, until audience demand forced them to give in. And we considered how sound film changed the studios, the films themselves, and the lives of those who made them.

Which sets us up perfectly for what came next: the official Golden Age of Hollywood. I'll see you then! In the pictures!

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