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June 2016 | cinematechnologymagazine.com

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THE LOWDOWN ON DOWNLOADS

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Why the new wave of laser projection systems are destined for greatness

Vol 29, No2 produced in partnership with





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The BKSTS (British Kinematograph Sound and Television Society) exists to encourage, sustain, educate, train and provide a focus for all those who are creatively or technologically involved in the business of providing moving images and associated sound in any form and through any media. The society works to maintain standards and to encourage the pursuit of excellence in all aspects of moving image and associated sound technology, in the UK and throughout the world. The Society is independent of all governments and commercial organisations.

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CINERAMA TO DIGITAL CINEMA: FROM THE ZENITH TO THE DECLINE

Enric Mas argues that the pioneers of cinema set a bar far higher than today's digital cinema can ever reach

I try to imagine what audiences felt when they first saw a movie in Cinerama... but I can't. Did they feel the same as I did when I saw a projection in 70mm IMAX for the first time? Some clues tell me the answer is no. Howard Rust, of the International Cinerama Society, gave me an initial clue when he told me that he was "talking to a chap the other day who'd just been to see IMAX. 'Sensational', he said. 'But, you know... it still doesn't give you the same pins and needles up and down the back of your spine that Cinerama does'".

What's the secret? How is it that seeing a film in Cinerama can be a unique event remembered for decades?

We have another clue in the man who collaborated with D.W. Griffith in *That Royle Girl* (1925), who produced and directed technically innovative short films, where black performers appeared, a rarity at the time, including the first appearance of Billie Holliday (*Symphony in Black: A Rhapsody of Negro Life*, 1935). He created a new imaging system (Vitarama) for the World's Fair in New York (1939), joining 11 16mm projectors, which reached a vertical image



▲ Fred Waller's artillery simulator (above) used five 35mm projectors to create "targets" — aircraft. A roller-coaster ride: the Cinerama screen (top) allowed the audience to get close up to the action

of 75 degrees high and 130 degrees wide, developments which led to the most advanced artillery simulator in the world, used to train future aircraft gunners in World War II. This man's name was Fred Waller. We have more clues in Waller's other collaborators: Hazard Reeves, a sound engineer who helped popularise the use of quartz crystals for radio transmitters and incorporated a stereo system (in a seven-channel format) into Waller's idea; Lowell →



◀ Fred Waller with the 11-camera Vitarama set up created for 1939 World Fair. Cinerama's three-projector set up lead to some dramatic film (right)

HISTORY REPEATING

◆ This would all be history were it not that history is repeated. Digital cinema (Digital Light Processing, DLP), invented by Texas Instruments, was introduced in 1997. It had a resolution of 1280x1024 pixels, distributed across a huge screen, which sounds to today's viewer like a very low resolution. An endless list of projectors arrived demonstrating the industry's desire to improve resolution, culminating in the introduction of 4K and the prospect of 8K. Websites dedicated to 4K acknowledge that "70mm Imax projection also beats out 4K projection in terms of sheer resolution, creating something closer to 8K in quality" (which is not twice, but higher) and that "the difference between 70mm IMAX screens and just about anything else truly is noticeable". (see www.4K.com) These quotes are from supposed experts.

◆ The director Steve McQueen has said, why try to imitate what you already have? The same answer lies behind most of Hollywood's riddles: money. The US box office reached \$11 billion in 2013, split roughly 50/50 between a few studios and thousands of theatre operators (all of which rely on concessions to boost profits). And digital cinema represents, in theory, a reduction in costs in production and distribution. Here's the key. Big studios do not care deeply whether the resolution is higher in the film negative, or whether the sense that the viewer perceives is more real with film, or whether digital cinema looks pixelated. People like McQueen know this and prove it when they say bluntly that "all this technology, it's changing every five minutes, because someone's making some money out of it". He adds about reel-to-reel film: "There's something romantic about film. Some sort of magic — it's almost like it breathes. Film feels much more... 'human?'".

Thomas, a writer and traveller who filmed the legendary T.E. Lawrence (Lawrence of Arabia) in the Palestine campaign during World War I; Michael Todd, a producer, who after leaving the Cinerama project, created the Todd-AO system with American Optical, (with a projection of 70mm and six audio channels) to try to compete with Cinerama; Merian C. Cooper, an aviator, writer, producer and director known for innovations in *King Kong* (1933) and the first film in Technicolor (*Becky Sharp*, 1935). He directed *This Is Cinerama* (1952), the first film in the Cinerama system.

If we try to imagine all these innovators together in a single project, we can begin to understand why Cinerama is so important. The system arose in response to the loss of viewers at the cinema and the fight with television — and the response was overwhelming. The Cinerama system has three 35mm projectors that project to 26fps to improve stability, a screen aspect ratio of 2.65:1 in a curved screen with an image that includes a 146 degree visual field and seven multi-channel sound. If we imagine an audience accustomed to watching films on an almost square screen (1.33:1), mostly in black-and-white with mono sound, we can deduce the impact on the viewer. But there is something more than that. Fred Waller was obsessed with reproducing the full range of human vision in a motion-picture experience. He created film cameras with 27mm focal length lenses, a very close approximation to the focal length of the human eye; the screen is curved at the same radius as the human retina; the camera lens had the same size as a contact lens of that



Cinerama", (see page 83) however CinemaScope triumphed nonetheless. Why? An aggressive strategy by Twentieth Century Fox to impose it... and the press, with critics such as Bosley Crowther of the *New York Times* finding it "similar to Cinerama" (!?). An estimated 200 to 350 cinemas per week converted to CinemaScope and by April 1954, 3,500 were installed. In mid-1955 it was 13,500. The industry adopted Panavision (a modification of CinemaScope with new lenses) as a standard in 1959.

THE QUEST FOR THE SPECTACULAR

The spectacular impact of the Cinerama format helps to explain why a group of cinema's best directors is struggling to preserve reel-to-reel film (either 35 or 70mm). Directors Christopher Nolan and Quentin Tarantino are among the best

"WE ENJOY INCREDIBLE TECHNOLOGICAL DEVELOPMENTS — THAT END WITH OUR TAKING A SELFIE ON A MOBILE PHONE"

time (rigid); and the projection covers a 146 degree horizontal angle of view, very close to the human binocular visual field.

Understandably, the technical difficulties of production, filming and editing did minimise Cinerama footage and screenings. But contemporaneously, a battle to match the Cinerama format began: the aforementioned Todd-AO, Super and Ultra Panavision 70, VistaVision, Technirama and Super Technirama 70 — and the best known: CinemaScope (1953), which developed a system created by Henri Chrétien in 1929, using anamorphic lens (manufactured by Panavision, Inc.). In this issue of *Cinema Technology*, Grant Lobban explores the advent of this format that some critics decried as a "a poor man's

known. Tarantino, at Cannes in 2014, said "digital projection and DCPs are the death of cinema as I know. [...] Digital projection, that's just television in public — and, apparently, the whole world is okay with television in public, but what I knew as cinema is dead". And further: "We have ceded too much territory to the Barbarians".

Something important has happened. It's a familiar story — it has happened with music, photography, books, and now it's the movies. In trivialising a format (as CDs transitioned to MP3s), the music industry has made people assume they no longer need to buy CDs. The psychological effect is terrible. I no longer "buy the CD", I don't need it. Now I just "buy the music". People are so accustomed to materialism that we



no longer remember the romance of the little things — if something is not being sold in a physical form, its value is just smoke. If I no longer need CDs, I don't need the stores where they sell them either and, ultimately, I don't need to buy the MP3 if a friend can get it for me or I download it myself. The situation with photography is identical. If you do not need negatives, you no longer need a place to develop them. You do not need photo albums — you send images over the Internet. Ultimately, you don't need a camera because your smartphone can solve everything. Christopher Nolan also refers to this format trivialisation impacting film, highlighting how 'content' can be ported across phones, watches, petrol station pumps or any other screen — and the suggestion is that movie theatres should accept their place as just another of these 'platforms'. He says: "This bleak future is the direction the industry is pointed in, but even if it arrives it will not last". His prediction is that with the current evolution of the industry, films will be seen mainly at home, with the few surviving theatres being relegated to hosting events for films focused on fans or franchises.

Claiming that the public knows the background to these issues is illusory. There is one aspect that puzzles: why do the people who are supposedly experts, the critics, filmmakers, collectors, not want to accept the reality of the situation? They have all contributed to this. I remember colleagues saying that the CD was the ultimate solution for music. It was created with that intention. They were then astounded by the MP3... and then they stopped buying music. Meanwhile, die-hards bought (and are still buying) vinyl. The case of photography is identical. We enjoy incredible technological developments that end with our taking a selfie on a mobile phone to be uploaded to the Internet in a compressed format. There

is a gap between so-called experts and true lovers of art: experts think they know the truth imposed and assume it as their own, the latter knows art expresses the truth.

THERE IS A RAY OF HOPE

There is hope. For example, in Barcelona, a city I know a little, there are options for cinemagoers such as the Zumzeig bistro-cinema, the Texas theatres and the "Phenomena Experience" theatre. These are fighting back in the digital war. The Zumzeig combines programming of films and documentaries that are difficult (if not impossible) to see elsewhere. It has a taste for films in their original version, with the possibility of projecting in 16 or 35mm, alongside presentations by producers and directors. What a concept — if you are the only venue to show a film, you don't have any competition. Viewers can sit in the bistro afterwards to chat about the film — a great way to spend the afternoon. Cinemas Texas is a revival house at an affordable price, with original versions and an awareness of the state of cinema (is it a coincidence that there was a Steve McQueen film and Catalanian films at its inauguration?). The Phenomena Experience theatre offers revivals, showings in 35 and 70mm, original versions, seasons, a catalogue worthy of the best film libraries... It is the only theatre in Spain that showed Tarantino's latest film, *The Hateful Eight*, under the conditions set by the director (70mm and Ultra Panavision). Guess where I went to see that movie?

For all those geeks who think they know the truth about the advancement of digital cinema, the opportunity exists to open their eyes wider (literally). It's easy: see a film in 70mm and UltraPanavision then in digital cinema (in 4K, even). Sit the same distance from the screen on both occasions and judge which is the better experience. **CT**

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