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Widescreen Film Format Before 1950s

The history of widescreen cinema is often told as follows: it was born in 1950s, when the newly-invented television technology threatened the cinema. The film producers had to make their products more attractive to the audiences. Accordingly they widened the screen to provide a more spectacular image. We notice many movie advertisements of the time stressed that they were made by the cutting-edge technology.¹ A wider and/or larger image meant something spectacular, which you could have not experienced before. However, widescreen technology was not invented in 1950s.

The widescreen image was originally born and introduced to the public at the same time with moving image in 1896, and had its chance to bloom almost at the same time with talkies in the late 1920s. Something that is obvious but easily forgotten when we are discussing widescreen is that something wide is defined only by comparison; to call something 'wide' there must be something 'narrow'—i.e., 'standard' format which is narrower than so called widescreen. The international standardization of the commercial film gauge was completed in 1907: 35mm with an aspect ratio of 1.33:1 and a four-

¹ "The world's greatest theatrical attraction!" (*This is Cinérama* – the first Cinerama film)
"The modern miracle you see without glasses!" (*The Robe* – the first cinemascope film)
These are the phrases you can see on the advertisement of the movies from the early 1950s, especially of the ones shot on the 'widescreen film format'.

perforation pulldown per frame.²

Two hundred men and women stood or sat in the basket of a balloon. (...) Then, suddenly, the captain of the balloon announced: "Ladies and gentlemen, we are about to leave the garden of the Tuileries. Cast off! (...) We are about to land in the Great Square of Brussels." After that, the balloon took its passengers to England, the Riviera, Spain, Tunis, the Sahara, and back to Paris for their final descent. On the trip, the happy balloonists saw such spectacles as a bullfight, a carnival, cavalry charges, a storm at sea and a desert caravan.³

This is the description of the show 'Grimoin-Sanson's **Cinéorama**', which is considered the pre-format of widescreen movies, at Paris Exposition in 1900. Ten synchronized projectors were used to present a gigantic, hand-colored moving image print on a 360 degree screen with a 100m perimeter.⁴ During the period between the birth of moving image and that of the standard format for commercial moving image several experiments for the panoramic moving image were attempted by the early cinema pioneers.

Before Cinéorama, the first trial of panoramic moving image, **Chase's Electric Cyclorama** was introduced to public in 1895. Eight pairs of magic lanterns were projected making dissolved views onto a cylindrical screen with a 90m perimeter.⁵ At the same

² Carr, Robert E. *Wide Screen Movies : A History and Filmography of Wide Gauge Filmmaking*. Ed. R. M. Hayes. Jefferson, N.C.: Jefferson, N.C. : McFarland & Co, 1988. 1.

³ MacGowan, Kenneth. "The Wide Screen of Yesterday and Tomorrow." *The Quarterly of Film Radio and Television* 11.3 (1957): 217.

⁴ Coe, Brian, 1930-2007. *The History of Movie Photography*. Westfield, NJ: Westfield, NJ : Eastview Editions, 1981. 142. "The first few shows were reported as being an 'undeniable success', but the Prefecture of Police closed it down due to the severe fire risk from the unventilated projection booth in which ten 40-amp electric arcs were funning and on top of which the audience were standing"

⁵ Ibid. 140. "The *British Journal of Photography* described an improved version shown in 1895: (...) The apparatus is as ingenious as it must be costly, but we much doubt the commercial success of the scheme, especially at the

Exposition which introduced Grimoin-Sanson's Cinéorama the **Lumière Brothers** also presented their wide film images using side film projection system. Using the 75mm-wide film with 45X60mm picture size the picture was projected on a 65 foot screen before 25,000 people.⁶ **Hale's World Tours**, which presented the scenery viewed from the end window of the railway carriage to the audience, was opened in London in 1906.⁷ By providing simulation of the real experience—fans created the effect of the passage of air, the platform rocked and vibrated to simulate the movement of a train, it achieved initial success; however, its mechanism was too complex to allow for lasting commercial success.

With rare exceptions which will be discussed later most of the experiments during the early cinema period regarding wider and larger screens were “exhibited as a wonder of science,” and “designed primarily for short-term amusement” with “notions of novelty.”⁸ The transition of exhibition from the peep show to public screenings allowed the image to become more similar to reality in terms of its size. “One of the factors which reduced the realism of the early moving pictures was the limited size of the projected picture.”⁹ The larger the screen became, the closer the image mimicked what human vision gives to us. By filling the entire field of vision of the audience a remarkable sense of realism could be obtained.

The pioneers of early attempts to provide audiences with a more vivid visual experience were scientists and businessmen rather than artists. People who made decisions regarding the technology on the images were not creators but the owners of theaters and

present time, when, judging from provincial and other accounts, the public seems to be surfeited with lantern shows.”

⁶ Ibid. 142.

⁷ Ibid.

⁸ Belton, John. *Widescreen Cinema*. Cambridge, Mass.: Cambridge, Mass. : Harvard University Press, 1992. 13.

⁹ Coe, Brian, 1930-2007. *The History of Movie Photography*. Westfield, NJ: Westfield, NJ : Eastview Editions, 1981. 140.

the film/ camera companies. They wanted wider and larger screen since it means not only spectacular images but also more people per screening. However, new technology tends to need new infrastructure such as a new building, a new projector and the new education for projectionists. Businessmen made the decision between new attempts and the existing system by calculating which one can promise more income. So it is not surprising that most of those early experiments regarding widescreen were thrown away even though some of them could provide the audience with much more interesting viewing experiences.

The first serial experiments in widescreen imaging following the standardization of the commercial film format during the 1920s need to be explained under the premise above. The first attempts began by modifying the projection process, and were followed by experiments in widening the actual film format. **Magnascope**, invented by Lorenzo del Riccio, was the first of these attempts in modifying the projection process. Under this system the screen becomes wider at certain sequences by letting zooming out the projector lens and having motorized curtains uncover more of the screen. The projectionist was informed two minutes before specific sequences to begin the operation. Since consistency was not an important factor at the time, the audience was reported to have enjoyed this simple contrivance. However, the bigger image meant “the more obvious the grain and the less sharp, bright the picture.”¹⁰ This weakness allowed only three movies¹¹ to be ‘magnascoped’: the naval battle sequence in *Old Ironside* (1926), the herd of elephants in a

¹⁰ Carr, Robert E. *Wide Screen Movies : A History and Filmography of Wide Gauge Filmmaking*. Ed. R. M. Hayes. Jefferson, N.C. : Jefferson, N.C. : McFarland & Co, 1988. 5.

¹¹ However, “after long neglect, the device turned up again to make the storm sequence in David Selznick’s *Portrait of Jenny* (1948) more impressive.” —MacGowan, Kenneth. "The Wide Screen of Yesterday and Tomorrow." *The Quarterly of Film Radio and Television* 11.3 (1957): 222

wild documentary, *Chang* (1927) and the aerial sequence in a World War One fighter-pilot melodrama, *Wings* (1928).

Enlarging the screen by the simple zoom was followed by the idea of parallel screens or projectors. **Polyvision** developed by Andre Debré interlocked three 35mm cameras and projectors. Only one film, *Napoléon* (1927), directed by Abel Gance was shot and screened using this system. Either by completing one panoramic scene composed of three linked images or by presenting three different parallel shots, Polyvision supplied a wider image. This divided screen idea seems to be more of an aesthetic decision than an idea resulting from the need for spectacle. There is the persuasive analysis saying that “the triptych screen could be seen as inspired in part, by the French tricolor, to which Gance’s red and blue tinting alluded in several sequences.”¹² Polyvision was not born for commercial reasons at all. The audiences, confused by the unfamiliar image, did not seem to be ready for reading three different screens. They merely wanted to enjoy the spectacle. Moreover, synchronizing three cameras creates problems during production. It also creates problems for the projectionist who has to synch three different projectors’ speeds especially if you want to create a seamless panoramic. Therefore, only limited venues could screen the Polyvision version of *Napoléon*. Eventually, Gance made a standard version of *Napoléon* by adding new shots and stereo sound in 1935.

Among these attempts using multiple projectors American inventor John D. Elms’ camera with two lenses taking two different images should be noted as well, not because it was successful, but because it has been succeeded by CinemaScope. Two images taken by Elms’ camera were supposed to be projected “side by side, but he (Elms) didn’t solve the

¹² Belton, John. "CinemaScope and Historical Methodology." *Cinema Journal* 28.1 (1988): 25.

problem of joining the edges smoothly.”¹³ Elms’ camera were not accepted by any commercial films at the time; however, his attempts inspired Henri Cartier’s two linked projector using Cinemascope lenses 15 years later which also further followed by the CinemaScope format 30 years after Elms’ attempt.

Other than the desultory ventures in the 1900s regarding film formats invented only to circumvent the Edison’s patents¹⁴ several significant trials on widescreen images were conducted from the late 1920s to the late 1930s. All of them used different film formats with various image sizes but were all somewhat similar to each other in their basic process. **Magnafilm** using 56mm film with a 1:2 aspect ratio was tried by Paramount. This process was developed by Lorenzo del Riccio and there is only one feature film shot using it: *We’re in the Navy Now*, (1929) screened on a 40X20 foot screen. Warner Bros. introduced **Vistascope** using 65mm film with a similar ratio.¹⁵ **Natural Vision** using 63.5mm film with a 1:1.85 aspect ratio was attempted by RKO and invented by George Spoor and P. John Berggren. Among four films shot by this system¹⁶ *Danger Lights* (1930), which was screened in Chicago first and then moved to the Mayfair Theatre in New York, was criticized because “the projector was very noisy —like a ‘machine gun or riveting machine’ said one report—and a three-quarter horse-power compressor was needed to provide air to cool it.”¹⁷ The fact that the sound was recorded on different film from the image, which ran at

¹³ MacGowan, Kenneth. "The Wide Screen of Yesterday and Tomorrow." *The Quarterly of Film Radio and Television* 11.3 (1957): 226.

¹⁴ Belton, John. *Widescreen Cinema*. Cambridge, Mass.: Cambridge, Mass. : Harvard University Press, 1992. 24.

¹⁵ Three films were made by this process: *A Soldier's Plaything* (1930), *The Lash* (1931), *Kismet* (1931) —Carr, Robert E. *Wide Screen Movies : A History and Filmography of Wide Gauge Filmmaking*. Ed. R. M. Hayes. Jefferson, N.C.: Jefferson, N.C. : McFarland & Co, 1988. 10

¹⁶ *Ibid.* 9.

¹⁷ Coe, Brian, 1930-2007. *The History of Movie Photography*. Westfield, NJ: Westfield, NJ : Eastview Editions,

24fps, whereas the image ran at 20 fps, was also a serious drawback.

As for Fox, there was **Fox Grandeur** which used 70mm film. The noteworthy feature films made using it were *Happy Days* (1929) and *The Big Trail* (1930). The first Fox Grandeur image was shown to the public on September 17, 1929 and was a newsreel that included a tennis match, a baseball game, and the Tiller Girl dancer. The exterior action sequence of *The Big Trail*, the last film shot in Fox Grandeur, made a significant impression on the audience. Along with Fox Grandeur there was MGM's **Realife**, which was almost identical to Fox Grandeur. The first Realife film *Billy the Kid* was released right after *The Big Trail* but did not seem to be as successful both commercially and technologically. MGM made only one more Realife movie after that. The technology which Fox Grandeur and Realife were based upon is very similar to that of Todd-AO 70mm film in 1950s. It uses 4 perf, 20fps film and had optical sound and was recorded on the same film as the image.

Supplying the audience with a wider screen image was one of the early filmmakers' instinctive desires. According to early cinema researchers, Edwin S. Porter could have been created a certain level of wide images if there hadn't been the fire accident followed by World War One. E.W. Clark, a cinematographer on *Intolerance* was known to have tested wide image by using a wide-angle lens and cropping off the reduced 35mm print.¹⁸ Most of the film producers even in 1910s were aware that the wider film formats offered brighter and sharper images. However, the problem regarding adoption of this complex technology —i.e., expensive film formats and bigger projectors— prohibited the implementation of

1981. 144.

¹⁸ MacGowan, Kenneth. "The Wide Screen of Yesterday and Tomorrow." *The Quarterly of Film Radio and Television* 11.3 (1957): 226.

wide image in the late 1910s.

The attempts to create a wider image in the late 1920s with the wider film formats are no different than these earlier trials. It is predictable that these films, which were not financially successful, had short life-spans and were not widely released, create difficult preservation issues. Most of the widescreen films released between 1929 and 1931 were shown in limited venues irregularly. In most cases widescreen films were shot both with the wide film and the standard 35mm film. When making Vistascope films Warner Bros. “proposed that the 65mm original should be reduced to 35mm in printing to make the product available to cinemas not equipped for wide film presentation.”¹⁹ One camera with wide film format and the other camera with the standard film format stood side by side and the standard ones were generally shown to public. Even *Billy the Kid*, which had not been shot by two different films was released as a 35mm film since the studio made the standard prints by having only the center of the Realife film printed during the printing process. It is therefore hard to expect that prints of the early widescreen attempts shot in these archaic systems be well preserved. Furthermore it is difficult to expect that they are easily identifiable as the prints containing the widescreen images.

As we have seen the major reason why widescreen film formats of the late 1920s and the early 1930s did not stabilize the market was due to their complex requirements during production and distribution. Not many theatres at that time could afford the new projection systems and not many studios were aggressively pushing their new formats in the market. Many cinema historians state that the advent of talkies in 1927 followed by the

¹⁹ Coe, Brian, 1930-2007. *The History of Movie Photography*. Westfield, NJ: Westfield, NJ : Eastview Editions, 1981. 145.

Great Depression in 1929 exacerbated the situation.

Usually, new technology means money. Not because it can always promise more income, but because it requires significant investment to be stabilized properly. Studios need to invest money to develop new technology and the theatre owners need to invest for new projection systems. If either (or both) were not promoted properly or invested in, new technology would have only a very slight chance of survival, especially in the early commercial film industry. The early talkies were heavily invested in, and their relatively simpler standardization made investing in the complex and nonstandard widescreen formats economically unsound. It is quite true that the studios were trying to “link it (widescreen) technologically and institutionally to sound”²⁰ while the owners of the theatres, which just finished renovation for sound movies, could not afford the renovation that new projection systems would require.

However, some historians argue that widescreen would have experienced its heyday in the mid-1930s rather than the early 1950s if not for the Great Depression²¹. Given the fact that most of widescreen system could be utilized using the existing infrastructure with little extra change, the cost for adopting widescreen is not as harsh as the changes required for talkies. The problem is that the Wall Street crash started October 23, 1929, less than one month after *Happy Days*, the first Fox Grandeur film, was released in New York. The nadir of the stock market lasted until 1932 and by that time most of the

²⁰ Ibid. 146.

“In all, fewer than twenty theaters had been equipped for 63mm, 65mm and 70mm projection. None apparently actually installed 56mm units except for the one demonstration screening in New York.” -- Carr, Robert E. *Wide Screen Movies : A History and Filmography of Wide Gauge Filmmaking*. Ed. R. M. Hayes. Jefferson, N.C.: Jefferson, N.C. : McFarland & Co, 1988. 8.

²¹ The threshold of *Widescreen Cinema* (Bolton, John, Cambridge, Mass.: Cambridge, Mass. : Harvard University Press, 1992) seems to be this idea. The part of *Moving Image Technology: From Zoetrope to Digital*. (Enticknap, Leo Douglas Graham,; New York: London ; New York : Wallflower Press, 2005) which explains early widescreen film format also presents this supposition.

attempts regarding widescreen were aborted. In contrast, the talkies had already passed the point of no return – i.e., too much money and human resources had been spent by both studios and theatres for the new system. Even though the movie industry is known to be the field that took the least damage during the Depression, it was not time to risk expansion into a new format, but continue making profit with the talkies.

The argument about the early widescreen cinema and the Depression is clear and sound. However, there is one more point to be discussed: standardization. The widely known 35mm film with 1.33:1 aspect ratio became the international standard for commercial film in 1907 and this standardization was propelled by Thomas Edison and George Eastman, the owner of the patent for the camera which fits to that film format and the owner of the company which produces that film format. Obviously, the main reason that the moving image accomplished such fast development is originated from this efficient monopoly which allowed for rapid standardization.

Many researchers of film history have confirmed that there hardly were features which require the standard film format —i.e., the 35mm width of the film size, the 1.33:1 aspect ratio of the image, 4 perforations per frame. Mostly, it was simple economical call.²² “This was the format ‘developed’ by W.K.L. Dickson in early 1891 for Thomas Edison’s Kinetoscope viewing device, commonly called a ‘peepshow’”.²³ Ironically enough, the film format that originated from the peepshow was decided as a standard for the industry even

²² “By slitting the 70mm film in half, Dickson came up with a format that was economically efficient. He maximized his use of Eastman’s war stock, doubling the amount of footage he could obtain from each roll and, at the same time, avoiding any waste.” - Belton, John. *Widescreen Cinema*. Cambridge, Mass.: Cambridge, Mass. : Harvard University Press, 1992. 19.

²³ *Ibid.* 1.

though public screenings required wider and bigger screens than the personal peepshows. In this sense the first standard film format was born outdated. It is not clear if Edison might have considered this aspect or not, but it seems to be apparent that he was too busy to be interested in something creative not financial. Furthermore, Edison and his staff threw away the idea regarding the synchronizing sound and image under the consideration that it would not promise more financial success even though the technology was available.²⁴ Other than the attempts from the late 1920s to the early 1930s, there were series of experiments regarding wider film formats during the 1900s as well: the 48mm Vivoscope of Blair, the 60mm Demeny-Gaumont and Prestwich (1893-96), the 68mm Biograph (1897), the 63mm Veriscope (1897), the 65mm Hughes Moto-Photoscope (1897).²⁵ Many of these were simply invented in order circumvent Edison's patent, but it is feasible that widescreen could have prevailed even earlier than 1930s if it were not for Edison's standardization and monopoly over the film industry.

The Bioscope in May 1930 under title, Wide Film Wobbling, "described the opposition of the cinema trade to the extra cost of the projection apparatus, at a time just after most cinemas had had to re-equip to install sound systems and discussed the problems for the film producers of trebled production costs and increased distribution difficulties. It concluded, 'this novelty, therefore, is to be tucked away to be brought forward when the industry needs a fresh stimulant.'"²⁶

This comment about Fox Grandeur being unsuccessful with high quality was

²⁴ Carr, Robert E. *Wide Screen Movies : A History and Filmography of Wide Gauge Filmmaking*. Ed. R. M. Hayes. Jefferson, N.C.: Jefferson, N.C. : McFarland & Co, 1988.

²⁵ Coe, Brian, 1930-2007. *The History of Movie Photography*. Westfield, NJ: Westfield, NJ : Eastview Editions, 1981. 145.

More Than One Hundred Years of Film Sizes <http://www.xs4all.nl/~wichm/filmsize.html#STANDARD>

²⁶ *Ibid.* 146.

proved to be quite true in 20 years. In the early 1950s 'a fresh stimulant to bring the widescreen forward' was the advent of television. All the economic concerns around movie industry including studios, film manufacturers, equipment and post-production service suppliers were experiencing there hard times.²⁷ It was time to adopt new technology to attract the audience back to theater from television. With the conclusion of the World War One men came back to daily life and home movie/ amateur film making became one of the major recreations for many of them. Moreover, by the time of America's expanding it was time for Hollywood to abandon the old studio system and to globalize. After two major technological revolution-like changeover of moving image—the advent of sound and color—not many options seemed left at that time but the old but new widescreen.

Theoretically, the renaissance of the widescreen image became available by recycling the old technology. Cinerama process, utilizing the wide lens and paralleling three synchronized images, was the direct descendants of all the attempts around projection: the Cineorama/ Polyvision and Elms' Camera. Todd-AO system, using 65mm film stock was almost identical with the attempts to widen the film gauge in the late 1920s: Fox Grandeur and Realife. The CinemaScope process was evolved both from the squeezing/ unsqueezing the image through the lens and larger film format. Ultimately, the investment answers with significantly growing income. The installation new technology and renovation also cost much amount of money but Hollywood studios and the theatres realized it will promise a certain level of financial success.

²⁷ Average weekly movie attendance dropped from 90 million in 1948 to 51 million in 1952. These falling attendance figures resulted in a decline of theater net income from \$325 million in 1941 to \$46 million in 1953.²⁰ From 1946 to April 1953 over five thousand movie theaters were closed. This figure represented over twenty percent of all indoor theaters. Total corporate before-tax profits in the motion picture industry fell from \$142 million in 1948 to \$80 million in 1953. - Belton, John. "CinemaScope and Historical Methodology." *Cinema Journal* 28.1 (1988): 27, 28

In many cases new technology cannot be made available or ruled simply by supply and demand. Sometimes timely coincidences might be the more critical to make a certain technology be implemented. The process of how widescreen image is finally stabilized in the industry through more than a century shows it. However, it also shows that without all the given attempts and experiments conducted by the early pioneers a timely new technology would not become attractive to the powerful decision makers.

Annotated Bibliography

Books

Belton, John. **Widescreen Cinema**. Cambridge, Mass.: Cambridge, Mass. : Harvard University Press, 1992.

The main idea of this book is almost identical to my paper: one of the most commonly well-known facts in film history is not so much true. Wide screen cinema was not born in 1950s from middle of no where. Observing the most famous era of widescreen, 1950s, Belton focuses on two more eras of widescreen: from the late 18th century to the early

19th century and from the late 1920s to the early 1930s. Even though a bit redundant description on what kind of point of view did he take could seem rather distracted, the writer's thorough inspection of all the film standards from the early cinema is quite informative. Especially the part, where he illustrates how those seemingly reasonable decisions about all the film standards could have been available, is highly recommended.

Carr, Robert E. **Wide Screen Movies : A History and Filmography of Wide Gauge Filmmaking.** Ed. R. M. Hayes. Jefferson, N.C.: Jefferson, N.C. : McFarland & Co, 1988.

The main beauty of this book is its scrupulous list-ups. Basically, its table of contents, filled with all kinds of wide screen film formats during the film history, is straightforward and simple. From the early wide screen to the 70mm processes, Carr illustrates and explains almost all the mechanics regarding the film formats and the systems with detailed indexes, film stills, illustrations, and the tables. Especially, the full filmography attached at the end of each film format or technology is largely helpful. Almost second half of the book is spent for the vast appendix: 'Filmography: Wide Gauge, Large Format, and Other Technologically Significant Films — Credits and Casts'. It would be seen little less useful in these days when all the free and handy resources are all over, it may still come considerably precious if you plan to do a complete and trustworthy research on a specific wide film format.

Coe, Brian, 1930-2007. **The History of Movie Photography.** Westfield, NJ: Westfield, NJ : Eastview Editions, 1981.

As shown from the title this book is for illustrating the principles and attempts, which made up the history of the early moving image: from camera obscura to 3D cinema. Cinema as a technological and industrial media, rather than as a genre of profound art, seems to be Coe's main interest. Detailed description on the early cinematographic inventions is followed by three chapters, which are devoted to three main epoch-making inventions in film history: color, sound, and wide screen. These three chapters discuss each technology in chronological order, respectively. Comprehensive explanation by diverse visual images is its main strength. Addressing the early technology of cinema with that of photography is also distinctive aspect of this book. One additional, appendix-like chapter, of which title is 'Movies in the home', is also handy and instructive. It addresses simple and essential history of amateur/ home movie making with vivid pictures of the camera and still images.

Enticknap, Leo Douglas Graham. **Moving Image Technology: From Zoetrope to Digital.** London ; New York: London ; New York : Wallflower Press, 2005.

Undoubtedly this book is an archetype-like textbook, explaining the film history upon technology. In each chapter keywords and/or theme of the moving image are discussed. Since each keywords and/or theme is overlapping in time order of the whole film history, it may seem little bit redundant (For example, widescreen film format before 1950s is mentioned three different parts of the book) ; however, there is certain level of variation by dealing the same subject in the different context. So the subtle differences along with different theme will also be detected in the long run.

Salt, Barry. **Film Style and Technology : History and Analysis.** London: London : Starword, 1983.

As the notoriously extreme statistician in film theory, Salt completes the film history under his own way of research. Film style and technology from 1895 to 1980s is discussed upon mathematical and/or statistical data. Its bibliography is made up of by

the texts about the early cinema, which were written in no later than 1950s. That will be helpful for the early cinema researchers. However, its lack of the explanation on the early wide film processes is somewhat disappointing.

Journals

Barr, Charles. "CinemaScope: Before and After." **Film Quarterly 16.4 (1963):** 4-24.

The time when this article was written is a decade after from the advent of the first CinemaScope. By that time, several kinds of widescreen film system had been stabled in movie industry in western hemisphere. However, Barr stated that the film critics and researchers were still skeptical about the aesthetics of widescreen films. Pointing out this kind of prejudice seems to be the writer's main purpose. From Bazin to Eisenstein, from reality to illusion, many film theories and critics are mentioned but not much new or vivid information about technological fact.

Belton, John. "CinemaScope and Historical Methodology." **Cinema Journal 28.1 (1988):** 22-44.

The article, written by the same author of *Widescreen cinema* (1992), seems to be the starting point of that book. The idea of both this article and the book is pretty much same as such: that widescreen images had been being existing from the age of the early cinema and the standardization, which was done fairly quickly, must have been forced by industrial financial reason. It would be good if you read this article first and take a close look at the specific part which you need to specifically.

Fielding, Raymond. "Hale's Tours: Ultrarealism in the Pre-1910 Motion Picture." **Cinema Journal 10.1 (1970):** 34-47.

As shown from the title, this article represents various attempts of early age of cinema to provide the audience with a real-like spectrum by screen image: from the very early wide (and large) screen, Cineorama and its siblings to the amusement park-like device, Hale's Tour and its siblings. The descendents of those devices are still found in amusement park. It is quite true the direct clue of these technology in main feature filmmaking industry nowadays. However, this article might be a good resource with many detailed facts if you want to take a glance about how the people were thinking about visual 'realism' at that time.

MacGowan, Kenneth. "The Screen's "New Look": Wider and Deeper." **The Quarterly of Film Radio and Television 11.2 (1956):** 109-30.

Written in the time when the widescreen images are truly boomed up, the main purpose of this article is to arrange all the seemingly new present system by that time. Along with widescreen, significant amount of this article is allotted to 3-D cinema as well. Statistic data, regarding the hard time which film industry was facing because of the advent of the television, is detailed and helpful. Even though majority of the articles is assigned to the technology of that time, you will still have the idea how the main widescreen cinema technologies were originated from the old ones during the late 1920s.

---. "The Wide Screen of Yesterday and Tomorrow." **The Quarterly of Film Radio and Television 11.3 (1957):** 217-41.

This is the article which was written in 1957. Being written fairly long time ago or fairly soon is the biggest strength of this article. Being thorough and informative regarding the early cinema with wide images, the writer describes every widescreen technology in

early cinema in aesthetical, technological and sociological way. Considerably vivid illustration about the important filmography in the history of widescreen cinema is one of the main charms.