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The Standard That Time Forgot: the 28mm Amateur Film Format

Compared to ancient Egyptian hieroglyphics or the frescoes of the Italian Renaissance, the moving image is a mere drop in the sea of history. After all, the first moving images were introduced to the world a little over a century ago. And even within this drop there are smaller parts that make up the whole: there are technical histories, theoretical histories, histories of style and of stardom. There is film, there is video, there is digital video, and there are digital files. Most histories of moving images focus on what person or what innovation was successful in making moving images an important cultural phenomenon. Yet there are other parts of this phenomenon that are not as well known and whose impact seems negligible due to their short existence. These “failures” add weight to the drop of moving image history, making the eventual ripple effect more far-reaching.

Currently the 35mm film format dominates professional motion picture film history; the 16mm film format dominates amateur motion picture film history. However there were many other formats born into the family tree of film. The slightly awkward middle sibling of 35mm and 16mm was the 28mm film format. Most professional and amateur filmmakers alike have never heard of 28mm, but there was a time when the professional and amateur film industries were ablaze with talk of its possibilities. While the heyday of 28mm did not last much longer

than a decade it is extremely important to the history of amateur film: it inspired competition and its faults brought about a better standard making it an important link in the chain of film format evolution.

Another occasionally overlooked element of the history of the moving image is that almost since the inception of film, audiences have wanted to watch moving images in places other than the local movie theater. People were renting and watching films in their living rooms and classrooms decades before the VCR. 28mm was intended for these uses. There are many terms used to describe moving images created by nonprofessional filmmakers or moving images created by professional filmmakers for the nontheatrical markets. “Small gauge film” (Stone, 123), “nontheatrical film” (Streible, 339), “home cinema”, “home movies” (Singer, 38), and “amateur film” (Stone, 123) are all terms that can be used in this discussion. For the purpose of clarity, “amateur film” or “amateur filmmaking” will be used in this paper.

There were roughly 12 different types of amateur film gauges that preceded 28mm, none of which gained much popularity. Birtac is one of the earliest amateur film stocks. It was first introduced in 1898 by the British experimenter Birt Acres. With Birtac, Acres took a 35mm filmstrip and cut it down the middle, creating a 17.5mm gauge that could be used in his Birtac camera (Enticknap, 66). The problems with the Birtac system were much the same as with the amateur formats which preceded it until 28mm came along: the bases were all made out of flammable cellulose nitrate which could not be projected without a protective fire booth installed, and it was very expensive for the consumer to make their own home movies since they had to develop a separate print from the negative (Fielding, 130).

In 1909 Kodak made the first cellulose diacetate base, also known as “safety film”. Between 1909 and 1948, this type of film stock was used primarily for amateur films, short

films, prints of films for temporary venues like churches and schools, and was used as negative stock in very rare instances where it would be too dangerous to use nitrate. Safety film at the time was much more fragile than nitrate film stock and still too expensive for most amateur consumers (Enticknap, 19). The French company Pathé Frères began producing its own safety diacetate film soon after Kodak. Their dominance in many film markets throughout the world in the early 20th century, gave Pathé the ability to break Kodak's monopoly over raw stock production.

Coming from the restaurant business, Charles Pathé opened Pathé Frères with his brother Émile in 1896. In 1901 Pathé Frères built a small studio for the production and development of film and sound recording and distribution in Rue du Bois, Vincennes. Pathé Frères did everything: it made its own raw stock, cameras, processing and projection equipment, all under the Pathé Frères name. Their trademark became the famous image of a rooster, which was intended to be a reminder of their culinary background (Marie, 333). Another studio was built at Montreuil in 1904, and with their success, they later built studios at Joinville, Paris and Nice; next they continued on to the foreign markets of London, New Jersey, Saint Petersburg and Barcelona (Raimondo-Souto, 33). When the Lumière brothers stopped making their cameras due to a fire in their studio, Charles Pathé had his company create the first Pathé Camera in 1903, which became quite popular in Europe. Pathé was also the first studio to use a glass roof and walls lined with cotton sheets to diffuse the light for their studio work (Salt, 68, 73). From 1904-1911, Pathé Frères was the largest film producer and exporter in the world (O'Brien, 142). Pathé sold or lent many film prints to be viewed at home, schools, organizations, etc. These were mostly educational films or reduction prints of Pathé Studio motion pictures. The next camera model was the Pathé Professionnel Portatif, then the Pathé Professionnel; the latter was their

most popular camera. It debuted in 1908 and was produced and sold until after World War I. It was used for making professional narrative films and newsreels (Raimondo-Souto, 20). In 1905 Pathé introduced Pathécolor, a mechanized way to tint films with stencils and highly trained colorists.

Pathé made films of everything from travelogues to elaborate period pieces to famous ballet performances. In 1908 they introduced *Le Film d'Art*, a production company that targeted the upper class, trying to reckon cinema to art instead of spectacle (Mebold, 140). Pathé introduced the Pathé Gazette in 1909, which became one of the most popular newsreel production companies in the world. Many American film trade papers had begun to complain that Pathé's films were too French—they were clamoring for more American stories. In retaliation, Pathé began its own trade paper in America called the *Pathé Weekly Bulletin*. In 1910 Pathé also constructed a studio in New Jersey; their first film produced in America was “The Girl from Arizona” (Marie, 346).

In 1912, competition was brewing for Pathé within the growing American amateur film market. More than likely as a response to the increasing pressure to one-up American companies, Pathé Frères experimented with something new. That same year both the Pathé Frères and T.A. Edison, Inc. introduced their own never-before-seen nontheatrical film gauge: the 28mm Pathé Kok in France, also known as Pathéscope in the US, and the 22mm Home Projecting Kinestoscope (Home P.K.), respectively. Both used the new safe cellulose diacetate as the film base for prints, and both offered consumers a rental service for reduction prints of professional productions. Despite these similarities, the Home P.K. sold poorly and was completely scrapped by 1914, whereas Pathé Kok 28mm had a successful run of approximately a decade. Pathéscope did so well that, after the projector was announced, a camera was also released for amateur

filmmaking in 1913 (Singer, 45). The Home P.K. had three rows of frames squeezed into the 22mm gauge; the first row of frames would be run through, then the aperture would be moved and the second row was run through the projector backwards; lastly would come the third row of frames. While the system used less film and was therefore cheaper, the frame size was only 5.7mm across leading to less quality pictures and the film strip took a lot of abuse from being run through the projector three times in one sitting (Fielding, 130). When the Edison Home P.K. dropped out of sight, Pathéscope was left without any competition for a period of time.

The 28mm film format was more of a success than Birtac and the Home P.K. for many reasons. The first benefit was that slitting a 35mm nitrate film in half could not create 28mm, thereby forcing consumers to project only safety film and to buy only 28mm brands of cameras and projectors. The second was that both of the cameras and projectors were cheaper and quite portable. A major downside to 28mm use was that the amateur filmmaker still had to shoot a potentially dangerous nitrate negative in their camera. They would then send the negative away to be processed, and in return would receive a much safer diacetate print to view (Enticknap, 66). This print had 3 perforations on one side of a frame, and one perforation on the other side of the frame (Fielding, 130). The specific width and design ensured that nitrate film would not be put in the projector and it also made sure that the consumer would not thread the print the wrong way (Enticknap, 67).

Willard Cook and Albert F. Victor were huge proponents of 28mm in North America. Willard Cook was the chief executive for the Pathéscope Company of America, Inc., and followed Pathé's European marketing and distributing techniques (Seattler, 100). Albert F. Victor owned the Victor Animatograph Corporation, and with both men representing companies deeply invested in nontheatrical film, they fought for 28mm to be standardized by the Society of

Motion Picture Engineers (SMPE). Hence in 1918, the 28mm wide “Safety Standard” was incorporated by SMPE. It was designed as the same size gauge as Pathéscope, but had three perforations for each side of the frame. Despite this difference, the SMPE Safety Standard film could still be played in the Pathéscope projector.

It is important to note around the time that Pathéscope was introduced to the market, the film medium was in limbo. It was no longer just the spectacle of lower class nickelodeon halls, and yet it had not reached the upper class as a viable and respectable way of passing time. The 28mm Pathéscope and Kok were both marketed to the wealthy citizens as socially acceptable entertainment. Willard Cook brought Pathéscope to America the same way that many of the elite traveled from France to the US at the time: by steamer boat. He set up screenings for everyone on board, and then had a private showing in the Imperial Suite for the top-level passengers, all of which got mentioned in the trade publication *Talking Machine World* in 1914 (Mebold, 140). This served to establish film as entertainment suitable for the upper class.

Also in 1914, the John Wanamaker Department Store in New York created a “Pathéscope salon” where they exhibited a 28mm reproduction of “Les Misérables” to their clientele. Cook brilliantly marketed the Pathéscope film projector with the phonograph (another market dominated by Pathé Frères) when he released several dance films that could be accompanied with music (Mebold, 141). These featured famous American dancers and various stars of Pathé films dancing either for entertainment or to teach the viewers the particular dance moves.

Since diacetate film was not flammable, it could now be sent through the postal service. Pathé’s extensive list of titles produced in-house allowed them to give many choices via the Pathéscope rental service. The company differentiated between the Pathéscope films that were made in their own studios and those made by studios who bought Pathéscope film for their productions, which

were labeled “American-Made ‘Class A’ Feature Reproductions” and were also available in the Pathéscope catalog. A few of the studios included were Bray, Selig, Biograph, Keystone, and anonymous amateur filmmakers (Mebold, 142).

Pathé would lend a specific number of reels weekly or biweekly for an annual subscription fee ranged from \$50 to \$150. Although highly discouraged by charging quadruple the rate of an ownership-based exchange service (where you had to buy several reels first and then subscribe to a lower fee rental service), there was also the option of being a one or two-time renter of reels. Around 1914 or 1915 the first Pathéscope catalog of films to rent called the *List of Non-Inflammable Pathéscope Films: Humor Education Travel Pathos* (Mebold, 141) was published. A family would get their reels, many with two subjects per reel, each reel running between 8 to 12 minutes (Singer, 42). As mentioned previously, Pathéscope was marketed to mostly the home, church and school markets; more specifically Pathé stated in a 1915 brochure that clubs, lodges, societies, and companies could also use their films for edification or entertainment purposes (Mebold, 145).

With the outbreak of World War I in Europe in 1914, much Pathé Frères activity was halted. This conflict, coupled with the fact that the SMPE had standardized 28mm, allowed American competition to quickly enter the market for 28mm. Alexander Victor’s Animatograph Company introduced its own 28mm projector, the Victor Safety Cinema, and soon thereafter a few other film companies produced 28mm Safety Standard projectors.

As many consumers felt it was too difficult to run the hand-cranked machinery, Pathé fought to stay in the game by launching a motor-driven model of their Pathéscope projector. Eventually Pathé introduced a De Luxe Specials line of Pathéscope films: these had greatly improved, high quality images and were generally tinted or dyed. The average customer for these

types of films would not be a family showing films in their living room, but would more than likely be a church, school or other organization that wanted to display films to large groups in a bigger space (Mebold, 142).

By the end of WWI, Pathé Frères was making less than a quarter of the number of films it made before the war. Many consumers were disappointed with the range of the Pathéscope films being lent out for viewing. While Pathéscope's catalog was extensive, it was still limited since it obviously cost money for them to create multiple reproduction prints of their 35mm films. Many people felt that if they wanted more choices, they would rather deal with the 35mm nitrate prints. American film dominated the world distribution market during and after the war, outnumbering French films 8 to 1 (O'Brien, 142). Pathé-Frères split into two entities in 1918: Pathé-Frères, headed by Emile Pathé, which dealt with phonograph production and distribution, and the Charles Pathé-controlled Pathé-Cinéma (Benghozi).

During the gradual downfall of Pathé Frères, George Eastman made it clear that he did not like Pathéscope film because the amateur filmmaker was still required to handle nitrate stock in the camera. In 1912 he hired the Englishman C.E. Kenneth Mees to be in charge of the Kodak Research Laboratories. In the agreement that Eastman and Mees worked out, Mees would be followed from his previous company by several technicians, including a man named John G. Capstaff. Capstaff was previously the head of the filter division at Mees' establishment, and once at Kodak he was put in charge of the photographic division. With a few other photographic and cinematographic experiments as his inspiration, Capstaff began his own study of the reversal film process around 1914. The reversal process allows one filmstrip to be used—the negative shot in the camera is then developed into the positive print that runs through the projector (Swanson, 127). The experiments at Kodak were put on hold in 1916 in response to World War I

and were then resumed in 1919. It was finally perfected with the breakthrough process of adding a controlled second exposure of the negative and by the addition of a silver halide solvent and a hardening agent to the first developer that the film is subjected to. The first of these supplements gave clearer highlights to the final image, and the latter hardened the gelatin in the emulsion to be set (Fielding, 131). The efforts of Capstaff and his fellow Kodak researchers had the potential to make amateur film processing half as expensive as it was at that time. The first model was completed at Kodak in 1920 (Fielding 132).

Another significant development also occurred in 1920: Charles Pathé stopped producing films. He sold sections of the company to pay off debts while the US production companies were struggling to become large conglomerates (O'Brien, 142). In 1922 Pathé stopped producing 28mm film. The other French production studio (and Pathé's main rival), Gaumont, stopped producing films and in 1925 were bought by an American-controlled company to facilitate the distribution of Hollywood films in France. French film production was left to the few until Bernard Natan was put in charge of Pathé and created Pathé-Natan in 1929 (O'Brien, 144). This was in response to the sound era, once again making the company a large-scale conglomerate in many markets until their bankruptcy in 1935 (O'Brien, 144, 138).

In 1923 Eastman Kodak introduced its Cine-Kodak system. It was first shown to the public at a public high school in Rochester, New York, where the audience members were filmed with it as they entered the meeting. The exposed celluloid was developed into a print and then projected at the end of the meeting (Swanson, 129). The cost of the system included a camera, projector, and the sale and processing of acetate reversal film stock. It was a 16mm wide safety film, with a single perforation per frame on each side. These dimensions were chosen during the Capstaff study in order to project a 6'x9' image with the best quality image possible. When it

was first marketed, Cine-Kodak's film perforations were rectangular shaped with rounded corners, varying from the first model's rounded perforation holes. It was thought to have cut the cost of amateur filmmaking by a sixth; this was a significant enough reduction to propel the popularity of Cine-Kodak (Fielding, 127).

Albert F. Victor became a proponent of the 16mm reversal process. He remarked, "at such a low cost it is almost certain that motion picture cameras and projectors may become as universal as still hand cameras" (Fielding, 134). By the end of 1923, Victor Animatograph and the Bell and Howell Co. launched their own versions of Cine-Kodak. Next, Willard Cook was hired by Eastman to help lend 16mm films to the public through Kodak's Kodascope Library (Mebold, 148). The bottom fell out from under the 28mm film format when these men, its two largest promoters, switched their allegiance to 16mm film stock. 28mm film was still used for several years after Cine-Kodak premiered: in Massachusetts, the Forbes family shot 28mm home movies until 1928, and in specific provinces in Canada 28mm was still being borrowed from libraries through the early 1930s (Mebold, 144, 148). Victor began pushing for 16mm to be standardized by the SMPE in 1924; it was finally approved and standardized in 1928 (Fielding, 134).

After Pathé stopped making Pathéscope film, the company introduced Pathé-Baby (or "Pathex" in America), a 9.5mm film gauge. This had one perforation in the middle of the frame so the image could be larger, was initially for viewing prints in homes, and was much cheaper than 28mm (Enticknap, 67). Pathé Frères began research on this 9.5mm format immediately after releasing Pathéscope. The smaller film width also meant a smaller and more portable projector, although it was still a hand-cranked model. By combining portability with the lower price, many amateur film exhibitors were sold on Pathé-Baby. A hand-cranked camera for 9.5mm was

manufactured here shortly after the auspicious introduction of the projector in Europe. The inventory of films for Pathé-Baby was mostly based on commercial film reductions that were initially for sale only, but were eventually available for rental. Many times these reproductions were edited down to shorter lengths, covering the break in the story through inter-titles or still frames (Schneider, 355-56).

Amateur filmmaking became much more common with the introduction of Cine-Kodak and Pathé-Baby. In 1926 the Amateur Cinema League was formed, officially bringing together amateur filmmakers throughout the world to discuss pertinent issues through meetings and an organizational publication, *Movie Makers* (Swanson, 129). The eventual success of nontheatrical films would not have been possible without the experiments with the many less popular gauges that preceded 16mm film's standardization.

For film archivists and researchers, 28mm poses some tough challenges. It needs very specific and costly equipment to view or transfer it, which may be impossible to find on the market and then to maintain in-house. Also there is a scarcity of 28mm objects to preserve or study. There are a few collections of 28mm in the United States, the largest being held at the Library of Congress and the George Eastman House (Mebold, 144). These are mostly of reduction prints from major production companies. Based on existing evidence, the lack of 28mm home movies leads researchers to believe that it was not popularly used to record everyday life but instead as a tool to project film safely in non-theatrical venues. The few 28mm home movies known to exist today were made by wealthy families who could afford all of the expensive equipment and processing costs.

In a conversation with the author of this paper, Film Conservator Liz Coffey of the Harvard Film Archive explained that 28mm has a tendency to shrink because its base was made

out of an early version of acetate, specifically designated as diacetate. This type of acetate also tends to smell like mothballs since camphor was originally used as a tool to make the film more manageable for projection. The George Eastman House thought that their collection of 28mm had vinegar syndrome because it had a strange smell to it; so they followed the rules for preservation of acetate film with vinegar syndrome by putting it in a separate storage area. Eventually they tested the collection with A-D strips and realized that it did not have vinegar syndrome, but was indeed just the classic mothball smell that occasionally comes with diacetate film. Jared Case of the Motion Picture Department within the George Eastman House stated that 35mm prints of their 28mm Motion Picture Collection were made for preservation and access. This would be the typical preservation action as 35mm is closer to the original format than 16mm is, especially since the original 28mm print was more than likely a reduction print of a 35mm film. It is possible then that if a Pathéscope or other 28mm film was found, it could actually be the only existing copy of a certain film. In this scenario, if a 35mm film once existed that is now completely lost or destroyed, the whole film or pieces of the whole could be saved for restoration if a 28mm reduction print of the film was located. Therefore it is extremely important to understand the history, needs, and concerns of 28mm in order to save these unique artifacts and their content.

28mm was standardized by the SMPE in 1918, and then it was superseded by 16mm merely one decade later. Its brief stint as the leading amateur film gauge created competition throughout the world. Its failures created far greater successes; 28mm's effects are seen through the amateur formats that came after it, whether it is film, video, or digitally captured. 28mm had its fifteen minutes of fame—much like 8-Track tapes and Laserdiscs—and proceeded to be eclipsed by the shadow of its bigger, better, cheaper successors. The historical timeline creates a

house of cards where one format is built upon another, and one part cannot be removed or discarded without the whole falling apart. Despite the fact that that these foundational formats are not as well known as those which came later, they greatly impact moving image history nonetheless. They should be included and not overlooked in this area of study. This history is not as far in the past as a fossil buried deep in the earth--it is still close enough to the surface to decipher with great clarity. Understanding what came before is critical to seeing a complete picture of the progression through film types to the current digital age. It will be interesting to look back in another hundred years to see what is built on today's technology.

Annotated Bibliography

Books

Abel, Richard. The Red Rooster Scare: Making Cinema American, 1900-1910. Berkeley, Calif.: University of California Press, 1999.

This book deals with the glory days of Pathé Frères and their dominance over the film market in America. It explains their success, how they influenced early moviegoers, and then shows how Pathé eventually was pushed aside for more American fair. This was full of information about the history of Pathé in America, but not much about 28mm specifically.

Benghozi, P and Delage, C., eds. The origins of Pathé-Natan. Une histoire économique du cinéma français (1895-1995). Paris: Harmattan, Collection Champs Visuels, 1997.

This was written from the study done in 1992-1995 by the Centre national de cinématographie and the Ecole polytechnique. It was first presented at an international colloquium held at the Sénat, Paris, in 1996. There was a small amount of information regarding Pathé Frères history.

Enticknap, L. Moving Image Technology: From Zoetrope to Digital. London: Wallflower Press, 2005.

This book deals with a very broad history of the technology of moving images and is a very good introduction to all topics of the science of movies. It was a good place to start to find a basic coverage of the 28mm format.

Fielding, R., ed. A Technological History of Motion Pictures and Television. Los Angeles, CA: University of California Press, 1967.

This book had a section that was full of information about amateur film and the 28mm format. It is an anthology of articles written for the Society of Motion Picture and Television Engineers, so it's information is detailed and the integrity of the data is high.

Kattelle, Alan. Home Movies: A History of the American Industry, 1897-1979. Nashua, N.H.: Transition Publishing, 2000.

This book is a detailed introduction to amateur filmmaking and watching. It talks about each company and studio that helped to create "home movies", and it discusses what brought Eastman Kodak to the forefront of this technology. It was helpful for information about 28mm and Pathé Frères in relation to other gauges and companies.

Marie, M., & Le Forestier, L., eds. La Firme Pathé Frères: 1896-1914. Paris: AFRHC, 2004.

This book had a lot of information Pathé Frères's years of success. Most of the articles were in

French, so it would have been even more useful had there been a full translation.

O'Brien, C. Cinema's Conversion to Sound: Technology and Film Style in France and the US. Bloomington, IN: Indiana University Press, 2005.

This book concentrates on comparing the American and the French experiences of their motion picture industry's conversion to sound. It was useful in learning more about the history of Pathé Frères.

Raimondo-Souto, H.M. Motion Picture Photography: A History, 1891-1960. Jefferson, NC: McFarland & Company, Inc., 2007.

This book tells the history of moving image cinematography from its inception until color movies became the norm in the early 1960s. It was relatively useful but there was not a lot of information on 28mm itself—the focus was more on the technical aspects and evolution of cinematography.

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

This book relates the style and technology of the first twenty-five years of moving images. It did not have much information about amateur filmmaking, but was helpful in some of the technological analyses.

Seattler, Paul. The Evolution of American Educational Technology. Charlotte, NC: IAP, 1990.

This book is a history of the theory and technologies of educational technology within the United States. It was helpful for information regarding the Pathéscope Company of America.

Websites

100 Years of Film Sizes. Almost 100 film widths and perforations were experimented with. Michael Rogge. <http://www.xs4all.nl/~wichm/filmsize.html#KOK>. 10-14-2008.

This website has brief descriptions of the various film gauges that were introduced throughout the history of moving images. It has a section for 28mm film that has a few interesting and new facts about this format, but is very general and does not define all terms it uses.

The Encyclopedia of Music in Canada. Historica Foundation of Canada. <http://www.thecanadianencyclopedia.com/index.cfm?PgNm=TCE&Params=U1ARTU0002733>. 10-25-2008.

This website tells a brief history of Pathé Frères. It mostly focuses on the phonograph part of the company, but there is relevant history about the film aspects also.

High Beam Encyclopedia. HighBeam Research, Inc. <http://www.encyclopedia.com/doc/1B1-374691.html>. 10-24-2008.

This website gives a brief biography of Charles Pathé. There were also a few sentences about his company that were beneficial. As a free online encyclopedia, its information is limited but it is a valid source.

MOMI: Charles Pathé. Museum of the Moving Image.
<http://easyweb.easynet.co.uk/~s-herbert/pathe.htm>. 10-25-2008.

This website gives a brief history of Charles Pathé and his company Pathé Frères. While not detailed, the Museum of the Moving Image is reputable and the information can be considered trustworthy.

Welcome to CINERDISTAN. CINERDISTAN. <http://cinerdistan.co.uk/28mm.htm>. 11-02-2008.

This website is a very detailed resource for all things 28mm. It is full of information and images—there are scanned versions of “Instructions for Operating the New Premier Pathéscope” (not dated) and also the KOK instructions from 1912 (not quite as helpful since it is in French, but there are other images).

Articles

Mebold, Anke, and Charles Tepperman. "Resurrecting the lost history of 28mm film in North America." Film History. 15.2 (2003): 137. Research Library. ProQuest. Bobcat, NY, NY. 9 Nov. 2008 <http://www.proquest.com/>

This article is a wealth of information and images regarding the 28mm format. Not only does it discuss the introduction of 28mm by Pathé, but it addresses its technology, faults, how it was viewed by amateur filmmakers, and why 28mm history is overlooked.

Schneider, A. "Time Travel with Pathé Baby: The Small-Gauge Film Collection As Historical Archive." Film History. 19. 4 (2007): 353-360.

This article argues for the importance of studying amateur film exhibition and the “living room cinema”. It focuses on one private Pathé-Baby collection for study, but it also gives a detailed history of the 9.5mm format.

Singer, B. "Early Home Cinema and the Edison Home Projecting Kinetoscope." Film History. Volume 2. Number 1 (1988). 37-69.

This article’s topic is the early attempt of film entrepreneurs to bring film projection into the home. It focuses on the Edison Home Projecting Kinetoscope, which gave beneficial background to the beginning of amateur film and the set up for 28mm.

Stone, Melinda, and Dan Streible. "Introduction: Small-gauge and amateur film." Film History.

15.2 (2003): 123. Research Library. ProQuest. Bobcat, NY, NY. 9 Nov. 2008 <http://www.proquest.com/>

This article is a basic introduction to that issue of the scholarly journal Film History. It was helpful in briefly describing the other articles in the journal, and any other books about amateur film that the authors of the articles felt were monumental to their work.

Streible, Dan, Martina Roepke and Anke Mebold. "Introduction: Nontheatrical Film". Film History. Volume 19. (2007) 339-343.

This article is a continuation on the issue of small gauge and amateur film in Film History 15.2. It focuses more on the European amateur film scene so it has information on Pathéscope.

Swanson, Dwight. "Inventing amateur film: Marion Norris Gleason, Eastman Kodak and the Rochester scene, 1921-1932." Film History. 15.2 (2003): 126. Research Library. ProQuest. Bobcat, NY, NY. 9 Nov. 2008 <http://www.proquest.com/>

This article is about the amateur films of staff of Eastman Kodak and the Rochester community, in particular Marion Norris Gleason. It focuses on the time when Cine-Kodak was introduced and how this new technology made amateur filmmaking an affordable activity to the masses. This was beneficial for information about the downfall of 28mm and the rise of 16mm.

Zimmermann, P. "Professional Results with Amateur Ease: The Formation of Amateur Filmmaking Aesthetics 1923-1940." Film History, Volume 2. Number 3, 1988. 267-281.

This article deals with the topic of amateur and professional Hollywood filmmaking styles influencing each other from 1923-1940. It is not very helpful for information about 28mm, but there is some information about amateur filmmaking directly after 28mm was out of the market.