

“The revolutionary product, 16mm direct-reversal safety film, introduced by Eastman Kodak in 1923, with one exception, swept away every other amateur format and scheme that had been essayed since 1894...The ‘one exception’ was of course Pathé’s 9.5mm system” (Kattelle 68)

On November 4, 1922, in order to distribute films from its catalog affordably to the average family, Pathé introduced its new 9.5mm gauge safety film. The year of its initial release it was not seen to be an amateur film-making format and the only equipment accompanying its release was the Pathé Baby home projector. “The prints were made three at a time on a special 35mm film stock, which after printing and processing was perforated and slit into the 9.5mm width” (Coe 166). Less than a year later, Pathé, realizing the potential of the gauge in the amateur market, introduced a 9.5mm camera and reversal stock that had made it possible for filmmakers to process their own works in the comfort of their own homes using processing kits available by Pathé. Though innovative, the home-developing process was difficult and inconsistent in the quality of development so most filmmakers chose to send their films to the Pathé labs for processing.

As soon as motion pictures were introduced to the world, people wanted a way to watch movies in their homes, as well as make their own motion pictures. Home viewing equipment for motion pictures was developed as early as 1897 but even into the 1920s the industry had not established a standard. There was 13mm, 17.5mm, 22mm, 28mm;

film with sprockets between the frames in the center of the film, circular sprockets on the side, notches on the side, three sprockets on one side with one on the other, even film with no sprockets at all. There were even film discs that had the images on them in a circular pattern like a record. Before 1923 the home movie market was a free for all for film manufacturers. Even Pathé had tried unsuccessfully to develop a home use format earlier in 1912 (28mm film).

1923 proved to be a watershed year in the amateur filmmaking industry. Kodak introduced their 16mm reversal film stock and accompanying equipment in June of 1923. Bell & Howell introduced a revised version of their Filmo camera for 16mm film, the first 16mm camera to have a clockwork motor drive. And in the midst of all the 16mm excitement, Pathé released their 9.5mm camera and reversal stock.

Though a little over half the width of 16mm film, Pathé's new format still had a relatively equal picture size, thanks to the placement of the slot sprocket holes in the center of the film strip between the frames rather than on the edges of the film in order to maximize the frame size on the film. The frame size in 16mm is about 10mm x 7.5 mm (75mm²) while the frame size of 9.5mm film is 8.5mm x 6.5mm (55.25mm²) about 74% the frame size of 16mm using 40% less film. Pathé's system had more frames per foot as compared to Kodak's double-perf 16mm and economized the running times of the films by creating a notch system for intertitles that created a delay so that instead of using 50 or so frames for a few seconds of intertitles, they would only involve three or four frames.

The first projector released for the format was the Pathé Baby projector. The projector accepted 30 ft cartridges of films made by the company of about one to two minutes in length. The film catalog of Pathé was extensive, including both live action and

animated films with recognizable figures as subjects, like Laurel and Hardy, Mickey Mouse, Betty Boop, Popeye, and Felix the Cat just to name a few. “[the films] were reduced from Pathé’s considerable 35mm archive. Subjects included newsreels, documentaries, comedies and feature films. Some were colored by a stencil imprint method” (Rogge). Though all the films were 30 ft. long initially, the running times would vary depending on the amount of intertitles included. The more a film had, the longer it would run thanks to the delay system in Pathé’s silent projectors. In order to protect the film while it was frozen in place during the delay, the light source was not as powerful as in a typical projector. Because of the weak light, the picture quality was poor. In 1931, the company released the Pathé Lux projector with a stronger light source and the notch delay system was abandoned ([Le Film](#)).

The projector was hand-cranked; the proper speed for silent subjects being 14 fps, though later Pathé would adopt the standard of 16 fps. The film would collect in a container on the lower part of the projector and would be rewound back into the cassette by hand cranking. In 1926, a clamp on motor was developed for use with the Pathé Baby projector and eventually 60 ft canisters as well as 300 ft spools could be accommodated.

The first camera for use with Pathé’s 9.5mm reversal stock was the Pathé Baby camera, announced on April 1, 1923. Many sources contend that Pathé’s 9.5mm film was the first amateur film format since Kodak’s 16mm camera was released a few months after the April 1 Pathé announcement (in June of 1923). There are some discrepancies though because Pathé did not begin shipping the cameras until later that year (in December according to Coe). According to Pierre Gauriat, during the twenties 9.5mm was very successful in most of Europe; however, it never made as big of an impact in the United States, mostly because of Kodak’s virtual monopoly on the industry there. However, when the depression hit Europe, the use of 9.5mm film decreased in countries like France and Germany, where those who were using the film lost a lot of their leisure

income. In the U.K. 9.5mm's popularity remained steady due to the country's insulation from the economic crash that had affected most other countries.

Another competitor, 8mm film, was introduced by Kodak in the summer of 1932 (Kattelle 96). Though it did not immediately destroy the 9.5mm market, its introduction as well as the later introduction of super-8 would contribute to the decline of the use of 9.5mm, kept alive now only by the occasional enthusiasts clubs in a few western countries, including, oddly enough, the United States (a country initially whose own amateur filmmakers never embraced the format to the extent that European amateur filmmakers' did). By 1936, according to Gauriat, 8mm proved to be a serious competitor with 9.5mm in Europe.

After World War II, in an effort to revitalize interest in the format, Pathé introduced the Webo M camera, a semi-professional model that remained in production until the "demise" of the format in the early eighties (according to Newnham).

"The design included 100ft spool loading, sprocket drive, interchangeable 'C' mount lenses and in various forms and makers, lasted until the demise of commercial 9.5mm. Initially offered in three versions in France - Norma, Touriste, Reporter - ranging from single lens to triple turret, variable speeds etc. Within a year just one model remained - the Webo M Super. Probably the most advanced cine camera at the time, it had full reflex viewing, triple lens turret, speeds from 8-80fps, backwind and variable shutter" (Newnham)

The camera was also offered in a 16mms version for a while and used in film and television production in France. Since 9.5 was used in more of a professional capacity in France than in the U.K., where it was more of a novelty, Webo M cameras are hard to come by in that country and are sought after by collectors and enthusiasts there.

Just as they released 9.5mm and 16mm in the same year, so too did Pathé and Kodak release sound projectors for their respective formats in the same year. In the spring of 1937, Pathé released their Pathé “Vox” projector. It was much cheaper than Kodak’s Art-Deco Sound Kodachrome Special projector (£60 vs. \$800). To accommodate sound, all one had to do on 16mm film was to remove one side of sprocket holes, leaving the frame size unaffected. Since 9.5 was designed to utilize the entire breadth of the filmstrip, adding an optical (and later magnetic) soundtrack altered the size of the frame, taking it from a rectangular shape to almost square. In an industry that was drifting toward widescreen formats, this was bad news for 9.5mm.

Another design flaw of 9.5mm is its center sprocket hole. Though it is acknowledged as an ingenious way to use the width of the film in the most efficient manner, the picture is also in danger of being damaged by a claw mechanism should the film be misaligned. Though the use of center sprocket holes was not a new concept in 1923 for motion picture film, ultimately the danger its location placed on the picture area contributed to the rarity of its use in film stock design.

According to Gauriat, the nail in 9.5mm’s commercial coffin was the affordability of relatively sophisticated camera technology for 8mm and Super-8 formats. For all the advances Pathé made in the development of its 9.5 equipment, even the simplest projectors and cameras could not compete financially with even the most complex 8mm and super-8 equipment, costing often 10 times as much as comparable equipment in the smaller format. 9.5 just could not compete anymore. Though production on some pieces of equipment continued into the early eighties, it seems that commercially 9.5 died out in about the late sixties and its memory lives on with the various enthusiast groups in Europe and the U.S.

Those groups are very active, still filming on 9.5mm film stock when they can come across it. They still have an annual 9.5 International Film Festival; this past year it was held in Germany. These groups have spent numerous man-hours digitizing resources

pertaining to 9.5mm film and equipment, including instruction manuals, journals published by Pathé about the format, and databases about the history of 9.5mm film. With their efforts they ensure that the memory of 9.5mm film lives on for the next generation of filmmakers and film enthusiasts.

Bibliography

Works Cited

Coe, Brian. The History of Movie Photography. Westfield, New Jersey: Eastfield Editions, 1981. pp 162-172.

-In the chapter Movies in the Home of Coe's book, Coe describes the history of home movie projection and amateur filmmaking from 1897 to the present. Coe gives precise dates for the announcement and release of the first 9.5mm technologies (the Pathé Baby projector and camera) and places its history in context with the histories of competing formats, most notably Kodak's double-perforation 16mm format.

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

-Kattelle discusses the history of 9.5mm film and its impact on the amateur filmmaking industry, especially in Europe. Kattelle also emphasizes the continued use of the format by enthusiasts even into the present. Kattelle also includes the histories of competing formats and touches upon the effect of 8mm film on the 9.5mm market.

Le film 9,5 mm/Film size 9.5 mm. 9 August 2007. Pierre Gauriat. 5 November 2007.

<http://pierreg.free.fr/cine95/index.html>.

-Gauriat's website, dedicated to 9.5mm film, is a useful resource for the technical specifications of 9.5mm film as well as comparing its measurements to its competing formats. Gauriat also presents a brief history of the format, detailing the later years of the format more in depth than most of the printed works found for the format. His history page includes a handy timeline comparing the range of years of 9.5mm to other formats. The site also has a page detailing some of the equipment produced by Pathé for the film format and brief histories for the Pathé Baby projector and camera. There is also a page dedicated to listing all of the French patents taken out for 9.5mm film and its accompanying technologies.

More Than One hundred Years of Film Sizes. 3 June 2007. Michael Rogge. 5 November 2007. < <http://www.xs4all.nl/%7Ewichm/filmsize.html> > .

-Rogge's site presents a detailed history of sub-35mm film formats, including an abundance of illustrations and photographs of the technologies of the time. There are small historical descriptions of the variety of sub-35mm film formats over the span of 100 years, including 9.5mm film.

The Nine-Five Pages. 21 October 2007. Grahame Newnham. 5 November 2007.

<<http://www.Pathéfilm.freeseve.co.uk/95ninefive.htm>>.

-Newnham's website includes a detailed history and description of 9.5mm equipment, from its inception to the present. There are many scanned photographs of all the projectors and cameras mentioned. Newnham also includes many lists detailing the films

available in the Pathé catalogs, some broken up by subject (Laurel and Hardy, Betty Boop, etc.).

Works Referenced

“9.5mm-The Forgotten Film Gauge?” IAC The Film and Video Institute. 6 November 2007. 6 November 2007. <<http://www.fvi.org.uk/central/ninefive.htm>>.

-This webpage gives a very brief description of the format and the mechanics of its usage. The interesting note about this page is its mention of how filmmakers today work with the format and note the current activities of certain enthusiast groups.

9.5USA. 5 November 2007. <<http://www.9-5usa.org/95USAhome.htm>>.

-This is the internet home of the United States 9.5mm filmmakers and enthusiast group. The site includes a page with a brief history of the format, a history of the club and its recent activities, details about past 9.5mm film festivals held throughout the world, and links to scanned images of many instruction manuals to various 9.5mm equipment (including Pathé Baby equipment). It also has a page with links to most all of the major sites that detail the history of 9.5mm film and its accompanying technologies.

“A Quick Introduction to 9.5mm Film.” Littlefilm.org. 5 November 2007.<<http://www.littlefilm.org/Talks/Gauges95mm.html>>.

-Though the history of 9.5mm film here is not as detailed as some other references, this site should be noted as important because it discusses proper storage procedure for old films that the reader of the site may have in his or her possession. The page serves as a

resource for those who are unaware of what 9.5mm film is (maybe someone who has found them in a loved one's possessions or at a flea market) and introduces that reader to the concept of film preservation in relation to those found films.

Beal, J. David. Cine Craft. London: Focal Press, 1974.

-This book, written during the decline of the use of 9.5mm film by amateur filmmakers in favor of the cheaper 8mm and super-8 describes a bleak future for the format. The entry for the format in the book is very small, only two paragraphs and ends with the sentence "The future of the gauge is undeniably uncertain."

"History of Sub-35mm Film Formats and Cameras." Ani-mato. 28 February 2007. 5

November 2007. <<http://www.saunalahti.fi/animato/filmhist/filmhist.html>>.

-This history situates 9.5mm film in context with the release of 16mm film and the introduction of "safety film" technology. It includes many illustrations and photographs, including one of a Pathé Webo M camera in a 16mm version.

"Pathéscope 9.5mm" Vintage Film Homepage. 28 April 2006. 5 November 2007.

<<http://www.Pathéscope.freeserve.co.uk/index.html>>.

-This is a British website that presents a history of the format along with links to a list of films in the Pathé catalog, both silent and sound, some QuickTime movies of a sound Pathé 9.5mm print and a detailed record of the conversion of that print into a digital file, a scanned instruction manual for a Pathé Pax magnetic sound projector, and a link to a page related to Pathé's attempts at a widescreen frame format on 9.5mm film with its

LIDO camera and Monaco projector. The page also has details concerning the U.K. 9.5mm film group, Group 9.5, including meeting times and contact information.

Souto, Raimondo. Motion Picture Photography: A History 1891-1960. London:

McFarland & Company, Inc., 2007.

-Souto's book includes a table detailing all the film formats released in the 1920s, including two separate entries for 9.5mm film, a 1922 entry indicating Pathé's release of the format for home viewing purposes, and a 1923 entry for the use of 9.5mm film as an amateur filmmaking format. The table suggests that 9.5mm film did not have reversal emulsion until 1923 when introduced as a format suitable for amateur use.