

## Super 8: Format History

### The Format

Eastman Kodak introduced Super 8 in April 1965 as an affordable equipment system for amateur ‘home movie’ use.<sup>1</sup> According to a *Barron’s National Business and Financial Weekly* article from the same year, “the verdict was in” on the adoption of the new format by amateur filmmakers:

Optimistic reports emanating from Rochester are backed up by actual sales of Super 8 cameras and projectors at New York City’s two largest camera stores, Peerless and Willoughby’s, which [photo finishing company owner Benjamin] Berkey operates. Mr. Berkey is convinced that Super 8 means a great forward leap in coming years for the lagging eight-millimetre end of the film processing business.<sup>2</sup>

Super 8 was seen as improving on the popular and economical amateur format double 8mm, also known as standard 8mm or regular 8mm, introduced in 1932.<sup>3</sup> While much more affordable than 16mm film, there were many problems associated with double 8mm. Shooting and processing double 8mm involved passing a 16mm film twice through a 8mm camera, and slitting the film in half after processing. Users complained about the difficulty in loading and rethreading the film. Faulty exposure by non-professional users also frequently resulted in poor image quality.<sup>4</sup> Super 8 was designed to eliminate the loading, exposure, and image quality problems of its predecessor. The film is packaged in single-pass 50 ft. cartridges that do not require the user to thread or

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<sup>1</sup> “Kodak: Super 8mm Film History,” Kodak, <http://www.kodak.com/US/en/motion/super8/history>.

<sup>2</sup> Norris Willatt, “Back in Focus: Film Processors Are Cashing In on the Boom in Amateur Photography.” *Barron’s National Business and Financial Weekly*. October 4, 1965, 5.

<sup>3</sup> Jonathan S. Gunter, *Super 8: The Modest Medium* (Paris: UNESCO, 1976), 22.

<sup>4</sup> Jonathan S. Gunter, *Super 8: The Modest Medium* (Paris: UNESCO, 1976), 23.

flip the film. The cartridge also allows users to load and unload the film in daylight. Notches in super 8 cartridges automatically set the film speed and filter, and cameras are usually equipped with light meters, so that even amateurs can properly expose their images. The cartridge also prevents light leaks, which allows the perforations in the film to be located at the centre of the frame rather than at the frame line, producing a steadier registration.<sup>5</sup>

In the late 1970s, Kodak introduced a longer, 13-minute 200-foot Super 8 cartridge that allowed filmmakers to shoot without changing the film as often.<sup>6</sup> The longer form facilitated the use of Super 8 for television<sup>7</sup> and by “para-professionals filmmakers,” those who are not professional filmmakers but who need professional-calibre motion pictures to use in their work.<sup>8</sup> The 200-foot cartridges were distributed through Kodak’s professional division, although amateurs were able purchase them through professional suppliers.<sup>9</sup> They were packaged with either 7242 or 7244 Ektachrome stock; the latter was a special fast-developing stock meant for television news situations.<sup>10</sup>

Super 8 perforations are half the width of double 8mm perfs (0.91mm versus 1.83mm), allowing Super 8 to have an image area about 35% larger than double 8mm (5.46mm x 4.01mm versus 4.5mm x 3.3mm) and thereby improving image quality.<sup>11</sup> The

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<sup>5</sup> Kodak, “Super 8mm Film History,” Kodak, <http://www.kodak.com/US/en/motion/super8/history>

<sup>6</sup> Don Sutherland, “New 200-ft Cartridges for Super 8 Filming,” *New York Times*, June 4, 1978.

<sup>7</sup> Tony De Nonno, “Professional Quality Super 8 Film Making,” *New York Times*, April 24, 1977.

<sup>8</sup> Don Sutherland, “Super 8 for ‘Para-Professional’ Filmmakers,” *New York Times*, November 12, 1978.

<sup>9</sup> Don Sutherland, “New 200-ft Cartridges for Super 8 Filming,” *New York Times*, June 4, 1978.

<sup>10</sup> Don Sutherland, “New 200-ft Cartridges for Super 8 Filming,” *New York Times*, June 4, 1978.

<sup>11</sup> Myron A. Matzkin, *Super 8 Film Makers Handbook* (London: Focal Press, 1976), 6.

projector aperture for Super 8 is 0.211 x 0.158 in. (a 1.33:1 aspect ratio), about 50% larger than double 8mm.<sup>12</sup>

Despite these improvements, some proponents of double 8mm claim that the inferior plastic pressure plate that holds Super 8 film against the camera gate compromises any improvements in image quality.<sup>13</sup> Super 8's larger picture size also produces a 10% shorter running time for the same length of film.<sup>14</sup> One of double 8mm users' primary oppositions to Super 8, however, was simply the fear that the new format would cause the obsolescence of the older film and its equipment.<sup>15</sup>

Beside double 8mm, Super 8's main format competitor is Single 8, which is solely manufactured by Fuji. Single 8 is almost identical to Super 8, with the exceptions of the 2-reel design of its cartridge and the film's base. Single 8 uses a polyester base, while Super 8 is triacetate-based.<sup>16</sup>

Super 8 film has been available in reversal and positive-negative process, colour and black-and-white, silent and with magnetic sound from Kodak as well as other manufacturers. Magnetic sound became available for Super 8 in 1973. The sound stripe was located on the non-perf side of the film, while a balance stripe was placed adjacent to the perforations so that the film would wind evenly.<sup>17</sup>

When the format was introduced, Kodak offered three motor-driven cameras at different price-points. All three cameras operated at 18 frames per second and had built-

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<sup>12</sup> Myron A. Matzkin, *Super 8 Film Makers Handbook*. (London: Focal Press, 1976), 6; Martin W. Baumgarten, "Super 8mm Cartridge Specifications and Film Notch Codes" & "Specifications for Super 8mm Motion Picture Films" Plattsburgh Photographic Services, <http://lavender.fortunecity.com/lavender/569/super8mmcartspec>

<sup>13</sup> Jonathan S. Gunter, *Super 8: The Modest Medium* (Paris: UNESCO, 1976), 26.

<sup>14</sup> Jacob Deschin, "Super 8 Movies: What Price Progress?," *New York Times*, June 6, 1965

<sup>15</sup> Jacob Deschin, "Super 8 Movies: What Price Progress?," *New York Times*, June 6, 1965

<sup>16</sup> Jonathan S. Gunter, *Super 8: The Modest Medium* (Paris: UNESCO, 1976), 26-7.

<sup>17</sup> Lenny Lipton, *The Super 8 Book* (New York: Simon and Schuster, 1975), 6 & 113.

in Type A filters that would automatically switch away when a light was attached.<sup>18</sup> The most expensive model, the M6, included a zoom reflex lens.<sup>19</sup> Since then, various manufacturers have produced over a hundred different models of Super 8 cameras. Today, no new Super 8 cameras are being made, although they are readily available from second-hand sources.

Among Super 8's primary contemporary users are artists and experimental filmmakers. As J. Hoberman states, double 8mm and Super 8 have served as "the vehicle for a distinctly cheap, experimental, and democratic mode of film-making [...] that has grounded avant garde film practice in a genuinely popular base".<sup>20</sup> While double 8mm remained popular among the avant-garde, Hoberman argues that "the most innovative post-structural (or anti-structural) films of the 1970s were produced in super-8".<sup>21</sup> Some of the American artists who have worked extensively with Super 8 include Vito Acconci, Ericka Beckman, Vivienne Dick, Marjorie Keller, Manuel De Landa, Joe Gibbons and Beth and Scott B. There are still a number of annual festivals around the world devoted to showing works on Super 8, as well as special exhibitions. Past shows highlighting the small gauge format include *Home Made Movies: 20 Years of American 8mm and Super-8 Films* (Anthology Film Archives, May 1 – June 30, 1981) and *Big As Life: An American History of 8mm Film* (MOMA, 1998-9).

Super 8 can be played back on Super and Single 8 projectors, Eastman Kodak VP-1 or VP-X video players, which convert 8mm film to television images, or on small

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<sup>18</sup> Jacob Deschin, "Kodak Unveils Super 8," *New York Times*, May 2, 1965.

<sup>19</sup> Jacob Deschin, "Kodak Unveils Super 8," *New York Times*, May 2, 1965.

<sup>20</sup> J. Hoberman. "Homemade Movies: Towards a Natural History of Narrow Gauge, Avantgarde Film-Making in America," *Home Made Movies: 20 Years of American 8mm & Super 8* (New York: Anthology Film Archives, 1981), 1

<sup>21</sup> J. Hoberman. "Homemade Movies: Towards a Natural History of Narrow Gauge, Avantgarde Film-Making in America," *Home Made Movies: 20 Years of American 8mm & Super 8* (New York: Anthology Film Archives, 1981), 3

8mm cartridge projectors with rear-projection screens.<sup>22</sup> Some Super 8 projectors were designed to accommodate double 8mm film with small adjustments.<sup>23</sup>

### **Super 8 Kodachrome Movie Film**

The original Kodachrome system was introduced in 1935 for 16mm movie film, and in 1936 for 35mm slide and 8mm movie film.<sup>24</sup> Kodachrome is a subtractive colour system that succeeded Kodacolor as the medium for home moviemaking in the mid-1930s.<sup>25</sup> Unlike Kodacolor's lenticular system, which required special filters on both cameras and projectors, Kodachrome is a dye-coupler, or chromogenic, stock. That is, it is a single-strip film whose emulsion consists of three layers sensitized to the primary colours. During development, chemicals convert, or couple, what are essentially black-and-white layers to a corresponding visible dye.<sup>26</sup> While Kodachrome is a slow speed film, it was still faster than its Kodacolor predecessor and produced brighter images.<sup>27</sup> Kodachrome is a reversal stock, and was therefore not practical for the mass-duplication needs of the motion picture industry, except for its limited use in conjunction with the Technicolor monopack process of the 1940s.<sup>28</sup> It is popularly known, however, for its extremely fine grain, deep colour saturation, and is highly valued for its stability and resistance to dye fading.<sup>29</sup>

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<sup>22</sup> Jonathan S. Gunter. *Super 8: The Modest Medium* (Paris: UNESCO, 1976), 58.

<sup>23</sup> Jacob Deschin, "Kodak Unveils Super 8" *New York Times* May 2, 1965.

<sup>24</sup> Kodak, "History of Kodak: Milestones 1930-1959," Kodak, [http://www.kodak.com/US/en/corp.kodakHistory/1930\\_1959](http://www.kodak.com/US/en/corp.kodakHistory/1930_1959)

<sup>25</sup> Leo Enticknap. *Moving Image Technology* (London: Wallflower, 2005) 83.

<sup>26</sup> Leo Enticknap. *Moving Image Technology* (London: Wallflower, 2005), 90.

<sup>27</sup> Lenny Lipton *The Super 8 Book* (New York: Simon and Schuster, 1975) 10.

<sup>28</sup> Leo Enticknap. *Moving Image Technology* (London: Wallflower, 2005), 90; Bob Brodsky and Toni Treadway *Super 8 in the Video Age* (Massachusetts: Brodsky and Treadway, 1988), 23.

<sup>29</sup> Bob Brodsky and Toni Treadway. *Super 8 in the Video Age* (Massachusetts: Brodsky and Treadway, 1988); Spencer Morgan "Kodak, don't take my Kodachrome!" *New York Times*. May 31, 2005.

Kodachrome II, a Type A (Tungsten) movie film, was the first film launched with the new Super 8 format. It was originally available on 16mm in 1961. This second-generation Kodachrome was two-and-a-half times faster, and featured improved colour, sharpness, grain and lower contrast<sup>30</sup> (although compared to other Super 8 films, Kodachrome II is relatively high in contrast.<sup>31</sup>) It could be used in either natural or artificial light conditions, as all Super 8 cameras were equipped with built-in daylight conversion filters (thereby eliminating the need to manufacture both a “Daylight” and a “Tungsten” form of the film.) Kodachrome II relied on Kodak’s K-12 processing and chemistry, which were discontinued after the introduction of the K-14 process for the new Kodachrome 40 in 1973/74.<sup>32</sup>

Super 8 Kodachrome 40 colour movie film (Type A) was introduced in the early 1970s. Kodachrome 40 has the finest grain of all common motion picture films.<sup>33</sup> Its fine granularity means that it is less sensitive to light, however, making its use difficult in low light situations, especially compared to the Ektachrome XL (existing light) film introduced in 1972.<sup>34</sup> Kodachrome 40 has well-saturated colours, moderate contrast, good exposure latitude, and is relatively sharp.<sup>35</sup> It is well-known for its deep tones, dense blacks, and its ability to capture fine details. In comparison to compare with other small gauge film stocks, it is colder in colour, lower in contrast, and less grainy than

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<sup>30</sup> Lenny Lipton, *The Super 8 Book* (New York: Simon and Schuster, 1975), 11

<sup>31</sup> Myron A. Matzkin. *Super 8 Film Makers Handbook* (London: Focal Press, 1976), 10&64.

<sup>32</sup> Plattsburgh Photographic Services, “Kodachrome Processing Page”. Plattsburgh Photographic Services, <http://members.aol.com/Super8mm/ServicesPage10>

<sup>33</sup> Bob Brodsky and Toni Treadway. *Super 8 in the Video Age* (Massachusetts: Brodsky and Treadway, 1988).

<sup>34</sup> Lenny Lipton. *The Super 8 Book* (New York: Simon and Schuster, 1975), 12&15.

<sup>35</sup> Lenny Lipton, *The Super 8 Book* (New York: Simon and Schuster, 1975), 21.

Fujichrome single 8 film; and it is less blue, finer grained, and lower in contrast than 3M Color Movie Film, or Dynachrome.<sup>36</sup>

In *The Super 8 Book*, Lenny Lipton asserts that “Kodachrome is one of those super products, like D3 airplanes or Rolls Royce automobiles, that have no peer”.<sup>37</sup> It was therefore quite disappointing to many that, in celebration of Super 8’s 40<sup>th</sup> anniversary and Global Super 8 Day in May 2005, Kodak announced the discontinuation of Kodachrome 40. According to Kodak’s press statement, “market dynamics” drove the company to discontinue the stock. Bob Mayson, general manager and vice president for Image Capture products, Entertainment Imaging division at Eastman Kodak, cites the shift to digital formats in the “‘home movie’ market” and the fact that “fewer and fewer labs worldwide have the machines and the chemistry necessary to process this film emulsion in the Super 8 format” as the key factors behind the decision.<sup>38</sup> A month later, in June 2005, Kodak announced the discontinuation of its 16mm Kodachrome film and of Kodachrome processing for all formats.<sup>39</sup> Kodak-certified processing for Super 8 film ended on September 25, 2006. Only one third-party lab, Dwayne’s Photo in Parsons, Kansas, will continue processing Kodachrome film in colour until the end of the year.<sup>40</sup> Two other labs in the US, Plattsburgh Photographic Services and Rocky Mountain Film Lab, can still process Kodachrome II and 40 to a black and white negative only, which can be electronically reversed back to a positive image when transferred to videotape.<sup>41</sup>

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<sup>36</sup> Lenny Lipton, *The Super 8 Book* (New York: Simon and Schuster, 1975), 21.

<sup>37</sup> Lenny Lipton, *The Super 8 Book* (New York: Simon and Schuster, 1975), 35.

<sup>38</sup> Kodak, “40<sup>th</sup> Anniversary of Super 8 film.” Kodak, [www.kodak.com/US.en/motion/about/news/super8](http://www.kodak.com/US.en/motion/about/news/super8)

<sup>39</sup> Kodak, “News and Events: Kodak announces end dates for Kodachrome motion picture film processing.” Kodak, [www.kodak.com/US.en/motion/about/news/kprocessing](http://www.kodak.com/US.en/motion/about/news/kprocessing).

<sup>40</sup> See Dwayne’s Photo. <http://www.dwaynesphoto.com>

<sup>41</sup> Plattsburgh Photographic Services, “Kodachrome Processing Page.” Plattsburgh Photographic Services, <http://members.aol.com/Super8mm/ServicesPage10>. The two labs are Plattsburgh Photographic Services and Rocky Mountain Film Laboratory.

Although Kodak recently introduced a new Ektachrome 64T Colour Reversal film for Super 8, and also offers other colour and black-and-white stocks in the format, the discontinuation of Kodachrome film caused uproar and sadness among its enthusiasts, who wrote many articles, postings, and petitions in response to its demise.<sup>42</sup>

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<sup>42</sup> See Terence Dick “Koda-Crime! A Eulogy to Super 8 Kodachrome”. *This Magazine* Nov.-Dec. 2005; Spencer Morgan “Kodak, don’t take my Kodachrome!” *New York Times*. 31 May 2005; Online petition, [www.petitiononline.com](http://www.petitiononline.com).