

Since the introduction of the Super 8 format in 1965, filmmakers have touted its compact size, light weight and ease of use, all while unfavorably comparing its image quality to that of 16mm. In addition to the frame-size factor (a Super 8 frame is 31% the size of its 16mm counterpart, which in turn is 22% the size of a 35mm frame), a large part of this contention is attributable to film stock performance. S8 has been hamstrung from the outset by a catalog of reversal-only emulsions.

First introduced by Kodak in the 1930s, Kodachrome (K40), though fine-grained, durable and capable of re-creating brilliant hues, has limitingly low latitude and is oppressively slow at 40 ASA. Until recently, K40 and Ektachrome (ASA 160, which debuted in 1974) would be among the few color S8 stocks made available to consumers. These two stocks are supplemented by Kodak today with their 7276 Plus X and 7278 Tri X black-and-white reversal films.

Despite this limitation, the popularity of S8 increased exponentially in the 1970s, with cameras, sound recorders and editing equipment becoming increasingly complex and capable of professional-quality use for certain applications. In 1968, an estimated 21 million feet of S8 footage was processed in the U.S. alone.

But even during S8's heyday, it was noted in an *American Cinematographer* special report (AC Nov. 1975) that "perhaps the most serious drawbacks to Super 8 production are the lack of professional-quality film stocks. . ."

Soon after, the arrival of portable video cameras and recorders terminated S8's evolution, as well as the commercial reasons

for Kodak or any other company to address the stock issue.

However, S8 continued to be a popular format for aspiring filmmakers, and its unique qualities have been rediscovered over the last decade as professional cinematographers avidly experimented with methods to achieve degraded images, grain-rich textures

Phillip Vigeant has also long realized the desperate need for a greater variety of film — including negative stocks — in order to maintain the format's vitality.

Vigeant had long been unable to convince any of the leading film companies (Kodak, Fuji, and, prior to its dissolution Agfa) to make other stocks available in

Transforming Super 8

By reworking Kodak and Fuji's cutting-edge 35mm stocks, Super8 Sound gives the often-dismissed format new creative options.

by David E. Williams

and surreal colors. Over this time, S8 has been seen extensively in commercials (for Reebok, Nike and Bally's), music videos (for such artists as Madonna, Nine Inch Nails and Paula Abdul) and feature films (as shot by Jan De Bont, ASC in Ridley Scott's *Black Rain*, Michael Watkins, ASC in *Point of No Return*, and most daringly by Robert Richardson, ASC for director Oliver Stone's *JFK* and *Natural Born Killers*).

Super8 Sound, the format's key proponent and innovator since the 1970s (with offices in Burbank, CA and Cambridge, MA), has supplied S8 cameras, lenses, stock and technical support to many theatrical, commercial, and music video productions. However, company president

the 8mm gauge. Further spurred by the recurring rumor that Kodak would finally discontinue their support for the format, Super8 Sound took the task upon themselves.

After years of research and development, Super8 Sound's first "Pro-8" stocks debuted in late 1993. (See "New Products," AC May 1994.) Utilizing customized equipment procured from Hollywood Film, Technicolor and other sources, Super8 Sound's in-house remanufacturing process consists of perfling and slitting 1000' rolls of 35mm film and reloading it into the familiar 50' plastic S8 cartridges. They also built an on-site processing lab to deliver dailies and special-order runs.

In theory, any 35mm stock

Director Oliver Stone (with Beaulieu Super 8 camera) and cinematographer Robert Richardson, ASC on location in New Mexico during the filming of *Natural Born Killers*. The S8 format was used extensively throughout the production, in both black-and-white and color, with Kodak's reversal stocks. The footage was then blown up to 35mm by Monaco/Interfor mat in San Francisco. (See AC Nov. 1994.)

(in 400' minimums) can be made into Pro-8, with each foot resulting in three feet of S8. The first to be converted were Kodak's EXR emulsions, as well as several of Fuji's Super F motion picture films and Velvia, Provia and Sensia still-photography reversal stocks. Each coaxial load runs for approximately 2.5 minutes at 24fps.

Super8 Sound is not currently dealing with black-and-white negative or infrared stocks due to the problematic buildup of static during their remanufacturing process. However, if the two available black-and-white reversal stocks are unable to fulfill a cinematographic need, it's noted that a monochrome look can easily be achieved in telecine with any of the Pro-8 color neg stocks. Though Kodak had offered magnetic-striped S8 stocks for simultaneous, single-system, in-camera sound recording, none of the Pro-8 emulsions offer this option. (Kodak recently announced its discontinuation of sound-striped S8 film.)

The results of early Pro-8 tests (performed primarily with cut-down 5248, 93, 98 and 45) were decidedly mixed, frustrated by frequent jams (in any camera other than the Beaulieu 7008 model recommended by Super8 Sound), emulsion scratches and dirt problems. The cartridges themselves, reusable versions made in Russia, were primarily at fault due to their brutally simplistic construction.

But Pro-8 *did* work, yielding enough promising images — including footage used for the Mazzy Star music video "Fade Into You" and a series of Kia automobile and Pacific Bell commercials — to demand Super8 Sound's further investment. In response, improved air-handling, temperature control, and water filtration practices were adopted, while dust contamination was further reduced by the installation of laminar air-flow tables in their loading room, which use hepa filters to remove particles as small as five microns.

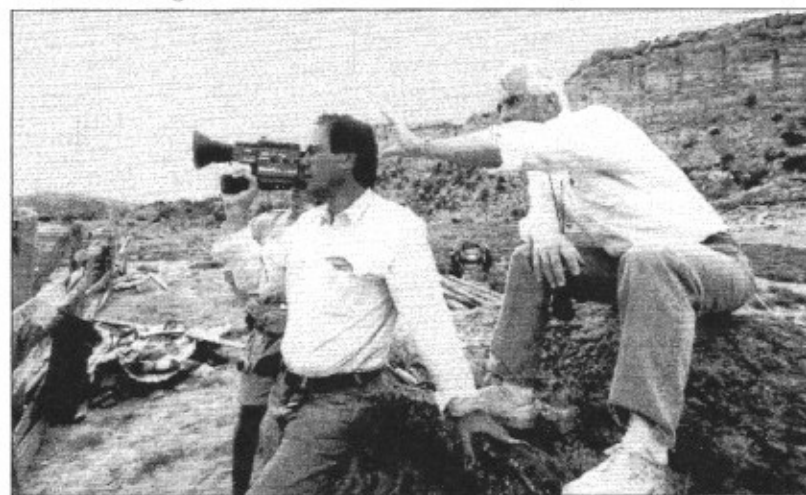
A brand-new Allen Products processing machine was also installed. Super8 Sound does *not* have a reversal film processor of its own, but C-41 (Kodachrome) and E-6 (Ektachrome) services are available through the company for both Kodak's S8 stocks and the Fuji-based Pro-8 reversal films.

Vigeant notes that customers frequently utilize Super8 Sound's neg machine for cross-processing Ektachrome to achieve a unique, high-contrast, purple-tinted look.

Super8 Sound's improved loading and lab practices were then augmented by the use of Kodak's own S8 cartridge (instead of inferi-

ture manual ASA selection, which allows Pro-8 users to utilize their built-in TTL light meter and aperture controls.

Most other S8 cameras rely on special notches designed into the film cartridge itself to key the proper ASA into their on-board exposure system. However, the Pro-8 cartridges have no such key-



or Russian version), which has made jamming problems largely a dilemma of the past, even in non-Beaulieu cameras.

Extensive testing of the various Pro-8 stocks in the Kodak cartridge, carried out with many different cameras (all featuring single pull-down claw movements), revealed that the cut-down emulsions transported as easily and as glitch-free as Kodak's familiar S8 reversal films. "The Super 8 cartridge looks so simple, but the precision with which it's made is critical," says Vigeant. "When we combined Kodak's cartridge with the neg film, we found that we could use it in almost any Super 8 camera."

However, the natural-selection process of spare parts availability has already retired many of the dozens of S8 camera designs offered since 1965.

The French-based firm Beaulieu, long-recognized as the only company to make professional-grade cameras in the S8 format, is the sole manufacturer in the world with a model currently in production. In addition, they are still making replacement parts for their older equipment. The Beaulieu cameras, including the 4008, 5008 and 7008 series, also fea-

ing, which therefore requires that cameras have a manual exposure override in order to be used with the films.

Beaulieu's most recent model, modified by Super8 Sound, is the 7008 ProII. The camera takes full advantage of current electronics and microprocessor technologies and its exposure control can be set from 12 to 500 ASA.

Pro-8 is intended for filmmakers who telecine direct from their camera original and complete their productions as video or digital media; the emulsions have no coding to enable conforming, and the company offers no printing services. To that end, Super8 Sound recently installed an upgraded Rank Cintel Mark III with Da Vinci color correction at its Burbank site for in-house transfers. As their telecine is dedicated for exclusive use with the S8 format, the custom gate (also capable of transferring single- or dual-channel magnetic tracks) has been optimally aligned — and stays that way.

Shandor Black is one Los Angeles-based director/cinematographer who has made extensive use of many of the Pro-8 and Kodak reversal S8 emulsions — for music videos and television spots and promotional programs for

such clients as Reebok and Taco Bell — since he began shooting with the format in 1991. Though S8's depth of available camera equipment and lenses offer him unique options in terms of image and mobility, Black considers the vast array of stocks now available to be the format's most exciting aspect. "Being able to reload various stocks in real time — just popping cartridges in and out — is an advantage exclusive to Super 8," he says. "But in color, it was basically a Kodachrome or Ektachrome world before the Pro-8 stocks came out. Now I can switch between Plus-X and [5245] in seconds, which gives me a lot of opportunity to capture a mood while it happens instead of trying to re-create it [after changing magazines]."

The simple mingling of black-and-white and color stocks is not Black's sole intent, however. He also sees S8 as the format of choice when creating the texturally driven images so prevalent in contemporary commercial and music video work. "People often comment on the Impressionistic feeling of Super 8 when you use the Kodak stocks," offers the small-gauge film specialist, "and though there's an inherent warmth and textural quality to the format, I've spent a fortune on extremely sharp Angenieux and Schneider lenses for my Beaulieu 7008. With those and the clarity and detail that the new negative stocks add, I have a whole new dimension of possibilities at hand."

Asked if audiences' changing aesthetics have had an impact on what his clients are looking for, Black observes, "In recent years, viewers have become less interested in clarity and more interested in suggestion — esoteric and ethereal looks. That's reflected by the style's acceptance by bigger clients, such as Reebok or Rollerblade, or in feature films like *Natural Born Killers* or *Dead Man Walking*. And what's interesting is that Super 8 wasn't necessarily used in these cases as a nostalgic device, but as a textural one."

Black recalls the recent NAB show in Las Vegas, noting, "One side of the room was completely devoted to digital imaging — trying to get the most perfect, lifelike quality possible. On the other side, a lot of people were talk-

ing about degradation and trying to make video look like film by introducing grain and frame-rate effects. That's an interesting contradiction. So why not just shoot film? Going further, why not shoot film that will allow you to really degrade something if you want to?"

While many have long fought to diminish the grain structure of S8 images, Black finds he often tries to magnify it as much as possible, "especially with Kodachrome. Sometimes I'll go so far as to project the footage and use a Betacam to shoot it off the screen. That way you can almost examine the molecular structure of your subject, which can be a very powerful effect."

When looking for image clarity, Black's favorite is the 5245-derived Pro-8 stock. "Right now, there are 12 stocks available in Super 8, but the 45 is exceptional," he attests. "It's absolutely grainless if you light it right, and if you've got it on the Rank, it looks as good any 16mm footage I've ever seen. Then I go right to the 93, if I'm shooting in low light or at night."

"But what's really exciting to me about the Super 8 format is that it's actually expanding so rapidly because of all the stocks now available," Black concludes. "I have all the tools I need to evolve."

Minimalist filmmaker Jim Jarmusch (*Stranger Than Paradise*, *Mystery Train*, *Dead Man*) and co-cameraman Larry Johnson recently shot Pro-8 negative and Kodak reversal stocks for the music video "Big Time," featuring Neil Young and Crazy Horse. The pair then transferred their footage at Super8 Sound's in-house telecine bay. Says Jarmusch, "I love the look of Super 8, the texture of it. We shot a lot of Tri-X and Ektachrome for the video, but we never could have done it without the 500-speed negative [5298], as we were filming in this small bar with basically no lights. And the footage turned out quite beautifully."

Adds Johnson, "We had to have that 500 ASA Super 8 stock because of the lighting situation, but we also used the 98 because we wanted to avoid the finer grain negative stocks and retain a bit of the Super 8 feeling."

Pleased with the results of the "Big Time" shoot, Young invited Jarmusch and Johnson to

document his band's European tour. "We could have shot on 16mm, but we decided to use Super 8 because it was so free and mobile," says Jarmusch. "We could just pop in cassettes and shoot constantly without having to load magazines. And that liberated us aesthetically, so we felt free to shoot anything that moved instead of being as careful or restrained as we probably would have been with 16mm. This was great for me because my feature work is usually very controlled, and I've never used much handheld stuff at all."

"Neil thought Super 8 was great too, in that it was so nice to have this little camera you could just carry in your bag. So while we did shoot some concert footage in 16mm and some long interview interrogations on Hi-8 video, most of our footage was Super 8."

"My video editor, Jay Rabinowitz, commented that the 'Big Time' video was made with a Nineties' mentality using updated Sixties' technology. And that suited the song, because while I didn't want to make a Neil Young video that was nostalgic for the Sixties, I did want a bit of that aura. And Super 8 does click off something in your memory. It's not 'current,' it's not digital imagery, but it has a unique quality."

Ironically, the quality of the Pro-8 footage proved problematic for unexpected reasons. Explains Jarmusch, "We were at a post house for our telecine and the [Pro-8] negative stuff looked so nice that they said, 'We can make this look just like 16mm.' And I said, 'No, no, that's not what we want.' But they just didn't understand, so I came back to Super8 Sound to do the transfer. I didn't want it all crushed down; I wanted the grain, and they did a great job."

With a chuckle, the filmmaker adds, "When I went to the on-line session, my technician wanted to make it look like 16mm too, so it was the same situation all over again."

The unobtrusiveness of the S8 format also played into Jarmusch and Johnson's experiences on the road with the band in Italy. "At first, Neil said, 'You guys have to wear all black and stay where I can't see you,'" Jarmusch recalls. "But after three or four shows, these guys from MTV

showed up with their video gear to get some footage and Neil said, "Nobody is allowed up on stage except Jim and Larry and they can go wherever they want!"

Asked why he didn't rely on small-gauge video for a greater part of the documentary shoot if ease of use and mobility were such a concern, Jarmusch explains, "I've done a lot of things in video, but it just doesn't get me *up* like film does. And Super 8 almost magnifies the things I love about film — the texture, the frame rate, and the feeling of it."

Extensive telecine transfers of Pro-8 negative film have also been performed by Editel in Los Angeles, with sessions conducted primarily by Gino Pinaro. Offers Pinaro, "Getting the best quality transfer from [the Pro-8] requires a different technique than 35mm, but the saturation, latitude and image detail is quite good — especially in nighttime shoots, which would have been impossible with [Kodak's] old reversal stocks.

"A qualitative difference between 35mm, 16mm and the Super 8 neg is still discernible — with the major differences depending upon proper exposure and magnification of grain. But if someone is shooting well, it compares very well. The 5245 [Pro-8] is one of the best-looking stocks, and people are amazed. I recently did a session with someone who shot on both Super 8 reversal and neg, and once they saw the control we had with the negative, they wished they had shot it all that way."

Pro-8 doesn't require any special handling during transfer — though extra care in keeping it clean is recommended as any dirt will be magnified exponentially. Says Pinaro, "We use extra PTR

'sticky' rollers to keep the film clean. But more importantly, we keep the film itself at a constant, even tension while it's on the Rank — because it will snap if you aren't careful."

He concludes, "I have been working with Super8 Sound since they began running the neg, and they have made great strides in quality control — eliminating dirt and scratches — so it's looking very good. And the creative possibilities the film offers are amazing."

Vigeant notes that the improvement of Pro-8 is additionally due to lab tests and technical information supplied by Kodak. "We can now offer a variety of stocks that no one else can, in 16 or 35mm, as well as fill custom orders. So we're confident that the Pro-8 idea will indefinitely ensure the viability of Super 8, because we can now offer any stock to our customers as soon as it's released in 35mm. That future-proofs Super 8 to the same extent that 35mm is protected."

As an example, Vigeant points to the Pro-8 version of Kodak's new 500T Vision stock, recently used to shoot concert sequences for a music video produced in New Zealand. "With 5298, the grain is very apparent in Super 8, even with perfectly exposed footage," he admits. "But the Pro-8 version of the Vision 500T is incredible, and comparable to 16mm 98 if someone is shooting direct for video."

Vigeant also points out that the Pro-8 option also allows both student and professional cinematographers to experiment easily and frugally with new film stocks and lab practices before going to the expense of shooting in 35mm — most particularly with

films that are not yet available in 16mm, such as the Primetime and Vision emulsions.

Despite the derogatory "amateur" label that has dogged S8 since its introduction, the precision necessary to create successful images in the format has been a formidable obstacle for beginners looking for a "professional" rather than "experimental" look. Improper focus, exposure mistakes and other mishaps are three times more apparent in S8 than they are in 16mm. Vigeant points out that "the format became known as 'amateur' partially because the cameras have always been deceptively easy to load and use, just as camcorders are now. But Super 8 was very difficult to master because you had to really understand cinematography and lighting to get good results with the stocks available. I love Kodachrome, but you really understand how unforgiving it is after shooting 93 or 98. Unlike with negative stocks, you can't rely on your timer in the lab or telecine operator to take advantage of the film's latitude and fix your problems. When something goes black in Kodachrome, it's black forever. But our Pro-8 stocks, combined with all of the choices that a modern telecine bay offers, create opportunities that no one could have imagined just a few years ago. And the cameras are *still* easy to load and use.

"There are probably 60 million S8 cameras out there in the world, a fact which, when combined with modern film stocks, creates an incredible image-making potential — a new option that will help encourage and develop the next generation of cinematographers and filmmakers." ♦