# 8. Color Print Fading and the Professional Portrait and Wedding Photographer – What to Do About a Troubling Situation

## Fujicolor SFA3 Papers Are by Far the Longest-Lasting Color Negative Papers Available

### An Upset Customer

Fehrenbach Studios in Reedsburg, Wisconsin has been our photographer for years. We had our wedding pictures taken by them, I had my portrait taken for my husband while he was in the service, and when we had our first baby, we had Fehrenbach Studios take his picture. We were happy with them up to this point — then strange things began to happen to our photographs. My portrait has turned blue and faded to almost nothing. The photo of our son has turned yellow and is fading away. My brother's graduation photo also has turned blue and is faded.

My mother approached Bob Fehrenbach on this matter and he said he would gladly replace these photographs for half price. He also stated that Eastman Kodak does not guarantee that photographs will not fade, and he went on to say that if he replaced all the faded prints that were returned to him free of charge, he would go out of business in a short time. . . .

Needless to say, when our second child was born we found another photographer.

The thing I would like to know is why should we have to pay a second time for something that should have lasted a lifetime.

Eastman Kodak has always contended with their advertising that photographs are lasting memories, once in a lifetime treasures, that keep today alive forever. I do believe a photograph should last longer than 7 years. I wanted to pass our children's baby pictures down to them when they got married, the same as my mother did for me. I have nothing to give them but a faded print.

I do not believe that this is the right way to do business. I feel that I have been cheated because my photographs have not lasted like they were advertised. Would you please look into this matter. . . .[1]

Letter from Mrs. Sharla M. Stanclift of Reedsburg, Wisconsin to the Office of Consumer Protection, Wisconsin Department of Justice, May 16, 1980

### People Expect Their Color Portraits and Wedding Photographs to Last

In no other area of photography is the stability of a color print as important to the customer — and the continued commercial success of the photographer — as it is in the professional portrait and wedding business. Photographs are among the few possessions that the average person would like to hand down to future generations. In the modern era, few individuals have any significant written record of their lives — most people have only photographs, and since the early 1970's, most of these have been color photographs. Indeed, the desire to preserve the memory of important times and events in peoples' lives — childhood, school and college graduations, careers, weddings, children, and families together — is what drives the professional portrait and wedding market. Describing the emotions of people who have survived fires, floods, earthquakes, and other natural disasters, an official of the American Red Cross said: "The items that cause the most grief are photographs. People lose their history when photos are lost."[2]

Probably no one knows the average person's attachment to family photographs better than Eastman Kodak, and the theme of preserving memories has been the basis of nearly all of Kodak's promotional efforts in portrait and wedding markets. A long-running Kodak advertising campaign, keyed to the slogan "For the Times of Your Life," is only the latest example.

Although few people think it necessary to preserve *all* their photographs in pristine condition forever, almost everyone has at least some color photographs that they value and would like not only to keep — and display — during their lifetimes but also to pass on to future generations. Unfortunately, few color photographs from the past 20 or 30 years will survive for future generations — after not too many years of display, many have already deteriorated so seriously that they are now only faded ghost-images of what they originally looked like. The fading of color portraits and wedding pictures affects the rich and famous, the poor and unknown, alike. And, as will be discussed later, the price paid for a portrait or wedding album usually has no bearing on how long the photographs will last.

If a print is made from a color negative on Kodak paper, it doesn't matter whether it costs the customer one dollar or one thousand dollars: they are all printed on one of the

See page 279 for Recommendations

October 1990

H&H Color Lab, Inc., a leading professional color lab located near Kansas City in Raytown, Missouri, switched from Kodak Ektacolor paper to Fujicolor paper in 1991 because of the much better color permanence of the Fuji product. H&H was the first major wedding and portrait lab in the U.S. to adopt Fujicolor paper (see pages 280–283). Shown here inspecting Fujicolor test prints coming off a Pako Leader Belt Processor are Sue Cadena, print inspector, and Rob Newbanks, quality assurance manager at H&H. Before making the change to Fujicolor paper, H&H president Wayne B. Haub sent a comprehensive information packet to the lab's customers explaining the stability advantages of Fujicolor paper and asking them whether they felt the lab should switch papers. Matched sets of prints of typical wedding and portrait photographs printed on both Ektacolor Portra and Fujicolor Professional papers were included for the customers to examine. Over 90% of those who responded to the survey said that they wanted H&H to make the change to the longer-lasting Fujicolor paper.

low-cost, poor-stability Ektacolor papers — products conceived and manufactured primarily for amateur snapshot photofinishing. In terms of image stability, there is *no difference* between a top-quality professional portrait printed on Ektacolor Portra II paper, the most expensive of which may cost many hundreds of dollars, and the 35-cent Kodalux (formerly Kodacolor) print made with Ektacolor Edge paper that one picks up at the local drugstore.

## Photographers Complain to Kodak About the Inadequate Stability of Ektacolor Paper

Beginning around 1980, faded color portraits and wedding pictures have been the subject of numerous newspaper and magazine stories.[3] In 1982, Max Brown, a well-meaning Iowa wedding and portrait photographer, went out of business after faded and cracked Ektacolor RC prints from the early 1970's were returned to him by large numbers of indignant customers demanding free reprints, and his story was featured on the CBS television program *Walter Cronkite's Universe*. In 1976, Max Brown had sued Eastman Kodak for one million dollars, and in 1982, Wisconsin professional photographers Bob and Bernice Fehrenbach and Robert Germann sued Kodak for $3.7 million.[4]

Both lawsuits claimed that normally framed and displayed prints made with the Ektacolor RC papers supplied by Kodak during the late 1960's and early 1970's suffered extremely rapid image fading and cracking of the RC base. (This author's examination of a variety of Ektacolor prints that had been displayed under typical home and office conditions indicated that these early Ektacolor RC papers were as much as 3 to 5 times *less* stable than the earlier Ektacolor Professional fiber-base paper they replaced.)

Neither the Brown suit nor the Fehrenbach/Germann suit ever reached trial; as a result of well-orchestrated defenses coordinated by Kodak's legal staff in Rochester

January 1981

Bernice and Robert Fehrenbach of Fehrenbach Studios in Reedsburg, Wisconsin are shown here with some of the more than 100 faded and cracked Ektacolor RC prints, taken between 1969 and 1976, that were brought back to the studio by angry customers. The three prints held by the Fehrenbachs support their claim that Ektacolor RC prints from the early 1970's faded even faster than the previous Ektacolor fiber-base prints. The print on the left, an Ektacolor fiber-base print, has faded much less than the two Ektacolor RC prints, even though the fiber-base print was displayed several years longer (all three prints were displayed in identical lighting conditions). The Fehrenbachs and another Wisconsin photographer, Robert Germann, subsequently sued Kodak for $3.7 million in damages, alleging fraud by Kodak and saying that Kodak advertisements promised the color prints would last "forever."

February 1981

Bernice and Robert Fehrenbach, with their son Thomas, discuss the Ektacolor fading problem at their "Faded and Cracked Ektacolor Print Booth" during the 1981 annual convention of the Wisconsin Professional Photographers Association in Milwaukee, Wisconsin.

— in which the photographers' lawyers were hopelessly outspent and outclassed — Kodak managed to get both cases dismissed on legal technicalities having nothing to do with the issues of color fading, RC-base cracking, or fraudulent advertising. (After Brown's lawsuit was dismissed, he successfully sued his lawyers, Paul Moser, Jr., of Des Moines, Iowa, and Robert L. Huffer, of Story City, Iowa, for legal malpractice; in an out-of-court settlement in 1985, Brown and his wife received $185,000.)

The Fehrenbachs were particularly bitter about the dismissal of their suit before it even had a chance to be argued in court — with a group of four very successful family-operated studios in rural Wisconsin, money was never the main issue with Bob and Bernice Fehrenbach. The Fehrenbachs are people of great integrity who care deeply about their photography and the honest value of the work they do for their customers, many of whom they know on a personal basis. They feel strongly that color prints *should* last forever. In the end they felt deceived and betrayed by Kodak. During the time of the suit, Bernice Fehrenbach often cited a statement made by William A. Sawyer, Jr., vice president and general manager of Professional and Finishing Markets for Kodak:

> Professional photographers have always been extremely important to Kodak; you are our partners in photographic progress. This partnership is much more than the ordinary type of manufacturer-user relationship. Photographers base their livelihood on Kodak products and stake their reputations on their trust in Kodak product quality each time they accept an assignment or tackle a new photographic challenge.[5]

Acting on behalf of the Committee on Faded and Cracked Photographs of the Wisconsin Professional Photographers Association (WPPA), Bernice Fehrenbach also circulated a petition asking Eastman Kodak to produce color film and print materials with greater stability for professional photographers and requested that Kodak engage in more truthful consumer advertising. The petition was backed by the board of directors of the WPPA and was signed by more than 275 professional portrait and wedding photographers from Wisconsin, Minnesota, North Dakota, and South Dakota. (The Wisconsin petition and Bernice Fehrenbach's cover letter, which were sent to Eastman Kodak, are reprinted in **Appendix 8.1** on page 294.)

## Texas Professional Photographers Protest Kodak's Advertisements

One angry photographer who has had hundreds of badly faded Ektacolor RC prints returned by customers is Zavell Smith, operator of a profitable wedding and portrait studio in San Antonio, Texas. According to Smith, "Nobody has helped me more than Eastman Kodak, but nobody has gotten me in more trouble than Eastman Kodak. And it's not

*(continued on page 273)*

January 1981

Max Brown, a Story City, Iowa portrait and wedding photographer, in his lawyer's office with a selection of the hundreds of faded and cracked Ektacolor RC prints from the late 1960's and early 1970's that had been returned by disgruntled customers, many of whom demanded that the prints be replaced at no charge. The faded print problem caused Brown to lose many of his lucrative school portrait accounts, and he was forced out of business. Accusing Eastman Kodak of false advertising and misrepresenting the stability of its Ektacolor RC papers, Brown sued the company for $1 million. Because of a technical error by Brown's attorneys, Robert Huffer and Paul Moser, the suit was dismissed in 1980. After losing an appeal to the Iowa Supreme Court, Brown sued his attorneys for legal malpractice; that suit was settled out of court for $185,000.

May 1982

Max Brown being interviewed about his lawsuit against Kodak by Christy Callahan for WHO-TV in Des Moines, Iowa. Waiting to be interviewed is an Iowa assistant attorney general who was in the midst of investigating charges by another Iowa photographer, Edward J. Mulvin, who had filed a complaint with the Attorney General's office concerning premature fading and discoloration caused by Kodak retouching colors and by the application of print lacquers as recommended by Kodak.


January 1981

Brown in front of his former studio in Story City, Iowa. The studio was purchased by photographer Pete Tekippe after Brown went out of business and his bank forced the sale of the property.

After the bank foreclosed, Brown's house was sold at auction. Taping the sale was a crew from CBS-TV, which included the event in a segment on the problems of fading color portraits and motion pictures for **Walter Cronkite's Universe**, broadcast nationwide on CBS television. Although both the Brown and Fehrenbach/Germann lawsuits were dismissed in court, they nevertheless had a major impact on Kodak and helped convince the company that it needed to improve the stability of its color negative films and papers. This concern soon resulted in the introduction of Vericolor III film and Ektacolor Plus and Professional Papers — all of which had much improved dark fading stability compared with previous Kodak products.

February 1982

Brown signs the sale papers for his home. Deeply in debt, Brown moved into a small rented house with his two sons and daughter. In the course of the lawsuit with Kodak, Brown and his wife separated. After holding a number of sales jobs to support himself and his children, Brown started a new wedding photography business in 1991 and now lives near Cedar Rapids, Iowa.

1981

Brown in the basement of his home with boxes of Ektacolor and Vericolor portrait and wedding negatives. Before he went out of business, Brown had built a sizable high school portrait operation in central Iowa. As part of his suit against Kodak, Brown had asked Kodak to bear the costs of reprinting the faded prints that had been returned to him by customers.

March 1981

Zavell Smith, a San Antonio, Texas photographer, is seen with some of the faded Ektacolor wedding portraits brought back to him by his customers. Upset about the situation, Smith helped organize a petition complaining about the poor image stability of Ektacolor paper and asking Kodak to inform the public of the "true expected life of color materials, and to publicly absolve professional photographers of blame in the fading of color materials available to them." The petition was signed by members of the Texas Professional Photographers Association.

just that we have a color print fading problem with Kodak — we have an industry-wide problem. You can take a trip anywhere in the country, visit any school or public building, and you will see faded color prints."[6] Smith says that many people want faded prints replaced at no cost, but he insists on a charge of 50% of the current price.

Smith attempted to have a "Faded Color Print Booth" at a convention of the Texas Professional Photographers Association but, Smith contended, the idea was blocked by TPPA officials. According to Smith, "They are all scared to rock the boat — they are all scared to talk about faded photographs."

Many of the photographers felt that publicity on the issue could only hurt their businesses because if customers became aware of the truth about the instability of the expensive Ektacolor prints they were buying, they might have their pictures taken by low-cost, mass-market operations instead. Or, they simply might give up having portraits made at all and spend their money on something else with greater perceived value.

The Texas organization did, however, circulate a strongly worded petition complaining about the poor stability of Ektacolor paper and saying that professional photographers had to bear the brunt of these inadequacies. Stating that in some cases "the reputations of photographers have been severely damaged," the association asked Kodak and other manufacturers for "an advertising policy that will properly inform the public of the true expected life of color materials, and to publicly absolve professional photographers of blame in the fading of color materials available to them." (See **Appendix 8.2** on page 295.)

## Kodak Promises the Federal Trade Commission and the Wisconsin Department of Justice That It Will Stop Knowingly Making False Claims

In addition to citing the extremely poor light fading stability of the Ektacolor RC papers from the 1970's, the Fehrenbach and Germann suit also alleged fraud on the part of Kodak because of the company's advertisements that stated Ektacolor prints would last "forever" or a "lifetime" when in fact Kodak knew very well that the prints would not. Two years before the suit was filed, the Fehrenbachs had complained about Kodak's advertising claims to both the Wisconsin Department of Justice and the Federal Trade Commission in Washington, D.C. After examining Kodak's

advertising materials, an attorney with the Wisconsin Department of Justice informed Kodak that it likely was in violation of Wisconsin's consumer-fraud statutes and wrote the company, "Given the admission by Kodak that its color print materials do not last forever, why are you preparing advertisements in direct contradiction?"[7]

Kodak was asked to submit in writing a promise that it would discontinue any "claim, statements, or advertisements which represent that pictures made from your company's materials will last longer than you are aware is the case."

In August 1980, a member of Kodak's legal staff wrote to both the Wisconsin Department of Justice and the Federal Trade Commission stating that "Kodak has withdrawn all advertisements, brochures, pamphlets, etc. which, taken alone, could imply that an individual print will retain its original appearance 'for a lifetime,' etc."[8] Kodak promised to monitor all such material in the future to ensure that no unsupportable claims were made.

## Kodak Resumes Making Misleading Claims About the Stability of Ektacolor Prints

Kodak adhered to its agreement for a few years, but, by the beginning of 1986, all of that seemed forgotten and Kodak was once again making statements that contained false implications about the permanence of Ektacolor prints. As part of the nationwide "For the Times of Your Life" promotional campaign managed by Paul M. Ness, coordinator of markets development for Kodak's Professional Photography Division, one brochure said:

> A professional portrait can capture the unique personality of each member of your family. Or help you remember special moments in a young child's life. The times that are important to you. You can keep today frozen in time, the memories just as fresh as the day they happened.
>
> . . . you can have a beautiful family portrait that you'll treasure for a lifetime.[9]

Another 1986 Kodak brochure said: "With professional wedding photography, tradition and good times come to life again and again. . . . let us help you capture the magic of this moment forever."[10] Stated yet another promotional brochure: "Keep today alive. Gather your family together once more for a professional family portrait. It takes only a few moments to capture this special time. The family portrait you take today could be your greatest possession tomorrow."[11]

With the "For the Times of Your Life" advertising campaign still going strong, Kodak described a new brochure in *The Times* newsletter this way: "Citing the sparkle in the eyes of her grandmother on a young woman's wedding day, the stuffer is guaranteed to provoke an emotional response from the viewer. It is designed to build interest in creating heirlooms for generations."[12]

In a 1988 article headlined "A Century of Value Helps Create Priceless Memories," Peter M. Palermo, vice president and general manager of the Consumer Products Division of Eastman Kodak, said:

> Precious memories recorded on film are irreplaceable and, therefore, priceless. Pictures which capture once-in-a-lifetime moments have a value that far exceeds the cost of the film and paper they are printed on. Photography allows people to relive their most precious moments forever.
>
> That has been the case for the last 100 years, ever since George Eastman revolutionized photography when he introduced the first snapshot camera in June 1888. "Most photographs are made for the purpose of obtaining a record which cannot be had in any other way," Eastman once said.
>
> . . . One thing hasn't changed. People still take pictures for the same reason they did 100 years ago. It is a natural longing to preserve one's memories so we can make our best moments live forever.[13]

All of this would be great if displayed Ektacolor prints actually would last forever, or even a "lifetime." This would be a wonderful and effective promotion — if only it were true. And Kodak is acutely aware that it is not. To some photographers, all of this may seem like too much nitpicking. But one of the serious consequences of Kodak's continuing to mislead the public and telling people that their proudly displayed color prints will last forever is that in a very real way this reduces the incentive for Kodak to produce a color print material capable of doing just that — preserving priceless memories in brilliant color "forever."

Even if "forever" seems out of reach at the moment to Kodak, the company certainly has the technological capability to produce color negative print papers with light fading and album-keeping (dark fading) stability *far* superior to that of current Ektacolor Portra II Paper and other Ektacolor papers. The slogan for a 1990 Kodak national ad campaign said: "A professional portrait isn't expensive. It's priceless." Assuming this to be true, it only makes sense that Kodak should produce a paper for professional portraits that is better, longer-lasting and, yes, more expensive than the current Ektacolor drugstore photofinishing papers.

## Print Fading Can Affect All Photographers, But the Studio Professional Is Harmed Most

When dealing with faded prints, established studios often feel at a disadvantage to the mass-market portrait operations whose low prices and ambiguous affiliations mean that only rarely will the mass-market photographer be asked to replace a faded print. And a traveling photographer who sets up for a few days at a time in a never-ending series of discount and department stores such as K-Mart, Wal-Mart, and J.C. Penney knows that he or she personally will not have future dealings with the people in the photographs. Even the "permanent" department store studios, such as those operated by CPI Corporation (headquartered in St. Louis, Missouri) in nearly one thousand Sears Roebuck retail stores in the U.S., Puerto Rico, and Canada, have a distinctly anonymous character. Most of these low-cost operations retain negatives for only a short time — if at all — after they are printed.

A photographer named Dennis with Photo Promotion Associates, Inc. visited this author's hometown of Grinnell, Iowa for several days in 1983 to take portraits at a local discount store and told this author: "Our prints will last indefinitely hanging on the wall. We use Kodak paper and that's the best that there is. Very occasionally you get a bad batch of paper and it might fade, but if it does we will replace it. I hear that PCA [a competitor of Photo Promotion] has had some trouble with their pictures turning red, but they don't use Kodak paper." Photo Promotion Associates, based in Monsey, New York, and whose promotional literature contained the Kodak-supplied "We use Kodak paper . . . for a good look" logo, went out of business in 1985.

At the time, PCA International, Inc., a huge portrait operation headquartered in Matthews, North Carolina, was in fact having serious problems with faded prints because from about 1975 until 1982 the company had the distinct misfortune of using Agfacolor Type 4 paper in its processing laboratories.

When PCA chose the Agfa paper, which was made in Germany by Agfa-Gevaert, the company was totally unaware of the astonishingly poor image stability of the product. PCA printed untold millions of portraits of children, adults, and families on Type 4 paper. All of these portraits are now severely faded, whether stored in the dark or displayed, and the photographs cannot be reprinted because the original negatives have long since been discarded.

In 1985 this author examined a selection of Agfacolor Type 4 prints made by PCA. They were less than 6 years old and had never been displayed, but all appeared to have suffered in excess of a 75% loss of cyan dye and had an extreme reddish color shift. Prints that had been displayed during the period were in even worse condition, but most of the deterioration evident in the displayed prints could be attributed to dark fading which took place while the prints were on display — light was not the major factor. Agfacolor Type 4 paper is without a doubt the most unstable color print material of the modern era — no other paper that this author is aware of even comes close to the speed at which Type 4 prints fade in the dark.

Business losses resulting from the exceedingly poor stability of Type 4 paper led to the filing of a nationwide class-action lawsuit in 1985 against Agfa-Gevaert on behalf of labs and photographers all across the U.S. who had used Type 4 paper; the case was settled out of court for an undisclosed sum in 1987.[14] According to court documents, PCA alone purchased more than $45 million of Type 4 paper between 1978 and 1982 (however, apparently because PCA previously had reached a financial settlement with Agfa, PCA was not a party to the class-action suit).

PCA's alarming experience with Agfacolor Type 4 paper also led the company to set up its own image-stability testing laboratory in 1984 so that it could conduct evaluations of color paper. PCA was probably the first major user of color paper anywhere in the world to have an in-house lab to test image stability. In 1985, in a presentation describing the work carried on in the facility, PCA explained that image stability was a subject of increasing concern for the company:

> The quality of portrait image stability is becoming a more important factor in evaluating overall product quality. Consumers now expect their portraits to not only have good color and composition characteristics, but also to maintain those images for much longer periods of time.[15]

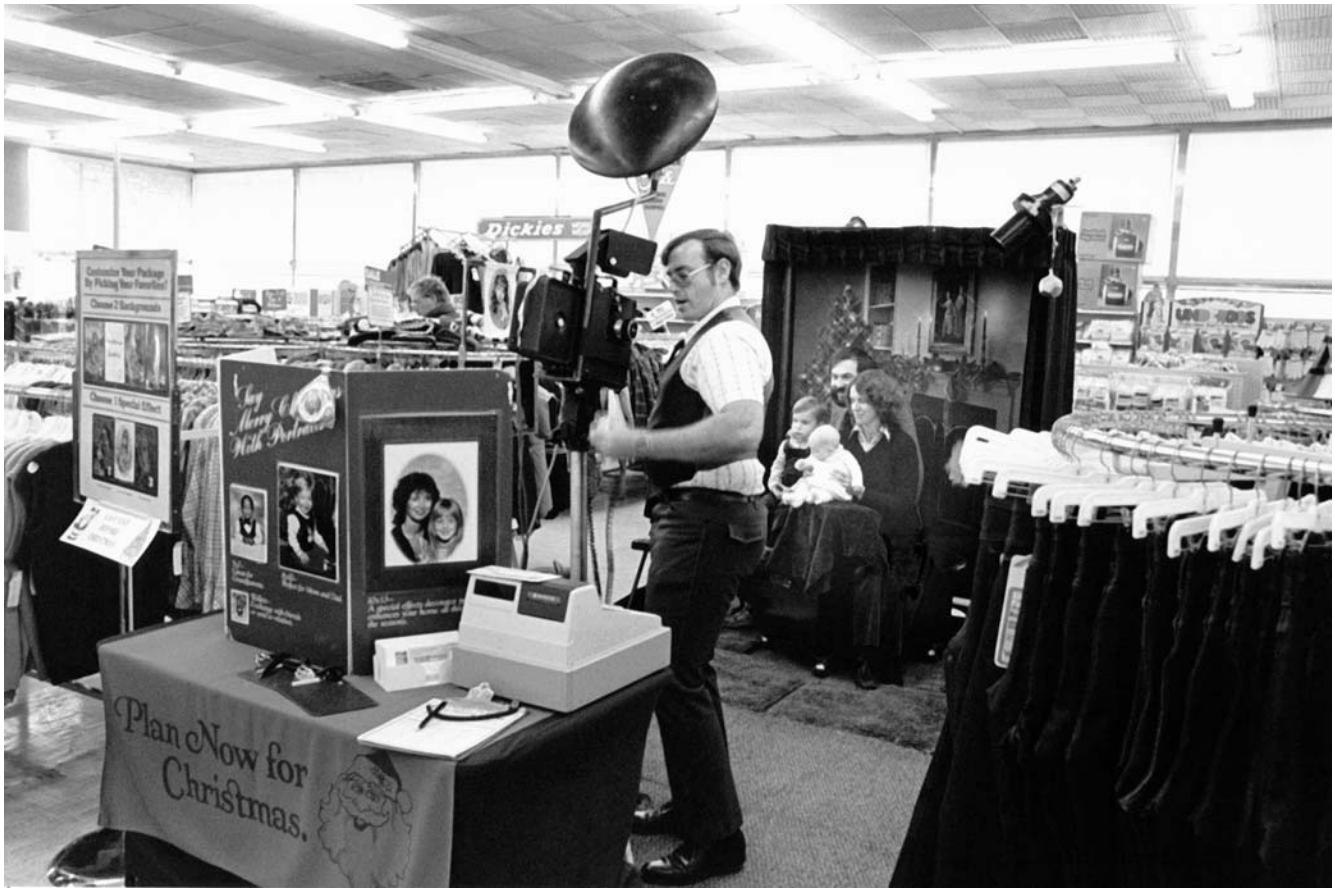
Along with Olan Mills, Inc., Lifetouch, Inc., American Studios, Inc., and CPI Corporation, PCA International, Inc. (the initials stand for Photo Corporation of America) is one of the world's largest child-oriented, mass-market portrait operations, producing many millions of low-cost portraits every year. PCA operates "permanent" studios in department and discount stores and also has hundreds of "mobile" photographers traveling to discount stores, churches, and other locations. PCA is reputed to be the world's largest single consumer of Agfacolor paper; at the time of this writing in 1992, the firm was using Agfacolor Type 9 paper, a product of vastly improved stability compared with the catastrophic Type 4 paper of the 1975–82 period.

This author's tests with Agfacolor Type 9 paper show that it is superior to Ektacolor Portra II Paper (RA-4) and Ektacolor Professional Paper (EP-2) in both light fading and dark fading stability when the fading of flesh tones is compared with the fading of neutral colors. (These colors are deemed by this author to be the most important colors to evaluate in portrait and wedding photographs; the behavior of pure cyan, magenta, and yellow colors is usually less important.) Over the years PCA has used Agfacolor papers primarily because they have been less expensive than Ektacolor paper and most other competing products for large-volume users.

## Discouraged Customers May Abandon Professional Portrait Studios and Give Their Business to Discount Store Photographers

By the mid-1970's, substantial numbers of color prints had been hanging on walls in homes and offices long enough for serious fading to have taken place, and this was when portrait and wedding photographers began to realize the magnitude of their problem. These concerns were heightened when photographers discovered that the Ektacolor RC papers introduced by Kodak beginning in 1968 faded even faster than the previous fiber-base Ektacolor Professional paper — many prints made with the "improved" Ektacolor RC papers during the years from 1968 until about 1976 became severely faded after only 3 or 4 years of display. (Following its long-standing posture regarding color fading, Kodak denied that there were any stability shortcomings with its Ektacolor RC papers and, as Kodak has always done in the past, the company told photographers that there was no cause for alarm.)

In 1981, the Professional Photographers of America sent a list of recommendations on how to deal with the problems of color fading to the organization's 15,000 members (see **Appendix 8.3** on page 296), and some professional photographers felt compelled to supply each of their customers with printed statements acknowledging the instability of color prints and absolving themselves of any liability; an example is the brochure issued by Krider Studios of Lawrenceburg, Indiana, which is reprinted in **Appendix 8.4** on page 297.




November 1982

Portrait photography is now almost universally done in color, and most children's and family photographs are done by mass-portrait operations such as PCA International, Inc. of Matthews, North Carolina. Shown here in 1982, a visiting PCA representative photographs the Charles Kolstad family in a Pamida discount store in Iowa. PCA used Agfacolor Type 4 Paper in the 1970's and early 1980's, and all of the millions of PCA portraits printed on Type 4 paper during that period have now faded to an unsightly red color — regardless of whether they were displayed or kept in the dark.

Photographers were dismayed to realize that every displayed print they had sold in the past, as well as all of those that will be sold in the future, will in time fade to the point where the customer no longer finds them acceptable. Current Ektacolor Portra II, Ektacolor Edge, and Ektacolor Professional papers are more stable than the Ektacolor RC papers from the late 1960's and early 1970's, but in spite of the improvements that have been made, it is a sobering fact that, if displayed, *every* print sold by professional photographers will in a relatively few years lose the special glow it had when new. Sometime between 10 and 30 years — depending on the particular color paper, how brightly the print is illuminated, and whether (and under what circumstances) it was lacquered — the print will fade to such a degree that many customers will find it unacceptable, or at least quite uninspiring.

When that happens, some people will simply put the photograph away, sad to see that it has faded. Others will lose the feeling they once had that professional portraits are valuable heirlooms worth their often high cost. They will have their portraits taken by low-cost department store photographers or by minilab-equipped "one-hour" portrait studios. Some will give up having portraits taken at all. A few will even bring faded prints back to the portrait pho-


November 1982

Like most mass-portrait operations, PCA does not retain negatives for more than a short period. When a print fades, there is no way to make a new one.

tographer and ask for replacements. The better known the photographer — and the longer he or she has been in business — the more likely it is that disgruntled customers will return deteriorated prints.

### For the Established Professional, Even a Little Fading Can Hurt a Lot

Perhaps more insidious for the high-quality and expensive professional is the effect of *subtle* fading and image yellowing that will result after only comparatively few years of display. A print can lose some of its brilliance — the smooth, long-scale tonality that distinguishes really good professional prints made from large-format roll-film negatives from the run-of-the-mill discount store special. The customer in such cases may not be inspired to come back to the studio in the future for another expensive and highly profitable 30x40-inch display print. The image quality lost in the initial stages of fading of a print on display — the partial loss of highlight detail in a wedding gown or a diminished feeling of richness — can be so subtle that even the photographer may not be consciously aware of the changes in the print unless an unfaded print can be compared side by side. But the drop in the customer's perceived value of the photograph can be very real.

### Kodak Likes to Think That the Average Person Is Unconcerned About Even Substantial Color Print Fading

Kodak has maintained that its studies show that the average person is unaware of even substantial amounts of image fading in color prints and therefore professional photographers should have little cause for concern about print fading.[16] It should be noted, however, that the Kodak studies were done without unfaded prints present for comparison, and the participants in the studies did not know the subjects personally and therefore were not familiar with the original color of a spouse's or child's hair, items of clothing, etc.

What Kodak is actually saying is that it believes that the general public is not sensitive to what constitutes a top-quality color photograph and, therefore, it doesn't really matter whether their prints fade. This is quite an amazing viewpoint, coming as it does from the world's largest photographic manufacturer. Rather than promoting image quality, Kodak seems to want to convince photographers — and their customers — that nobody really cares very much what their precious color prints look like.

This author would give the average person a lot more credit than Kodak apparently does. Most people are actually quite sensitive to print quality, especially when they can compare prints side by side. When offered something better, most people quickly recognize it — and want it. The typical home has on display both old and new color prints — often hanging together on a wall or arranged in groups on a table. The side-by-side comparison is there. The worse the prints look (whether because of fading or because the prints were of poor quality to begin with), the less likely it is that their owner will feel inspired to return to the studio and pay to have more pictures taken. Every photographer knows this.

One should recall that earlier Kodak studies showed that most people were going to be happy with the unsharp and grainy images produced by the Kodak Disc camera introduced in 1982; the marketplace proved Kodak wrong on that score (customer dissatisfaction and rapidly declining sales as people switched to Japanese 35mm cameras for their far better image quality led Kodak to abandon the disc camera in 1988), and it will undoubtedly prove Kodak wrong on the color fading issue as well.

Kodak has failed to recognize that a color photograph that can in fact preserve memories forever — or at least for a very long time — is a very appealing product, and something that nearly everyone would like to own. As Charles Lewis, a professional photographer writing in *The Rangefinder* magazine about the color fading problem, said: "Deep down inside, you know that the client expects that portrait to last forever."[17]

Once the general public understands the color print stability problem — and is offered a reasonably priced product that will last substantially longer on display than Ektacolor Portra II Paper or Ektacolor Professional Paper, there is no doubt what the average person will choose.

In the portrait and wedding market, better image stability is simply good business. Kodak doesn't appear to know that. Instead, the company seems to believe that if it spends enough money promoting Kodak paper in television, radio, and print advertising, and keeps suggesting to the public that its color pictures will last forever, people will keep on buying prints made with Kodak paper — even when better color papers are being offered by Japanese or German producers.

Beginning around 1985, trade publications such as *Photo Marketing* and *Photographic Processing* started carrying full-page ads by Konica, Agfa, and Fuji extolling the improved image stability of their color papers; most Kodak ads, on the other hand, said little or nothing about the stability of Ektacolor Paper and instead promoted the Kodak Colorwatch System, a processing quality-control program available from Kodak to processing labs that agree to use "Kodak color paper and Kodak chemicals exclusively." Supported by a multimillion dollar advertising campaign on TV and in magazines and newspapers, Kodak says the program is "designed to drive customers into photofinishing departments identified as members of the Kodak Colorwatch system." The program also includes trade advertising "intended to make every retailer aware of the quality standards you meet."[18]

Many people in the photofinishing business say that the real purpose of the Kodak Colorwatch System is to make drugstores, portrait studios, minilabs, and other retailers fear that if they do not offer prints made on heavily advertised Kodak paper, they will lose customers to studios and processing outlets that do. This in turn is intended to make processing labs fear that if *they* do not use Kodak paper and chemicals, professional photographers and processing retailers may change to a lab that does.

Kodak's attitude is reminiscent of that of the Detroit automakers in the 1960's before Japanese cars began to take a substantial share of the market from them. At the time this book went to press in 1992, Kodak was behind Fuji, Konica, and Agfa in the stability of color prints. And it was Konica — not Kodak — that marketed the first of the

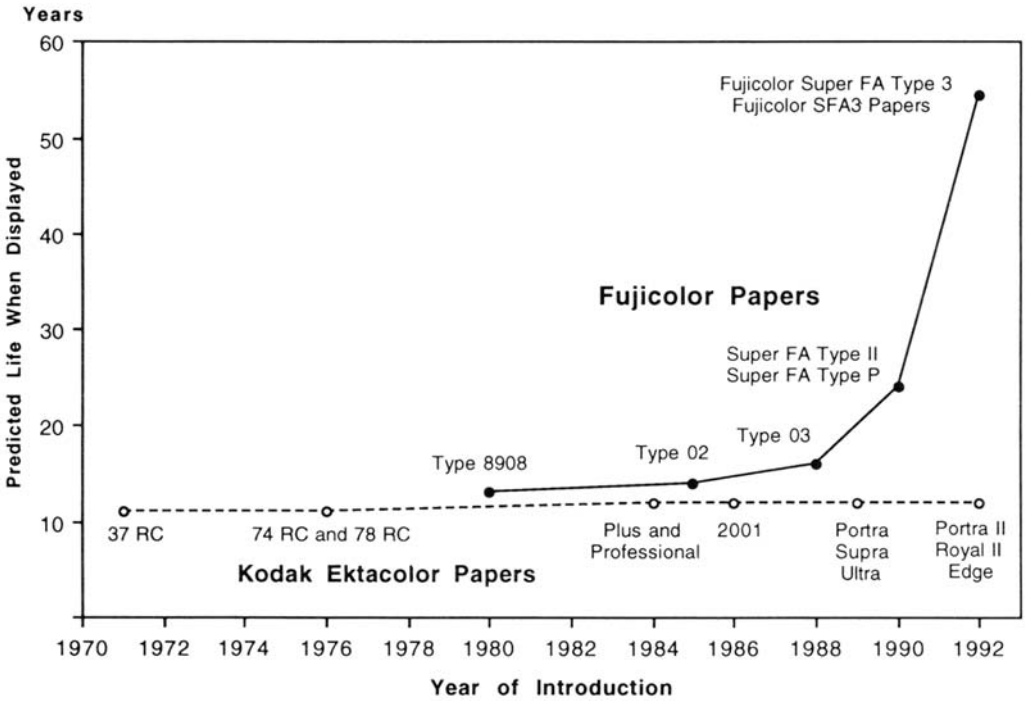



**Figure 8.1** Beginning in 1980, successive generations of Fujicolor EP-2 and RA-4 compatible papers have exhibited steadily increasing light fading stability, with current Fujicolor SFA3 papers having an estimated display life of more than 50 years according to this author's tests. Kodak's Ektacolor papers, on the other hand, have shown negligible improvements in light fading stability since the introduction of Ektacolor 37 RC Paper more than 20 years ago in 1971. When exposed to light on display, Fujicolor SFA3 papers last more than **four times longer** than current Ektacolor papers (e.g., Ektacolor Portra II Paper).

new generation of color papers with enhanced dark storage stability, Konica Color PC Paper Type SR (also advertised as Konica Century Print Paper) in April 1984, months before Kodak's similar Ektacolor Plus Paper became available to photofinishers as a replacement for Ektacolor 78 Paper.

It was more than a year later, in the middle of 1985, that Kodak finally introduced Ektacolor Professional Paper as a replacement for Ektacolor 74 RC Paper, a product that since 1977 had been the mainstay of the professional portrait and wedding field. Ironically, during that one-year period, low-cost Kodacolor snapshots from the drugstore (printed by Kodak on Ektacolor Plus paper) had far better dark fading stability than the expensive Ektacolor 74 RC prints sold by the best professional studios!

It was also Konica, not Kodak, that in 1984 introduced the first stability-enhancing "washless" stabilizer chemicals and companion minilab for color film and paper; it took 2 more years before Kodak introduced washless processing chemicals. (Kodak entered the minilab market in 1986 with machines manufactured in Japan by Noritsu and Copal. Sales of these and later Kodak-manufactured minilabs were poor, however, and Kodak withdrew from the minilab market in 1989.)

## Fujicolor SFA3 Papers Last Far Longer Than Any Other Color Negative Paper

Supplying prints on the most light-stable color paper available is probably the single most important improvement a professional photographer can make in his or her operation.

At the time this book went to press in 1992, this author's accelerated tests showed that Fujicolor SFA3 papers, RA-4 compatible papers introduced in 1992, had by far the best overall light fading and dark storage stability of any color negative paper. When displayed, prints made on Fujicolor SFA3 papers should last more than *four times* longer than prints made with Ektacolor Portra II Paper and other Ektacolor papers.

(Fujicolor Professional Paper Super FA Type P, introduced in 1991, is approximately *twice* as stable on display as Ektacolor Portra II Paper. Fujicolor Super FA Type P paper will be replaced with Fujicolor SFA3 Professional Portrait Paper [tentative name] in 1993.)

When evaluated with this author's image-life criteria and standard display conditions, the display life of Fujicolor SFA3 prints is estimated to be 54 years; the display life of Ektacolor Portra II prints, on the other hand, is estimated to be only about 12 years. On long-term display, the retention of critical flesh-tone colors is particularly outstanding with the Fujicolor SFA3 papers (see Chapter 3).

When stored in the dark, the Fujicolor SFA3 papers have much better dye stability and far lower rates of brilliance-robbing yellowish stain formation than Ektacolor Portra II Paper and other Ektacolor papers.

As a second choice among RA-4 compatible papers, Konica Color QA Paper Professional Type X2 and Konica QA Paper Type A3 are recommended. Although not the equal of the Fujicolor SFA3 papers in terms of light fading stability, the Konica QA papers are better than Ektacolor Portra II Paper. The best EP-2 compatible papers are Konica Color PC Paper Professional Type EX and Konica Color PC Paper Type SR. This author's accelerated light fading tests indicate that these Konica papers are superior to Ektacolor Professional and Ektacolor Plus papers.

Because of the new magenta dye in the Fujicolor SFA3 papers, they have better color reproduction (especially of

# Recommendations

## For Professional Portrait and Wedding Photographers

- **Choose a lab that uses Fujicolor SFA3 paper.** The single most important thing a professional photographer can do is to use the color paper with the best light fading stability when displayed. At the time this book went to press in 1992, Fujicolor SFA3 papers, including the low-contrast Fujicolor SFA3 Professional Portrait Paper (tentative name) designed for use by portrait and wedding photographers that will be introduced in 1993, had **far better** light fading stability than any other color negative paper on the market. Accelerated light fading tests indicate that, for a given amount of fading, displayed prints made with Fujicolor SFA3 papers will last more than **four times longer** than prints made with Kodak Ektacolor Portra II or Ektacolor Professional papers. In dark storage, the dye stability and yellowish stain characteristics of the Fujicolor SFA3 papers also are **far superior** to Ektacolor papers. With their excellent tone and color reproduction, these breakthrough Fujicolor papers are the primary recommendation for professional portrait and wedding photography; no other color negative paper even comes close to the longevity of the Fujicolor SFA3 papers. Fujicolor SFA3 papers, which are compatible with the RA-4 process, are also the primary recommendation for commercial photography and general photofinishing.

  Two top-quality professional portrait/wedding labs offering prints made with Fujicolor papers are: H&H Color Lab, Inc., 8906 East 67th Street, Raytown, Missouri 64133; telephone: 816-358-6677 (toll-free: 800-821-1305) and LaClaire Laboratories, Inc., 6770 Old 28th Street, S.E., Grand Rapids, Michigan 49546; telephone: 616-942-6910 (toll-free: 800-369-6910). For the names of other labs using Fujicolor papers contact: Fuji Photo Film U.S.A., Inc., Color Paper Dept., 555 Taxter Road, Elmsford, New York 10523; telephone: 914-789-8100 (or call toll-free: 800-526-9030 and ask for Customer Service).

  The second longest-lasting color papers are Konica Color QA Professional Paper Type X2 and its higher-contrast photofinishing counterpart, Konica Color QA Paper Type A3. For labs that have not yet converted to Process RA-4 and are continuing to use the EP-2 process, Konica Color Professional Type EX or Konica Color Type SR papers are recommended.

- **Inform customers about the color fading problem.** Tell customers that Ektacolor, Fujicolor, and similar color prints gradually fade when exposed to light on display, and explain to them the need to keep at least one copy of every important photograph in the dark, in an album or print-storage box. Even in the dark the prints are not permanent, but protected from light, they will last much longer than displayed prints. This not only is a service to your customers that will be appreciated, but will also generate additional print sales.

- **Offer UltraStable Permanent Color Prints, Polaroid Permanent-Color Prints, or EverColor Pigment Prints** as valuable heirloom keepsakes, and promote them for upscale display applications (EverColor is a tentative recommendation). Offer these permanent color prints as an alternative premium product to all segments of the portrait, wedding, and family group market. Regardless of price expectations, customers should be informed of the availability of permanent color prints for those special photographs they would like to display and keep as heirlooms. This can develop into an entirely new and profitable market segment. High-priced photographers serving the "carriage trade" should furnish permanent color prints exclusively. Permanent color prints should also be used for portraits of government leaders, corporate presidents and board members, and cultural figures, and for other color photographs of historical importance intended for long-term display.

- **Color negative films:** Kodak Vericolor III and Kodak Vericolor 400 professional color negative films are recommended for portrait and wedding photography. These films, which in Europe, Japan, and most other countries are called Kodak Ektacolor Gold 160 Professional Film and Ektacolor Gold 400 Professional Film respectively, have better dark storage stability than any other color negative films designed for portrait and wedding photography. (At the time this book went to press in 1992, Vericolor III was not available in a "Type L" version for tungsten-illuminated exposures. Kodak Vericolor II Type L has extremely poor stability and is even less stable than obsolete Vericolor II Type S film; when a tungsten-balanced color negative film is required, Fujicolor 160 Professional Film Type L is recommended.) Fujicolor Reala (ISO 100), Fujicolor HG 400 Professional Film, and Konica Color Impresa 50 and Konica Color Super SR200 professional films are designed for portrait and wedding photography and have comparatively fine grain with excellent pictorial quality. Although not as stable as Kodak Vericolor III and Vericolor 400 films, the Fuji and Konica films have fairly good stability and are satisfactory alternatives to the Kodak films.

- **Negatives should be retained indefinitely.** If space limitations preclude storage of all negatives, at least keep negatives of sale prints. Inform customers of your policy on negative retention. One reason for retaining negatives (aside from the competitive advantage over mass-market operations, which usually do not keep negatives) is that when improved, more stable print materials become available (and they most surely will), a photographer may be able to generate significant business reprinting older negatives for customers. Negatives should be stored in an air-conditioned room with reasonable relative humidity (always less than 60%). Ideally, all negatives of value — those from which prints have been sold — should be refrigerated according to the recommendations in Chapter 19. It is especially important to refrigerate older and less stable Vericolor, Vericolor II, Ektacolor, Kodacolor-X, and Kodacolor II negatives in order to prevent further image deterioration. Negatives should be stored in uncoated polyester (such as DuPont Mylar D) or uncoated polypropylene top-flap sleeves placed inside of paper envelopes (see Chapter 14).

- **It is best not to lacquer prints.** None of the currently available print lacquers can be recommended without reservation. Likewise, surface-texturing finishes, such as McDonald Pro-Texture, should be avoided. If a protective surface coating is needed (e.g., with large display prints where framing under glass may not be practical), pressure-sensitive laminating films made by Coda, Inc. and MACtac Permacolor are recommended by this author (see Chapter 4). Laminates must be applied after retouching and spotting are completed. With the recommended papers for printing color negatives, no worthwhile benefit is gained from ultraviolet-filtering lacquers or laminating materials; likewise, 3M Photogard offers no additional protection against fading and may in fact cause prints to fade even more rapidly.

- **If a lacquer must be used:** Lacquer-Mat lacquers and the Sureguard McDonald Pro-Tecta-Cote 900-series non-cellulose

nitrate lacquers introduced in 1992 are recommended (see Chapter 4, where addresses of suppliers are also given). With the recommended color papers, no worthwhile benefit is gained from the use of UV-absorbing lacquers.

- **Do not emboss, texture, or canvas-mount prints.** Prints should not be pressure-textured or split through the core for canvas mounting. Either of these operations can cause emulsion and/or RC base cracking, thereby shortening the life of a print.

- **Retouching and spotting:** For wet-brush retouching of color negative print papers, use only Kodak Liquid Retouching Colors. For dry (steam-set) application, use only Kodak Retouching Colors (dry). All other retouching colors on the market should be avoided since the long-term effects of these products on color papers are unknown. Retouching with colored pencils is not possible without first applying a matte "retouch" lacquer to accept the pencil colors, and therefore this method is not recommended.

- **Framing techniques:** Prints should be framed with an overmat to avoid direct contact with glass. An aluminum-foil or polyester-sheet vapor barrier should be placed between the print (or mount board if the print has been mounted) and the backing board in a frame. Prints should be framed under glass (see Chapter 15 for further discussion of framing). With the recommended color negative print papers, no worthwhile benefit is gained from UV-filtering materials such as KSH UV-filtering sheets or Plexiglas UF-3.

- **Wedding albums:** Wedding albums should have pages, or page inserts, made of uncoated polyester (such as DuPont Mylar D); acceptable alternatives are albums with open-frame pages with prints held under page overmats. Probably satisfactory are albums with pages made of untreated polypropylene. Polyvinyl chloride (PVC) and so-called "magnetic" self-stick pages should be strictly avoided, as should all albums made of cheap paper and other low-quality materials. If prints have been lacquered, open-frame, overmatted album pages should be used.

## Recommendations for Manufacturers

- **A high-stability, negative-printing silver dye-bleach print material** (e.g., a more stable, negative-printing version of Ilford Ilfochrome) is urgently needed. In dark storage such a material should be essentially permanent, with no fading or staining occurring in hundreds of years; on display the prints should be at least several times more stable than current Fujicolor SFA3 papers. Because top-quality professional portrait and wedding photographers could clearly differentiate themselves from cut-rate, mass-portrait operations by offering such a premium, high-stability product, a print material of this type would almost instantly find a huge market in the professional photography field.

- **A proven-safe print lacquer is needed.** A print lacquer that is harmless to Ektacolor, Fujicolor, Konica Color, Agfacolor, and other chromogenic prints, even when the lacquer is applied in high-humidity conditions, is urgently needed. The lacquer itself should be stable and not yellow upon prolonged exposure to light; the lacquer should be supplied in glossy, semi-gloss, and matte formulations.

pinks, reds, and purples) than any other color negative paper. (In a practical sense, the color reproduction differences between current Kodak, Konica, and Agfa papers are now so small as to be almost undetectable visually.)

Future competition among papers for printing color negatives will focus on three issues: image stability (especially light fading stability), color reproduction, and price. Kodak is currently at a disadvantage in all three areas.

As shown in **Figure 8.1**, in recent years Kodak has made no significant improvements in the light fading stability of Ektacolor papers. Tests indicate that although the dark fading stability of Ektacolor Professional and Ektacolor Plus papers is much improved over Ektacolor 74 RC and previous Ektacolor RC and fiber-base papers, current Ektacolor Professional, Ektacolor Plus, Ektacolor Portra II, and Ektacolor Supra papers have light fading stability that is only slightly better than Ektacolor 37 RC Paper, introduced in 1971 — more than 20 years ago!

Photographers should try to keep abreast of current information in the field. As professional photographers have more clearly made their needs known, significant competition has developed among Konica, Fuji, Kodak, and Agfa in terms of improving the stability of their respective color papers.

Indeed, this author's current recommendation of Fujicolor papers could change abruptly if Kodak, Konica, or Agfa were to introduce a substantially improved paper for the professional market. But for now, offering color prints on Fujicolor paper can be a definite competitive advantage over studios that stay with Ektacolor paper because, given the option, virtually everyone wants their displayed color prints to last as long as possible.

## H&H Color Lab Switches from Ektacolor to Fujicolor Paper After a Survey of Its Customers Shows Strong Support for the Change

Some labs may fear a loss of business if Kodak paper is abandoned for the superior Fujicolor papers. Photographers may worry that they also could lose business if they stop offering prints on Kodak paper — indeed Kodak's massive advertising campaigns for Ektacolor paper on TV and in magazines and newspapers play on that very fear. But there should be little difficulty in convincing customers that Japanese papers are better than Ektacolor paper. Americans have come to expect superior quality in Japanese products, whether they be cameras, consumer electronics, automobiles, or the many other quality products that Japan is known for.

H&H Color Lab, a leading professional portrait and wedding lab located near Kansas City in Raytown, Missouri,[19] made the change from Ektacolor paper to Fujicolor paper in 1991 after making a detailed study of the comparative merits of each product and conducting a survey of the lab's customers to get their views on the matter.

Despite being convinced that Fujicolor paper was not only a much longer lasting product than Ektacolor paper, and that Fujicolor paper also had visibly superior color and tone reproduction, H&H president Wayne B. Haub was concerned that switching to Fujicolor paper might cause his photographer customers to lose some business, and that this in turn could result in a loss of business for his lab.

February 1992

Wayne B. Haub, president of H&H Color Lab, Inc.

If H&H decided to drop Ektacolor paper, Kodak would prohibit photographers using H&H Color Lab from participating in Kodak's "For the Times of Your Life" promotional program, even if the photographer continued to use Kodak color film.[20] Wrote Haub in a cover letter that accompanied the H&H survey:[21]

> Since the introduction of color into portrait and wedding photography, Kodak has been the undisputed leader in the industry and has become synonymous with quality. Therefore, many times we have not even considered alternatives and in actuality have limited our choices because of this mindset. But, in the past decade technology has progressed in quantum leaps in all areas, including the science of emulsion manufacturing. From the results of our findings, we believe that for the first time in our industry there exists a real choice between chromogenic color paper manufacturers in relation to quality, price, and permanence.

Accompanying the survey sent to H&H customers was an information packet describing the longer life of the Fujicolor prints and a set of matched prints made with both Ektacolor Portra and Fujicolor professional papers. Of those that responded to the survey, more than 90% voted for changing from Ektacolor to "the longest-lasting paper available." According to H&H, "an overwhelming majority were pleased with the extended display permanence of the Fuji product . . . and felt the time long overdue to address this important issue." (See **Appendix 8.5** on page 298.)

In January 1991, H&H switched most of its color print production to Fujicolor paper and, according to Haub, the response among his customers has been very enthusiastic. In a letter written to H&H, Mac McKinley of Customcraft Photography in Slidell, Louisiana said:[22]

> We received a Profit Pack wedding from H&H last Friday — on the new Fujicolor paper. Fantastic color!! We compared the pix with a recent wedding shot in the same church, with the same lighting, done on Ektacolor by your lab — what a tremendous improvement!! This paper is superior to Ektacolor, even if it had the same display life. The bride and groom picked up the album on Saturday and — with no coaching from us — perceived a significant difference in the color saturation and contrast between their wedding pix and our display albums on Ektacolor. We are now hoping for an early phase-in of the *Super* FA paper in all departments of your lab. Thanks for taking such good care of your customers (and *our* clients)."

Another H&H customer, Paul McMillian of Van Deusen Photography in Kansas City, Missouri, said:[23]

> Since I have been experiencing a problem with my window display prints fading after only a couple of months of display exposure to strong daylight, I was very interested to hear of the Fuji paper's resistance to fading. Being from the "Show Me" state, I am truly one that must see the results for myself! I displayed a set of test prints in my southern exposure solarium for several months. No contest! The Fuji paper is clearly the longer lasting material, especially when you compare skin tones — the Fuji prints retain their natural look much better.

Commented David Lee of Photography by Lee in Washington, Illinois:[24]

> It [Fuji Super FA paper] seems to have excellent contrast without losing shadow detail. The color is richer with the Fuji paper. Recent weddings done at churches where earlier work looked dark and muddy, now look brighter and richer . . . a superior product. I'm thrilled.

H&H was the first major professional portrait and wedding lab in the U.S. to switch from Ektacolor to Fujicolor paper. H&H president Wayne B. Haub reports that since making the change, business has steadily increased and that the lab has even been forced to temporarily turn away some new customers to keep the lab from expanding so fast that service and product quality might be compromised. Haub commented to this author that if he decided to change back to Ektacolor Portra II Paper, there would be far more resistance among his customers than he encountered in 1991 when H&H made the change to Fujicolor paper. Haub says that providing his customers — and their clients — the best and longest-lasting product is simply "the right thing to do."

Haub, who, along with H&H lab manager Ron Fleckal, has made print quality and customer service almost an obsession at the lab, says that the lower cost of Fujicolor paper has allowed H&H to offer its customers a number of services that it was unable to provide in the past and still maintain a competitive price structure.

But, Haub added, if Kodak were to introduce a new Ektacolor paper that had better permanence and image quality than Fujicolor paper, he would promptly switch back to Kodak, despite the higher cost of Kodak's products.

H&H film technician Darryl Owens with rolls of 220 Vericolor and Fujicolor color negative films that have been processed in a Sitte Tischer Divomat MX-24 dip-and-dunk processor. For protection against scratches, dust, and fingerprints, all film is sleeved immediately after processing (films remain sleeved during analyzing and proofing).


Printer operator Lea Bass printing orders on a Lucht V-7 multi-lens package printer. The daylight printer is loaded with 575-foot rolls of 10-inch Fujicolor paper. H&H also has enlarger stations for prints where custom cropping, dodging, burning, and precise color balance are required.

Prior to proofing and printing, each negative is coded and carefully video analyzed with the color balance and density values entered into a networked Digital Equipment Corporation VAX computer system running Kodak Accudata software. When the negative is proofed and later printed, the data are used to control printer filtration and exposure times. Shown here is operator Graciella Marshall with a Kodak PVAC Video Analyzer. H&H also uses Bremson Data Systems CVIS digital video analyzers. Proof prints are individually backprinted with the studio name and date, H&H order number, roll and frame number, and negative density and color filtration values.

Printer inspector Sue Cadena and quality assurance manager Rob Newbanks checking Fujicolor prints coming off a Pako Leader Belt Processor Model 2140 which has been modified to run the RA-4 process. H&H uses Fuji-Hunt processing chemicals throughout the lab.

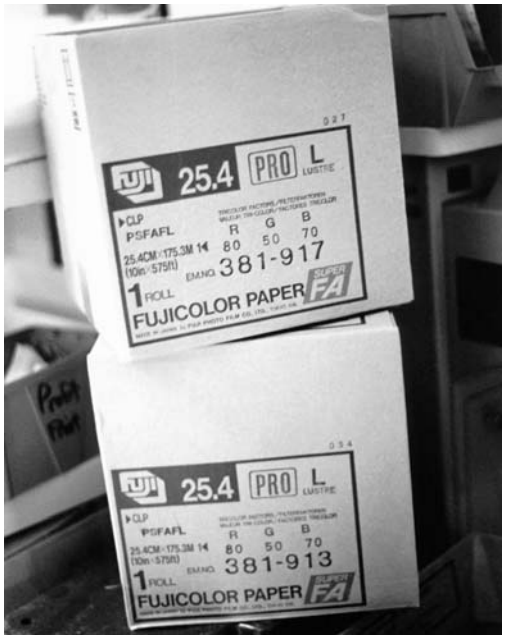
*(H&H Color Lab continued on next page)*

Steve Valenzuela, print spotter/inspector at H&H, checking prints prior to cutting and packaging. All prints from 120/220 negatives are routinely dust-spotted (retouched to remove small dust spots).

H&H devotes considerable effort to make sure all the prints it produces have pleasing color balance and density and are free of dust spots and other imperfections; prints that do not meet H&H's standards are remade. Print inspector Chandra Wilper checks wedding prints prior to packaging and shipping.

Extensive retouching, air brush work, and hand coloring and repair of restoration copies of faded and damaged originals is done for an hourly charge. Artists Dee Myers and Myrna Gamble work on large prints in the retouching department. Negatives can also be retouched to remove blemishes, soften facial wrinkles, etc. As is the case with most wedding and portrait labs, H&H customers usually request lacquering on larger-size prints.

Like most large professional labs, H&H uses computers throughout its operation for order tracking, printer control, pricing, etc. Shown here is quality assurance manager Robert Newbanks with the lab's Digital Equipment Corporation VAX central system. In 1992, the lab began using a high-end Apple Macintosh computer system with a Kodak XL 7700 thermal dye transfer printer for restoration of faded and damaged photographs.




Boxes of Fujicolor professional paper. H&H was the first major professional portrait and wedding lab in the U.S. to switch from Ektacolor paper to Fujicolor paper.

## The Fading Problem Started with the Conversion from Black-and-White to Color

In the mid-1960's, portrait and wedding photographers began the large-scale conversion from black-and-white to color photography. The shift to color had greatly accelerated by the beginning of the 1970's, and by 1975 nearly every studio in the U.S. had changed to color photography. At the time, few photographers realized that in promoting color — and abandoning fiber-base black-and-white prints — they were also giving up a very long tradition of essentially permanent images. Almost none of their customers were aware of the fact that the Ektacolor prints they were buying and displaying would in many cases not survive in acceptable condition for even 5 years. The extremely stable silver image of a properly processed fiber-base black-and-white print was displaced by a very unstable dye image subject to rapid fading when exposed to light on display — and the color prints gradually faded and yellowed even when kept in the dark.

Kodak set the stage for the conversion of the portrait and wedding industry to color when it introduced Ektacolor color negative sheet film in 1947. At that time Kodak would not sell color paper on the open market, so users of the new color negative film had to make prints by the Dye Transfer process. In order to maintain a monopoly in the lucrative Kodacolor amateur processing business, Kodak sold Kodacolor film with processing and printing included in the price; as a result, it was not necessary — nor in Kodak's interest — to sell color printing paper and processing chemicals in the retail market.

As a consequence of antitrust action initiated by the independent photofinishing industry, however, Kodak in 1955 signed a federal court consent decree compelling the company to start selling Kodacolor film without processing included, and to make color paper and chemicals commercially available. Kodak Color Print Material, Type C was introduced in August 1955 (the name was changed to Kodak Ektacolor Paper in May 1958).

In 1963 Ektacolor film, which by then closely resembled Kodacolor amateur film, was introduced in 120 and 620 rolls to supplement the sheet-film formats and, along with the establishment of large photofinishing labs such as Meisel Photographic Corporation of Dallas, Texas, the field rather quickly evolved into the color portrait and wedding business as we know it today.

Even though Ansco had been a leading supplier of black-and-white films and paper to professional photographers, and also had supplied some color materials to the portrait and wedding profession in the form of Ansco color transparency films and Ansco Printon reversal print materials (both of which the user could process), the company quickly lost out when Kodak Ektacolor films and papers became available. The demise of Printon — a material noteworthy for its exceedingly poor light fading stability — was no loss to the field.

Kodak's introduction of Vericolor II film, and the companion C-41 process, in 1972 spelled the end of Ansco's involvement in the professional studio business. The company (which in its later years went under the GAF name) dropped out of photography altogether in the mid-1970's, leaving Kodak with a virtual monopoly in this branch of photography. Commenting on the introduction of Vericolor III in 1983, one writer said:

> The [wedding and portrait] "people market" is predominantly Kodak Vericolor. Kodacolor barely accounted for 1%. Surveys of big "people" labs revealed that the 120 negative market appears to be holding, with an increase in the 220 long rolls, particularly where labs can offer processing without looping. This is a market that is almost 99 and 44/100 percent pure Kodak. A few labs reported seeing a slight increase in Fuji film, but Fuji 120 is primarily sold in small quantities over-the-counter and does not make its way to the pro labs.[25]

The film picture in the United States remained pretty much the same at the time this book went to press in 1992; Vericolor III and Vericolor 400 films were used by the majority of professional portrait and wedding photographers, although Fuji was beginning to make serious inroads into the market with Fujicolor HG 400 Professional Film (often called Fuji NHG 400 film) and Fujicolor Reala Film.

## Kodak's Policy of "One Paper for All Needs" and Why Professionals Ended Up with Poor-Stability Color Papers Designed for Low-Cost Drugstore Photofinishing

When it was introduced in 1955, Kodak Color Print Material, Type C was essentially the same material used by Kodak in its own photofinishing labs to produce Kodacolor prints. This marked the start of Kodak's supplying the professional trade with print materials in which virtually every aspect of their design was dictated by the price, processing speed, and other competitive requirements of amateur snapshot photofinishing — a segment of the business that consumes far more color paper than professional portrait and wedding photography.

The number of prints produced by the amateur photofinishing industry is awesome. A single large photofinisher, Fox Photo, Inc. of San Antonio, Texas, reported in 1986 that its 20 wholesale photofinishing plants *daily* made more than 2 million Ektacolor prints. Said Fox, "We are proud of the part we have played in the preservation of the memories of our nation and its people." (In 1986, Fox Photo, which has used Kodak paper since its founding in 1905, was offered for sale and was quickly purchased by Eastman Kodak for $96 million, apparently to ensure that Kodak would remain the sole color paper supplier to Fox's photofinishing labs. In 1987, Kodak sold the retail division of Fox back to the previous president of Fox, Carl D. Newton III, for an undisclosed sum; Kodak retained the wholesale labs and they are now a part of Qualex, Inc. — a joint venture between Kodak and Fuqua Industries that is 49% owned by Kodak and 51% owned by Fuqua.)

Kodacolor prints made before 1953 had extremely poor light fading stability and rather quickly developed severe yellow-orange stains whether stored in the dark or placed on display, and Kodak apparently thought that the stability of this product was inadequate for the professional market. Dye Transfer has been available since 1946, but the high

cost and complexity of making Dye Transfer prints kept the demand for the process very small.

Once the Kodacolor staining problem was solved to Kodak's satisfaction, and after the 1955 federal court consent decree forced Kodak to make color paper and processing chemicals commercially available, Kodak proceeded to sell Ektacolor paper in portrait and wedding markets. (Although less severe than it once was, yellowish stain formation during storage is still a problem with current Ektacolor Portra II and other Ektacolor papers; it has the same root cause — staining of unreacted color couplers, principally the magenta dye-forming couplers — as the stain that afflicted the early Kodacolor papers.)

Although there were a number of Ektacolor papers produced during the 1960's — they differed mostly in sensitometric characteristics — the introduction of Ektacolor 37 RC paper in August 1971 finally solidified Kodak's policy of having only one negative-positive color paper for all applications. This continued through the introduction of Ektacolor 74 RC Paper in April 1977 and remained the general Kodak policy until the introduction of Ektacolor 78 paper in 1979. Ektacolor 78 paper was somewhat higher in contrast than Ektacolor 74 RC; however, with respect to image stability, processing characteristics, etc., the two papers were identical. (By the time Ektacolor 78 was introduced, it and virtually all other color papers were on an RC base, and Kodak no longer felt it necessary to include RC in the product name.)

Professional portrait labs for the most part continued to use Ektacolor 74 RC while gradually, over a period of a few years, many amateur photofinishers and some commercial photographers began using Ektacolor 78 paper because its higher contrast provided more "snap" and somewhat higher color saturation. The reasons for this are that small prints often look better with increased contrast and that low-cost amateur cameras have lower-quality and often dirty lenses, both of which tend to reduce the contrast of the color negative image. On the other hand, high-contrast images tend to suffer from loss of both highlight and shadow detail and frequently have a somewhat "harsh" appearance. During the early 1980's, Kodak apparently used the two papers interchangeably in the company's chain of amateur photofinishing labs (Kodak Processing Laboratories).

## The Differences Between Ektacolor "Professional" and Ektacolor "Amateur" Photofinishing Papers

When Ektacolor 78 paper was replaced by Ektacolor Plus paper in 1984, Kodak promoted the new paper primarily as an *amateur photofinishing* product. Ektacolor Professional Paper, the replacement for 74 RC paper, followed about a year later, in June 1985, and this paper is clearly identified by Kodak as a professional portrait/wedding product. Although targeted at different markets, the two Ektacolor papers have identical stability characteristics (while much improved in dark storage dye stability compared with the Ektacolor 78 and 74 RC papers they replaced, the new Ektacolor papers are only *slightly* better in terms of light fading stability).

The only difference between Ektacolor Professional and Ektacolor Plus papers is their sensitometric properties. Stated simply, Ektacolor Plus is about 12% higher in contrast than Ektacolor Professional Paper. Logically, the papers could have had the same name, with contrast number designations to distinguish them, as is the usual practice with black-and-white papers.

With the introduction of the faster-processing RA-4 papers, the picture got a little more complex: Ektacolor Edge paper (formerly Ektacolor 2001 paper) is sold in photofinishing markets, while Ektacolor Portra II paper, a low-contrast "professional" product, is supplied for portrait and wedding photography. Kodak also produces higher-contrast Ektacolor Supra (similar in contrast to Ektacolor Plus paper) and the even higher-contrast Ektacolor Ultra paper for the commercial lab market. (Basically these three "professional" Ektacolor papers are simply low-, medium-, and high-contrast versions of the same paper. Were it not for Kodak's desire to segment the market, the three papers would have been supplied the same way black-and-white papers are: with one product name and three contrast grades.) Ektacolor Portra II, Supra, and Ultra all have "Kodak Professional Paper" printed on the backside. In addition, for the minilab market, there is Ektacolor Royal II Paper, which is made with gold-colored backprinting and a somewhat thicker RC base.

Regardless of what name Kodak has given the papers, *all* of the Ektacolor RA-4 papers that were available at the time this book went to press in 1992 had essentially identical light fading and dark storage stability characteristics.

Following Kodak's example, other manufacturers have similar high- and low-contrast versions of their color papers and have also designated their low-contrast products as "professional" papers. Fuji makes Fujicolor Paper Super FA Type 3 and, in 1993, Fuji will introduce low-contrast Fujicolor SFA3 Professional Portrait Paper (tentative name) as an improved-stability replacement for Fujicolor Professional Paper Super FA Type P. Fuji also supplies a higher-contrast paper called Fujicolor Professional Paper SFA3 Type C for commercial labs, and gold backprinted Fujicolor Supreme Paper SFA3 for the minilab market.

Konica markets its products as Konica Color QA Paper Type A3 and Konica Color QA Paper Professional Type X2. Agfacolor Type 9 is currently supplied in a single grade only; the contrast of Type 9 paper falls between that of Ektacolor Portra II paper and Ektacolor Supra paper.

## The Differences Between Process RA-4 and Process EP-2 Compatible Papers

Ektacolor 2001 Paper, the first of the rapid-processing RA-4 papers, was introduced in 1986 as a replacement for Ektacolor Plus Paper in the expanding minilab market (RA stands for "rapid access").

The principal difference between the old and new types of color negative papers is that Ektacolor Edge (originally Ektacolor 2001), Ektacolor Portra II, Fujicolor SFA3, and other RA-4 compatible papers use silver chloride as the light-sensitive silver halide, whereas Ektacolor Plus Paper, Ektacolor Professional Paper, and other process EP-2 compatible papers employ silver bromide. Silver chloride allows faster processing, particularly in the bleach-fix step. Dry-to-dry processing times for RA-4 papers can be under 4 minutes — less than half the time required for the standard EP-2 process. For large operations, the significance

of the decreased processing time is not so much that any particular print is processed more rapidly, but that *twice* the amount of paper can be processed on a machine in a given amount of time, thereby reducing capital equipment costs.

Even faster processing times for silver chloride papers are likely to become common in the future. For example, Agfa has reported an experimental process with a *total* processing time of only 30 seconds!.

Historically, pure silver chloride emulsions were found primarily in slow-speed black-and-white contact papers; while it has long been known that silver chloride emulsions could be processed more rapidly than silver bromide emulsions, it was only since the mid-1980's that silver chloride emulsions were perfected that were both fast enough and had sufficiently good latent image keeping characteristics to be suitable for color enlarging papers.

RA-4 papers also do not require that the color developer contain benzyl alcohol (necessary with the EP-2 process), and this allows much more rapid mixing of the developer concentrate with water to make a working solution.

By the end of 1994, RA-4 compatible papers from Kodak, Fuji, Konica, and Agfa will likely have largely displaced EP-2 compatible papers.

A 1989 Kodak advertisement for Ektacolor 2001 Paper described a number of advantages this paper and the RA-4 process offer over the older Ektacolor Plus Paper (and, by implication, the lower-contrast Ektacolor Professional Paper) and process EP-2:

> How many reasons do you need to switch?
>
> Take your pick. There are a lot of good reasons for converting to Ektacolor 2001 paper and process RA-4.
>
> Like the advantage of processing prints in half the time required with yesterday's technology.
>
> Not that you have to sacrifice quality for speed. In fact, with this combination you get even brighter whites, more brilliant highlights, richer colors, and unsurpassed image stability.
>
> But the greatest temptation could be new production efficiencies. For instance, greater quality control with increased process stability and outstanding emulsion uniformity. And consider the savings with decreased mixing time and replenishment rates.[26]

With the introduction of Konica QA Paper Type A in early 1988, Konica became the second company after Kodak to market an RA-4 compatible paper (QA stands for "quick access"). Mitsubishi sells Konica QA paper under its own label — called Mitsubishi Color Paper SA (SA stands for "speed access"); the paper is also known as Mitsubishi Rapid Access Paper.

Agfa introduced its Agfacolor Paper Type 9 later in 1988, and Fuji began selling Fujicolor Paper Super FA (FA stands for "fast access") in 1989. Agfa, which historically has offered color papers in only one contrast grade, will in the future probably follow the practice of its competitors and market two or more versions (contrast grades) of Agfacolor paper. (At the time this book went to press in 1992, Agfa did not yet have a "professional" color paper.)

## The Stability of Current Ektacolor Papers Is Still Far from Adequate

The design, processing, cost, and image stability of current Ektacolor papers are still dictated by the requirements of the amateur photofinishing field. Because of increased competition from Fuji, Konica, and Agfa, the constraints imposed by the amateur photofinishing market probably have even more influence on Kodak today than they did when Kodak Color Print Material, Type C was marketed in 1955. Given this situation, it is not surprising that the Ektacolor papers which have evolved over the years have proved so inadequate in terms of image stability. Especially in terms of light fading stability, current Ektacolor papers fall *far* short of the needs of professional photographers.

Indeed, the typical customer buying an expensive professional portrait, or spending more than $1,000 on a set of wedding photographs, would be quite disillusioned to learn that the stability of the prints she or he receives is no better than that of the low-cost Kodalux prints, formerly known as Kodacolor prints, available at the local drugstore. (Kodacolor prints were made by Kodak on Ektacolor paper — there has not been a "Kodacolor" paper for many years.) Worse still is the knowledge that the extensive retouching, lacquering, texturing, and canvas mounting commonly given professional prints can all further reduce the stability of an already inadequate product. Because 35-cent drugstore Kodalux prints have been spared these "image enhancement" treatments, they are almost certain to be *more* stable than professional studio prints!

## Why Prints Made by Mass-Portrait Operations Are Likely More Stable Than the Most Expensive Prints Sold by Well-Known Professionals

Color prints currently supplied by mass-portrait companies such as PCA International, Inc., CPI Corporation (which operates studios in Sears Roebuck retail stores), Olan Mills, Inc. (which has more than 1,100 portrait studios in the U.S. and Great Britain), American Studios, Inc. (which services many Wal-Mart discount stores), and Lifetouch, Inc. are also likely to be more stable than the more expensive prints sold by traditional studios. These prints are rarely lacquered, and retouching, if done at all, never exceeds simple dust-spotting. Olan Mills, having dropped Ektacolor paper in 1988, now uses Konica color paper in its labs. (In this author's long-term light fading tests with critical neutral gray and flesh-tone colors, Konica EP-2 and RA-4 papers proved superior to their corresponding Ektacolor papers, and the Konica papers were also better in dark fading stability.) CPI Corporation uses both Konica and Fujicolor papers in its labs.

Even prints produced in minilab-equipped "one-hour" portrait studios that are rapidly emerging as competitors to the serious studio professional are likely to have better image stability than the far more expensive prints sold by traditional studios. This is particularly true in the case of photographers using Konica minilabs because the papers normally supplied for these minilabs have better light and dark fading stability than Ektacolor papers.

At the time this book went to press in 1992, most of the

high-quality "people labs" supplying the professional wedding and portrait business were still using Kodak papers exclusively, and this too has become a disadvantage to the professional photographer.

## Kodak's R&D Efforts Have Been Stymied by the Company's Fear of the Stability Issue

After discussing Kodak's "single-color-paper-for-all-needs" policy with Kodak officials and many others in the photographic industry, it has become quite obvious how this unfortunate state of affairs came about. To date Fuji, Konica, and Agfa have followed Kodak's example, and none offers a premium, high-stability color paper for professional needs.

The problem actually began more than 50 years ago, with the introduction in 1935 of Kodak's first successful color film, Kodachrome film. For the next 45 years, Kodak kept a tight cloak of secrecy on the stability characteristics of *all* of its color products.

In the early 1940's, when Kodacolor was displacing black-and-white films in the amateur field, and later, when Ektacolor was doing the same in the portrait and wedding business, Kodak was loath to reveal information about color stability out of fear that to do so would discourage customers from switching to the more expensive and profitable color materials. Later, when Ektacolor paper was firmly established in both amateur and professional markets, Kodak did not want to say anything that would give customers in either market reason to question the quality of the product. In spite of the fact that the portrait and wedding markets are big business, by far the largest market for Ektacolor paper is amateur photofinishing.

The way the situation evolved, it would do the company no good to produce a premium, high-stability print material because Kodak's policy of keeping stability data secret would effectively prevent advertising the stability advantages of such an improved material. Because a more stable print material would be more expensive and/or more difficult to process than existing Ektacolor paper, Kodak would be unable to justify the existence of the product if it could not talk about its major virtue: improved stability. And it would be difficult to discuss the stability of one product without talking about them all.

By 1986 it was evident that research and development at Kodak was falling behind both Konica and Fuji in terms of color paper image stability, and with the 1989 introduction of Fujicolor Paper Super FA, Kodak had clearly lost its long-standing leadership position to Fuji. Kodak fell even further behind when Fuji introduced the Fujicolor SFA3 papers in 1992. Kodak has lost the lead not only with papers for printing color negatives but also with process R-3 papers for printing transparencies: both Fujichrome Type 34 paper, introduced in 1986, and Fujichrome Type 35 paper, introduced in 1992, have much better light fading and dark storage stability than Kodak's Ektachrome Radiance and Radiance Select papers, which were introduced in 1991.

## A Premium-Quality, High-Stability Color Paper is Urgently Needed

A number of things can be done to improve the situation for wedding and portrait photographers, as suggested in the **Recommendations** section on pages 279 and 280 of this chapter, but the only real solution is the introduction of new negative-positive color print materials with greatly improved light fading stability. Today's Ektacolor Professional and Ektacolor Portra II papers — and even the new Fujicolor SFA3 papers — are simply not adequate for the requirements of professional photography. These papers, all of which were designed primarily for drugstore photofinishing, have never been adequate. At the very least, a color print material designed for printing color negatives should be essentially permanent when stored in the dark at room temperature. This means not only that the image dyes must not fade over time but also that the prints remain completely free of yellowish stain formation so that whites and delicate highlights retain their original brilliance. When exposed to light on display, the material should be *at least* ten times more stable than the current Ektacolor Portra II Paper. Indeed, the light fading stability of Ektacolor papers has seen little improvement over the past 20 years, and it is *poor light fading stability* that is the major shortcoming of these products.

The greatest concern for the professional photographer is to deliver the most stable color prints possible to the customer. Stable prints reduce the likelihood that a print will be returned in faded condition by a disgruntled customer demanding a free replacement, and, more importantly, mean that the photographer's reputation for top-quality work will not suffer. Few people who have purchased an expensive portrait or family group photo only to find that 5 or 10 years later it has lost its vivid colors, sparkling highlights, and rich, deep shadows will be inclined to give the photographer more business. Faded prints mean loss of repeat business, and this will affect the serious studio professional far more than the low-cost, anonymous mass-portrait operations like PCA International or the CPI Corporation studios in Sears Roebuck stores.

## A More Expensive, High-Stability Color Paper Will Clearly Differentiate the Serious Studio Photographer from the Mass-Portrait Operations

For the serious studio photographer, who may sell a 30x40-inch family portrait for $500 or more, the percentage cost of the color paper to make that portrait is very small. If the cost of a high-stability color paper were to be even several times that of Ektacolor paper, the price impact on the finished print would be minimal (proofing could continue to be done on Fujicolor, Ektacolor, or other low-cost paper). Almost anyone spending $500 for a portrait would be willing, indeed happy, to spend an additional $20 or $25 for a print that they knew would last far longer on display.

Today's more sophisticated consumer looks for quality and value in everything he or she buys, and is willing to pay more to get it. *Image stability* is a key aspect of photographic quality, and after 10 or 15 years of display in the customer's home, image stability will be *the* most important aspect of quality. The photographer's reputation will rest on it.

It is difficult to think of any other type of product where the public is offered but a single quality level. There are inexpensive, utilitarian cars like the Ford Escort and the General Motors Geo; a wide variety of cars are available in

the middle price range; and those who want the best purchase a Mercedes-Benz, BMW, Lexus, Jaguar, Cadillac, Lincoln, or other top-of-the-line vehicle. There are expensive refrigerators and cheap ones. Shoes and clothing come in all price and quality levels. Kodak and the other manufacturers have premium-quality, fiber-base black-and-white papers to complement their less expensive and less stable RC papers, and there is no reason why color photography should not offer a range of price/permanence options.

The availability of a premium, high-stability paper would in the eyes of the public clearly differentiate the serious professional from the mass-market portrait operation. Mass-market companies likely could not afford a significantly more expensive color paper: the low prices paid for their prints, coupled with the large numbers of package prints that are made on speculation but never picked up by customers, make their costs for color paper a comparatively large percentage of their operating expenses.

By not supplying the portrait and wedding business with a special, premium-quality, and high-stability color print paper, Kodak and the other manufacturers have done a major disservice to the photography profession — and to the general public.

Notwithstanding the headline used by Kodak in a series of magazine and newspaper advertisements that began running in 1988 and was continuing in 1992, "A Professional Portrait Isn't Expensive. It's Priceless," Kodak is saying to professional photographers — and to their customers — that expensive professional color photographs deserve nothing better than the Ektacolor paper used to make the lowly 35-cent drugstore Kodalux (Kodacolor) print.

## Ilford Ilfochrome and Kodak Dye Transfer Are Not the Answer to the Fading Problem

Nearly all professional portraits and wedding photographs are made with color negative films because of their superior tone reproduction (the ability to retain both highlight and shadow detail) and their very pleasing flesh-tone reproduction. Prints made from color negatives usually have better overall color quality with lower, more pleasing, contrast than prints made from color transparencies.

Negative films also have far wider exposure latitude than transparency films, and prints made from color negatives are much easier to retouch (scratches and dust spots print lighter than the image) than are color prints made from transparencies, where dust and other defects print darker than the image. These and other advantages of the color negative-positive system in the portrait and wedding field effectively rule out such alternatives as silver dye-bleach Ilford Ilfochrome prints (called Cibachrome prints, 1963–91), which must be made from transparencies. Making an "interpositive" from an original negative and then making an Ilfochrome print from the interpositive not only is expensive but usually gives unsatisfactory results.

Using presently available equipment, it is of course possible to digitize color negatives with a high-resolution scanner and, using electronic reversal to achieve a positive image, output the images on current Ilfochrome silver dye-bleach paper. To make prints from color negatives in this manner would add significant cost to their production and, in any event, the light fading stability of Ilfochrome prints is not as good as that of Fujicolor SFA3 paper.

Kodak Dye Transfer prints also are inferior to Fujicolor SFA3 prints in terms of light fading stability, and this, coupled with the high cost of Dye Transfer prints, makes them ill-suited for most wedding and portrait applications.

At present, this leaves only the chromogenic print papers such as Fujicolor, Ektacolor, and similar papers made by Konica and Agfa for printing portraits and wedding photographs from color negatives.

## A Silver Dye-Bleach Color Negative Print Process Offers the Best Hope for a Reasonably Priced, High-Stability Color Paper

This author believes that a negative-printing silver dye-bleach paper, similar in concept to Ilford Ilfochrome (called Cibachrome, 1963–1991) except that prints are made from color negatives instead of transparencies, offers the best hope for producing premium-quality, reasonably priced, and easily processed color prints with a substantial increase in light fading stability. Ideally, one would want the light fading stability of such an improved paper to be at least ten times better than that of Ektacolor Portra II and other Ektacolor papers — and this means that the new paper would also have to be much more stable on display than Fujicolor SFA3 paper or Ilfochrome materials.

A major advantage of a negative-printing silver dye-bleach paper is that, when made with a polyester base instead of a less stable and lower cost RC base, it would be genuinely *permanent* when kept in albums or elsewhere in the dark; in normal room-temperature storage, the prints probably would last for more than 500 years without fading and would remain totally free of the yellowish stain that plagues Ektacolor prints in long-term storage.

The technology to produce a negative-printing silver dye-bleach paper has been available for some time: Ciba-Geigy actually demonstrated such a product (called Cibacolor paper) in 1963. In one of the most unfortunate marketing blunders in the entire 150-year history of photography, Ciba-Geigy was unable to recognize the importance of what its scientists had created, and the company's management decided not to commercialize the process.

In 1989 Ciba-Geigy, a huge Swiss pharmaceutical and chemical firm with operations all over the world, sold its Ilford photographic division (with its line of Ilfochrome products) to the International Paper Company, headquartered in Purchase, New York. There is now real hope that Ilford, under its new American owner, will do what Ilford's previous owners failed to do and will develop an improved, more stable, negative-printing version of Ilfochrome. According to Robert Fletcher, former president of Ilford Photo Corporation, "We are looking at how this might be accomplished, but it is much too early to say when such a product might actually become available."[27]

Although currently having no silver dye-bleach products, Agfa-Gevaert is another company with considerable expertise in this technology. Judging from the outstanding light fading stability of Agfachrome CU-410, a silver dye-bleach paper produced by Agfa in the early 1970's, an Agfa negative-printing silver dye-bleach product could be truly outstanding. The light fading stability of the Agfa product was considerably better than that of current Ilfochrome

materials (see Chapter 3.)

In 1982, at a conference of the Society of Photographic Scientists and Engineers held in Rochester, New York, Fuji of Japan gave a presentation on a new technology for negative-printing silver dye-bleach papers[28] and even showed a few color prints made by the process. Rumors about the process have surfaced from time to time, but nothing official has been heard from Fuji since the 1982 conference.

At one time even Eastman Kodak had a silver dye-bleach print material. Known as Azochrome, the material and associated processing chemistry were produced on a limited scale in the early 1940's. The Azochrome process, which was designed for making prints from color transparencies, was never actually marketed and Kodak abandoned silver dye-bleach technology in favor of the vastly inferior but less expensive and easier to process Kodacolor negative paper — the forerunner of today's Ektacolor paper. A number of beautiful Azochrome prints are in the collection of the International Museum of Photography at George Eastman House in Rochester, New York.

When a high-stability silver dye-bleach material for printing color negatives becomes available, a new era will begin for professional portrait and wedding photographers. Not only will they *finally* be able to offer their customers prints that look better than the low-cost Ektacolor prints supplied by their low-cost discount store competitors, but the silver dye-bleach prints will also be absolutely permanent when stored in the dark in albums and will last far longer than Ektacolor prints when displayed.

Most likely, proof prints will continue to be made with Ektacolor, Fujicolor, or similar inexpensive papers; only the enlargements ordered by customers would be printed on the premium-quality and longer-lasting silver dye-bleach material. The higher cost of the silver dye-bleach prints, while probably having relatively little impact on the prices asked of customers by top-quality professionals, will prove to be a significant competitive advantage because the print materials and processing will be too expensive for mass-portrait operations to make available in their low-cost print packages.

At some point in the future, an improved electrophotographic, ink jet, thermal dye transfer, or other direct digital process may offer a more cost-effective, high-stability alternative to a negative-printing silver dye-bleach material. But for now, all of these digital print processes fall short of what is needed in one or more of the following areas: color stability, pictorial image quality, speed of print production, print-size limitations, and cost.

## UltraStable Permanent Color Prints, Polaroid Permanent-Color Prints, and EverColor Pigment Prints: Premium Products for Upscale Markets

For premium-priced display applications, where the very best quality and truly permanent display prints are desired (and cost is a secondary consideration), UltraStable Permanent Color Prints, Polaroid Permanent-Color Prints, and EverColor Pigment Prints are the only choices available.

Unlike Fujicolor, Ektacolor, Ilfochrome, Kodak Dye Transfer, and other color prints that form images with organic dyes, permanent color prints employ extremely stable pigments that, for all practical purposes, do not fade. The pigments are similar to those used in automobile enamels and other exterior paints.

According to estimates from this author's accelerated light fading tests, UltraStable Permanent Color prints (made with the improved yellow pigment to be introduced in early 1993) and Polaroid Permanent-Color prints are expected to last more than 500 years without perceptible fading or staining when displayed under normal indoor conditions.

These are the most permanent high-quality color prints in the 150-year history of photography — on display, they are *far* more stable than Ilfochrome or any other silver dye-bleach print material that has ever been produced. The prints should last at least as long — and quite possibly longer — than the best "archivally processed" and toned fiber-base black-and-white prints. In short, UltraStable Permanent Color prints and Polaroid Permanent-Color prints are absolutely in a class by themselves!

Permanent color prints can be made from original Fujicolor, Ektacolor, or other prints, or from color transparencies. Most commonly, photographers will supply the lab with a finished Ektacolor print (that has been carefully printed, spotted, and retouched), and a facsimile pigment print will be made from this original. Special high-resolution, laser-scanned color separations are employed in the production of the prints (the complete process, which is fairly complicated, is described in Chapter 1).

The materials and technology for producing these visually outstanding prints were originally developed by Charles Berger, a fine art photographer and inventor working in Ben Lomond, California. Berger and his associates (at the time operating as the ArchivalColor Company) licensed the process to the Polaroid Corporation in 1986, and Polaroid began supplying the cyan, magenta, yellow, and black pigment-coated sheets used to form the color image together with the white opaque polyester base material and basic printmaking instructions in 1989. (Polaroid is acting only as a supplier of Permanent-Color materials; the company does not offer a printmaking service. At the time this book went to press in 1992, only Ataraxia Studio, Inc., located in Bensalem, Pennsylvania, was utilizing the Polaroid-manufactured materials.)

Because of Polaroid's reluctance to continue research and development work on the process, Berger set up his own company, UltraStable Color Systems, Inc., in partnership with Richard N. Kauffman, to continue research on the color pigment process. Sold under the UltraStable Permanent Color name, Berger's new materials offer improved color and tone reproduction, faster and easier print production, and elimination of toxic chemicals from the process. UltraStable materials were introduced on a limited scale in 1991–92; with an improved stability yellow pigment, full availability of the materials was scheduled for early 1993.

EverColor Pigment Prints, supplied by the EverColor Corporation in El Dorado Hills, California, are made with a high-stability modification of the AgfaProof graphic arts proofing system. EverColor plans to introduce the high-resolution, polyester-base prints in early 1993. At the time this book went to press in 1992, this author had not had the opportunity to test the stability of the prints, but information supplied to this author about the structure of the prints and the pigments employed to form the color image sug-

David B. LaClaire – 1992

LaClaire Laboratories, Inc., a top-quality processing lab in Grand Rapids, Michigan catering to wedding and portrait photographers nationwide, planned to offer UltraStable Permanent Color prints in 1993 as a much longer-lasting alternative to the Kodak Dye Transfer prints that the lab has supplied for many years (see Note No. 29 on page 292). In 1991, LaClaire Laboratories switched from Kodak Ektacolor papers to Fujicolor papers because of the better image stability of the Fuji products. According to lab manager Bob Steenwyk, "As a lab, we have an ethical responsibility to offer our customers the longest-lasting prints we can." Shown here with a large family portrait printed on Fujicolor SFA3 paper are Steenwyk and lab technician Jim Nieboer.

gests that the stability of the prints will be very good. (Light fading and dark storage tests will be started as soon as production samples of EverColor prints become available.)

UltraStable Permanent Color prints and Polaroid Permanent-Color Prints initially will be quite expensive — $850 or more for the first copy of a 20x24-inch print.[30] Subsequent copies of a print cost much less. (While still expensive, EverColor Pigment Prints are not expected to cost as much). But even when the photographer's fees are added to the cost of the prints, possibilities will be good for sales in the "upscale" portrait, family group, wedding, executive "boardroom" portrait, fine art, and photo-decor markets. Permanent color prints will have great appeal to families and individuals as heirlooms that can be displayed and handed down for generation after generation.

Such prints are expected to be widely used for portraits of presidents, heads of state and other politicians, and entertainment celebrities — anyone of historical note. Labs planning to offer permanent color prints are listed in the **Suppliers** section on page 293.

With future development, the cost of making permanent, pigment color prints should decrease significantly, thereby expanding the potential market to a much larger segment of the population.

## "Lifetime" Warranties for Color Prints

Burrell Colour, Inc., a professional color lab in Crown Point, Indiana with associated labs located in at least seven other states, is one lab that guarantees a free reprint for any color print that fails to last 100 years, whether displayed or not.[31] Burrell, which has used Ektacolor paper exclusively, began offering the guarantee to customers in 1986 even though, according to owner Donald J. Burrell, "all of our competitors think we are out of our minds — they think a lot of prints are going to be coming back."[32]

Burrell says that "we are banking on the idea that people won't put a print in bright light in front of a window and that if a print is hung in your living room, for example, we feel that most living rooms will be remodeled or redecorated within 7 to 10 years and during that time period the photograph will fade so slowly that you wouldn't even notice it. After that time period the person will take the photograph off the wall and put it into a drawer to save it

for history. Being in a dark area, it will last that long [100 years] and we don't see it as a problem. We took our lead from Kodak that the prints would last 100 years when we came out with that announcement."

Burrell knows that prints left on display for "maybe 20 years" will fade, but if they do, "send us the negative and we will reprint it at no charge." Arguing that "the photographer has to give his customer some type of insurance that somebody is going to stand behind a product that cost $200, or $300, or $400, or even $1,000," Burrell said that this is a form of advertising and should be seen as a "satisfaction guarantee" rather than an assurance that every print will actually last 100 years. Some years earlier Burrell offered a free-replacement guarantee for any print that failed to last 5 years,[33] and the effectiveness of that promotion encouraged him to expand the warranty when Ektacolor Professional Paper became available.

Burrell Colour requires that returned prints be accompanied by the original negative and a copy of the Burrell invoice (Burrell suggests that the customer tape the invoice to the back of the framed print to aid in identifying the photograph). Photographs must be "cared for properly" and not be physically damaged. Burrell has not specified how much fading qualifies a print for free replacement, saying that "this is left up to the customer." As part of the guarantee, Burrell will also spot, lacquer, and mount the replacement print in the same manner as the original, at no additional charge.

Most processing labs have been very cautious about print-life warranties, however. They fear that eventually they could be deluged with demands for free reprints. Meisel Photographic Corporation of Dallas, Texas, a large lab serving the commercial, portrait, and wedding markets, at one time offered an all-inclusive free-replacement guarantee for faded color prints. But after Bank Langmore, a professional photographer working out of San Antonio, Texas, asked Meisel to replace a large number of faded prints that he had sold some years earlier to the Minolta Corporation for display in the company's New Jersey headquarters, Meisel abandoned the free-replacement guarantee. According to Langmore, Meisel initially balked at honoring its guarantee for his prints (many of the prints were large and expensive), but he and Meisel eventually reached what Langmore called "a satisfactory settlement." Apparently sobered by that experience, in 1982 Meisel instituted a much more limited guarantee:

> Meisel will reprint at one-half the current price any print five years old or less that has faded severely, even if improperly displayed. Prints over five years old will be reprinted at full charge.[34]

This author believes that "lifetime" or "100-year" color print warranties are not a legitimate form of product promotion — unless customers are clearly informed that these are guarantees of *satisfaction* and are not misled into thinking that displayed color prints will in fact remain in good condition for 100 years. With the exceptions of UltraStable Permanent Color Prints, Polaroid Permanent-Color Prints, and EverColor Pigment Prints, they will not.

The customer *must* also be informed that if the photographer goes out of business, the studio changes hands, or the lab goes out of business or changes ownership, the guarantee probably will be worthless.

Offering a 100-year warranty does have some positive aspects: it likely will make a lab much more conscious of the stability characteristics of the color papers it uses, more careful with processing, spotting, and lacquering, and more receptive to color papers offering improved stability when they become available. A lab offering a 100-year free-replacement warranty is assuming a significant amount of liability (with current Ektacolor Portra II Paper, for example, *virtually all* prints that are displayed for "a lifetime" will end up severely faded), and this can only help increase the concern for product quality and product stability by both the lab and the photographer. A Burrell Colour promotional brochure describing the guarantee said: "The logistics of the Guaranteed for a Lifetime Program are relatively simple but the concept is far reaching. Our part is a total commitment to maintain utmost quality in our products. . . ." (It is worth noting, however, that at the time this book went to press in late 1992, Burrell, a long-time Kodak customer, was using Ektacolor Portra II Paper instead of one of the much longer-lasting Fujicolor papers.)

A photographer offering a lifetime free-replacement warranty has a real incentive to retain and properly care for negatives — and invoices — and this too is a positive aspect of the concept. Print fading aside, organized negative files also offer the potential of selling new prints to old clients when color materials with improved light fading stability become available in the future. Mass-portrait operations normally do not retain negatives for any length of time, and this fact can be turned into a competitive advantage for the established studio professional.

## Notes and References


1. Mrs. Sharla M. Stanclift, letter to the Office of Consumer Protection, Wisconsin Department of Justice, Madison, Wisconsin, May 16, 1980. This was one of a number of complaints about faded prints made on Ektacolor RC papers during the period 1969–1976 that was sent to the Office of Consumer Protection by customers of Fehrenbach Studios and other professional photographers in Wisconsin.
2. Nadine Brozan, "Natural Disaster: Hidden Legacy of Pain," **The New York Times,** June 27, 1983.
3. See, for example: Ellen Ruppel Shell, "Memories That Lose Their Color," **Science 84,** Vol. 5, No. 7, September 1984, pp. 40–47; John Rumsey, "Faded Photos May Cloud Kodak Future," **Times-Union** (Rochester, New York), February 29, 1980, p. 1; Richard Whitmire, "When Pictures Don't Last Forever – Kodak Goes to Great Lengths to Head Off Suit Over Fading Prints," and companion article: "Kodak's Ads Make Fewer Promises," **Times-Union,** November 14, 1980, p. 1; Allen Mundth, "Photographers Challenge Kodak Ads," **Wisconsin State Journal** (Madison, Wisconsin), Section 4, July 7, 1980; David Trend, "Kodak and the Pros – When Memories Get Returned," **Afterimage** (Visual Studies Workshop, Rochester, New York), Vol. 8, No. 6, January 1981; Stephen R. Milanowski, "Notes on the Stability of Color Materials," **Exposure,** Vol. 20, No. 3, Fall 1982, pp. 38–51.
4. Max E. Brown and Corinne R. Brown and Flaire Color Photography Incorporated (Plaintiffs) vs. American Professional Color Corporation and Eastman Kodak Company (Defendants), Case No. 54126, filed August 1976 in the Iowa District Court for Black Hawk County. A transcript of the court proceedings may be obtained from: Iowa District Court for Black Hawk County, Clerk of Court, 316 East 5th Street, Waterloo, Iowa 50703; telephone: 319-291-2482. See also: Bernice Fehrenbach and Robert J. Fehrenbach, d/b/a Fehrenbach Studios, Inc. and Robert Germann, d/b/a/ Germann Photographs (Plaintiffs) vs. Eastman Kodak Company (Defendant), Case No. 82-C-185, filed in 1982 in the United States District Court for the Western District of Wisconsin. A transcript of the court proceedings may be obtained from: United States District Court, Clerk of Court, P.O. Box 432, Madison, Wisconsin 53701; telephone: 608-264-5156.

5. Eastman Kodak Company, **Kodak Studio Light** (Centennial Issue), No. 2, 1980, p. 1; from "Foreword," by William A. Sawyer, Jr., vice president and general manager, Professional and Finishing Markets, Eastman Kodak Company.
6. Zavell N. Smith, telephone discussion with this author, November 19, 1980, and interview with this author in San Antonio, Texas, March 25, 1981.
7. Mark E. Smith, assistant attorney general, Wisconsin Department of Justice, letter to Robert Locker III, Eastman Kodak Company, July 17, 1980.
8. Robert F. O'Connor, Eastman Kodak Company legal department, letter to Mitchell Paul, an attorney with the Division of Advertising Practices, Federal Trade Commission, Washington, D.C., August 1, 1980.
9. Eastman Kodak Company, **Magic.**, brochure in the "For the Times of Your Life" promotional campaign, Kodak Pub. No. P3-703, 1986.
10. Eastman Kodak Company, **How to Advertise and Promote Your Studio – "For the Times of Your Life" Professional Photography Promotion Guide Book,** Kodak Publication No. P3-708, January 1986.
11. Eastman Kodak Company, **Expressions.**, "For the Times of Your Life" promotional brochure, Kodak Publication No. P3-705, 1986.
12. Eastman Kodak Company, **The Times**, Vol. 2, Issue No. 2, 1988, Kodak Publication No. P3-84A, p. 1.
13. Peter M. Palermo, vice president and general manager, Consumer Products Division, Eastman Kodak Company, **Photography 1888–1988, A Century of Value Helps Create Priceless Memories**, Eastman Kodak Press Release No. NS988798EXP, September 1988.
14. Charley Wise Photography, individually, and on behalf of all others similarly situated, Plaintiff, v. Agfa-Gevaert, Inc., Defendant. Case No. PCA 85-4223-RV, United States District Court, Northern District of Florida, Pensacola Division, filed June 3, 1985. A transcript of the court proceedings may be obtained from: United Stated District Court, Clerk of Court, Rm. 129, 100 N. Talafox Street, Pensacola, Florida 32501; telephone: 904-433-2107. A year before the filing of the class-action suit against Agfa-Gevaert, James Nall of M&A Studios, Mobile, Alabama, had threatened to take legal action against Agfa because of damages he allegedly suffered from his use of Agfacolor Type 4 Paper. Nall had purchased $54,000 worth of Type 4 paper during 1978–1981, and by 1985, according to Nall, "every single picture had turned pink." Nall sought $162,000 in damages; the case was quickly settled out of court for an undisclosed sum.
15. Dave Withington, "A Review of the Testing Methodology for Evaluating Portrait Image Stability," presentation at the 38th Annual Conference of the Society of Photographic Scientists and Engineers (SPSE), Atlantic City, New Jersey, May 15, 1985.
16. Donald A. Koop, "A Relation Between Fading and Perceived Quality of Color Prints," **Second International Symposium: The Stability and Preservation of Photographic Images,** Ottawa, Ontario, August 25–28, 1985, (Printing of Transcript Summaries), pp. 335–349. Available from The Society for Imaging Science and Technology (IS&T), 7003 Kilworth Lane, Springfield, Virginia 22151.
17. Charles J. Lewis, "Preserve Priceless Negatives," (Studio Management Series), **The Rangefinder,** Vol. 33, No. 9, Sept. 1984, p. 55.
18. Eastman Kodak Company, "Develop a Brighter Profit Picture with the New Kodak Colorwatch System," advertisement on the back cover of **Photographic Processing,** Vol. 20, No. 9, September 1985. The Kodak Colorwatch System was originally announced by Kodak in mid-1985 under the name of "The Kodak Masterprint System." Soon after the announcement, the name was changed to avoid possible legal action against Kodak by photofinishers already using the "Masterprint" name.
19. H&H Color Lab, Inc., 8906 East 67th Street, Raytown, Missouri 64133; telephone: 816-358-6677 (toll-free: 800-821-1305); Fax: 816-356-7950.
20. During 1991 and 1992, Terry J. Deglau, Coordinator, Portrait and Wedding Photography, U.S. Marketing Operations, Professional Photography Division, Eastman Kodak Company, sent letters to many of H&H's customers, which said in part (from a letter dated June 17, 1991):

    "Consumers expect member studios of 'For the Times of Your Life' to use Kodak professional products in producing their professional portraits. Unfortunately, however, our records indicate that your primary professional lab does not use enough Kodak professional products to be routinely providing your studio with finished packages made with these products.

    "If you would like to remain a member of the 'For the Times of Your Life' program, you have two options:

    • Request that your professional lab use Kodak professional papers and chemicals for your orders.

    • Switch to a lab that will qualify your continued membership in the 'For the Times of Your Life' program.

    "Once you have decided how you wish to proceed, please forward a letter detailing your decision to 'For the Times of Your Life,' Eastman Kodak Company, 343 State Street, Rochester, New York 14650-0412. We will quickly review your input and respond in a timely manner."

    Kodak took the position that even if a photographer was using Kodak Vericolor professional films exclusively for his or her work, that was not sufficient to continue membership in the "For the Times of Your Life" program. In part because of this stance, increasing numbers of H&H's customers have switched to Fujicolor professional films and stopped using Kodak products altogether.

    At one point, after Kodak learned that H&H was considering changing to Fujicolor paper, David P. Biehn, vice president and general manager of Kodak's Professional Imaging Division, visited H&H president Wayne Haub and lab manager Ron Fleckal to try to dissuade them from making the switch. According to Haub, Biehn did not dispute the claim that Fujicolor paper had much better light fading stability than Ektacolor paper, but he nevertheless told Haub and Fleckal that H&H would lose business if the lab dropped Kodak paper. Responding to an invitation from Biehn, Haub later visited Kodak in Rochester, New York for further discussions on the matter. H&H was the first professional portrait and wedding lab in the U.S. to switch from Ektacolor to Fujicolor paper.
21. Letter and survey from H&H Color Lab, Inc. president Wayne Haub to H&H customers, dated September 26, 1990.
22. H&H Color Lab, Inc. "Customer Testimonials," excerpts of letters sent to H&H by its customers concerning their reaction to prints made with Fujicolor paper, 1990.
23. H&H Color Lab, Inc., see Note No. 22.
24. H&H Color Lab, Inc., see Note No. 22.
25. Elizabeth Cunningham, "Product Improvements; New Items; New Film Speeds," **Photographic Processing,** Vol. 18, No. 1, January 1983, p. 35.
26. Eastman Kodak Company, "How Many Reasons Do You Need To Switch?", advertisement in **Photographic Processing,** Vol. 24, No. 1, January 1989, back cover.
27. Robert Fletcher, former president, Ilford Photo Corporation, Paramus, New Jersey, telephone discussion with this author, March 7, 1989.
28. Koichi Nakamura, "Silver Catalyzed Dye Reduction and Its Application as an Imaging Process," presentation at the **35th Annual Conference of the Society of Photographic Scientists and Engineers**, Rochester, New York, May 12, 1982.
29. LaClaire Laboratories, Inc., 6770 Old Twenty-Eighth Street, S.E., Grand Rapids, Michigan 49506; telephone: 616-942-6910 (toll-free: 800-369-6910). In 1993, LaClaire Laboratories plans to introduce UltraStable Permanent Color prints for clients who want a longer-lasting alternative to the Kodak Dye Transfer prints that have been produced by LaClaire for many years. See: David B. LaClaire, "Marketing UltraStable Portrait Prints," **Professional Photographer,** Vol. 119, No. 2159, April 1992, p. 36. See also: John Durniak, "Color Almost Too Good to Be True," **The New York Times**, December 6, 1992, p. Y27. See also: Mark Wilson, A Color Process That Won't Fade Away," **The Boston Globe**, May 17, 1992.
30. At the time this book went to press in 1992, only two labs furnishing UltraStable Permanent Color prints had established prices for the prints. Color Prints by Nordstrom: $350 for 8x10-inch prints; $450 for 11x14; $675 for 16x20; $850 for 20x24; $1,400 for 24x36 (additional prints from the same image are discounted 50% or more, depending on quantity). See: William Nordstrom, "In Search of Permanence: 500-Year-Life UltraStable Color Photographs," **Professional Photographer,** Vol. 119, No. 2159, April 1992, pp. 34–36. Ken Lieberman Laboratories, Inc.: $1,200 for 16x20; $1,400 for 20x24; and $2,200 for 24x36 (additional prints from the same image are discounted 50% or more, depending on quantity). See the **Suppliers** list on page 293 for the addresses of these labs and other suppliers of UltraStable Permanent Color prints and Polaroid Permanent-Color prints.

    In 1993, the EverColor Corporation, a company founded by William Nordstrom and Richard H. Carter, plans to sell EverColor Pigment Prints for $150 for 8x10 and $325 for 16x20, with additional prints from the same image available at a substantial discount.
31. Burrell Colour, Inc., "Lifetime Guaranteed Colour Prints – Only from Burrell Colour," advertisement in **The Professional Photographer,** Vol. 113, No. 2092, September 1986, p. 53.
32. Donald J. Burrell, president, Burrell Colour, Inc., telephone discussion with this author, December 5, 1986.
33. Burrell Colour, Inc., "Are Your Color Prints Guaranteed – If Not, What Will You Do?", advertisement in **Studio Photography,** Vol. 18, No. 8, August 1982.
34. George K. Conant III, president, Meisel Photographic Corporation, letter to this author, September 7, 1982.

# Suppliers

## Suppliers of Color Print Materials

**Agfa Corporation**
Professional Products Division
100 Challenger Road
Ridgefield Park, New Jersey 07660
Telephone: 201-440-2500

**Eastman Kodak Company**
Professional Photography Division
343 State Street
Rochester, New York 14650
Telephone: 716-724-4000

**Fuji Photo Film U.S.A., Inc.**
Color Paper Department
555 Taxter Road
Elmsford, New York 10523
Telephone: 914-789-8100
Toll-free: 800-345-6385

**Konica U.S.A., Inc.**
Professional Products Group
440 Sylvan Avenue
Englewood Cliffs, New Jersey 07623
Telephone: 201-568-3100

**Polaroid Corporation**
Attn: Mr. Dave Morreale
100 Duchaine Blvd.
New Bedford, Massachusetts 02745
Telephone: 508-998-5563
(source of materials and instructions for making Polaroid Permanent-Color Prints; Polaroid itself does not make prints)

**UltraStable Color Systems, Inc.**
500 Seabright Avenue
Santa Cruz, California 95062
Telephone: 408-427-3000
(source of materials, instruction manuals, and workshops on making UltraStable Permanent Color Prints; UltraStable itself does not make prints)

## Lab Producing Color Prints Made With Polaroid Permanent-Color Materials

**Ataraxia Studio, Inc.**
3448 Progress Drive – Suite E
Bensalem, Pennsylvania 19020
Telephone: 215-343-3214

## Labs Offering Color Prints Made With UltraStable Permanent Color Materials

**EverColor Corporation**
Suite 140
5145 Golden Foothill Parkway
El Dorado Hills, California 95762
Telephone: 916-939-9300
Fax: 916-939-9302
(beginning in 1993, EverColor will also offer EverColor Pigment Prints – see below)

**LaClaire Laboratories, Inc.**
6770 Old 28th Street, S.E.
Grand Rapids, Michigan 49546
Telephone: 616-942-6910

**Photographic Arts, Inc.**
70 Webster Street
Worcester, Massachusetts 01603
Telephone: 508-798-6612

**Robert Liles Photography and Printmaking**
3935 N. Seeley Avenue
Chicago, Illinois 60618
Telephone: 312-477-8536

**Australian Colour Laboratories**
39 Hotham Parade
Artarmon 2064, N.S.W.
Australia
Telephone: (61)-2-438-3322
Fax: (61)-2-437-4328

**Sillages**
Marc Bruhat
91, quai Panhard et Levassor
75013 Paris, France
Telephone: (33)-1-4584-6713
Fax: (33)-1-4584-0883

## Labs Offering Color Prints Made With EverColor Pigment Print Materials

**EverColor Corporation**
Suite 140
5145 Golden Foothill Parkway
El Dorado Hills, California 95762
Telephone: 916-939-9300
Fax: 916-939-9302

New York City sales representative of EverColor:

**Ken Lieberman Laboratories, Inc.**
118 West 22nd Street
New York, New York 10011
Telephone: 212-633-0500

# Appendix 8.1 – Text of Cover Letter and Petition Sent to Eastman Kodak by the Wisconsin Committee on Faded and Cracked Photographs

March 11, 1980

Mr. Walter Fallon, Chairman of the Board
Mr. Colby Chandler, President
Eastman Kodak Company
343 State Street
Rochester, New York 14650

Gentlemen:

Enclosed is a petition authorized by the Wisconsin Professional Photographers Association, to be circulated among its members and members of other photography associations in Wisconsin, Minnesota, North and South Dakota.

We as members of these organizations feel that the seriousness of the matter should be brought to your attention, in the form of this petition.

In addition to this petition, many of those signing, indicated the desire for Eastman Kodak to produce a PROFESSIONAL color paper for final prints. Current paper is OK for proofs. A professional paper should be as stable as Kodachrome when stored in the dark, and at least 10 times as stable as current EKTACOLOR 74 RC, WHEN ON PERMANENT DISPLAY.

Most persons quizzed, gave the opinion that they would be interested in paying more for a more durable product, if it meant the permanence would last over a greater period of time.

Thanking you in advance for your consideration.

Sincerely,

[signed]

Bernice Fehrenbach

Committee on Faded and Cracked Photographs
Bernice Fehrenbach, Chairman
Wisconsin Professional Photographers Association
229 N. Walnut Street
Reedsburg, Wisconsin 53959

*(Text of petition signed by approximately 275 professional photographers and sent by the Committee on Faded and Cracked Photographs of the Wisconsin Professional Photographers Association to Eastman Kodak Company.)*

November 1, 1979

Eastman Kodak Co.
Rochester, New York

Gentlemen:

We as Professional Photographers and members of the Wisconsin Professional Photographers Association are confronted with a serious problem with cracked and faded photographs. Our customers do not understand why this has happened and obviously we are blamed for the problem.

We are aware of the disclaimer on any color permanency now made by Eastman Kodak. Nevertheless we must bear the onslaught of irate customers who parade through our doors, demanding their photographs be replaced. We are bearing not only the costs but also the damaged reputation, the failure of the materials have caused. To soothe our wounds, we feel Eastman Kodak should compensate the photographer and color labs, so we can replace the faded and cracked prints, without charge.

Also, we would like the public to become more informed on what can happen to their photographs. Therefore we would like you to issue a statement on color permanency, so we can pass this information on to our customers. We feel it is time we educate the consuming public about color photography.

Sincerely,

Committee on Faded
and Cracked Photographs
Bernice Fehrenbach, Chairman

Note:

The above letter has been approved by the Board of Directors of WPPA, to be sent to Eastman Kodak. The Committee would appreciate your support for this effort by signing the attached petition.

Thank You

# Appendix 8.2 – Petition Sent to the Professional Photographers of America by Members of the Texas Professional Photographers Association

**Petition**

July, 1980

To: Board of Directors, Professional Photographers of America, Inc.

We, the undersigned, are members of the Texas Professional Photographers Association, Inc., or other professional photographers in attendance at the Texas PPA summer seminar in Kerrville, Texas, July 5–8, 1980, and are all practicing professionals who sell to the public, or, are engaged in photography in industrial departments.

While it is recognized that color dyes will, in time fade, we believe that the manufacturers of color sensitized materials have inadequately informed the consumers of the United States as to the impermanence of color materials now being manufactured. The consumer has been led to believe that color materials have a long life both in color stability and in physical structure. While manufacturers specifically refuse to warrant their products, even for short periods of time, consumers are not fully informed of this policy and expect long life from the materials, whether amateur products, or professional products produced by professional photographers.

Many professional photographers are bearing the brunt of these inadequacies, and are having to replace photographs that have deteriorated, causing a financial burden on members of this association and other professional photographers, due to no fault of their own, and in some cases the reputations of photographers have been severely damaged.

We are asking the Board of Directors to use the good offices of the Professional Photographers of America to consult with the manufacturers of sensitized materials, advising them of the displeasure of professional photographers, and specifically negotiating an advertising policy that will properly inform the public of the true expected life of color materials, and to publicly absolve professional photographers of blame in the fading of color materials available to them.

If such negotiations with manufacturers should fail, or, statements from manufacturers are inadequate, then it is requested that the Professional Photographers of America, Inc. introduce a plan that will inform the public as to the limits of color materials, and defending the professional photographers from undue blame placed on them.

[signature sheets attached]

Texas Professional Photographers Association, Inc.
Drawer 828
Temple, Texas 76501
Telephone: 817-778-3232

# Appendix 8.3 – Recommendations Concerning Color Film and Print Fading Issued by the Professional Photographers of America for Its Members

Professional Photographers of America, Inc.
1090 Executive Way
Des Plaines, Illinois 60018

Suggestions and Recommendations
On Color Changes in Prints and Films
From the PP of A Education Committee

January, 1981

**I. Suggestions:**

A. The breakthrough in color films and printing materials is providing us with photographs that are aesthetic, true to life and provide pleasure and satisfaction.

B. Color negatives and transparencies may in time not be suitable for reproduction.

C. Color prints may fade and deteriorate.

D. Consideration must be given to the role and responsibilities of the professional photographer in using the materials.

1. The use of the photograph.

2. It is imperative that the manufacturers' processing and storage recommendations are followed.

3. Suggestions to the customer should be made in accordance with the instructions from manufacturer in regard to displaying the photograph.

E. Suggested procedures to follow in the photographer/customer relationship:

1. Explain briefly the nature of the products now available for use.

2. Explain alternatives – Black and White, Sepia, Oil or Dye Transfer.

3. Explain negative retention practice followed by your studio.

4. Determine your charges for reprinting or converting to an alternative.

5. Post these charges – it should be OK to use percentages of current re-order prices.

**II. Additional protection and suggestions:**

A. Photographers should urge manufacturers to continue research and development of better materials to improve dye stability of film and prints. Manufacturers of photographic materials should be encouraged to include specific statements regarding the problem of print and film fade in their advertising and promotional materials.

B. Encourage national and local associations to cooperate with manufacturers in making available materials to be used for customer education.

C. PP of A members may wish to replace deteriorated photographs. If so, they should consider retaining negatives or films ordered as long as the photographer making the original exposure remains in business and the films are printable.

D. Reasonable care should be taken to properly store and identify these original films following recommendations supplied by the material manufacturers.

E. All films and prints may in time deteriorate, lose color saturation and image fidelity. Storage conditions, display and other factors (heat, humidity, UV exposure, etc.) will determine how long a film or print will last. Advise your customers to consult their professional photographer for recommendations on ways of extending the "life" of their photographs.

**III. Recommendations:**

A. Explanation cards should be displayed in your studio.

B. The subject of deterioration of the photographic image and materials should be part of the initial contact with the customer.

C. The following PP of A disclaimer is offered for your consideration and possible use. Although this has been developed by PP of A Legal Counsel, we suggest you review the disclaimer with your legal counsel before actual use.

"This studio and/or photographer assumes no responsibility or liability for defects or shortcomings including color changes or instability of the material used and processed in accordance with the manufacturers' specifications. Accordingly, for color film and color prints, the studio and/or photographer disclaims the implied warranties of merchantability and fitness for a particular purpose. For all photographs, whether black and white or color, we also disclaim liability for any consequential or special damages you may suffer, and in no event shall our liability, whether in tort or negligence, in contract or otherwise exceed the actual cost of the material used."

A Photograph is a Treasured Possession
And Should Provide Satisfaction and
Pleasure for Many Years

[Dated December 17, 1980. Some 15,000 copies of this statement were printed and copies were sent to all PP of A members.]

# Appendix 8.4 – Text of Brochure Explaining the Problems of Color Print Fading Supplied to Customers by Krider Studios of Lawrenceburg, Indiana

Krider Studios, Inc. has been in business in Lawrenceburg since May, 1947. We are now photographing our second generation of weddings, and our second and third generations of babies, plus grandparents and great grandparents.

It is because of the many close friendships that we have developed over the years, that we feel we have to be completely honest with our customers about the fading and changing of color of direct color portraits. We can foresee a lost generation of photographs, and we feel it is our obligation to do what we can to preserve as much of our heritage as possible, through photography, for future generations. Portraits are meant to be treasured keepsakes.

Webster defines a photograph as, "A picture made by photography," and photography as, "The art or process of producing images of objects upon a surface sensitive to the chemical action of light etc." We, at Krider Studios, prefer to define a photograph as the recording of an instant from life. These instants from life are recorded for many reasons, but in the case of portraits, because we want to remember, or be remembered. Portraits are meant to be treasured keepsakes.

Because Krider Studios respects your right to know before you buy, we are supplying the following information. We are finding that most materials that are available to professional photographers for taking and printing direct color, are subject to fading and changing of color. The degree of change depends on many variables. We think you should be aware of this, and are offering these alternatives for your consideration.

Since we can print black and white portraits from color negatives, but we cannot print direct color portraits from black and white negatives, your portrait has been taken on color film, unless otherwise specified, for those of you who wish all or a portion of your order printed in direct color. For those of you who wish a more permanent photograph, we can make black and white, brown tone, or oil colored portraits from either color or black and white negatives. We urge you to discuss this with our staff. The decision will be yours.

We retain all of our negatives, and all photographs taken by Krider Studios are covered by a Limited Warranty that states, "The dyes used in color films and prints, like other dyes, may in time change. Neither film nor prints therefore will be warranted against any change in color. If any time, any photographs taken by Krider Studios, Inc. should in any way become lost, stolen or destroyed, the print, or prints, will be replaced to the original purchaser, by Krider Studios, Inc., 215 Walnut Street, Lawrenceburg, Indiana, at 75% of the current reorder price, providing the original negatives are available and in a printable condition. This replacement order will be complete in 60 days."

Damaged or faded photographs must be returned to Krider Studios, Inc. and the charges for reprinting the photographs must be paid in advance. This Limited Warranty is not subject to arbitration, and is provided as a service without legal recourse and extends no further than the terms as they are written.

May we suggest that if you have any treasured photographs that are deteriorating, that now is the time to have them copied and restored before excessive fading occurs. Bring your photographs to Krider Studios, Inc. now for a "no obligation" evaluation.

Krider Studios, Inc.
215 Walnut Street
Lawrenceburg, Indiana 47025

# Appendix 8.5 – Text of 1990 Letter from H&H Color Lab, Inc. to Its Customers Announcing the Change from Ektacolor Portra Paper to Fujicolor Professional Paper

Dear Customer,

In 1990 Kodak introduced the Ektacolor Portra Professional paper and high speed RA-4 chemical process as the new industry standard, and H&H switched to this paper and process in February 1990. Since that time it has been our opinion, as well as many of our customers, that although the chemical process was improved, overall print quality actually declined. Therefore, we began a search for a better product consistent with the H&H objectives of quality, service, and price.

This search led us to a new RA-4 compatible paper manufactured by Fuji, Fujicolor Professional Paper Super FA. We thoroughly tested this paper for many months and in September, mailed test results and sample prints [matched sets of prints made with both the Kodak and Fuji papers] to many of you requesting your opinion. Over 50% of those polled responded to our questionnaire, and the results are as follows:

• 93.9% of the 263 photographers responding voted "YES" that H&H should pursue the best quality product regardless of the manufacturer.

• An overwhelming majority were pleased with the extended display permanence of the Fuji product (nearly twice as long) and felt the time long overdue to address this important issue.

• H&H production employees were unanimous in their positive support for the Fuji paper. They enjoyed the ease with which they could produce accurate color and preferred the overall quality look of the Fuji paper.

Based on our research, our test results, and your "yes" responses, we will be converting at least 85% of our production facilities to the new Fujicolor Super FA paper during January of 1991.

In our questionnaire we welcomed any special comments or observations you wanted to express. Some commented that Kodak has provided support to the professional photographer over the years. We discussed this concern with representatives of Fuji Film USA and they have committed to increasing their support to the professional photographer including increased educational programs and scholarship grants.

Some also expressed a desire to "buy American." Kodak will continue to be a major supplier to H&H. We buy many products from Kodak in the areas of black and white materials, color paper, film, production hardware, and computer software. The channels of communication with our good friends at Kodak are better than ever. We believe they will listen to the demands of the marketplace, and we will see competitive changes in the future!

We all know good and fair competition is healthy for the marketplace. We are witnessing this principle of the American free enterprise system working and benefiting you, the independent studio photographer, and your customer. The lab and the photographer now have both Fuji USA and Kodak working hard to win our business and help us improve our industry.

To those who took the time to study the information and respond in such high numbers, thank you! We especially appreciate the kind words you expressed about H&H. We feel flattered and even more dedicated to provide the finest product in the industry. You have given us a mandate to pursue quality wherever we find it. With Fujicolor Professional Super FA paper, your customers will receive their photographs printed on the best and longest lasting color negative paper available in the world today, and H&H can continue to pursue and provide you with the best balance of quality, service, and price.

Sincerely yours,

Wayne B. Haub, President
December 29, 1990

H&H Color Lab, Inc.
8906 East 67th Street
Raytown, Missouri 64133

Telephone: 816-358-6677
Toll Free: 800-821-1305
Fax: 816-356-7950