Film-Tech

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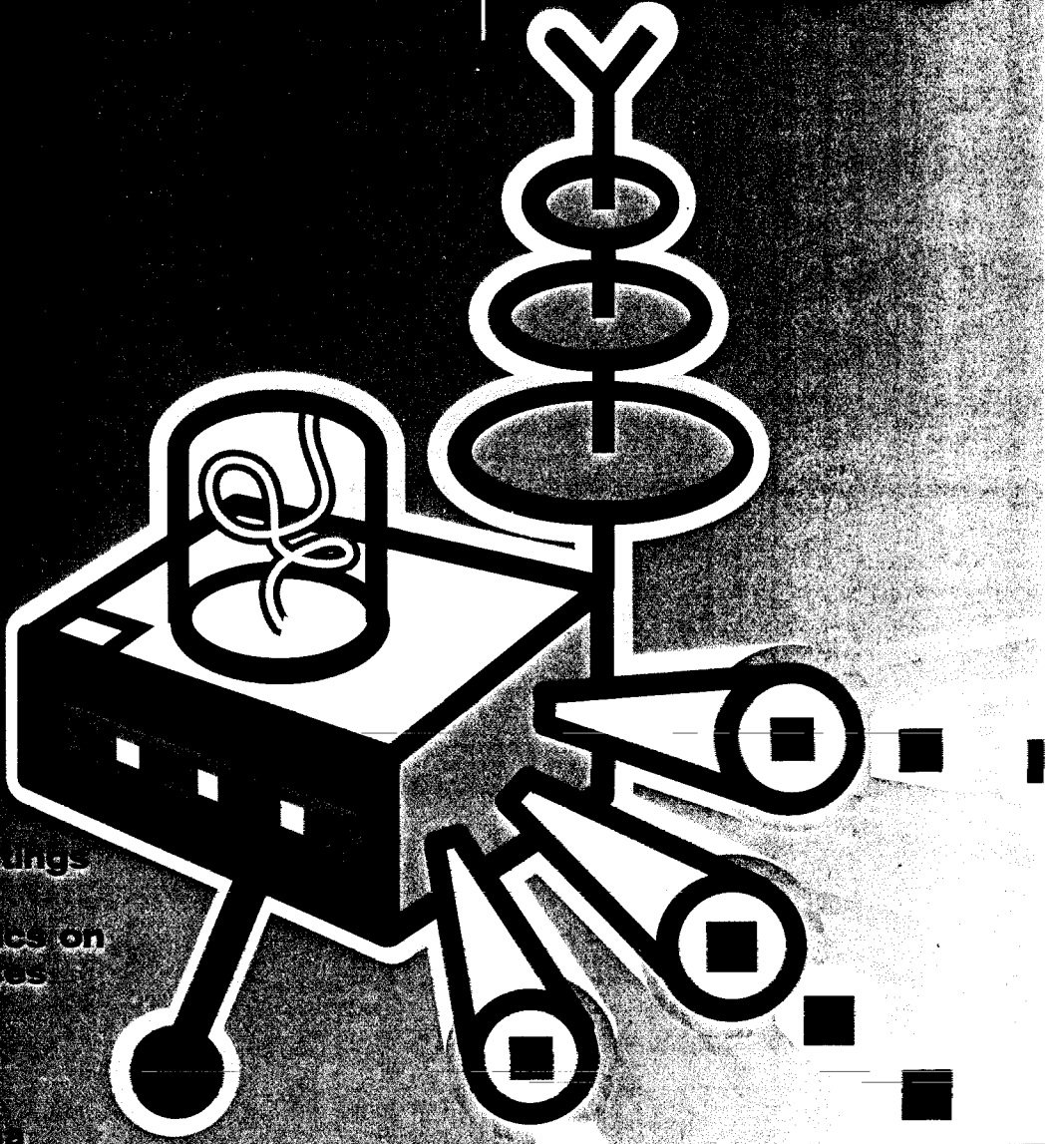
JUNE 2000

Kodak notes



Season's Greetings

by Sean Lohan
Manager, Cinema Operations, US, Canada and LAR
Entertainment Imaging Division, Eastman Kodak Company

Season's Greetings sounds strange for this time of year but the start of the busy summer season is just what our friends in exhibition have been waiting for. Looking at the various financial reports from the circuits, it is clear to see that the past year has been a difficult time for everyone. Stadium seating and the megaplexing of America have taken its toll on the theatres, but as this industry has shown time and time again they will rebound from this period of financial woes and come back stronger than ever.

In this issue of *Cinema Notes* we have added a few new features as well as continuing with our regular features you have come to expect. There is a new column– "Ask Don Lane." Don is the *Kodak ScreenCheck* Experience Manager for the United States and Canada. As more and more screens continue to join the program, Don has been receiving many operational and logistical questions from theatres across the country. To share this information with the rest of the industry we decided to feature a few of the questions in each issue. Also starting this month we will do a feature story with an Exhibitor Relations executive from one of the **studios. Harry Mathias has written a very informative story about Schneider lenses and John Fithian, the new president of NATO, has been kind enough to sit for a question and answer session. The other new feature we have added is a full page of websites and links for** various parts of our industry. Check out the back cover and see what we have to offer.

The *Kodak ScreenCheck* Experience has now been in theatres for a little over one year and I am very excited about the growth we are seeing in both the United States and Europe. I am pleased to announce that Clearview Cinemas, one of the major circuits in the Northeastern part of the United States, has recently joined the *ScreenCheck* Experience. The first two theatres to receive *ScreenCheck* certification are the world famous Ziegfeld and the Beekman, both in Manhattan. Make sure you read the article on page 9. If you would like additional information on the *ScreenCheck* Experience please contact me.

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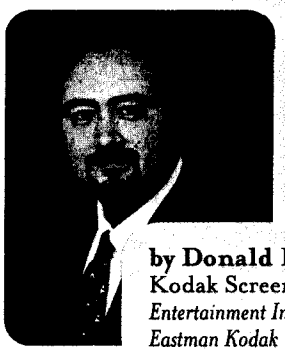

Ask Don Lane:

by Donald F. Lane
Kodak ScreenCheck *Experience Manager,*
Entertainment Imaging Division
Eastman Kodak Company

Q: I run a theatre in California and the air is extremely moist. Can you tell me where I can find tools to help me record the amount of humidity in my booth and what the optimal amount of humidity should be?

C. Garcia, California
A: An economical solution is to visit your local Radio Shack and purchase a Temperature/Humidity gauge. There are many models available for around twenty dollars. Place them next to your platters to get the most accurate measurements. The relative humidity in your booths should be between 50 and 60 percent.

Q: I would like to know what some of the common causes of abrasion and wear to film are. Are there any resources on the web or information you can send? Thanks in advance for your help.

J. Culver, Arizona
A: Some of the common causes for excessive abrasion and wear of film prints are excessive tension, misalignment of film in the projector, creased edges, or improper film handling. An excellent article is posted on the Kodak website at www.kodak.com/country/US/en/motion/support/h1/projection.shtml#common.

If you have a question for *Cinema Notes*, please ask Don Lane at donald.f.lane@kodak.com or call 310-204-7143.

Schneider Optics:
Focuses on Projector Lenses

No matter how much technical and artistic talent goes into creating motion picture images, the audience doesn't get the full impact if the picture is not put on the screen properly. One important variable is the projection lens.

Schneider Kreuznach, headquartered in Bad Kreuznach, Germany (with the offices of its U.S.A division, Schneider Optics, in New York and Southern California), has been providing exhibitors with high-quality projection lenses for more than eight decades. Harry Mathias, Schneider Optics' director of motion picture technology, is a well-known Hollywood-based cinematographer and former consultant to Panavision (a major camera manufacturer) and Kodak.

"I'm not a lens designer," says Mathias. "That's a highly specialized skill. But, I am involved in the process of selecting what lenses Schneider is going to work on, and what issues must be considered when we design our lenses."

Harry Mathias

Mathias estimates that Schneider provides more than 70 percent of the projector lenses used by exhibitors around the world.

"Years ago, projector lenses had fairly short lives," he says. "This was primarily because they consisted of different glass elements that were cemented together. The extremes of heat, light and vibration that occur during projection, caused the cement to get brittle and yellow. This often caused the lens elements to separate."

In 1982 Schneider introduced the first full line of lenses that were "air gapped" rather than cemented, he explains. The elements were mounted in metal with nothing but air between them.

"This type of lens design is very difficult to manufacture and very few people in the world know how to do it," Mathias explains. "Air gapped lenses don't age the way other cinema lenses can. They can still be damaged if they are abused or improperly exposed to the extreme heat that is generated if you run a projector without any film in the gate; but treated properly they will not age in the same way."

Mathias says that major contemporary lens design challenges result from the way most modern auditoriums are designed.

"Stadium seating requires very-wide-angle lenses in order to project a large enough image on the screen with a limited throw," he explains. "Prior to stadium seating, the average lenses were about 50 mm to 70 mm for projecting flat images, and 95 mm to 125 mm for anamorphic or other wide-screen films. Today, the average lenses used in theatres with stadium seating are between 37.5 mm and 45 mm for projecting flat images, and 70 mm to 85 mm for anamorphic or other wide screen images."

Projector at The Spectrum in Orange, Calif.

He explains that subtle imperfections become more apparent when larger images are magnified on bigger screens with shorter throws. Furthermore, these very-wide-angle lenses differ far more dramatically from one focal length to another in terms of how big the projected image will be, given the same throw.

"The difference between a 110 mm and 115 mm lens is hardly noticeable," he says, "but the difference between a 25 mm and 30 mm lens is huge. This is why we make a series of lenses in 2 mm increments. If a theatre doesn't have the option of the perfect lens size, the manager has to choose between a picture that is too small and one that is too big. Neither is a good option. Audiences will complain if images don't fill the screen. If image size is too big, it must be cropped, cutting part of it out. That changes the composition designed by the cinematographer, and it increases magnification, which affects image quality."

Mathias adds that each focal length lens is specially designed for maximum efficiency at that size.

"Some manufacturers use add-on adapters to alter the focal length of a lens," he says. "We don't recommend that. Our 47.5 mm lens is not just 35 mm lens magnified. It is a different design."

Mathias adds that proper maintenance of lenses is extremely important. They are made of high-quality optical glass and covered by specially designed multi-coatings (as indicated by the MC on the lens barrel).

"Lenses need to be cleaned regularly," he says. "They are durable, but they can be damaged if fingerprints or dust are left on too long, and they become imbedded into the surface of the lens. It is very important to use a clean, lint-free cloth and to avoid grinding dirt into the glass. The best thing to do first is to use a blower — either a can of air or a bulb syringe

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DreamWorks Patricia Gonzalez

Talks About In-Theatre Promotions

Patricia Gonzalez, head of in-theatre marketing services for DreamWorks SKG, says that effective trailers, one-sheets, print and TV advertising are highly important tactics for attracting audiences. But, she believes that imaginative local promotions can give exhibitors and distributors a sharp competitive edge.

Gonzalez began her career working a concession stand at a General Cinema theatre. Six years later, she was managing that circuit's high-profile Sherman Oaks (California) multiplex. Gonzalez subsequently became national director of film marketing for the circuit. She joined DreamWorks SKG in September 1996.

Gonzalez and a staff of five regional representatives cover the United States, Puerto Rico and Canada, providing an interface between the DreamWorks in-theatre marketing department, exhibition film marketing departments and local theatres.

"We believe it's important to motivate theatre managers to promote our movies," she says. "We almost invariably mount a large-scale manager incentive program to reward people who execute the best in-theatre promotions for our movies. For *The Haunting*, we sent a manager and three guests to London where the film takes place and gave out a lot of other prizes.

Local managers are provided with comprehensive guides filled with suggestions and materials for promoting individual movies. Managers are also encouraged to find innovative and creative ways to attract local audiences.

"We try to make the guidelines simple," she says. "We know how much a manager has to deal with on a daily basis. People who have worked on the exhibition side, understand the duties of running an operation, especially today's megaplexes. We try to be very sensitive to the limited amount of time managers have to promote movies. They have enormous responsibilities well beyond coming in the morning, opening the door and selling tickets."

Gonzalez encourages participation in manager-incentive programs.

"We've had grand prize winners from major markets to some very small markets," she says. "What matters is how their creativity is used to market our movies."

Gonzalez tells the tale of the Regal 10 team (Jonathon Douglas, Heather Finer, Jonas Beauregard and Greg Burnett) in Jacksonville, Tenn., who built an 18-foot Z character from *Antz* out of plywood. The plywood structure looked like it was holding up the side of the building.

"The local press made that into a big story," she says. "You can't buy this kind of advertising. The manager and his staff built it themselves. That kind of innovation is a very important part of marketing a film."

Gonzalez speaks from experience. When she was managing the Sherman Oaks multiplex, Gonzalez won a prize from 20th Century Fox for her promotion of their film *The Abyss*.

"We did a tie-in with an airline company and a local radio station, and gave someone a free trip to a diver's resort in Miami," she recalls. "I think these promotions are a great way to get involved, and be part of the movie experience while generating more interest at the same time."

What's it like being on the other side of the fence motivating other people at local theatres to dream up innovative promotions?

"I love every minute of every day," she answers.

Schneider

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— to blow the dust and dirt off the lens. Kodak and other companies make excellent lens solutions and lens tissue. Apply the solution to the tissue, not to the lens, because no projection lens can be 100 percent sealed. Liquid can get inside the lens and, when it evaporates from the heat of projection, it will leave an internal streak or a spot that cannot be reached for cleaning. Under no circumstances should any sort of solvent or acetone be used on a lens, because these will actually dissolve the coating and ruin the lens."

Mathias says that Schneider Optics has had an extensive research and development program underway for some time, for lenses to be used with digital projectors. He says they require "completely different" designs and are expected to become available starting in June 2000.

"The idea that theatres will be able to use the same lenses for film and digital projection is not valid," he states. "In the first place, lenses for traditional film projectors are designed to accommodate the curved, pillow-shaped form film takes when subjected to heat from Xenon lamps. Digital images will come from a flat chip, so such lenses won't be properly aligned with the source of the image.

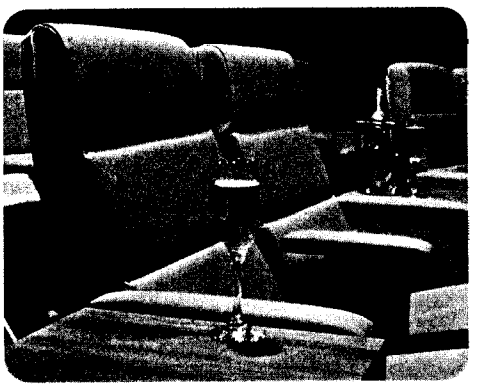
"And that's just the smallest factor in this," he continues. "Their optical paths are spaced differently because there is a complex prism in the optical path of digital projectors that is absent in film projectors. In a film projector there is about a half-inch to an inch and a half between the back of the lens and the film plane. All of the current digital projectors have much more space between the imaging device and the lens and so a much longer back focal distance is required of the lens. Lenses for digital projection systems must also be designed to work perfectly with the prism system. Lenses for these projection systems must be newly designed from the ground up. This is particularly difficult when you realize that it takes at least six months from design to production of a lens, while today's digital technology is advancing at a rate that fast or faster. This means that today's solution is probably not tomorrow's solution. By the time one produces a set of lenses for today's digital projection systems, there may be a whole different set of requirements for the next generation of digital projectors. But, whatever happens, I am confident that Schneider will be the first company to serve that need without making compromises."

General Cinema
Goes the Extra Mile to Market Movies

"Our marketing strategy at General Cinema is to give people the best possible value for their entertainment dollar," says Page Thompson, senior vice president of marketing for the Boston-based circuit. "The new buildings that we're putting up demand a higher ticket price. We try to provide extra entertainment that makes people feel they're getting a better value for the money. We also believe creative promotions can help add a sense of excitement to the movie-going experience."

In the past year, General Cinema has hired five field marketing managers who focus exclusively on the company's film and concession promotions. The circuit also encourages theatre managers and local marketing partners to get involved with film promotions. Thompson explains that the marketing department picks a film to feature each month. Field marketing people devote the majority of their time to promoting that film based on information from General Cinema headquarters and the studio.

For *The Road To El Dorado,* from DreamWorks SKG, various local marketing partners were brought into the act. "In the Philadelphia area," Thompson says, "we cross-promoted the film with the professional hockey team by running the trailer on the giant screen in their arena. In Boston, we have a tie-in with the Revolution soccer team and in Chicago with the White Sox. At the stadiums and arenas, we had prize patrols distribute *The Road To El Dorado* packs during games in order to generate interest in both the film and in General Cinema. In New York, we had a group of people and the General Cinema mascot, Popcorn Man, in the background during live shots on the *Today* show, holding *The Road To El Dorado* banners. We also had a co-promotional program with Hershey's candy, where we built giant pyramids in our movie lobbies and decorated them with gold foil symbolizing the city of gold."



A recent promotion in some cities for the Andy Kaufman biopic, *Man on the Moon,* drew on the fact that comedian Kaufman invited his Carnegie Hall audience out for milk and cookies. In selected theatres on opening night, *Man on the Moon* audiences were given free milk and Otis Spunkmeyer cookies.

"It made the whole experience more enjoyable," says Thompson.

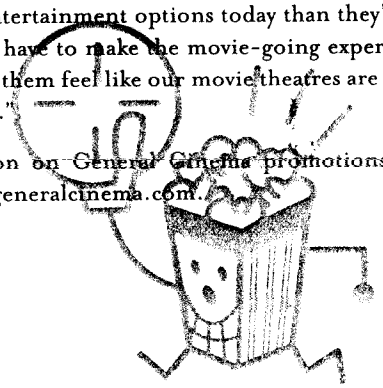
Other annual ventures include a Summer Movie Camp for kids between three- and eight-years-old. Thompson says the Summer Movie Camp attracts more than 650,000 kids a year to previously-released movies which are shown at discount prices.

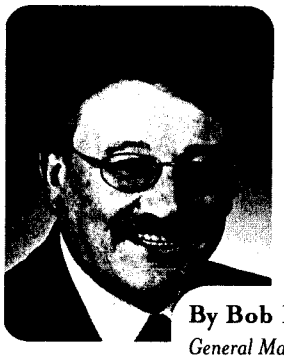
"A lot of the kids come as part of day-care or summer camps," he says. "It's the first trip many of them make to a movie theatre. We want the experience to be as enjoyable as possible, so in addition to the movie we tend to have a lot of entertainment. It could be members of the local soccer team signing autographs, clowns or someone from the police or fire department to entertain the kids. It's like a three-ring circus. Hopefully, they have a great time and get in the habit of going to the movies. And at Summer Movie Camp every kid leaves with a prize."

Whether attracting kids or adults, Thompson believes it is more important than ever to find ways to bring people to the theatre and to give them reasons to come back.

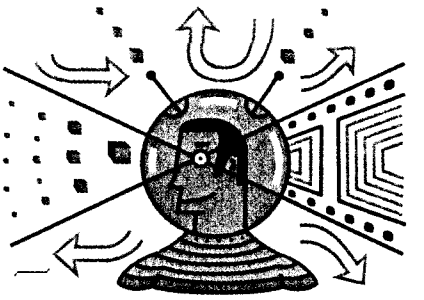
"People have more entertainment options today than they've ever had before," he says. "We have to make the movie-going experience more compelling and make them feel like our movie theatres are the place to go for entertainment."

For more information on General Cinema promotions check out their website at www.generalcinema.com.





Kodak
and the Future



By Bob Mayson
General Manager
Cinema Operations, Entertainment Imaging
Eastman Kodak Company

A lot of different companies and different professions were represented at ShoWest. But we all have one thing in common — we care about pictures. Big pictures that tell great stories on big screens.

Many are asking, will those pictures continue to be shown on film or will they be digitally projected? And what will that mean to our future?

Let me turn that question around and ask what do we, all of us in the industry, want the future to be? What do we want film cinema to be? What do we want digital cinema to be? And what is our role?

I'll answer those questions from the Kodak point of view. We have lots of activities underway and they're all based on one simple fact: Kodak *is* pictures.

This year, in all major categories, 45 movies were nominated for Academy Awards®. Kodak film was used to shoot all 45 of them. But, we also provided digital services for 11 of those movies which is more than any other company. That's not unusual because Kodak is not just a film company OR a digital company. We're a picture company and we care a lot about the quality of those pictures.

And we know, however and wherever, audiences can see pictures on screens — ranging from televisions to computers, and from sports arenas to hand-held devices — there is nothing that provides the same experience, the same magic, as seeing great pictures on a cinema screen.

And because Kodak is pictures, we will continue to raise the quality bar for those pictures.

Today, those pictures are projected on film. Film cinema has a long and healthy future, one that we at Kodak will continue to invest in!

What do we want the future of film cinema to be?

I would suggest we *all* want film cinema to be what it's always been — a place that delivers unique audience value and great entertainment — and "immerses" them in a larger-than-life experience they can't get anywhere else. At Kodak, we are doing our part to make that happen.

A couple of years ago, we "reinvented" color negative film with our introduction of the Kodak Vision family. Now, we're getting ready to do that again with print films. We think film prints could be sharper and cleaner. They could be steadier, brighter, and more scratch resistant. In our laboratories and working with our industry partners, we're developing solutions that improve the entire film system.

In addition to new emulsions, you will see new film projector technology that re-designs the relationship between shutter, intermittent and lamphouse to take film projectors to new levels of steadiness, brightness and resolution.

Even after all these years, film is still really only delivering about 50 percent of its future quality potential.

We've established the *Kodak ScreenCheck* Experience to help cinemas meet industry standards for picture quality. We've begun the first industry-wide training classes for projectionists to help them upgrade their skills. And we're extending the *Kodak* Cinema World brand into other emerging markets. Our experience in Moscow has proven that audiences respond very well to high quality film-based entertainment. Kodak theatres will deliver that.

Have I mentioned we care about pictures? But, we are business people. We believe investments in the whole film process are wise investments because the system has lots of potential. We believe that film will be the best way to show pictures on large screens for long into the future.

But film will not be the only way. Digital also offers promise. What do we want the future of digital cinema to be? To get established, digital has to deliver something different from film. It has to have a tangible consumer reason to exist.

I would suggest that we want image quality that's *better* than film...a distribution process that's more efficient and reliable...a system designed to world standards...and an audience experience that's *superior* to home viewing.

This need not be an either/or situation. One technology will not replace the other. Film and digital will exist side by side, each offering a different cinema experience. But, for that to happen...we can't settle for today's solutions. We can't settle for digital TV on larger screens. We can't settle for "good enough" and Kodak has a major role to play.

In the Kodak Technology Center in Hollywood, we're working with the industry to develop a high-quality digital cinema system, not just a projector, a whole process of preparing and delivering superior pictures to a cinema audience. The process will begin with the whole movie in digital form — on a Kodak digital intermediate created from the film negative.

That digital intermediate which is commercially available today can be used to reproduce the movie in any form, on any media, for any purpose.

The Kodak digital cinema system will include technology and expertise from Kodak as well as best-in-class components from other manufacturers. Our intention is to create a *universal* system that makes sense to everyone. We're working with world-class partners who also care about pictures.

To address industry concerns around artistic integrity and image security in a digital system...we're working with QUALCOMM for encryption and compression technology. We believe QUALCOMM's encryption and compression technology exceeds the industry's expectations. QUALCOMM has proven they know how to handle large data files in effective and reliable ways.

We'll add Kodak knowledge of color management and other expertise to create a system that preserves image fidelity and makes picture quality consistent from screen to screen across different venues.

To address the need to drive for superior picture quality in a digital system — we are testing and discussing with Japan Victor Company (JVC) — the possibility of using their next generation D-ILA chips in Kodak digital cinema system. We may also have discussions with other chip manufacturers.

Our intention is to combine innovative chip technology, Kodak color science, and Kodak's unique experience with high performance optics, to produce on-screen images that better match the quality of "show prints" in today's best film projection systems.

That would make Kodak digital picture quality roughly twice that being demonstrated in the best digital systems today.

Also, because the projector will be the most expensive component of the system, we are also looking towards using very high quality, but less expensive, chips to make digital projectors more affordable.

Finally, let me add this about our new system: We are not just creating a technical solution. We are also applying Kodak business expertise, as well as our industry understanding, to create a system that also makes financial, and artistic sense and puts brighter, sharper, clearer pictures on cinema screens.

Because...beyond digital technology... and beyond film technology...our collective future depends on putting great pictures on the screen.

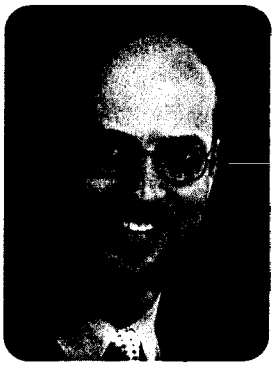
What are we doing about our future?

I've talked a bit about Kodak efforts but whatever the technology, creating great entertainment is really a collaborative process. It takes more than a million hours to make a major motion picture and just two hours to show it.

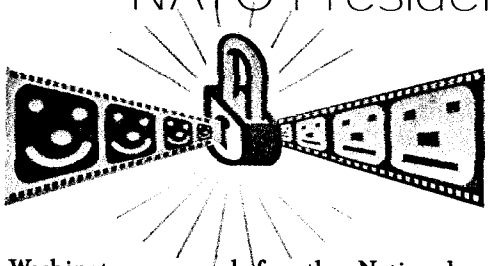
One million hours is a huge investment, by a lot of people who share one belief: that audiences want great stories told in pictures on cinema screens. If you only take one message from what I've explained, please take the following. At Kodak, we're raising the quality bar for big pictures.

We do not believe that digital cinema will find widespread commercial acceptance overnight. But, when it's ready, we all need to be ready also with a system that makes commercial, artistic, business, and technical sense.

Film and Digital. If together, we can continue to improve film cinema and help digital cinema deliver on its promise, we can all enjoy a healthy and growing future.



A Visit With:
NATO President John Fithian



John Fithian, formerly Washington counsel for the National Association of Theatre Owners (NATO), stepped into a new role as president of the organization last January. The position keeps Fithian busy shuttling between Los Angeles and Washington.

"I have a residence in Washington and another in Studio City, but sometimes I feel like I live on an airplane," Fithian says.

NATO has more than 650 member companies, including more than 70 percent of the U.S. movie screens. NATO's members include the larger circuits and many smaller "mom and pop" operations, and has plans for a large international presence. Following are excerpts of a conversation:

Q: What are your main responsibilities?

A: The business of NATO generally falls into two major categories, either legal or business issues. Most of the legal work takes me to Washington, where NATO looks out for the legal rights of our members. The business of managing NATO keeps me centered in Los Angeles.

Q: What are some of the most important legal issues?

A: One example is the Americans with Disabilities Act passed by Congress. The law states that people with disabilities must be given the same access to places like movie theatres as everyone else. It isn't always completely clear what that entails. For example, many newer theatres have stadium seating, and many theatres with stadium seating are providing wheelchair access in the area between the front few rows closest to the screen and the stadium seating area. This is commonly the place where people enter the theatre and it seems to be the most sensible place for wheelchair access. Some people feel that doesn't give handicapped people in the audience sufficient options. We filed a friend of the court brief in an important case on this issue on behalf of a NATO member. A Federal Court of Appeals found the circuit was in compliance with the law. At the same time, we are sensitive to this issue, so we continue to look for solutions that satisfy everyone.

Q: Are there other broad legislative issues affecting NATO members?

A: Some people are lobbying legislators to have the voluntary movie ratings system — G, PG, PG-13, R and NC-17 — enacted into law. In other words, if someone underage manages to get into a theatre showing an R-rated movie, the exhibitor could be burdened with a large fine or even prison time. We believe this legislation would be dangerous for many reasons. It would be a breach of free speech guaranteed by the First Amendment. Do we really want the government legislating and enforcing laws that dictate who can see which movies? NATO and the MPAA have designed a voluntary movie rating system. Our members have agreed to request *IDs* to verify that their patrons comply. We believe that is the proper way to deal with this issue.

Q: What sort of issues does NATO get involved with internationally?

A: One current issue is the dialogue about digital cinema. If, in fact, there is going to be a significant change in the way films are distributed, it will affect exhibitors everywhere in the world. We believe there must be uniform standards for all aspects of digital cinema, including satellite transmission, projection and encryption. All we need to do is look at what happened with digital sound. Since there is no single standard, exhibitors now have to invest in handling multiple digital sound systems. It would be untenable to require exhibitors to invest in installing and maintaining different digital projection systems. We also need standards for transmission and encryption. NATO members and the studios are working with the Society of Motion Picture and Television Engineers to develop standards.

Q: How do you think the implementation of digital cinema will be financed?

A: Theatre owners have recently made major investments in improving infrastructure that is providing a much better entertainment environment for audiences. We don't believe our members should also be burdened with the cost of installing digital projection systems. The technology is unproven. There are no global standards yet, and the main economic benefits would go to the studios and other distributors. In my first speech as NATO president at the ShoWest Conference, I said that the studios will have to finance any conversion to digital cinema. That's not my opinion. It's NATO's position.

Q: Why should the studios pay?

A: They would benefit from reducing costs for making and distributing film prints. If, in fact, beaming movies from a satellite, or sending it over fiber optics lines proves to be cost-effective, the studios will realize huge savings. That still leaves a lot of unanswered questions. How will studios finance the transition? Who will actually own the equipment? There are a lot of complex issues. Even

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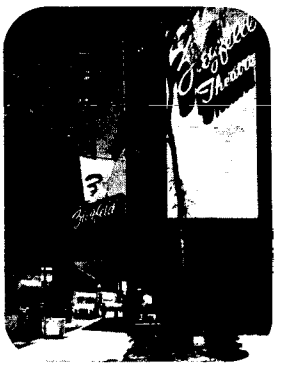
Ziegfeld and Beekman Theatres

Premiere *Kodak ScreenCheck* Experience In New York City



Movie-goers to the famous Ziegfeld and Beekman Theatres are enjoying the New York City debut of Kodak's *ScreenCheck* Experience, a certification program designed to ensure theatre audiences the best quality in movie presentation.

"The Ziegfeld is regarded as one of the finest motion picture theatres in the country," according to Gene Heaney, spokesperson for Clearview Cinemas, operators of the Ziegfeld and Beekman Theatres. "Among industry professionals, the theatre has a reputation for being the best place to go for the best movie experience. That's why we felt it was the perfect place to introduce Kodak's *ScreenCheck* Experience to the movie-going public in New York."

The Kodak program launched at The Ziegfeld Theatre the first weekend in May and soon after at the Beekman.

"The Ziegfeld, Beekman and Kodak are names synonymous with images and quality. This joint effort with Kodak is important because it affirms our commitment to the people who create movies and the audiences who pay to see them," Heaney said.

"Through the *ScreenCheck* Experience, Kodak is helping audiences experience movies the way they are meant to be seen," says Don Lane, *Kodak ScreenCheck* Experience manager, for Kodak's Entertainment Imaging Division. "The *Kodak ScreenCheck* Experience assures that theatres meet or exceed industry standards for presentation. We are excited about introducing our program to New York at this landmark site in The Big Apple."

The *ScreenCheck* Experience certification process involves Kodak with evaluating presentation quality and providing advice and technical training. Screens are periodically re-certified by Kodak to maintain certification in the program.

"We believe discerning movie-goers will choose screens where they see the *Kodak ScreenCheck* Experience logo because they'll know the exhibitor is committed to providing a high-quality experience," says Lane.

The *Kodak ScreenCheck* Experience is available in the United States and Europe. Some 600 screens have been certified in the United States and Europe since the program was introduced in 1999.

Clearview Cinemas is an operator of community-based movie theatres in Connecticut, New Jersey, New York and Pennsylvania. With 65 locations and over 297 screens, Clearview Cinemas offers a unique mix of first run commercial, art, independent and family oriented films. Clearview is a wholly-owned subsidiary of Cablevision Systems Corporation (N: CVC).

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if you had a total transition to digital projection, chances are that at least in the beginning megaplexes and multiplexes will have both film and digital projectors. In other words, there is a question of transition, roll out and timing. There are also questions of control. Control of the data emanating from the new system, control of movie times and screen selection, etc. There are answers to all of these questions, but we don't have them today.

Q: Are there other major issues that need to be resolved?

A: Nobody is going to support a transition to digital projection until we are certain that encryption technology is rock solid. Some very smart people are assuring us that encryption isn't a concern. The problem is that many of those same people were confident that the Internet was secure, and now we are hearing about all sorts of problems.

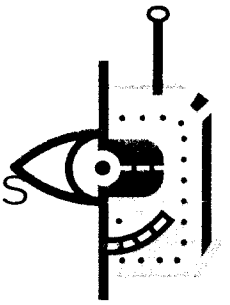
Q: What's the bottom line?

A: Digital projection is intriguing, but at this point, it is not a fait accompli. For some people it is a certainty, and for others there are still questions.

Q: Home video is evolving in intriguing ways. Satellite and cable channels are delivering many movies and other entertainment into the home. High-definition TV is on the near horizon, and millions of people now spend much of their leisure time on the Internet. What do these trends portend for the future of the cinema?

A: A reporter called me when the proposed merger between AOL and Time-Warner was announced. He wanted to know if I thought that signaled the beginning of the end for movie theatres. I reminded him that people said that about television and later about VCRs. People still want to get out of the house and see movies in the best environment possible as part of a communal experience. As long as theatres preserve that 'brand' and offer people something they can't get at home, our business will thrive.

Shedding Light on Screen Luminance Meters



John P. Pytlak
Senior Technical Specialist
EI Worldwide Technical Services, Eastman Kodak Company

To Measure Light, You Need a Photometer

Standard ANSI/SMPTE 196M "Screen Luminance and Viewing Conditions" specifies the "Photometer type" as follows:

"Screen luminance shall be measured with a spot photometer having the spectral luminance response of the standard observer (photopic vision) as defined in CIE S002. The acceptance angle of the photometer shall be 2° or less. The photometer response to the alternation of light and dark on the screen shall be to integrate over the range of 24 Hz to 72 Hz and display the arithmetic mean value."

Can You Please Translate That?

Simply put, the meter should "see" the light reflected by the screen as the human eye does. Some meters have photocells that are more sensitive to invisible infrared energy, and may give incorrect measurement of visible light. Meters designed specifically to measure screen luminance use special sensors and filters to have a "photopic" response just like the human eye.

Second, the photometer used to measure screen luminance in a theatre should measure light reflected from a small area of the screen, no more that two degrees in viewing angle. For example, if you take measurements 60 feet from a screen 20 feet high, a meter with a two degree acceptance angle "sees" an area on the screen only about two feet in diameter. Having a relatively narrow viewing angle allows the user to measure luminance in various parts of the screen, to evaluate the uniformity of illumination across the screen.

Since screen luminance is measured "open gate" with the projector running, the light on the screen is actually going off and on 48 or 72 times per second. At the normal 24 frames per second, a two-blade shutter gives 48 interruptions of light every second. A three-blade shutter gives 72 interruptions. A meter used for measuring screen luminance needs to be properly calibrated for the alternating light/dark cycle of a projector.

Professional Screen Luminance Photometers

Several photometers are designed and calibrated specifically for measuring screen luminance in theatres. They are available through theatre equipment suppliers, professional photography dealers, or from the manufacturers.

Minolta Model LS-100 Luminance Meter

This digital meter is available from Minolta is sensitive enough to measure luminance as low as 0.001 footlambert. It can be used to measure screen contrast ratio (black luminance) and stray light as well as screen luminance. Earlier models of Minolta screen luminance meters may also be available on the used equipment market. Additional information is available at http://www.minoltausa.com. Click on the menu items for "Business," then go to "Color/Light Measurement," "Light Meters" and "LS-100."

SpectraCine CineSpot Model SC-600

The SpectraCine CineSpot One Degree Spotmeter Model SC-600 is popular with many theatre technicians. Complete product information is at: www.spectracine.com/msc600.htm

UltraStereo Labs PSA-200 Projection System Analyzer

This unique technology for measuring screen luminance uses a CCD camera and laptop computer to display luminance measurements simultaneously for 45 areas on the screen. Other measurements and diagnostic graphs are also available. The PSA-200 is especially useful when aligning a lamphouse for uniform illumination, as the CCD camera can be set up in the theatre auditorium while the laptop computer display can be located next to the projector while the technician makes adjustments. Information can be found at the UltraStereo Labs website at: www.uslinc.com/products/features/psa20.htm. For an article about the design and use of the Projection System Analyze, go to: www.uslinc.com/forum/ smpte97.htm

Other Meters

Luminance meters (or spotmeters) designed for general photographic use can also be used to measure screen luminance. These meters may not have the specified spectral response, or may be "fooled" by the shutter interruptions, so they need to be calibrated against a known "standard" screen luminance meter. As long as the measuring conditions remain constant (same color of light, same type of projector shutter), the calibration should be valid. For

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example, the Sekonic L-508 Cine Zoom Master can be used as a screen luminance meter if properly calibrated. Information on this meter is at:

www.sekonic.com/products/L-508c.html

Other photographic spotmeters made by Pentax, Minolta, or other manufacturers may also be suitable, as long as they are calibrated against a standard screen luminance meter for footlamberts or candelas/metre?.

Unsuitable Meters

Incident light meters are NOT useful in measuring screen luminance, since they can only measure light falling on the screen (footcandles), and not the light reflected back to the audience. Incident light readings do not take screen gain or curvature into account, and are not a good indicator of screen luminance.

Reflected light meters used for general photography usually measure a much broader area than two degrees, and often are not precise enough to measure slight changes in light level. For example, many photometers are only calibrated in Exposure Value (EV) increments equivalent to one full photographic stop, so they can barely discern the difference between eight and 16 footlamberts. Even a meter calibrated in 1/3 EV increments is not able to accurately measure the difference between 12 and 16 footlamberts.

The meters built into cameras for exposure control are likewise not precise enough to sense small differences in screen luminance. In most cases, they also measure an area that is too large, and may not have the proper spectral sensitivity.

Need for Periodic Calibration

Regardless of the meter used, periodic calibration is necessary to ensure accurate measurements. Calibration services are usually available from the companies supplying the meter (e.g., www.spectracine.com/repair.htm).

Obtaining Copies of SMPTE Standards

Copies of standard ANSI/SMPTE 196M "Screen Luminance and Viewing Conditions" are available from the SMPTE, 595 West Hartsdale Avenue, White Plains, NY 10607, Telephone: (914) 761-1100. Standards and test films can be ordered at the SMPTE website: www.smpte.org/stds/index.html

For more information, contact me at john.pytlak@kodak.com.

Elimination of Silver Based Sound Tracks Moves Closer

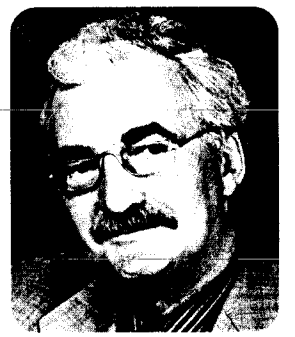
The elimination of the costly silver-applicated soundtrack process, long a goal of the film industry, is getting closer, according to Dolby Laboratories and Eastman Kodak Company.

The companies report that an increasing number of release prints with high-magenta analog soundtracks are being issued, with 20th Century Fox now joining Warner Bros. and Artisan Entertainment in issuing all releases with high-magenta tracks. Testing is also underway by Paramount and Universal, who recently released *Erin Brockovich* with 100% high-magenta prints.

The use of high-magenta soundtracks, which are silver-based but use different dye layers, is a vital intermediate step towards the use of an economically and environmentally advantageous pure dye track.

Fully compatible with conventional exciter-lamp soundheads, high-magenta tracks sound even better with red LED readers, thereby encouraging the installation of more of the new readers, which are necessary to read pure cyan dye tracks. Currently there are over 55,000 projectors with red LED readers in use worldwide, including 20,000 in North America, bringing closer the day when the release of prints with cyan dye tracks will be practical.

According to the ad hoc film industry committee that is working to encourage the conversion to dye tracks, that day could come as soon as next year. At a meeting in early March, reports Dolby Vice President and committee member Ioan Allen, the committee believed the industry could "start the transition to dye tracks in January 2001, with a limited distribution release of cyan dye track prints to confirm technical principles. This will lead to the target of full-scale releases as soon as possible"



Allen

Masson

"The day we eliminate the outdated silver-applicated soundtrack altogether will be a milestone in the history of cinema sound, and that day is now in sight," Allen said. Added Dr. Alan Masson, Director of Engineering for Eastman Kodak Company in Hollywood, "The benefits of cyan dye tracks will be felt by the laboratories, theatres, and the environment."

Development of the new soundtrack technologies was spearheaded by a collaborative effort of Dolby Laboratories, Kodak, and Technicolor, who were then joined by Deluxe, CFI, Fotokem, stock manufacturers Fuji and Agfa, and Ultra Stereo Labs/USL, Inc. Because digital soundtracks are not redeveloped, they are unaffected by these changes in analog soundtrack processes.

For further information on both high-magenta and cyan dye tracks, visit www.dolby.com and www.kodak.com/go/motion.

Internet Resources Part 1

The growth of the Internet has made a wide variety of "on-line" resources and information available to projectionists and theatre personnel. Many companies and organizations in the motion-picture industry have websites useful to theatres. Lively discussion forums about all aspects of movies can be found on private sites and in public Usenet newsgroups. Finding the information you need on the Internet can be a challenge, but it is fun too. This is the first of two parts, **look for more Internet resources in the next issue of** *Cinema Notes.*

Kodak Websites

Most people know about Kodak's popular website: www.kodak.com. It is a portal to a wide variety of information about Kodak and its products and services. Although you can easily navigate the site using the menus and search function, here are some handy links for theatres:

For direct access to Kodak's Entertainment Imaging **(Motion Picture) site: www.kodak.com/go/motion**

Many of Kodak's motion-picture newsletters, including back issues of *Film Notes for Reel People* and *Cinema Notes* are on-line at: www.kodak.com/US/en/motion/newsletters

Kodak's site has an extensive listing of motion picture industry links: www.kodak.com/US/en/motion/industry/index.shtml

For information on the *Kodak ScreenCheck* Experience: www.kodak.com/US/en/motion/screencheck/index.shtml

An E-Commerce page is now available at www.kodak.com/go/screencheck

Information on the new cyan dye analog soundtracks is on-line at: www.kodak.com/US/en/motion/support/sound/index.shtml

Links to Other Websites

Rather than try to list hundreds of website URL (Uniform Resource Locator) addresses in this article, a good way to find and bookmark useful websites is by visiting these sites that have numerous links to other sites:

Trade publication sites often have extensive links to distributors, theatre circuits, equipment suppliers, equipment dealers and theatre service companies:

Film Journal International: www.filmjournal.com
Boxoffice Magazine: www.boxoffice.com
***Hollywood Reporter*: www.hollywoodreporter.com/hyperlink/index.asp**
Variety: www.variety.com

Trade organizations likewise post numerous links on their websites:International Theatre Equipment Association (ITEA): www.itea.com

Large Format Cinema Association: www.lfca.org
National Association of Theatre Owners: www.hollywood.com/nato
American Society of Cinematographers (ASC): **www.cinematographer.com/resource/index.htm**
American Film Institute (AFI): www.afionline.org
Academy of Motion Picture Arts and Science: www.oscars.org
Motion Picture Association of America (film ratings): www.filmratings.com.

Cinema Notes

Return Service Requested:
EASTMAN KODAK COMPANY
c/o American Direct Mail
908 Hollywood Way
Burbank, California 91505

EASTMAN KODAK COMPANY
3457 S. La Cienega Blvd.
Los Angeles, California 90016
www.kodak.com/go/motion

To be added to the mailing list
fax to 310-204-7111,
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