

Film-Tech

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For The REEL PEOPLE
A Technical Service For Filmhandlers From Eastman Kodak Company

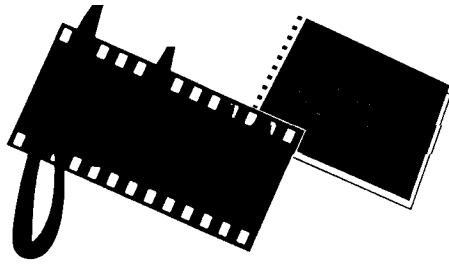


October, 1994

LEND US YOUR EARS

ENTERTAINMENT DATA, INC.

KAMINSKI - SPIELBERG - OSCAR



October 1994

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Pytlak's Practical Projection Pointers

We continue to hear from you about a wide variety of topics. In the past few months, some distributors have been distributing prints printed on polyester film stock, instead of the triacetate film stock that has served the industry well for over four decades. And movies like *Schindler's List* are showing that black-and-white prints are still a powerful artistic medium, but have projection characteristics noticeably different than color prints.

Q: When we started playing *Maverick*, we noticed a focus shift between our trailers and the feature. Once we refocused the projector for the opening titles of the feature, it stayed sharp. The focus shift seemed more apparent in our larger auditorium. We understand that *Maverick* was printed on a new type of film stock that can't be cement spliced (we use tape splices, so that wasn't a problem). Why does the new film focus differently?

A: You're correct that *Maverick* was printed on a different film stock than normally

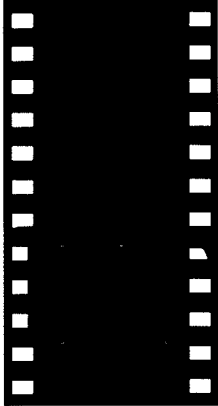


JOHN PYTLAK
Senior Technical Associate
Motion Picture Systems Development Group

used for theatrical prints in North America. It was printed on EASTMAN Color Print Film having ESTAR Base (Kodak's trade name for polyester film support), rather than the usual triacetate film support.

Actually, Kodak has made print film on ESTAR support since the late 1950's (almost as long as triacetate support, which replaced the very flammable nitrate film in 1950), but it has been primarily used for 16mm prints and prints for "special venue" projection like IMAX, DISNEYWORLD, SHOWSCAN, IWERKS, etc. ESTAR film support has greater tensile strength, toughness, and greater resistance to tearing than triacetate film support, making it ideal for applications where a print must be projected thousands of times. It is also used extensively in countries like India, Thailand and the Philippines.

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INTERVIEW

Marcy Polier **Entertainment Data, Inc.**

Q. Can you tell us a bit about your background ?

A. I'm a native of Los Angeles and I graduated from Inglewood High School in 1970. I went to USC for two years as an Art History major, and then traveled up the coast and into Oregon before deciding to settle down to get serious about life. I was married at that time and my father-in-law, Dan Polier, knew Mann Theatres needed a secretary in the booking department and arranged an interview with Bill Shields, who hired me on the spot. Being the new kid on the block, they gave me the assignment of getting the overnight "grosses", the lowest totem on the pole.

Q. How did you get the idea to start EDI?

A. Well, after three weeks of painstakingly collecting grosses, typing, and adding figures, and putting up with bookers who were yelling and screaming for results hours before they could possibly be ready, I started asking why there wasn't a centralized collection service. No one had a very good answer, so I decided to start one. The concept was ahead of its time. Even my father-in-law told me to forget it and learn the theatre business.

Q. Did you learn the business?

A. I got serious about learning everything I could about Exhibition. They promoted me to secretary for Larry Lapidus, the head film buyer at Mann at the time. But they still would not let me off gross duty. I couldn't sleep one night and got up to



**MARCY POLIER, PRESIDENT OF EDI,
AND HER "GOLD REEL AWARDS"**

make notes. I knew that the idea could work, and that it was badly needed.

Q. What was the first step?

A. I first met with every exhibitor and distributor in L.A. Everyone was skeptical at first but I was very persistent. Once everyone understood that we wouldn't print screen numbers, and that I wasn't going to take no for an answer, I was on my way.

Q. Did you need a lot of money to get started?

A. No. My dad loaned me \$800 for my first computer programs and Ted Mann let me use his offices, phones and photo copy machines because I was eliminating two jobs there from the beginning. In those days many exhibitors were still gathering the grosses for their own circuits by hand so we offered those services as well. We were tracking the data for the Los

Angeles booking district during the week. On Sunday we'd gather three figures for the weekend.

Q. It sounds as though it was successful from the inception.

A. I was working 18 hours a day, 7 days a week, and after 6 months of being in business I was finally able to hire my first employee. The distributors were so happy with the service they started arguing with me over where I would expand next. I went to New York, and it was a failure. I couldn't convince them to break with tradition, so I closed up after 6 months and opened in San Francisco. Dallas and Chicago came next. Then in 1982 Phil Garfinkle joined the company and he completed our nationwide expansion.

Q. How many employees do you have now?

A. We have 120 employees now, mostly part-time, and we have offices in New York, Toronto, London and Munich. We track data on over 20,000 screens every night.

Q. Does every exhibitor cooperate with EDI?

A. Virtually every exhibitor. We still have some hold-outs, but every year there are fewer and fewer.

Q. How did you get into the international markets?

A. It began one morning in

1989. Michael Williams-Jones of UIP invited me to breakfast at the Four Seasons. He showed me all the various gross reports from his offices all over Europe, Asia and South America. There were at least 30 pieces of paper in different formats, languages, and currencies strewn all over the table and falling onto the floor. It was pretty amusing, and I was very excited about the potential. It took three years for our London office to really become established and now we track over 95% of all the data there. We are nearing the end of our third year in Germany, and expecting to have some spectacular results by January 1995. We hope France, Spain and Australia will be next.

Q. Do you still collect the data by phone?

A. Not exclusively. We get a lot of the data through electronic feeds and by fax. However, there are still many exhibitors who are not yet computerized, and even the companies that are computerized sometimes experience sporadic, slow or problematic feeds. Since grosses must be collected nightly, and without fail, we do collect data over the phone. In fact, the phone collection has been the secret to our success. The phone costs have remained relatively constant over the years and it is a very effective method of collecting this kind of data.

It also gives us the opportunity to speak to the managers for feedback on previews and

screenings, another service we offer, and to get additional data on special local circumstances that might have effected a gross.

We have custom-programmed inbound/outbound computerized phone call queue that organizes the workload for our calling staff. Each caller works with a computer terminal for the instantaneous input of data. A single phone call can yield a single figure from one theatre, or more than 100 figures as we tap into what we call a "pick-up" to get a multitude of theatre results from one source. That way every theatre needn't be bothered with individual phone calls. We also have a toll-free 800 number for theatres who want to call us.

Q. Do you perform specialized functions for some of your distributor clients?

A. All the time. We are asked to collect matinee figures, results on sneak previews, and to prepare special research projects. For this we use our 30 gigabytes of data spanning 15 years of covering films, theatres, markets, and above-the-line talent. For the last year or so we have been preparing two new products for distributors, or for any one else who might find them useful. One project is a complete set of U.S. maps highlighting theatre data and grosses. The other is a complete compilation of all the school districts in the nation and their yearly schedules.

Q. Are the theatres usually

cooperative in giving you the grosses or do they feel they are too busy when trying to close at night?

A. If they are busy or not ready we call back at a more convenient time, or they call us. We've been around for so long now, 18 years, that they seem to enjoy it. Some have personal relationships with our callers who call them over and over again. They seem happy to cooperate because they know the data is important not only to the executives of their own company but to the distributors of the film as well.

Q. What are some of the advantages to the theatres of getting the grosses channeled properly as quickly as possible?

A. When renegotiating bookings each Monday, the exhibitor has a comprehensive and standard performance report that allows their decisions to be based on solid information. This data informs them of how well they're doing relative to their competition, all put into the context of the marketplace. Also, distributors have immediate access to the grosses beginning Friday night, permitting them to work out their strategies and formulate plans prior to Monday morning. The more informed the distributors are in their decision-making process, the greater the likelihood a film will do increased business.

Q. Last year Kodak partici-

pated with EDI in the Gold Reel Awards which were presented at NATO/ShoWest. Could you tell us more about this?

A. The Gold Reel Awards honor the handful of films that hit the \$100 million mark in gross box office receipts. That milestone, and the awards themselves, have become an industry standard to define the super-successful films.

Last year Chicago film reviewers Siskel & Ebert joined us in the award presentation as emcees. They brought an added dimension to the awards ceremony by adding their critical perspective as well as a lot of humor.

Q. I understand that you are in the process of publishing some of your data. Could you expound upon that?

A. We have a tremendous wealth of data and we have distilled it so that the industry can have access both on-line and in print. We have started by publishing "Box Office News" in Variety every Tuesday and will continue with on-line versions.

Q. Could you give us some examples of the kind of theatre data you collect?

A. We are currently gathering data on adult, children and bargain ticket prices, which we update bi-annually. We also maintain and are updating a database of theatre addresses, phone and fax numbers, the number of screens in each loca-

tion, the number of seats per screen, sound and projection data, teleticketing capability, and demographic information about the population in the vicinity of a theatre's location. Eventually we will have the most comprehensive database on North American theatres available.

Q. What does the future hold for EDI?

A. We're looking to a broad-based expansion in the development and delivery of information to the entertainment and media industries.

The first quarter of 1995 will see the implementation of a graphical, *on-line* version of our Release Schedule and our summary box office databases. This will be a very exciting information tool that will contain expanded film data about future releases, movie star track records, and box office records that will be easily accessible to the motion picture, entertainment and financial communities.

We're continuing to enhance and roll-out our new products, the School Holiday Calendar, which tracks the percentages of students on holiday by market for any day of the year, and the Theatre Atlas, which plots theatre locations on custom-drawn street maps.

We will continue the international expansion of our core business—overnight box office reporting. After the success of EDI UK and EDI Germany, we plan to bring our services to France and Australia.

EDI BACKGROUND

Founded in 1976 by Marcy Polier, Entertainment Data, Inc. has long been the industry's primary source for motion picture box office information. EDI was the first to identify the need for comprehensive and instantaneous box office data. By using computer technology, EDI was the first to meet that need and in so doing established a service that now encompasses a variety of industry working tools. As such, EDI is an integral part of the fabric of motion picture distribution and exhibition: its information services help shape the way in which industry executives conduct business. EDI's overnight reports literally define the negotiating positions for distribution and exhibition each Monday morning, as well as help inform decision makers in publicity and marketing.

Today, EDI collects and reports data from approximately 24,000 screens in the U.S., Canada, the United Kingdom and Germany on a daily basis. EDI's products and services run the gamut from daily overnight gross reports to customized research, from instantaneous on-line reports to monthly calendars. In addition, EDI has amassed a wealth of historical motion picture industry data unparalleled in its depth and breadth.

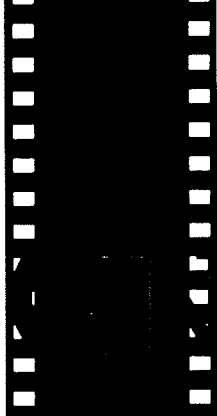
- 1976** Introduced the concept of centralizing the collection of overnight box office sales data and introduced the use of computer technology in the collection, processing and dissemination of that data.
- 1976** The first to create a statistical flash box office report which includes the percentage change and screen average analysis that have become industry benchmarks.
- 1980** Began to report and deliver on the weekends, expanding service to seven days per week.
- 1984** Expanded operations to include Canada.
- 1985** Expanded coverage of theatre reporting from nightly market sampling to comprehensive coverage of 18,000 screens nightly.
- 1986** The first to download overnight grosses directly into a distributor's mainframe computer, facilitating *Electronic Data Exchange* between exhibition and distribution.
- 1986** Launched the *Release Schedule*, the first service to track future release dates on a weekly basis.
- 1987** Created the first comprehensive box office summary database of film information.
- 1988** Created the annual Academy Award Handicap consumer-oriented publication that highlights each year's Oscar races.
- 1990** Established the annual EDI Gold Reel Awards to recognize films that have grossed over \$100 million.
- 1990** Launched Overnight Tracking services and Release Schedule in the United Kingdom; EDI now tracks 2,000 screens daily.
- 1991** Created EDI-ONLINE, the first online, menu-driven interactive query system for box office data.
- 1992** Implemented the first direct nightly polling information collection system by linking EDI computers with AMC and Famous Players' host systems.

- 1993** Launched Overnight Tracking services and Release Schedule in Germany.
- 1994** Launched Box Office News, a weekly data page published in each Tuesday's issue of *Daily Variety*.
- 1994** Developed and launched two new comprehensive services: the School Holiday tracking calendar and the Theatre Atlas mapping service.
- 1994** Created MovieTrax, a unique new graphics-oriented box office information service for newspapers and magazines.

E D I S E R V I C E S

- ❑ **Overnight Tracking:** EDI collects overnight box office results and reports that information to users in a variety of ways: computer-to-computer electronic feed, early morning hard copy deliveries, through EDI ONLINE, an on line menu driven query system with instantaneous box office information available the same night as collected, and fax (EDI-FACTS).
- ❑ **Release Schedule:** EDI's Release Schedule offers the industry's only weekly updated release calendar, tracking films up to a year in advance. The Release Schedule provides distributors, exhibitors, agents, producers and advertisers with a wealth of information, including advance film synopses and credits, distribution slates, the top 100 grossing films, the highest opening weekend totals and more.
- ❑ **Box Office Tracks:** A monthly box office service designed for smaller exhibitors or video retailers, offering an economical way of staying on top of motion picture box office performance.
- ❑ **Theatre Atlas:** This state-of-the-art information tool plots theatre locations on street level maps and indexes those listings with comprehensive performance and profile data. The first ever such guide to the nation's movie theatres.
- ❑ **School Holiday Calendar:** A valuable marketing tool, the Holiday Calendar reports on the percentage and number of students on vacation for any day of the year at national, market, state, county or district levels.
- ❑ **EDI Gold Reel Awards:** The EDI Gold Reel Awards, presented annually at the NATO/ShoWest convention in Las Vegas, honor those films which have surpassed \$100 million at the domestic box office. Co-sponsor for the 1994 presentations was Eastman Kodak Co.
- ❑ **EDI Publications Division:** Box Office News is a special news and data page in the Tuesday edition of *Daily Variety*. Sprinkled with lively graphics and charts, Box Office News analyzes weekend business with views of national and regional box office performance. MovieTrax is a unique new weekly information service that provides newspaper and magazines with customized, market-specific box office and movie information in the form of charts, graphs and filmographies.
- ❑ **Custom Research:** Over the course of the past 18 years, EDI has built a motion picture information database of films, theatres, locations, credits and box office unmatched in its scope and range, making any customized research problem easy to solve.

With an eye toward the future, EDI is taking an active part in the unfolding Information Superhighway. Already on-line in the U.S., EDI is committed to an on-line future where updated motion picture information is available to users around the world, 24-hours-a-day.



CEMATOGRAPHY

The Winner Is... Janusz Kaminski

Janusz Kaminski left Poland 13 years ago. It wasn't through normal diplomatic channels. He escaped as a political refugee. Kaminski was 20. He had no family or friends in the U.S. He didn't speak English. He didn't have any money. He had no formal training in film. What were the odds that he would win an Oscar within 13 years?

Q. Why did you want to emigrate to America?

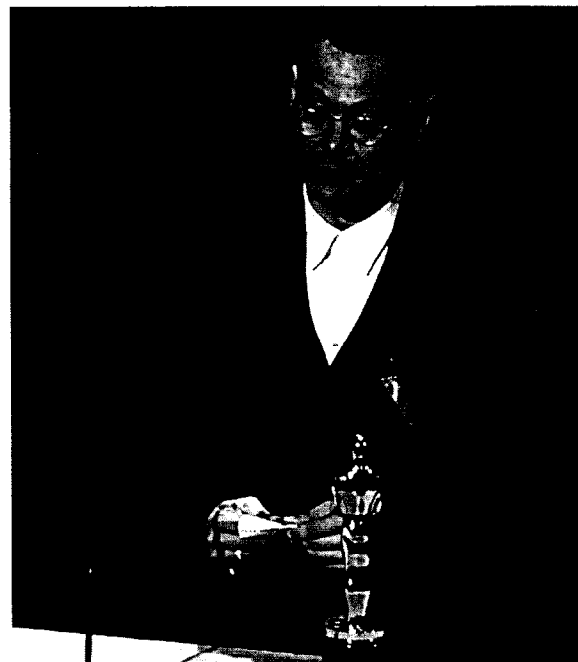
A. I was a movie fan all my life. American movies were permitted in Poland, though they were usually six or seven years old. That gave me an idea of what America was like. I was permitted to travel to Greece with an amateur camera club. While I was there the government began the repression of members of Solidarity. I decided to defect. I went from Greece to Vienna, and I was there for nine months until I was able to emigrate to Chicago.

Q. Why Chicago? Did you know someone there?

A. I met someone in Greece, a fellow countryman, who left Poland in 1968, who told me I would get a lot of help from the Polish community.

Q. Did that happen?

A. When I landed in Chicago I went to a Polish employment agency and they sent me to work in a factory where they manufactured playing cards. I operated a machine for three months.



JANUSZ KAMINSKI & "OSCAR"

When I became eligible for a raise from \$3.75 to \$4.50 an hour, I got fired. That's the way they did it. The moment you were eligible for all the benefits, they would fire you and hire another refugee. But I found other work and after a year, I enrolled at Columbia College in Chicago, where I studied film making.

Q. Why did you become a cinematographer?

A. In one of our earlier classes, we made a 10 minute movie, there were four of us. I wanted to direct, but that was not my fate. I ended up shooting the movie because we pulled straws and mine was the short one. When I saw the dailies... in fact, the excitement of waiting for the dailies. I knew this would be my work. At that stage, it was important to me that my work was appreciated by others. Later on, I realized what I was up against, and how difficult it is to become a professional cinematographer.

Q. Were there cinematographers who influenced you at this formative stage?

A. In 1986, John Alonzo (ASC) was shooting *Nothing in Common* in Chicago. I was standing behind a fence watching the crew when I saw a friend from school, who was working for the producer. He introduced me to John. I told him I was a great fan of his work, and he agreed to let me become his intern. I spent two months with him, and that was my introduction to professional filmmaking. I realized that while it was a much bigger production, the cinematographer's job was the same as it was in my student films. I didn't feel so intimidated after that.

Q. What happened when you finished school?

A. In 1987, I was accepted into the A.F.I. (American Film Institute) graduate program. During my year there, I was constantly showing my reel of 16mm films. Every Tuesday, I would read *The Hollywood Reporter*, and I would call the production offices of all low budget movies in their listings. I asked if they wanted to see my reel. I showed it to 100 to 150 people until someone took a chance and hired me to shoot a feature called *Grim Prairie Tales*, starring James Earl Jones. I did the first shot, and then I just started crying because my dream was coming true.

Q. What happened after you

shot that film?

A. For a year and a half, Roger Corman was my sole source of income. I worked as a gaffer, operated B camera, and did second-unit photography. Finally, he gave me a chance to shoot, and I did three films with him. After that, I started getting pictures with two to three million dollar budgets.

Q. How did Steven Spielberg discover your work?

A. I shot a television movie directed by Diane Keaton. It was called *Wildflower*, and it was on Lifetime Cable. Steven (Spielberg) was watching, and it caught his eye, both the story and the photography.

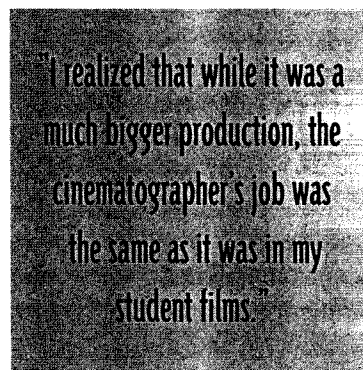
Q. What did he do ?

A. The movie was on Thursday night, and the next day people called from all the major motion picture studios. A producer from Amblin told me Steven was producing a pilot for a mini-series, and he wanted me to shoot it. The director was Gregory Hoblit, and we went to North Carolina to shoot *The Class of 61*. It's a Civil War period film about a graduate of West Point in 1861.

After the first three days, I heard a rumor that Steven wanted me to shoot his next movie. A few days later, the head of television for Amblin told me about *Schindler's List*. I met Steven for the first time during the winter of 1991. He said he was going to shoot the film in the spring of 1993.

He said he had just learned that I was Polish, and he wanted me to know that had nothing to do with him choosing me for this film. I started researching the period. Of course, I read the book about Schindler, and I met various people with first-hand stories.

But, my life also went on. I shot a movie called *The Adventures of Huckleberry*



Finn. Afterwards, I flew to Poland with the production designer and producers for *Schindler's List*. I came back, did another picture, then we flew to Poland in June of 1992, location scouting with Steven.

Q. How else did you research the story?

A. I was familiar with the holocaust. It was part of my education. But, I wanted to get very close to the period. I know from experience that the more you learn about the subject matter, and the period, the more you contribute, because you can translate your knowledge into pictures.

Q. Did you look at films from that period ?

A. I looked at some documen-

taries, and at several Polish movies. One was called *The Last Train*. It was filmed in 1948 in Auswicz by a Russian director of photography. It was photographed from a very low angle with wide-angle lenses, and dark skies.

I saw another movie called *The Passenger*. It was photographed in 1966. The style was natural and realistic. In style, it was like Gregg Toland's work on *The Grapes of Wrath*. It really made you feel like you were there.

In *The Grapes of Wrath*, the scenes on the road as they were driving felt very realistic. This realism extended to the migrant workers' camp. The landscape felt natural because of the way he lit it. I know he was using big arcs, but it felt like everything was lit by candlelight and firelight. It was beautiful, but it was not overly stylized, and that was my approach towards shooting *Schindler's List*.

But, my main influence was a book of still photography by Roman Vishnic, who photographed Jewish settlements in Eastern Europe between 1926 and 1939. I saw the pictures and said "this is how the film should look."

Q. When you met with Spielberg, did he have his mind made up about shooting the film in black and white?

A. Yes, the decision was already made. He asked how I felt about shooting in black and white, and I said, how else could you do a picture like this? I had shot a low budget

feature in black and white, and I had a year and a half to prepare, so I wasn't worried. I read books, and Kodak provided me with a great deal of information.

Q. What was Spielberg's motivation for shooting black and white?

A. Our perception of that period comes from documentaries, newsreels, and black and white stills. There was really no other choice.

Q. I've heard that you didn't use post-40s camera techniques, like modern dollies and Steadicams.

A. I did use dollies and Steadicams, but I used them in a very different way because we were trying to recreate reality. We didn't want it to feel like a movie. Reality is documentary footage with a handheld, shaky camera. Lights are flaring on the lens. There is frenetic camera movement, shooting through objects, and sometimes out of focus. Even when the camera is steady, the angle is a little askew. It's not perfect. Those are the techniques we used. Even when we used a dolly, we would have the operator handhold the camera. We wanted that kind of unsteadiness, because that's how the life was at that time and place. It was very frantic and unpredictable. There was a sense of immediacy. The overriding look was agitated movement with the camera panning and tilting up and down. It was always a little shaky.

Q. Did Spielberg have this style in mind, or did that come out of the conversations you had?

A. This style came when we started shooting. In an early discussion, he said he wanted to use a Steadicam, and I thought it would be too fluid. It's too movie-like. I suggested trying some handheld shots while we were blocking a scene in a concentration camp, where children are being separated from their mothers, and the mothers are being loaded on a train. We did that all handheld, and when we saw the dailies, it felt like we pulled that footage from the archives.

Q. You found him pretty open to suggestions?

A. That's part of his brilliance. He doesn't worry about whose idea it is. He was very open. I could ask, what do you think of this? He would say, that's good or that's dumb. He allowed me to use my creativity to the fullest extent, and encouraged me to take chances. He talked right to my heart. It was like I was plugged right into the lenses and lights.

There was a scene where I said, I think it may be a little too dark. He said, if it's too dark, we'll come back and re-shoot it. When will I hear that from another director? This was all coming from his heart.

There were no storyboards. We arrive on the set in the morning, and we would figure out how to do the scenes scheduled for that day. It was

instinctive, from the heart, and collaborative. That's how we created a very unusual movie.

Q. You told me why you liked the idea of shooting this film in black and white. Did it affect how you visualized the story in other, less obvious ways?

A. It is much easier to lead the audience to what you want them to see. You either light the face, or you light the background. The eye naturally goes to the brightest object in the scene, rather than to something with bright color. It helped us to focus the audience more clearly on the story.

Q. Did Spielberg have the idea about adding touches of red to the little girl's coat from the beginning?

A. Yes, from the very first moment, he said there will be a little color, and I don't know how much.

Q. Parts of the film were in color, like the opening scene. Can you explain that?

A. The opening scene with the lighting of the candles was shot in color with EASTMAN 5296 film. There was also a scene at the end with the funeral that was shot in color. Sometimes,

we shot once in color, and again in black and white, just to be sure. We used color to separate those scenes from the holocaust.

Q. Was there ever any ad-libbing by the actors?

A. We followed the screenplay very closely, but in terms of blocking, Steven improvised a

On working with Spielberg:

"He doesn't worry about whose idea it is ... he allowed me to use my creativity to the fullest extent, and encouraged me to take chances. He talked right to my heart ... there was a scene where I said, "I think it may be a little too dark" he said, "If it's too dark, we'll come back and re-shoot it." When will I hear that from another director?"

lot, and those ideas weren't scripted. There's a scene where Ben Kingsley comes out of an apartment building. People are being arrested and families are separated. A German soldier comes to Ben and asks, "Where are your papers?" As he's looking for his papers, the camera tilts up and down. You can feel how frantically he is looking.

Finally, he finds the papers, and gives them to the German. He is being led to the background, and meantime, another person comes out of a building. There is the same hurried

action, and as he's searching for papers, we see in the background, a little boy running away. It's his son.

The German aims his rifle at the boy, and at the last moment the father pushes the gun. They shoot him, and two soldiers run after the boy.

Steven told them to grab the boy by the arms, and carry him towards the soldier with the rifle. He told the actor to fire the rifle at the boy. He told the soldiers who were holding the boy to get mad, and scream, and tell the soldier how stupid it was to shoot the boy. What if you had missed and hit me? It felt so real, because it would be a very human reaction. That's part of his genius. He has the ability to see those things right on the spot.

Q. Did you pre-visualize this picture before you shot it?

A. Sometimes I dream about lighting setups, and other times I don't know how I will light something until I put the first light on. In *Schindler's List*, we dealt with very large locations that had to be pre-rigged, and so I tried to figure out what I was going to do in advance. The camp at Ploszow was built from scratch, and we had to pre-rig that set because it was so big. It took two weeks of laying cables, and

putting the lights in place. I had three trucks loaded with lights, and every single one was needed. The gaffer said, "don't ask for more lights, because we don't have any."

Q. Did you learn things as you were shooting about black and white film?

A. I learned that you cannot expose the faces at the suggested exposure. If black and white film is rated for E.I.200, and you expose it that way, you get grey faces, and I wanted white faces. I kept the background at the given level, but I made faces two stops brighter. I learned that the more light I put on faces, the better they looked. I learned that on day exteriors when it looks bad to the eye, it's going to look great on film.

Q. Specifically what do you mean when you say you want the faces white?

A. I didn't want grey skin tones. I wanted white. If you use the given exposure, you start doing grey on grey, and I wanted black and white. Sometimes I wanted grey tones, but never on the keylight side, I wanted white faces, and I wanted them to glow.

Q. You said that you did testing. What type of black and white films are available today?

A. There are only two films available, Eastman Plus-X was my primary film. I used Double-X for scenes requiring

a finer grain image. I had two weeks of testing, and realized that I needed a fast film for most scenes, because of the faces. I tried to add a creative element by putting people in silhouettes, or by having half a face drop into blackness. That was a way of using black and white.

Q. Did you use the ARRI 535B for all your handheld shots?

A. We used both cameras. My operator used the 535B, because he was working with it 12 hours a day. Occasionally, when I was shooting second camera, I would put the 535 on my shoulder. We always had two cameras on the set. The 535 was on a tripod. If I felt there was something interesting for a second handheld camera, I would just grab it and do the shots.

Q. Give me an example.

A. When the train arrived at night at camp, we set up the dolly shot looking at the train as it arrived. I grabbed the other camera with Steven Mizler, the focus puller. We hopped on the train and shot over people's heads, as the actors inside were looking through a little window at the camp. The audience was seeing what the actors saw. The door opened with one camera looking in, and the other one, grabbing shots from inside.

Another example was the evacuation of the ghetto. Steven was shooting this little family scene, where the little

girl is screaming, "Goodbye Jews, Goodbye Jews," and people were throwing things at them. I was at the head of the bridge, grabbing shots of the principals as they were walking toward us.

Q. Did any of you realize that you were making such an important movie?

A. The most prints we were going to have was 50. We knew we were making an historically important film. But we never expected that the whole world would see it, and that the movie would make money and win Oscars.

Q. What makes a film a great movie?

A. I don't know, and that's the magic. If I could tell you what makes a great movie, I would become an advisor to the studios. You can go through life and never make a great movie, but we all want a chance to make the next *Citizen Kane*.

Q. It's really interesting how a camera can see "inside" an actor instead of just the outside. Can you tell when that is happening?

A. You can see when it's there, and all of our lighting tricks are nothing, once you see what's happening in the actor's eyes and on his face, and the performance. I learned that in the very first feature that I shot with James Earl Jones.

I made very conscious decisions about Oskar

Schindler. I wanted him to always look great, glamorous and big. He is always in the foreground, and he was always bigger in the frame. I wanted the audience to feel safe when they saw him. I wanted him a little bit bigger than life.

Q. So you had him in the foreground. What else? Were you shooting him at lower angles?

A. Not really. Mainly, it was lighting. I gave him a special eyelight. I would light his face, and then I would put an additional light on it. I cut a little slit in a sheet of cardboard, and just put a Basher light through it. I wanted him to look like he was a movie star.

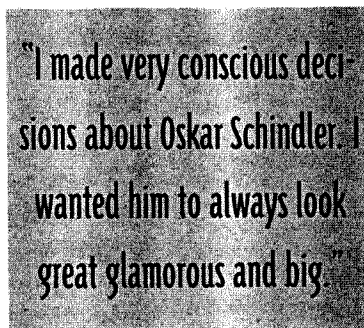
Q. Were there other technical problems shooting in black and white?

A. Sometimes I longed for the latitude and speed of today's EASTMAN EXR color films. The biggest problem was static electricity. There were sometimes spots on the negative that looked like lightning strikes in the sky. We figured out that it was caused by the higher silver content in the old black and white films. We sprayed mist in the air at locations, and we were careful to avoid friction while we were loading film. There are other things you can do, like wedge a small piece of damp sponge in the camera, and use a de-humidifier when film is being loaded rewind to de-ironize the air.

Q. Are there lessons you took away from *Schindler's List*

that you can apply to your next picture?

A. My life completely changed after making this movie. I realized that the United States is my homeland. I realize that as much as I wanted to romanticize about Poland it's the same country that it was when I left. I realized that it's very important to be true to your work, and to choose the right project and work on good movies. I rein-



forced my belief in my instincts, because I relied on instincts in *Schindler's List*.

Q. That's an interesting comment about trusting your instincts. Is that something you have to learn?

A. I learned on some emotional level that it is best to trust my instincts. Sometimes, we would have a factory location pre-lit, and we would be ready to shoot, and I would notice that the overcast sky was creating a wonderful soft look that was just right for the mood of a scene. And I would start turning off lights.

Q. Is it difficult to shoot black and white, since we see the world in color?

A. You have to depend on tonal differences to separate foregrounds and backgrounds. You learn to look at the wardrobe and the walls. The film will always find the brighter tones, so you have to decide what that should be.

Q. You are working on *Little Giants* right now. Tell me a little about that.

A. It's a story produced by Steven for Amblin with Warner Bros. Basically it's a children's movie about PeeWee football. Right after that I will do a movie called *The Scarlet Letter* for Roland Joffe. It's a costume, period film.

Q. Do you still have unfulfilled dreams?

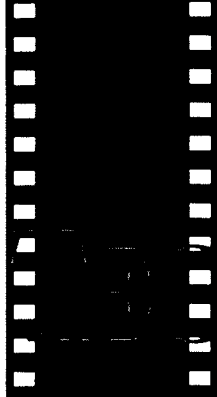
A. In my lifetime, I'd be happy and lucky if I do one more movie like *Schindler's List*. That's my goal. If I'm lucky, I'll shoot another 50 or 60 films. I'll be happy if one is as satisfying as *Schindler's List*.

Q. Do you think movies play a role in our society beyond entertainment?

A. A good movie can change people's lives. It can make them happy. It can build or destroy relationships. It can make people more aware of what's going on around them.

Q. What role does the cinematographer play?

A. It may sound a bit contrived, but I believe I'm the audience's eyes.



TECHNOLOGY

Lend Us Your Ears

As we move toward the 21st century, the sound “explosion” is profoundly impacting the theatrical experience. The emergence of stereo digital sound as the state-of-the-art acoustic experience is compelling exhibitors to scrutinize their auditorium designs with respect to noise reduction.

In anticipation of the 3,000 new screens on exhibitor’s drawing boards in the next two years, Eastman Kodak CO. is looking toward some industry leaders to provide basic construction criteria for sound enhancement. Since it is much easier—and far less expensive—to provide a high-grade auditorium from the beginning than to retrofit, we reproduce the following guidelines for new construction.

In a future issue of *Film Notes*, we plan to discuss image concerns, such as screen size and light, porthole design, and projector set-up in much this same matter.

Stereo soundtracks, particularly digital tracks, can contain very quiet sounds, as well as louder peaks than conventional film tracks. Playback of these subtle components requires extra attention to background noise levels in the theatre.

Background noises can be divided into two types: steady-state noise, caused by HVAC equipment, refrigerators, projector noise and distant traffic rumble; and intermittent noise, caused by adjacent traffic noise, aircraft noise, footfall and adjacent screen bleed-through.

It is much easier to correctly design the proper acoustic environment when theatre auditoriums are at the blueprint stage than to go back and

attempt to patch mediocre situations later. The architectural firm that is setting up your theatre should be directed by an acoustician in matters of sound. Utilizing a sound level meter and filter, background noise measurements are intended to quantify steady-state noises.

Reverberation

Certain acoustic parameters differ depending upon whether an auditorium is intended for music performance (a concert hall), or film soundtrack reproduction (a cinema). The most obvious of these is reverberation, which in the cinema should be effectively as low as possible, and in a concert hall may consciously be extended in the design, to improve the subjective loudness of the music, and to make a more pleasant sound. In the cinema, the prime requirement is a more accurate sound; reverberation needed to make the sound more pleasant is added into the mix during soundtrack production. Since most dubbing theatres are now moderately small, with short reverberation times, the mix will add adequate

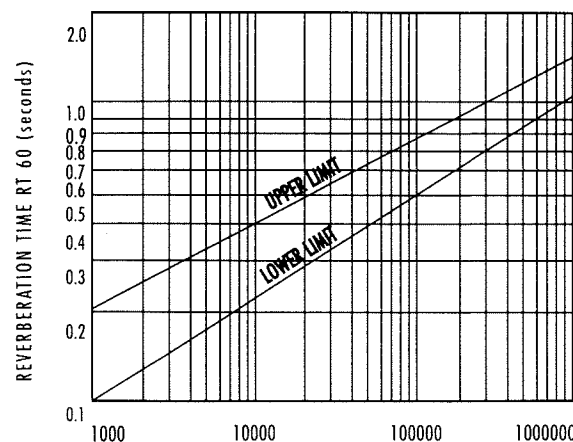


Figure 1 Acceptable Reverberation versus Room Volume at 500 Hz

reverberation for all replay theatres.

Within reason, the reverberation characteristic of a theatre should be as short as possible. Excessive reverberation results in coloring of the sound and reduced intelligibility of the dialog. Assuming a theatre is built with sound-absorbent material on all surfaces, the resultant reverberation characteristic will increase with room size, in consequence of greater reflection time delays caused by increased path lengths. Figure 1 shows the recommended reverberation time at 500 Hz for varying room volumes.

In normal rooms, absorbency is lowest at low frequencies and greatest at high frequencies, especially as attenuation in air increases with frequency. As a result, reverberation time will normally increase at low frequencies, and become increasingly shorter at high frequencies. This changing characteristic should be smooth, and above 150 Hz, if measured in third-octaves, there should be no reversals; i.e., no higher band should show a higher reverb time.

Reflectivity

Optimization of reverberation time, though, is not enough to ensure good acoustics. A good theatre design will also avoid resonances and reflections. Good practice dictates that the front of the loudspeaker wall should be heavily damped with sound-absorbing material, and even more important, that the rear wall of the auditorium

should be heavily damped. Any theatres using A4 type loudspeakers with wings should apply sound absorbing material to the front surface. Acoustically-absorbent material can be added to an existing theatre, but new theatre designs should also consider issues such as minimum port glass size, since too large a glass area in the projection room wall can cause both picture and sound-reflection problems. Other sound reflection problems can come from converted old theatres with proscenium arches which face the screen, and ceiling beams and vertical column faces reflecting sound from the screen.

Another difference in acoustic requirements between cinema and concert halls relates to the desirability of early lateral reflections (sounds that reflect off the side walls at the front of the auditorium). In a concert hall, with a music performance, these reflections can be attractive, adding to stereo width, and giving the music more "body". But the same effect with dialog in a cinema can be disastrous to speech intelligibility, as the central speech image becomes diffuse, and there are multiple delayed reflections. For this reason, the side walls at the front of the cinema should be as absorbent as possible, and the loudspeakers should have a spatial tailored to minimize the amount of signal which can hit the side walls (especially at frequencies above 500Hz). The controlled directivity from use of horns is the only practical

way this can be achieved. Direct radiator cone loudspeakers are not suitable for stage loudspeaker use. Not only will energy be reflected off the side-walls, but signals will also be reflected off the ceiling, further muddying dialog clarity.

Rear Screen Damping

No behind-screen acoustic reflections should be audible in the seating area.

Behind-screen echoes have historically been responsible for many of the intelligibility problems with cinema sound. The most effective method of achieving screen front/back isolation is to mount the loudspeakers as integral elements within a well-damped wall; this will block all but the lowest frequency back-screen audio. The front surface should be covered with acoustic absorbent material, damping any front/back reflections in the auditorium.

A wall also creates a perfect plane baffle, as described in classic loudspeaker design literature, thus significantly improving extreme low-frequency response and linearity. This is one of the reasons that a loudspeaker wall is one of the major elements of the THX loudspeaker system. Without an isolation wall, attenuation of behind-screen reflections becomes much more difficult. To effectively damp the wall screen: 1) High-frequency horns should be mounted as close as possible to the rear of the projection screen, minimizing acoustic reflections off

the screen surface itself. (The front of the horn should never be more than an inch or two from the screen.) **2)** Each loud-speaker assembly should be draped with substantial acoustically absorbent material, wrapping the entire assembly up against the screen. **3)** As much of the cavity surface area behind the screen as possible — rear wall, side-walls and ceiling — should be covered in absorbent material.

One further consideration relating to systems without a loudspeaker wall is that the front surface on any large area bass bins, (and even more important, if fitted, the speaker wings), should have absorbent material mounted on front surfaces with cut-outs for the woofers. Without such material, significant reflective “ping-pong” echoes can build up between the screen and the parallel rear wall of the theatre.

Interior acoustics are of most importance for dialog intelligibility. Excess reflected sound can result in flutter echoes or reverberation which diminishes dialogue intelligibility.

It is not necessary to provide specific sound reflecting surfaces in motion pictures theatres. Most of the surfaces can be sound-absorbing. Some might argue that it would become difficult to sustain adequate loudness; suitable modern power amplifiers and loudspeakers, however, can easily be selected which provide enough power. Experience indicates that sound-absorbing rooms promote

excellent speech intelligibility provided they are reasonably quiet.

Sound-absorbing material can be used to reduce reverberation and control echoes. Standing waves can result in low-frequency room resonances which accentuate a “boomy” quality. Standing waves can be controlled using sound-absorbing material with an air space behind, such as a lay-in ceiling.

New Theatre Location

Select a quiet location to reduce the costs of construction and to prevent noise intrusions. Areas and adjacencies to avoid:

- a) Next to window glazing.
- b) Building service areas such as toilets, mechanical rooms, electrical rooms and elevator equipment rooms.
- c) Other noise-generating adjacencies.

Remember to review the use of spaces above and below the theatre for potential noise generation. Avoid locations beneath equipment rooms, and dance and exercise studios, or above a parking garages or subway train lines. Airport flight paths, truck loading areas, and busy traffic intersections should also be considered during site selection, as the increased cost of adequate sound isolation may be significant.

Never locate a theatre below a curb-mounted air handler with direct bottom inlet and discharge, unless the ductwork is fully enclosed in special sound attenuation construction.

Floors and Ceilings

In order to avoid excessive bass, specify a lay-in ceiling with sound-absorbing tiles having an NRC rating of 0.90 or greater. The tiles are typically comprised of 1.5” thick fiberglass with a painted glass cloth facing.

Unless absolutely impossible, aisles and floors should always be carpeted. Although the practicality of carpeting the area beneath the seats due to food & drink residue usually supercedes this suggestion, be aware that completely “damped” environment is optimal for excellent sound.

A suspended gypsum board ceiling must be specified if:

a) Air-handing equipment is located above the room (a concrete floating floor may be necessary in the equipment room).

b) The floor above the theatre is uncarpeted.

c) The floor slab above is not at least six inches of regular weight concrete.

d) The Sound Transmission Class of the floor/ceiling construction will be inadequate using a lay-in tile (i.e., lightweight wood frame construction).

Provide mineral wool or fiberglass insulation above all gypsum board ceilings.

The above analysis should also be conducted on the floor/ceiling assembly below the theatre. Gypsum board ceilings are generally necessary in lightweight wood frame construction where concrete is not used.

Sound Transmission Design Criteria

Walls, doors and floor/ceiling constructions are rated for their sound transmission properties according to ASTM Standards E90, E336, and C413 which result in a single figure of merit rating system known as Sound Transmission Class, or STC.

The selection of appropriate STC ratings needs to be made on the basis of the background noise criteria selected in the theatre and the level of noise anticipated in the adjoining spaces. Continuous background noise can play an important role in perceived sound isolation by masking transmitted sound. The sum of the STC rating plus NC rating should always equal or exceed 95 at common walls between theatres. Other sources of intrusive noise should be evaluated.

All sound-rated partitions must incorporate full height slab-to-structure framing containing fibrous insulation and gypsum board sealed airtight at the head and sill with a bead of acoustic sealant. All penetrations must be sealed airtight and recessed boxes fully enclosed. Four-gang and smaller junction boxes can be sealed using sheet caulking on the back and sides, as shown in Figure 2. Larger boxes can be effectively sealed using one-hour fire-rated gypsum board construction. Comply with the standards outlined in ASTM

Standard E497, "Installation of Fixed Partitions of Light Frame Type for the Purpose of Conserving Their Sound Insulation Efficiency."

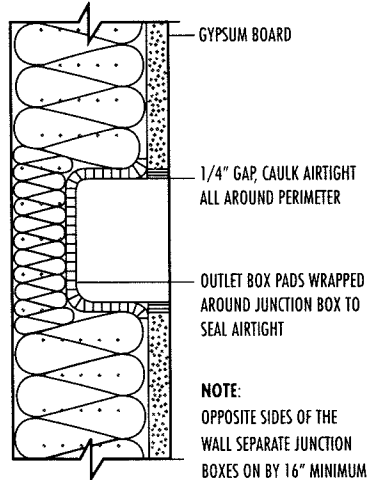


Figure 2 Junction Box Treatment

Figure 3 shows minimal and typical multiplex demising wall designs necessary to achieve acceptable auditorium isolation.

Table A below presents suitable STC ratings. Note that higher numerical STC ratings transmit less sound, and higher NC ratings permit louder background sound due to the ventilation system.

In order to avoid sound "flanking" the walls, continuous metal roof decks are discour-

aged without gypsum board ceilings, and independent floor slabs with an elastic joint are required at STC65 and greater walls.

Figure 4 shows a more sophisticated wall design, used to ensure isolation between projection rooms and auditorium — a construction of this type can be a major element in isolating projector and machinery room noise.

Sound-Absorbing Wall Treatments

The wall behind the audience should be covered in sound-absorbing material entirely.

Typical sound-absorbing panels are comprised of 1.5" thick glass-fibercore wrapped in porous fabric having inherent flame-resistant properties. Panels are available with fabric edge wrapped conditions and with resin hardened edges, metal, or wood frames. Complete prefabricated sound-absorbing panels are available. If the side walls are not angled, avoid hard flat parallel gypsum board surfaces facing one another across the room, particularly in the audience area at ear height, in order to avoid flutter echoes.

Seats

Choice of seat design can have a significant effect on acoustic quality, especially in the small theatre. This becomes obvious when standing at the screen and looking at what the loudspeaker "sees" — a major part of the sound field will be seats, or optimistically, audience.

Table A
STC Ratings for
Common Walls Between Theatres

Minimum in-situ		
STC Rating	Noise Criteria	Description
STC 60	NC 35	Min.Standard
STC 65	NC 30	Typical
STC 70	NC 25	Desirable

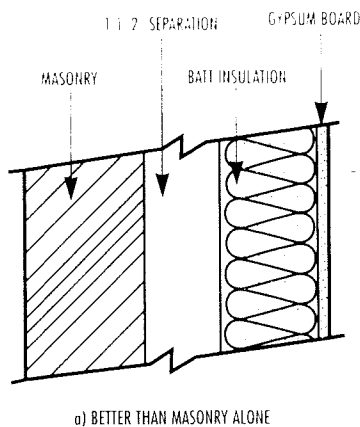


Figure 3 Recommended Demising Wall Design

First, a seat should be chosen which will be sufficiently damped as to offer no reflections to the screen. If the seats have fold-up bases (squabs), the undersurface should be damped. *Never use seats with a plastic or metal reflective undersurface.*

Next, an ideal seat has acoustic properties that do not change when a person sits in it; i.e., the absorption with respect to frequency does not change. In this way, regardless of what percentage of the house is filled with audience, the frequency response will be the same. Better quality seat manufacturers will provide information on this subject; contact Dolby Laboratories for information on testing procedures if you wish to carry out your own evaluation.

The most sophisticated seat selection will also consider high-frequency grazing at the top of the seat, and low-frequency aberrations caused by the potentially resonant chamber under a row of seats.

HVAC Design

The following guidelines are essential to providing a non-competitive backdrop for theatre acoustics:

- Mechanical equipment having rotating parts should not have any direct physical contact with the walls or ceilings of theatres.

- Do not locate air-moving devices in the ceiling plenum directly above the theatre. This includes heat pumps, fan-powered boxes, variable air volume boxes (VAV), fan coil units (FCU), exhaust fans, and air handlers (AHU).

- VAV boxes may be located above theatres only if the ceiling is comprised of at least one layer of 5/8-inch thick gypsum board. Other equipment should be reviewed for its radiated sound level if it

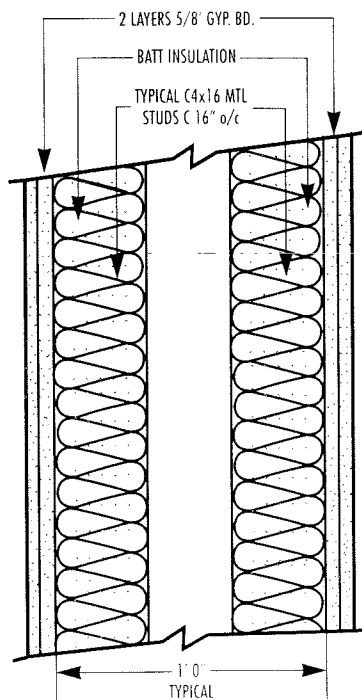


Figure 4 Screening Room / Projection Room Minimum Wall Design

must be located above the space. Avoid using fan-powered VAV boxes due to high levels of radiated noise.

- Locate air-moving devices above storage rooms, corridors or the projection room. If for some reason they *must* be located over the auditorium, placement at a corner where they are supported by two load-bearing walls or a structural column will be of great benefit. Consideration could also be given to the use of stanchion supports on the roof. Noise from the air-handler is transmitted in two ways: direct transmission of rumble through the building structure, and airborne noise through the ducted air. If air-handlers have to be mounted on the roof at auditorium corners as described, extend the ducting as far as possible before a downturn to reduce airborne noise.

- All air handlers and projector exhaust fans must be vibration isolated.

- *Again,* never locate air-handling devices on the roof directly over the theatre.

- Review supply air diffuser selections and specify an NC rating five points less than required.

- Lay out supply air ductwork and registers to have equivalent duct lengths between diffusers and the fan.

- Only those ducts, pipes and conduits essential to serve a specific auditorium space should be allowed to penetrate its walls.

- Provide an

exclusive duct branch and zone system to serve each auditorium/screen so as to avoid crosstalk.

– Size ductwork mains over the theatre to have one-inch thick internal duct liner.

– The discharge sound level of the supply fan being used should be reviewed in order to specify the appropriate duct length and/or sound attenuator.

– Excess turbulence generated noise may be avoided by using 90° duct turns; provide long radius elbows. If unavoidable, specify air-foil turning vanes.

– Dampers should never be located directly behind the face of the air distribution device.

– Avoid locating plumbing and rainwater leaders in the walls or ceiling spaces of the theatre.

– Any piping located in the walls or ceiling of the theatre space should be attached with resilient mountings.

– Provide a clearance between pipes and gypsum board or other finish surfaces. Do not allow pipes to make rigid metal-to-metal contact between ceiling hanger wires, supports, framing, or other structure to which finishes are attached.

Penetrations

Ducts penetrating the sound-rated wall or floor/ceiling construction should be in an insulated sleeve packed with one-inch thick mineral

wool fire safing and sealed on both sides using backer rod and acoustical sealant.

Piping penetrations less than three inches in diameter should be sealed using acoustic sealant filling a 1/4-inch clearance. Larger pipes should be treated similar to ducts.

Avoid any back-to-back penetrations, such as electrical panel boards, junction boxes or fire extinguisher cabinets. Offset penetrations two stud cavities.

HVAC Maintenance

Regular HVAC maintenance is essential to ensure the minimum noise level the system is capable of. Bearings should be lubricated, and belt tension and condition verified, at manufacturers' recommended intervals; most important, filters should be cleaned on a scheduled basis. Dirty filters have been found responsible for a theatre noise floor 10dB above the measured figure at the time of system installation.

Doors

Doors are among the most likely paths of noise intrusions. Vestibules are the most reliable means to obtain adequate noise reduction without extensive care in specification and quality assurance procedures during construction, including performance verification of the actual installation. The vestibule should be carpeted, have a sound-absorbing lay-in ceiling, and have full-height walls which are insulated and faced

with wall carpet.

A very simple test for obvious sound leakage is to switch off auditorium lights and look for any visible light leakage around the doors.

Our thanks to the generosity of Dolby's Ioan Allen for providing these recommended acoustical standards, culled from Dolby's "Technical Guidelines" publication. If you would like this publication in its entirety, please contact Dolby Labs at (415) 558-0200.

Table B Typical STC Ratings for Sound-Rated Doors

STC 35: 1-3/4 inch thick solid-core wood door with double gasketing at the head and jambs and fixed threshold with door bottom. Use only at vestibule or guarded entry conditions.

STC 42: 2-1/4 inch thick sound-rated wood door and adjustable neoprene head and jamb gasketing with flat threshold and automatic door bottom.

Use only at carpeted corridors which are designated as quiet zones.

STC 49: 2-1/4 inch thick insulated steel door having tandem offset magnetic gaskets at the head and jambs with cam-lift hinges and flat threshold.

Require manufacturer's authorized representative to supervise installation and prepare punch list.

Continued from page 2

There, prints are often shown in makeshift theatres in the countryside, where conditions are far from ideal.

Recently, some film distributors have been re-exploring the concept of using polyester prints for theatrical distribution. The strength and toughness of polyester makes prints almost unbreakable, which can be an advantage. But at the same time, excessive tension may build up if the projection equipment malfunctions or is mis-threaded. Kodak recommends the use of a *Tension-Sensing* failsafe to minimize damage in the event of a problem.

The strength, toughness and stiffness of polyester support also allows the support to be slightly thinner. The ESTAR support used for EASTMAN Color Print Film has a normal thickness of 0.0047 inches (120 microns) compared to triacetate, with a normal thickness of 0.0056 inches (140 microns). Thinner film means more film will fit in a given diameter roll (an advantage for distributors to reduce shipping costs), but also means that the print may require refocusing. The focus difference will be more apparent with a short focal length lens that has less depth of focus, which is why you probably noticed it more in your larger auditorium.

Kodak has developed a one-page information sheet on the properties of polyester base film, and is working with dis-

tributors to send a copy along with every print made on ESTAR print film. This information sheet is reprinted in this edition of *Film Notes for REEL PEOPLE*. You may want to post a copy in the projection room for reference.

Q: While playing *Schindler's List*, I noticed a build up of white powder in the gate after each showing. The black-and-white sections of the print also seemed to be much noisier than the color sections as they ran through the projector. After a few weeks, the black-and-white sections seemed to get more dirt particles than the last color reel. What gives?

A: For many theatres, *Schindler's List*, was the first black-and-white print they had played in many years. It was also unique, in that color film was spliced together with black-and-white film for most prints in circulation.

The problems some theatres encountered with powdering, dirt-buildup, and sticking in the gate were related to the lubrication (or lack thereof) on the print. For optimum projection, the Society of Motion Picture and Television Engineers recommends that the 35mm prints be edgewaxed (SMPTE Recommended Practice RP151). This recommendation is based on published reports by Kodak dating back to the 1920's, showing the need for lubrication of

prints after processing.

Recently, film laboratories have come under increasing levels of environmental regulation. In particular, the solvent used to dissolve the wax used to lubricate prints is being phased out because it may deplete the ozone layer. The laboratories have found that modern color print films have enough built in lubrication to perform well without edgewaxing, so most labs have stopped lubricating prints. The early prints of *Schindler's List* were not lubricated, but unlike color film, the older technology of black-and-white print film is more sensitive to the lack of lubrication.

Edgewaxing reduces the frictional coefficient of the film surface as it goes through the projector gate, and helps protect the film surface from abrasion (much as wax on a floor or automobile helps prevent scratching). Without wax, there is more sticking of the film as it runs through the gate, which may cause noise, unsteadiness and perforation wear. Unlubricated prints also are more susceptible to abrasion and scuffing by the projector gate and intermittent sprocket shoe, resulting in powdering and dirt. The problem was quickly recognized, and subsequent prints were lubricated.

Kodak worked closely with the Lucasfilm Theatre Alignment Program (TAP) to find a way to lubricate prints

on an "emergency" basis. Kodak has long recommended against using "non-standard" lubricants such as projector oil, silicone sprays, "WD-40", etc., because they adversely affect the film. All of these materials leave an oily coating on the film which causes mottle, or attracts dirt. Some oils will actually leach out the dyes from color film!

We evaluated a variety of "over-the-counter" waxes and lubricants to try to find one that would provide lubrication and not harm the film. Almost all (eg., aerosol furniture polish) were unsatisfactory. We found that "SC Johnson Paste Wax" could be used as an "emergency" lubricant. The paste wax is a "combustible mixture", so care should be taken not to use it where it might ignite (another good reason not to smoke in the booth).

If severe difficulties are found due to lack of print lubrication (unsteadiness, excessive noise, heavy powder buildup, obvious scuffing of the emulsion from the film between the perforations, etc.), the SC Johnson Paste Wax may be used as an "EMERGENCY" lubricant. First, apply a THIN coating of wax to the gate components that contact the film surface, including the intermittent sprocket shoe. If more lubrication is needed, a VERY THIN layer of paste wax may be applied to the film edges (not the image area!) with the fin-

gers as the film enters the projector (keep your fingers out of the running projector, as your blood does not make a good film lubricant).

Finally, if all else fails, about 2 grams of paste wax (a cube about 10 mm across) can be evenly spread, with a clean felt buffing cloth, on the sidewall of the entire print as it lies on the platter. Rub the wax in along the convolutions of the film, making sure the wax is spread evenly by the cloth to prevent "clumping" on the film. The soft paste wax will seep into the roll of film, and leave a wax deposit along the perforations and film edges. Remember to wax both sides of the print (only 2 grams per side).

This method should only be used in an EMERGENCY, when the lubricated print performance is totally unsatisfactory. Excessive application of the paste wax may intrude into the picture area (seen as unevenness or mottle) or soundtrack area. Paste wax should NEVER be applied to 70 mm magnetic striped prints (any build up will clog the magnetic heads), and wax clumps may interfere with the reading of digital sound tracks. Excessive wax may also build up on the gate, rollers, sound drum, or other projector components. Finally, too much wax may make the print so slippery that it tends to slide off the platter (be

sure to use those suction film clips to keep the roll in place), or slips on the sound drum, causing wow and flutter. Remember, a little wax goes a long way, and too much wax may cause problems.

In the last issue, we talked about the focus difference between black-and-white print film and color film print film. Because the silver image in black-and-white absorbs much more infrared energy than the dye image in color print film, the film will focus differently, especially at high power levels, or with a very short focal length lens. This difference was especially apparent in *Schindler's List*, where the two films were intercut. The problem can be minimized by adjusting gate tension, using effective heat (IR) filters in the lamp, and checking lamp focus and alignment to eliminate "hot spotting". The amount of focus shift between black-and-white and color print film can be evaluated by projecting the SMPTE 35-IQ test film, which has 100 feet of a critical focus chart made on black-and-white print film (magenta image). Test films are available from the Society of Motion Picture and Television Engineers, 595 West Hartsdale Avenue, White Plains, New York, 10607, Telephone (914) 761-1100.

Despite the technical problems, almost everyone agrees that *Schindler's List* was a "masterpiece", and deserved all the awards it garnered.

■ **THIS MOVIE IS ON POLYESTER BASE FILM** ■

Most feature films today, in the United States, are on triacetate base film. However, this movie is on polyester base film, much like the leader used for projection.

Although triacetate and polyester base films are similar in many respects, there are some important differences. Polyester prints are, for example, slightly thinner than triacetate. This means the diameter of the roll may be smaller, the same amount of film may weigh less, or more film may be added to the reel.

You may notice differences, also, in the way the prints “feel,” the way they wind up on platters or reels, run through the projector, go over the rollers, or focus on the screen. Those differences will affect the way you do your job.

■ **USE TAPE SPLICES ONLY** ■

The tape you use for triacetate prints is satisfactory for polyester prints. Polyester prints cannot be assembled with splicing cement. Cement splices will not hold.

■ **WATCH FOCUS** ■

Because polyester prints are thinner, you may need to make a minor focus adjustment between triacetate lead-ins (trailers, snipes, etc.) and this feature presentation on polyester film.

■ **DO NOT LUBRICATE THE PRINT** ■

It is not necessary. The print should run smoothly and quietly without additional lubricants. Waxes or lubricants can cause damage to the print. Particle Transfer Rollers can be used to clean prints.

■ **MAKE SURE THE EQUIPMENT IS ALIGNED** ■

Misaligned equipment can cause base scratches and destroy the audiences' enjoyment of the presentation. Equipment alignment is more critical with polyester base film.

■ **CONSIDER TENSION-SENSING FAIL-SAFE MECHANISMS** ■

Because polyester prints will not break as easily as triacetate, excessive tension may build up if the equipment malfunctions or is midthread. We recommend contacting your service technician about using tension-sensing fail-safe mechanisms to stop the equipment and minimize damage in the event of a problem.

■ **KEEP THE PROJECTION ROOM CLEAN - AND AT PROPER HUMIDITY** ■

Polyester films may develop a somewhat higher electrostatic charge – and attract dirt – as they run through projectors. This is an increased problem when humidity is low. You can minimize problems by keeping the projection room at 50- to 60-percent relative humidity, and maintaining a clean projection area. The grounding of platter assemblies – and the installation of electrostatic eliminators on all equipment – provide additional protection.

■ **PLEASE KEEP THESE INSTRUCTIONS WITH THIS PRINT** ■



**Motion Picture &
Television Imaging**



FOR THEATRICAL EXHIBITION & MARKETING PROMOTIONS

ENTRY ELIGIBILITY

Any in-theater promotion centered around one theme or one film that is designed to attract both frequent and infrequent moviegoers into the theater. Promotion may include:

- Community Relations
 - Senior Citizen Groups
 - National Promotion Tie-ins
 - Lobby Displays
 - Charity Benefits
 - Local Merchants
 - Contests
 - Youth Groups
 - New Theater Openings
- or any other promotion activity that meets the above criteria.

ENTRY FORMAT

All entries must be submitted in the form of a scrapbook (preferably in a binder). Scrapbooks must not contain any easily breakable elements! Only ONE scrapbook is allowed per entry and must include the following typed information and materials:

- Description of Promotion (including significance and impact)
- Explanation and Detail of Promotion Implementation (including time-line)
- Theater Capacity
- Promotion Budget (total amount spent including trade outs)
- Attendance during Promotion (may be averaged if held over several days)
- Photographs of the event/promotion
- Press Coverage (if available)
- Summary

QUALIFICATION DATES

Any eligible promotion that took place in an independent or chain theater between November 1, 1993 and November 1, 1994

ENTRY DEADLINE

November 11, 1994 (no exceptions!)

ENTRY FEE

\$75.00 per entry

Payment MUST accompany entry form and may be submitted by check or credit card (American Express, MasterCard, or Visa)

PRIZES

All prizes will be awarded at the 1995 NATO/ShoWest Convention in Las Vegas

- *Grand Prize Chain Theater \$750
- **Grand Prize Independent Theater \$750
- Second Prize Chain Theater \$250
- Second Prize Independent Theater \$250
- Third Prize Chain Theater \$100
- Third Prize Independent Theater \$100
- Honorable Mention \$50
- Honorable Mention \$50

Additional Prizes To Be Awarded:

- Best International Promotion held in a foreign chain or independent theater \$300
- Eastman Kodak Award \$500
- Eastman Kodak Honorable Mention \$50

*Chain Theater (26 or more screens in theater group)

**Independent Theater (25 or fewer screens in theater group)

PLEASE TYPE OR PRINT, USING THE APPROPRIATE FORM FOR YOUR THEATER (CHAIN OR INDEPENDENT). EACH ENTRY MUST BE ACCOMPANIED BY ITS OWN FORM (FORMS MAY BE XEROXED FOR ADDITIONAL ENTRIES). ALL INFORMATION MUST BE COMPLETE

ENTRY FORM INDEPENDENT THEATER (25 or fewer screens in theater group)

Entry Name (Title Of Promotion must match title on scrapbook)

 Theater Name _____
 Theater Owner/Operator _____
 Theater Promotion Manager _____
 Address _____
 Phone _____ Fax _____
 City _____ Zip _____

If your entry is judged a Winner, please list below the NAMES/TITLES to appear on the Award Certificate (Trophy will bear name of the promotion and theater only):

Payment enclosed: \$ _____

Please make check payable to: The Hollywood Reporter

Charge my Credit Card:

American Express Visa Mastercard
 Account# _____
 Expiration Date _____
 Signature _____

Note: All foreign entries must be paid by credit card only! No foreign bank checks will be accepted.

Send entry form(s) to:

The MOVIE T.E.A.M. AWARDS
c/o THE HOLLYWOOD REPORTER
5055 Wilshire Blvd.
Los Angeles, CA 90036-4396

For more information, call Angele Price at (213) 525-2084 or FAX (213) 525-2090

ENTRY FORM CHAIN THEATER (26 or more screens in theater group)

Entry Name (Title Of Promotion must match title on scrapbook)

 Theater Name _____
 Circuit Name _____
 Theater Owner/Operator _____
 Theater Promotion Manager _____
 Address _____
 Phone _____ Fax _____
 City _____ Zip _____

If your entry is judged a Winner, please list below the NAMES/TITLES to appear on the Award Certificate (Trophy will bear name of the promotion and theater only):

Payment enclosed: \$ _____

Please make check payable to: The Hollywood Reporter

Charge my Credit Card:

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Motion Picture
&
Television Imaging
Eastman Kodak Company

343 State Street, Rochester, NY 14650-0315

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TORONTO	3500 Eglinton Avenue Toronto, ON M6M 1V3	(416) 766-8233
VANCOUVER	840 Howe Street, Suite 30 Vancouver, BC V6Z 2L2	(604) 684-8535

Outside the United States of America or Canada
please contact the Kodak company in your country.

Eastman Kodak Company
Rochester, NY 14650, U.S.A.

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