Film-Tech

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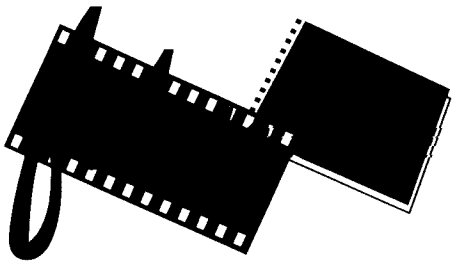
KODAK

FOR REEL PEOPLE

H-50-35

A Technical Service For Filmhandlers From Eastman Kodak Company

December 1994



December 1994

H-50-35

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Pytlak's Practical Projection Pointers

JOHN PYTLAK
Senior Technical Associate
Motion Picture Systems Development Group

Static can be a highly charged issue. The mailbag brought several questions regarding the buildup of electrostatic charge on prints, and its effect on presentation quality.

Q: I've noticed the information sheets sent along with recent prints made on polyester film stock say that the polyester film may tend to develop more static charge than prints made on triacetate film. Why is this?

A: To answer your question, let me take you back to your high school physics class. Remember the experiment where you rubbed a glass rod with a silk cloth, and the rod became positively charged? Or rubbing a hard rubber rod with wool put a negative charge on it? The rubbing action transferred electrons from one material to the other, generating static charge. And the rods remained charged because they were insulators (did not conduct electricity). In this experiment, the amount and polarity of the static charge depended upon the materials that were rubbed together.

Processed print film, like the rods, is a pretty good insulator. One side is coated with a gelatin emulsion, the other side is the plastic support (or film base), usually either cellulose triacetate or polyester. When the film unwinds from a roll (as from a reel or platter), some electron transfer occurs as the emulsion separates form intimate contact with the support. Likewise, static charge may be generated when the film rubs against other materials like rollers or even the metal projector gate. The amount and polarity of the charge generated depends upon the materials that are separated or rubbed together. Polyester, being a different material than triacetate, will charge differently. In general, polyester-base film tends to develop a slightly greater charge than triacetate.

Bear in mind that other factors effect the amount of static charging. The intimacy of contact and the speed of the separation or rubbing can effect the amount of charge developed. Materials in prolonged intimate contact can generate con-

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ERVIEW

Award Winner Jodie Foster

Quite often we will see a famous face or recognize a person for a particular achievement or accomplishment. If we're lucky, there may be a few people out there that will be famous, or at least seen in the public eye in a positive light. To stay in the public eye is another feat, mostly reserved for politicians and athletes. For Jodie Foster, it seems to follow her like a beacon. Many of us first remember seeing her in Coppertone ads, then Disney films, and her numerous films as an adolescent. As an adult, she came back with two Academy Award performances in *The Accused,* and *Silence of the Lambs,* and a directing debut in *Little Man Tate*. She also charmed us in her most recent comedic performance and box office success, *Maverick.* In general, and with few exceptions, does a child actor find success as an adult on the Silver Screen. What makes it even more astounding is that she has a critically-acclaimed directing credit as well. Where most actresses seem to fade over the years, she is getting stronger. Ms. Foster has the rare ability to transform herself into whatever the role requires, and it is no surprise that she is this year's recipient of the George Eastman Award – an award that Kodak presents at the Show East Convention for excellence, quality and dedication to the craft of filmmaking.

Q: How difficult was it for you to get your first directing job?

A: I was in a very fortunate position. I had almost

Jodie Foster, Starring In Nell
Courtesy of 20th Century Fox

25 years experience in front of the camera, and a relationship with Orion, having made *Silence of the Lambs* as well as quite a few other films. Orion was an artist-friendly company, and was willing to bring on first-time directors. So it was easier for me than someone just coming out of film school.

Q: Did you find it difficult to direct yourself in *Little Man Tate?*

A: Surprisingly no, but when I look back on the

film I really don't ever want to direct myself again unless it's a very small part. It's not that you don't get out of yourself what you want, because ultimately on-screen and technically you do, but it's that you don't have the environment that you need—an environment that is free enough where you can drink coffee for an hour and a half, and somehow get the energy back to go into another scene. When you act and direct you don't have the downtime you need to give the performance a chance as an actress. So yes, with hindsight, I hope I never have to do it again, but at the time it was fairly easy. The main problem was not being able to sleep. The film environment impacts on everything when your co-stars are suddenly getting direction from the person that's working with them in the scene. For example, I was directing the Dianne Weiss character while playing her nemesis, so there's an odd interchange. With the little boy, it was very helpful because I could be in a scene with him, protect him as a mother, and guide him as a director. I could say certain things to him if he wasn't coming up with the line that would make him feel comfortable, or get from him the look or the reaction shots that I wanted without having to pass through a third person.

Q: Were there a lot of things as a director that you didn't expect?

A: I think I've kept my eyes on the technical side of film for so long that there really weren't any big surprises making the film. The real surprise came at the end of the movie when we were first showing it at one of the festivals. We had worked on it for a year and a half with this whole family of people, the cast and crew, the people in development and distribution marketing. Suddenly the day that you show it to everyone else, the complete responsibility belongs to you. It's entirely your fault, or your blessing. It's your film ultimately, but there is a realization that the responsibility is on your shoulders and that you're responsible for the vision. During the process you tend to forget that at some point you are going to have to be up on a stage all by yourself having to defend your film. When I think of *Tate* and of the new film I'm starting, I don't think any person could find two more personal films and yet both of these movies are tailored to my own experiences. I don't mean they're autobiographical, but they're some of my revelations and in some ways how I see the world. So to have it up there in front of five-hundred-thousand people, or however many people there are, and suddenly have no cushion at all, and to say "Well OK, that's my life", I don't think I ever anticipated that I would feel so alone.

Q: So tell us about the film you're now working on as a director.

A: We are in preproduction on a film called *Home for the Holidays*. This is the working title, so it will probably change. It stars Holly Hunter and Anne Bancroft, and it's about a family with grown children that come home for Thanksgiving. Most of the film takes place during the Thanksgiving dinner, where all hell breaks loose.

Q: OK, so now you have a script and have visualized it. How close does your visualization of the script come to what is actually going to be up on screen?

A: It's like a jigsaw puzzle that keeps completing itself. You think that somehow you've got things all sewn up, and then you bring in new pieces of information, new possibilities and new paths. You might choose to take some of them, but not all of them, so those decisions make your path clearer. It's really a honing process more than anything else. From the time you first read the original draft, to what you end up with on the screen, hopefully there will be some compromises. But in general, it's not about expanding your vision, but focusing it and shaping it so that you end up throwing off the dross and stuff that doesn't make sense, or that doesn't particularly move you any more. It used to, but it doesn't any more, so if it doesn't stick with you, then chances are it won't stay in the film. I find this process gets simpler as the film goes on.

Q: Since film is such a visual art form, are there any cinematographers that instantly come to

mind that you would like to work with in as far as how they paint the picture?

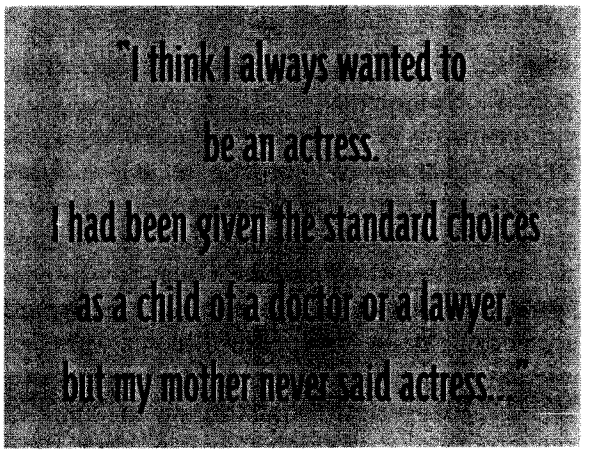
A: Yes, I could probably name thirty of them; all of the contemporaries. But with my films as a director, and maybe this will change, I look at the story first, and then find a story teller or a language that best suits it. I'm not sure that in the last two movies I've made that the camera was the dominant language. Because if your paying too much attention to the camera, then chances are you're off the mark of what the film is about. But there are just so many great cinematographers I admire like Roger Deakins, or Gordon Willis, who is the godfather of those wonderful slow-to-black fades, which I keep trying to stick into my movies, but can't find a way to make them fit. Or the simplicity of Sven Nykvist in the Bergman years, or Storaro. Fujimoto, whom I love, is an extraordinary technician, whose films are totally and distinctively his. He has a way of using fluorescence and glare in provocative ways. All of them have totally different styles.

Q: When would you turn over your vision to the cinematographer?

A: It depends. If you're going to make *Batman,* or *Barton Fink,* or *Hudsucker Proxy,* three incredibly visually-stylistic films, whose whole crux depends implicitly on camera movements and the use of the camera, then the best thing that you can do as a director is to be a communicator. Look at the films of Stefan Czapsky, who is now doing Tim Burton's movies, who also did *The Thin Blue Line,* or Bob Richardson with Oliver Stone's pictures. What is wonderful about both of their styles is that they have a way of making ugliness incredibly appealing or riveting. They are able to retain the appropriate ugliness or garishness that the film is supposed to have. I'm not sure that I'll ever make movies that require that, but I appreciate it.

Q: What is an average day like for you as an actress, and as a director during production?

A: As an actress, its just a lot of waiting around, which is really important in film-making. It's hanging around with eighty-five people who are all wearing boots and gear, and having one of those night shoots where you're lying all over each other telling really bad jokes, or watching TV. It's probably the closest thing to a family feeling that I've ever had, including my own family. You don't have this enormous baggage of history, like "you threw that apple on my head when I was four", and you don't have the barriers that have developed because you're actually too close. So it's the most open family experience that I know. You allow yourself to be open in a way because you know it's going to be over, and you don't have a responsibility to these people for the rest of your life. If you're going to be in a job for five years, chances are you're never going to be really close to all the people you work with. When you know it's going to be over in two months, it's different, because you eat breakfast,

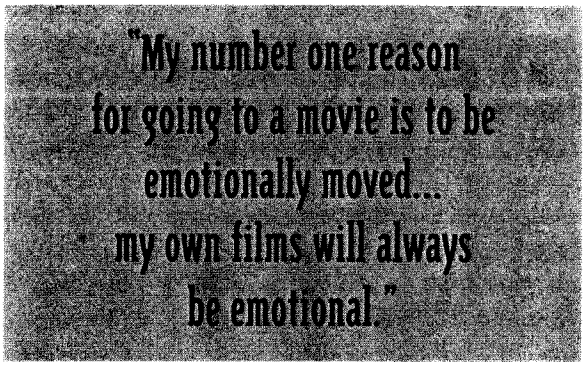


lunch, and dinner together, and it just takes on a different character. But as a director, you don't have time for any of this. You're always the last one to know anything, and never get any of the dirt. They always tell the director everything at the wrap party, so you can hear the director saying things like "you're kidding me-what, when".

Q: What is your earliest movie memory?

A: My family was really big on drive-ins. There were four of us, and we were always making noise and running around in our bathing suits. It was LA, and it was always hot. My mom had a station wagon, so we would take our sleeping bags to the drive-in. If you got too noisy she

would stick you on top of the luggage rack. That's how I saw *Doctor Zhivago*. I remember the squawky boxes, and I vaguely remember the music. I kept falling asleep because it was so long, but I do remember opening my eyes every



once in awhile, and seeing the frozen tundra on the screen from my sleeping bag. It's the earliest thing I remember.

Q: When did you know you wanted to become an actress, or a director?

A: I think I always wanted to be an actress. I had been given the standard choices as a child of a doctor or a lawyer, but my mother never said actress because she didn't want to give me hopes. She'd say, "you want to become a doctor?", but I remember saying I wanted to become a professional talker. I didn't want to be a lawyer, but a talker. I really started to think about jobs that required talking, like debating or politics. I just knew I wanted to get up in front of people and give speeches. When it came to directing, I can remember being on a movie set as a kid, and I knew that I wanted the director's job, because you got the most respect. The director was responsible for everything.

Q: Do you go to movies very often?

A: Oh yes. If it's a film I particularly like, I will see it a lot of times. If it's a film that I feel had a lot of potential but didn't really live up to it, I will see it maybe once or twice. That's it.

Q: Are you critical of the audience's reaction during the screening of your films?

A: As far as monitoring a reaction, with dramas its tough because audiences don't really do anything. They don't laugh, or jab each other in the ribs, or gab with each other. It's not a lot of fun to see dramas with an audience, because most of what you feel is tension.

Q: How critical do you think audiences are today regarding presentation?

A: They pay closer attention, and are more sophisticated than ever before. I'm sure of it. I'll be somewhere like Kansas and hear an audience member say, "It was framed up too high", or they didn't like the sound, instead of just saying they liked or disliked the whole film. They can dissect the film.

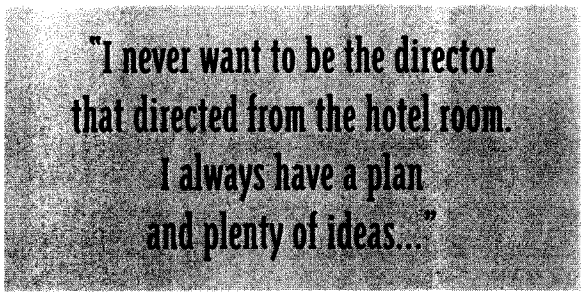
Q: What objections do you have about theatrical presentations?

A: I have some pet peeves. Exit signs that are right next to the screen, or a computerized booth where the film is put onto the platter, started, and left alone while the projectionist goes away for the rest of the movie, never monitoring the film to see if there are any problems – especially when I know a film very well, one that I've seen quite a few times, and I know something is off, the volume level or one of a variety of picture problems. I feel that the audience is most likely only going to see that particular movie one time. So they should be given the best opportunity, under the best circumstances available, to appreciate the experience. I am also concerned when a particular film is playing on numerous screens in a multiplex, especially when I know that there are other films out there not getting places to be seen. It used to be that the overflow in these multiplexes would give patrons a chance to see some of these smaller films. Now it's only the big studio films that are in these complexes, so in order to find a decent foreign film, or independent film, you must drive to Kalamazoo.

Q: Technology in filmmaking – applying to your work?

A: Technology is always good as long as it is

held in the hands of somebody who knows how to use it properly. Pyrotechnics for pyrotechnics sake in a film always bothers me. But there is nothing better than all of the new film stocks and lenses that keep coming out. They have really progressed in the last ten years, and it's exciting. Just look at the movies from the seventies that we loved. You project them today and say " my god, look how awful they look" and we loved them. I would have to say that my number one reason for going to a movie is to be emotionally



moved. I want to forget that I'm there. So when you see a film like *Forrest Gump,* whatever the technical language they used to bring us into that era was really appropriate. But sometimes the pyrotechnics take me out of the experience. I know my films will always be emotional films, so I'm not sure that the big stuff, the big discoveries will impact on my films.

Q: Do you want to make action pictures?

A: I wouldn't rule it out, and I'm certain my company wouldn't either. In fact we are actually very interested in action films. But, I think there is a way to appeal to people in an exciting movie and also have it emotionally impactful. That it be provocative and about people's lives and not just blowing up buildings and watching technical feats is important. It's like music. There is an extraordinary difference between a Dolby™ or THX™ snipe and a Tears for Fears record. One is really what it's intended to be, which is to show technique, and the other is using the technique in a way that impacts someone emotionally.

Q: In your films, do you have an idea of what the soundtrack will be, or do you give it over to a composer?

A: I always have an idea of soundtrack; however, I love it when things change. I never want to be the director that directed from the hotel room. I always have a plan and plenty of ideas, unless someone comes up with something better, and then I'll steal it from them and tell them " Thank you". With the music in *Little Man Tate,* I knew from the first week of casting that *I Get a Kick out of You* was the song that should start the movie. I said "this speaks to me for this film", and in my next film we have a song in mind that has popped up. I know that ultimately it will play, and not just because it's on the nose, but because it has to do with a tone. I think the tone of the film is the first thing that reveals itself to you instinctually. Not that you have to have a handle on it, because the film has to speak to you, and you not speak to them .

Q: Tell us a little about your upcoming film *Nell.*

A: It's about a woman who has grown up her entire life in a cabin in the woods. The only influence she's had in her life was her mother, a speech-impaired stroke victim, who raised her and hid her away from society. A country doctor discovers the woman on the death of her mother, and brings in the appropriate people, namely a psychologist . They decide to study this woman because she speaks an indecipherable language. They try to categorize her, and figure out how best to bring her into the world. So, it's basically about these two people who become in some ways parental figures for this grown woman, and how they try to learn her language. They have all sorts of ideas about who she is, and by the end of the film, she reveals herself to be entirely different than either of them thought. Liam Neeson is the country doctor, and Natasha Richardson is the psychologist.

Q: Do you know anything more about a sequel to *Silence of the Lambs?*

A: We don't know anything yet. It is being written by Thomas Harris, and he is very meticulous, which makes it a slow process.

CINEMATOGRAPHY

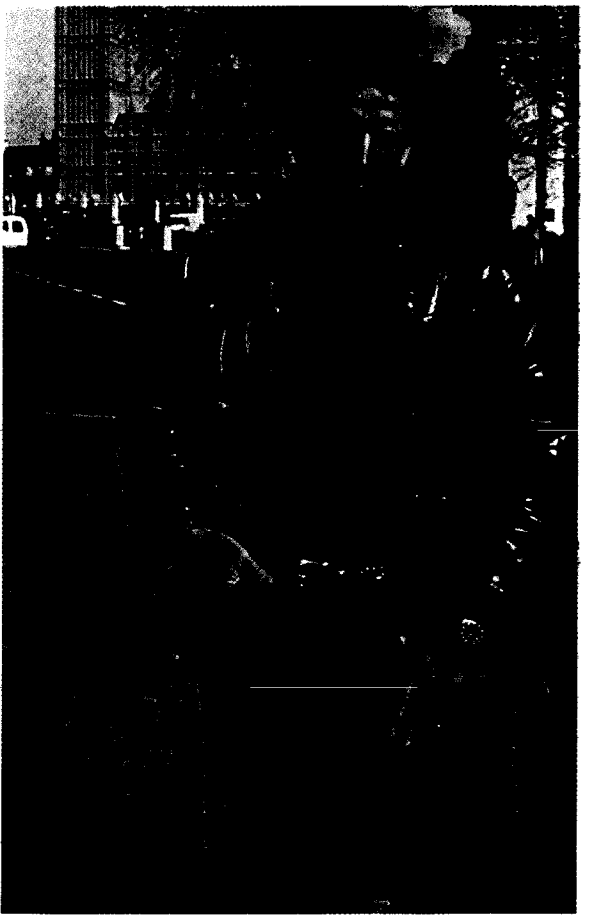
Radioland Murders Challenges Cinematographer

Most of all, he had to remember he was shooting a comedy, and much of the humor was visual. The audience has to see body language and facial expressions. Yet, it was also a murder mystery, with shadowy dark scenes. That would be enough of a challenge for most people. But director of photography David Tattersall found plenty of other challenges while he was shooting Lucasfilm's *Radioland Murders*.

One challenge was keeping pace with a rigorous and ambitious 10-week shooting schedule without compromising production values. Another was composing wide-screen anamorphic (2.35:1) images within the confines of many comparatively-small interior sets on sound stages at Carolco Studios in Wilmington, North Carolina.

Perhaps the biggest challenge of all was the need for seamless integration of live-action foreground film with digital backlot exteriors, generated at Industrial Light & Magic Co., in San Rafael, California. In these scenes, which include almost all exteriors, Tattersall retains a natural, even light though neither he nor the cast could feel the ambience of the actual setting.

The 33-year-old Tattersall began his career shooting music videos and commercials after graduating from the National Film School of Great Britain. He also lensed several minor British features and television projects before getting a chance with Lucas' TV series, *The Young Indiana Jones Chronicles*. He continues to shoot commercials in Britain and Europe.



DAVID TATTERSALL

On the set, Tattersall is a quiet, contemplative leader for the camera crew. He's not one for soft, simple lighting. In fact, Lucasfilm shipped in extra gear to supplement the inventory at Carolco, where the *Radioland* sets filled Stage 4 for most of last winter.

In the following interview, Tattersall discusses how he achieved *Radioland*'s elaborate, fast-paced look on a budget capped at $10 million.

Q: How did you achieve such a rich look on a tight budget and impossible schedule?

A: Planning was the key. For instance, six weeks

before we started shooting, production designer Gavin Bocquet and I got together and worked on the late art deco, aerodynamic, curved wall theme he had in mind for the set. He was very keen to include ceilings. That meant lighting would be tricky, especially with anamorphic lenses filming action in a tight corridor. So we designed windows and lined the corridor with strips of glass bricks. That allowed us to get light through walls and keep the ceilings. We also shot through the plexiglas windows.

We discussed color schemes and lighting that would highlight the light/dark themes in the script. *Radioland* is a comedy, but it's really a dark comedy. So we chose colors and furnishings, and worked out lighting schemes for different rooms that would highlight the mystery or the comedy in various scenes.

Q: What about the visual effects?

A: The majority of the effects – and there are only 60 of them – are exteriors. We built 37 rooms inside the station, but it had no outside. In one case, there's a wild chase sequence with Brian Benben, the male lead, running from the police across Chicago rooftops. The police think he's the one killing people at the station, although the audience ends up suspecting nearly all the main characters at one time or another.

We have another scene where a guy falls down a lift (elevator) shaft, kicking and screaming the whole way down. We put him in front of a blue screen for that, and then filmed a tracking shot. Later, ILM composited the live-action footage of him with the background of the shaft.

Q: Were there many blue-screen shots?

A: Some were with blue screens, some green, some white and some black. It depended on the bias of the background. In most cases with the wide anamorphic frame, we only put the screen behind the action. The rest of the frame was painted during digital postproduction at ILM.

For one shot outside at night, we built a replica of a radio mast and swung around it in a helicopter, shooting a chase up the tower. We had real actors on the 40-foot mast and didn't bother with the background. We just lit it with very contrasty light, rim and side lighting, and then didn't worry about the background. They took care of that later at ILM.

Q: How did they deal with camera movement while compositing the images?

"Radioland is a comedy, but it's really a dark comedy. So we chose colors and furnishings, and worked out lighting schemes for different rooms that would highlight the mystery or the comedy in various scenes."

A: They call it "difference matting." We shoot a plate of a scene with no actors or movement, and the folks at ILM scan it into their computers. Then they scan in the frames with action. Anything that's moving, the computer can make a matte from. They can even program in the focal length of the lens, so it matches the perspective with the new background. The computer can also work out the acceleration and deceleration of any camera movement, and match our pans and tilts with a CGI background. It essentially creates a 3-D model from comparing 2-D frames.

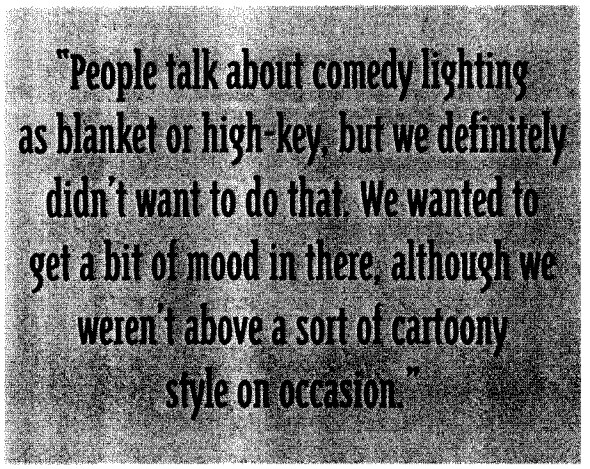
As a result, I was free in how I was able to move the camera and light foregrounds for composite scenes. The camera was definitely not locked down.

Q: How were the backgrounds generated?

A: We built and photographed miniatures for several backgrounds. Others were extracted from real scenes such as the skyline. Digital matte artists at ILM created some backgrounds. Most backgrounds were comprised of a combination of these techniques. For instance, the lift shaft started as a miniature, and was enhanced at a computer workstation, where details and texture were

added, so it looked realistic at full film resolution.

Q: This was primarily an interior film, and a comedy. Why was it filmed in anamorphic format?



A: It was Rick McCallum's decision, and my first reaction was that it was unusual. I normally associate anamorphic lenses with great vistas, as in *Lawrence of Arabia.* But Gavin designed the set to work with it. The rooms tend to be wide, but not tall. And with a shallower frame, it was often easier to light, since we could hang lights close to the top of the frame. At the end of the day, I found the wider frame was a great advantage. Most of the time when you are shooting interiors, you wish you had more width. You get forced into extra pans and developing shots. We did those, certainly, but we also learned how to use the frame creatively. With the 2.35:1 aspect ratio, the actors can walk from a mid-shot into their own close-up. And we could spread five characters throughout the frame, rather than standing side-by-side, and have them at different sizes reacting to the jokes and with each other.

Q: Did the format affect your choice of film?

A: In a way, yes, because the zoom lenses we were using only opened to stop T-4.3. We shot EASTMAN (EXR 200T film) 5293 for most of the film, because an exposure index of 200 (under tungsten light) gave me an extra stop to work with. That became important, both for depth of field during some of the wild action, as well as when we had to light the station's large auditorium. To get T-4-5.6 in there, we would have been roasting the actors.

In some of the smaller spaces, where I could get the lights in closer, we used (EASTMAN EXR 100T film) 5248. That comes from my background in commercials. I try to shoot on the slowest stock possible, so I can get the richest look. Nevertheless, I was really pleased with the way the faster film compared. If the two are projected side by side, you can see a difference, but it's minuscule, splitting hairs really.

People talk about comedy lighting as blanket or high-key, but we definitely didn't want to do that. We wanted to get a bit of mood in there, although we weren't above a sort of cartoony style on occasion. Our look is colorful, but we also used shadows for effect. The script even weaved the lighting into some jokes, such as mixing suspense and comedy in a dark room.

Q: It sounds like the pace must have been grueling. Did you feel rushed into making decisions?

A: During the main shooting schedule, we averaged five or six pages each day. Our pick up week – when we shot many of the cameos–moved even faster, and we averaged 14-to 15-hour days. We would have several scenes being set up at once, and a team filming miniatures as well.

But I like it when things get a bit exciting. When you have the time, say on a commercial shoot, you can end up over-discussing options to the point where your ideas stop improving. But when you're up against it, there's a weird sort of energy that gets transmitted to the film.

There needs to be compromise. This is a business of light and shade and craft. It's also 10Ks and brute arcs and 800-foot cable runs through snake-infested forest. It's humping heavy pieces of equipment to inhospitable parts of the world. You have to be very practical. It's also time. If you spend time messing around with your lighting, you're stealing somebody else's time.

You can't be totally selfish about the art. At the end of the day, you've got to put it on film and send it in.

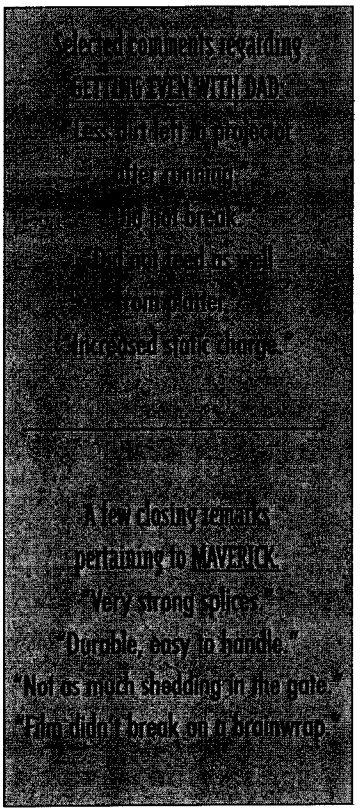
(NOTE:EASTMAN, 5248 and 5293 are trademarks.)

ESTER SURVEY RESULTS

The majority of motion picture films in the United States are printed on triacetate-base stock. However, due to increased customer interest in polyester-base film stock, two major motion pictures within the last six months were distributed exclusively on ESTAR stock, Kodak's polyester-base film.

Although these film stocks are similar in many respects, there are some discernible differences. For instance, ESTAR is slightly thinner, but will not break as easily as triacetate. Film handlers frequently comment that ESTAR "feels" different, is difficult to splice, is tighter on the platter, and so forth.

Because of Kodak's ongoing interest in maintaining the highest quality screen presentation possible, our business research department sent a questionnaire to a number of theatres selected randomly that played *Getting Even with Dad* and *Maverick* recently. The following is a quantitative summary of the results. Averages are based upon a 7-point scale, where 7=much better, 4=no difference, and 1=much worse.



PROJECTIONIST SURVEY–SUMMARY
ESTAR PRINT TESTS–AVERAGES

		Maverick	Getting Even With Dad
Make-Up	How Easily Cut	4.24	3.72
	Condition of Lab Splices	4.41	4.5
	Handling During Make-Up	4.69	4.44
During Run	How Feed From Platter	4.25	4
	Tendency to Jam/Brain-Wrap	4.43	4.13
	Noise Level	4.69	4.11
	Dirt Buildup in Projector	4.92	5.12
	Focus	4.62	4.2
	Static Charging	4.57	4.31
	Overall Picture Quality	4.92	4.4
Near End	Dirt on Film Image	4.69	4.73
	Base Scratches	4.86	4.96
Break-Down	Perf Damage	4.89	4.82
	Number of Shutdowns	4.73	4.94
	Damaged Film Removed	4.89	4.61
Respondents		51	26

We continue to be most interested in your reactions to polyester-base film. Please direct your comments and questions to either Terri Smith Westhafer or John Pytlak in care of *Film Notes for Reel People.*

CHECKLIST FOR

This is a suggested checklist for your booth. We are sure that you will find other addition

Recommended Steps for Good Projection
Before and During Every Screening:

- Make sure the gate and trap area are clean
- Check critical film path before and after starting projector
- Check loop sizes
- Is the lens clean?
- Make sure the correct lens is being used (scope or flat)
- Film print and film end secured on the platter
- Is the film running smoothly through projector and platter?
- Is the film in focus for both the trailers and the feature?
- Is sound system functioning properly?
- Is the correct sound system switched on (Dolby,DTS,SDDS, etc.)?
- Are the rollers moving smoothly?
- Is the film framed properly?
- Is the aperture plate properly aligned?
- Is the masking correct?
- Check sound levels in auditoriums

Projector *(cleaning)*
- ❑ Gate and trap area
- ❑ Face and stand
- ❑ Components
- ❑ Rollers
- ❑ Intermittent oil (if applicable)
  - ❑ proper levels
  - ❑ foaming
- ❑ Components
  - ❑ dirt and / or wax
- ❑ Lenses and port glass

Platter
- ❑ Rollers
- ❑ Centerpiece
- ❑ Check speed

Sound
- ❑ Volume level
- ❑ Sound optics
- ❑ Speakers

Film Cleaning
- ❑ Particle Transfer Rollers *

Projector
- ❑ Cleanliness of film path
  - ❑ Sound head and rollers
  - ❑ Sprockets
  - ❑ Sensing rollers/rings
- ❑ Film gate and pressure pads
- ❑ Lens and port glass

Platter
- ❑ Centerpiece
- ❑ Timing

Booth
- ❑ Work bench
- ❑ Floors
- ❑ Vents

Film Cleaning
- ❑ Web media cleaner and/or PTR's*

OOD PROJECTION

your own. We hope that you will copy it and use it as a training device or just a reminder.

Projectors

- ❑ Lubrication
  - ❑ intermittent
  - ❑ friction points
- ❑ Lenses
  - ❑ projector (all)
  - ❑ sound heads

Lamphouse (make sure power is off)

- ❑ Reflector
- ❑ Diffuser
- ❑ Airflow equipment

Booth

- ❑ Port glass
- ❑ General cleaning
  - ❑ platter (all stands, etc.)
  - ❑ tables, autowinds
  - ❑ humidifiers
  - ❑ floors, walls, filters, misc.

Projector

- ❑ Drain and refill projector oil
- ❑ Sprockets
  - ❑ wear
  - ❑ excessive play
  - ❑ check intermittent
- ❑ Film gate
  - ❑ align film gate and trap
  - ❑ check guide rollers for binding and grooves
  - ❑ align intermittent tension shoe
  - ❑ intermittent shoe wear
  - ❑ connections and tightness
- ❑ Pad rollers
  - ❑ flat spots/grooves/binding

Platter/Make-Up-Table

- ❑ Drive motor brushes
- ❑ Variable transformers
- ❑ Inspect and lubricate bearings

** Particle Transfer Rollers are safe and effective for cleaning film. If properly used, PTR's can be used to continuously clean your film print during every presentation. If you need information concerning PTR rollers, please contact your equipment supplier.*

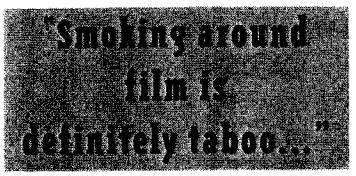
If you are not sure how to service any of the equipment listed – soundheads, sprockets, etc., don't despair. Call the manufacturer or consult the manual. There is no such thing as a stupid question when it comes to your safety or the care of your equipment.

Keep your hands away from moving parts and use extreme care and the proper precautions before working on electrical components or light sources.

If we can be of any assistance, please contact Terri Smith Westhafer or Brad Tierney at: (213) 464-6131

Continued from page 2

siderable charge as they are separated — try pulling the backing paper off an adhesive bandage in the dark and observe the static glow. Faster film transport speeds tend to generate more static, which is why static charging is most often noticed during platter makeup or fast rewinding, rather than during relatively slow 90-feet-per-minute projection. Finally, the conductivity of the charged material effects how fast the static charge can be dissipated — that is why static is more troublesome in winter months, when the heated indoor air tends to be very dry, reducing any conductivity provided by moisture.



Q: We sometimes get random "clicks" and "pops" in the sound, especially in the winter months. This only occurs when the projector is running, and not with the non-sync sound. Our service engineer checked out the sound system and said the problem may be due to static on the film, and recommended using a humidifier in the booth. Why will this help?

A: You have a very sharp service engineer. Film may generate quite a bit of static charge, especially when the relative humidity is low so there is little moisture to increase the film's conductivity and help dissipate the static. The random "pops" are probably from static discharge (tiny sparks) that occur in or near the soundhead as the charged film comes into close proximity to grounded metal components. The problem is most severe in the winter because heating air reduces its relative humidity. We recommend maintaining a relative humidity of 50 to 60 percent in film handling areas, to minimize static problems and optimize projection performance. Low-cost accurate humidity gauges are readily available, and evaporative humidifiers add needed moisture to the air. (We do not recommend cold mist or ultrasonic humidifiers for film handling areas because they may deposit a white powdery residue of mineral salts from the vaporized water). In some cases, the central HVAC system can be adjusted to increase the relative humidity to the desired range. Don't deliberately raise the relative humidity much above 60 percent, as excessive moisture will rust or corrode metal parts, and will tend to make the film emulsion too soft and sticky.

Q: Other than keeping the relative humidity between 50 and 60 percent, what else can I do to minimize static-related problems?

A: You've probably seen the ads about laundry products that reduce "static cling". These materials increase the conductivity of surfaces to which they are applied, helping dissipate static charge. In addition to familiar over-the-counter products like "Static Guard", there are many "industrial grade" antistats sold for use around computers and sensitive electronic components.Although we DO NOT recommend applying these antistatic chemicals to the film itself (some may cause mottle or dye fading), they can be used to treat non-conductive surfaces such as plastic counter tops, carpeting, vinyl chairs, plastic rollers, etc., to minimize static buildup.

Remember that the amount of static generation depends upon transport speed and how much the film rubs or slips against surfaces. Avoid using excessive speed to make-up or rewind film. Be sure all rollers are aligned and are turning freely. Metal rollers should be grounded — for example, rewinds mounted on a wooden tabletop should be wired to provide an electrical path to ground so static cannot build up. (This will also help avoid those unpleasant shocks as you touch a charged rewind).

Since static charge on film can attract dirt and dust particles, keep all film handling areas free of dirt and clutter. Smoking around film is definitely taboo–cigarette ashes are readily attracted by static charge on the film. Clean work surfaces (like make-up and rewind tables) frequently with a damp cloth or sponge. Because the film returning from the projector to the platter is often only a few inches from the floor, keep the floor dust free by damp mopping.

Following these simple suggestions will help minimize problems with static, and result in a higher quality image on the screen.

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