Film-Tech

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FILM NOTES FOR THE

**Sound
Advice**

**Zsigmond's
Bonfire**

**Platter
Brains**

WINTER 1991

C O N T E N T S

E D I T O R ' S   M A I L B O X

)ear Editor:

 would like to say that I was very impressed with your
ıresentation to the MPEX members in Seattle and I am
Jad to see that Kodak is taking an active role in the overall
ıresentation of the films in our theatres.

ſou mentioned that Kodak publishes a projection manual,
ıut I neglected to get the publication number from you. I
vould be interested in a list of all your current publications
f you have one.

Ґhanks,
Иan Blangy
)istrict Manager, Seven Gables/Landmark Theatres

*Editor: Our projection manual is now complete and is
ɪvailable for $35 in minimum lots of 10. A more eco-
ıomical way to obtain this particular publication, however,
ſs to arrange for a group presentation of Kodak's "Film
ᵣom Start to Finish" program. This is a full-day seminar
ᵣovering all aspects of pre-production, production, distribu-
ʲion, projection, and customer service. It is available to
ɡroups of 35 or more at the location of your choice at $54
ɲer person ($49 for NATO members) and the projection
manual is included in this package price.*

Additionally, we offer The Book of Film Care *and are in
the final editing phase of an updated* Film Notes for Reel
People Collection. *For further information, please call Terri
Smith or Brad Tierney at (213) 464-6131.*

Dear Editor:

As Director of Marketing for AMC Theatres, I find your
publication both informative and quite useful.

Would it be possible to add me to the list as well as our
District Supervisors?

Again, thanks very much for your assistance and for
publishing such a professional newsletter.

Sincerely,
Madelyn Fenton
Director of Marketing, AMC Theatres

Editor: We are pleased that you find Film Notes *useful and
we will certainly make the requested additions. We en-
courage you as well as our readers to write to us with the
names of any personnel whom you would like to receive
copies of our publication.*

Dear Editor:

I note with delight that you intend to make back issues of
Film Notes for the Reel People available within the next few
months. I am anxious to make my library complete. Would
you please send me a list of all issues so that I can check
off those that I have and determine which are missing? I
look forward to hearing from you.

Thank you,
Marvin R. White

*Editor: The stock of most of the early editions is entirely
depleted, so we are unable to fill requests for any issues
prior to 1986. Our upcoming revamped collection will in-
corporate all the issues published since the beginning of*
Film Notes. *Watch for an announcement that this collection
is available in a future edition.*

CLYDE McKINNEY'S SOUND ADVICE

Clyde McKinney is a highly-respected sound engineer whose work in the sound field is both diverse and extensive. Clyde began his work in the sound industry right out of college, where he worked on the film *Tommy* with its quintaphonic sound. He would then join Dolby Labs for the release of *Star Wars*, where he continued to work for the next seven years. This was the growth period for Dolby's Stereo Optical Sound. In 1984 Clyde was one of two members of a new group called "THX." Clyde worked four years with the THX group, until he began his own consulting company. Clyde has been a consultant on Disney's *Imagineering*, and Magic Kingdom projects. Clyde once again is found on the cutting edge of technology as a sound consultant for the Cinema Digital Sound program.

Q: What constitutes a good sound system?

A: A sound system is more than just the equipment that you put into the auditorium. The sound system incorporates the environment in which it reproduces; therefore, it is important to look at the theatre design itself. Theatres should not be long echo halls, but should have a relatively low background noise (NC30), and a relatively low reverberation time. A sound environment is supposed to re-create sound, not create sound. A theatre environment should be neutral with a small room intimacy. The speakers should be loud enough to fill the room, and should meet industry standards. The power supply is very important, and should be relatively large so that the sound does not get "clipped" (clipping is a situation where the power amp does not have the ability to reproduce the signal, which becomes distorted, and in many instances sends a DC pulse down the speaker wires, damaging the system.) The sound system is a complete system that takes into consideration the equipment and the environment.

Q: How can you prolong the life of your sound system, or is it a product of the environment?

A: These are mechanical systems, and therefore, have a finite life. Units that are produced today have a tendency to last longer due to improvements in technology. This holds true especially in the areas of high power compression drivers and high power woofers. However, if you abuse the paper, plastic, and metal they will eventually fail. Your components should be kept dry, and you should try to avoid drastic humidity shifts. One of the most common abuses is to overdrive the system (crank up the volume). The house level is normally established at a

rtain level on the Master Fader. There is a gain above that 'int that can damage the system. Most systems can withstand me abuse; some cannot. There is a misconception that some-ing is loud because it becomes distorted, and distorted com-'nents actually make more audio. There are more high fre-iency drivers damaged by having DC power driven through em (clipping), which will be heard as popping, or distortion.

Q: What should the manager/projectionist know about sound?

A: Unfortunately, it is difficult for a manager/ operator to become an expert in sound, and in any cases this can be counter-productive. The manager/)erator should have a general knowledge of how the sound 'stem works, as well as basic trouble shooting information. he system information is usually provided by the manufac-.rer in the equipment manual, and the overviews are usually ritten as a management piece. Benchmark testing should be ;ed as a sound reference (such as snipes, daters, etc.). On oc-ision some of the prints that go to the theatres are not pro-iced correctly; therefore, test films can be used to determine hether you have an equipment failure or a sound problem. iffy test film is one type of test film.)

Q: We have become an industry of letters: THX, Dolby SR, CDS, etc. What do they mean for us?

A: These letters are manufacturer designations to help label, and in some cases, describe their 'stems. Dolby is a reproduction format, and they create]uipment to reproduce their own stereo optical format. This 'stem enables them to store left, center, right and surround in-rmation in the optical track area (stereo optical). CDS is a orage system, and a reproduction system. Cinema Digital)mes out with six discrete channels of audio, left, center, ght, left surround, right surround, and a sub-woofer channel. HX, unlike Dolby and CDS, is not a format, but a design leory that implements a sound system in a motion picture en-ironment. THX has their own crossover system, but uses a list f industry equipment that meets their standards. Their design andards incorporate equipment, and the environment in 'hich they are reproduced.

Q: Why is it so expensive to have a THX house? And is it worth the cost?

A: The cost of a THX house has to do with the increased design standards. Architects and construction people must pay more attention to acoustics, wall construction for installation, and HVAC design. These factors can drive up the price, but if you tried to retrofit an existing theatre to these specifications it could be cost prohibitive. It makes more sense to build it right in the first place. What THX brought to the industry is a coherent design based on in-dustry standards and practices. By putting together these design techniques and setting up rules and guidelines, it makes a system that is slightly more complicated to install, and therefore, a little more expensive. The equipment is really no more expensive, since THX uses approved industry equipment from non-THX manufacturers. Is it worth the cost? That is a question that would have to be asked of the theatre owners. My experience with THX would say "yes." The managers and owners were very pleased. Anything that will give a theatre a better presentation that the customer can perceive to be better than the theatre down the street will give that theatre an edge. I wish that more theatres would start to market themselves, and promote their systems.

Q: Where do you feel that sound systems will go in the future?

A: To answer this question we must look at each section of the system. Current speaker systems have compression drivers, and because of their design, we have a certain amount of distortion in both the compression driver and the horn. This is an area where lower distortion and better dispersion control will probably be established. In the power amplifier category, we are pretty well covered. We have power amps that have a greater frequency response than their speaker systems; it just depends on how much money you want to spend. The auditorium is another factor to consider, and THX has addressed this problem pretty well, so the next logical step is the front end system. Stereo optical has probably evolved about as far as it can. They have some minor differences bet-ween the manufacturers, but they all basically adhere to the standard in which the print is recorded. The Dolby SR system extended the dynamic range of stereo optical, but I don't see

much more beyond Dolby SR for stereo optical. The next logical step beyond stereo optical is digital, and this brings us to the CDS system which has the ability to store a wider dynamic range. Digital is the logical progression for the future.

Q: What is a front end system, an A-Chain, B-Chain, Dolby A, and Dolby B?

A: The A-Chain and the front end system are synonymous, and the A-Chain is whatever is done to the signal when it comes off the film to get into the presentation format in the proper number of channels with a flat frequency response. The B-Chain has equalization and power amplification, fader, speakers, and acoustical environment to take that flat signal from the A-Chain and reproduce it in the theatre. The A-B Chain is just a logical way to break the system down into two parts. Dolby A is a noise reduction system, and Dolby B is a consumer noise reduction system.

Q: Should Dolby, Ultrastereo, THX, etc., be threatened by CDS?

A: No, and it should increase the quality of these sound systems. The major impact will be on the post production industry. They will have films being produced that take advantage of the discrete tracks, and the number of tracks available. The editorial staff will be impacted, and some of the sound studios will have to make some minor changes. Most of the mixing studios that can handle six channels have a six track recorder capable of doing CDS mixes without making any changes. Stereo optical sound designed studios will have to make some modifications to have the split-stereo, two-channel stereo surrounds.

Q: Will there be equipment changes with the CDS system?

A: There are speaker systems in the industry right now that are capable of being incorporated into system designs to answer the demands of the CDS system. I do think that the theatre engineers are going to have to think more carefully about their system designs, and be more cognizant of the power and frequency response demands of the CDS system. The components are already on the market; however, components are chosen for various reasons, one of which is price. CDS will not force manufacturing changes in speaker systems as much as choices that are made by the design engineer.

Q: What are the components of CDS?

A: The system is composed of a reader and an electronics package. In the 70 mm system the track is about the same size as the 35 mm, and is placed where magnetic track number three normally goes. In 35 mm that area is the same as the normal optical track. There is no other modification of the projector other than the fact that you need to put in a sync motor. The reader is like the current optical sound head; it has a light source and a camera (which is like the cell assembly, but with very small cells). The camera reads the dot patterns and sends the information through a video cable to the electronics package. The dot pattern is decoded by the electronics package and converted into a 16 digital byte signal for the five wide ranges, and one decimated channel. The decimated channel is a linked frequency channel for the sub woofer. The channels go to a digital house equalizer, and then out of the unit to the house system. For the 70 mm system there is an electronics package, a penthouse, and a sync motor.

Q: What will be the consequences if a CDS system is installed in a theatre with a poor sound system?

A: If you compare CDS to the existing system there will no doubt be a difference. CDS is discrete, and it does have a wider frequency response. You're wasting your money if you put CDS into a small system that cannot meet the power requirements. You could damage your system because there is a tendency to turn up the system too loud because it sounds so good. If you put CDS into a marginal system, it is like putting a Porsche engine into a Volkswagen. It would go real fast for a short period of time. A good sound system design is a balanced design, but this does not mean that you have to put in the most expensive equipment. The system needs to have the power handling capabilities to meet industry standards.

TROUBLESHOOTING PLATTER BRAINS

by Kelly B. Smith, AMC Field Engineer

In today's advanced projection booths, the platter system has become the industry standard. Although this efficient method of transporting film has few flaws, it can create havoc when the film is not properly secured and balanced on the platter. If the film should wrap around the platter centerpiece, it can actually "strangle" this mechanism, making it dysfunctional and causing severe film splitting and breakage.

Film wrapping usually occurs because of platter disks rotating in an erratic manner or through human error when loading and securing the film.

Because film wraps can be time consuming to repair, the program interruption for the audience frequently exceeds five minutes. Of course, this type of "down time" is highly undesirable from the standpoint of audience satisfaction. Most film wraps can be avoided with proper maintenance and a few helpful hints.

The chart helps to identify different types of wraps and suggests both the causes and the remedies. Although most wraps fall into these categories, some may not. In a situation where no category match can be made, observe non-platter related influences when trying to locate a cause.

TAIL WRAP

The tail end of film slips off the edge of the platter disk and begins to wrap around the disk support arm and spindle. The film will eventually wrap so tight that it breaks.

TO CORRECT: Separate the tail wrap from the rest of the print (may already be separated because of film break). Begin unraveling the film in a clockwise direction. Once the film has been removed, reattach to print. Watch for tears and creases.

CAUSE	PREVENTATIVE MEASURE
1. Tail is not properly secured with stopper or print tuck (most often on longer prints).	1. Secure print with stopper or print tuck.
2. Fan or air vent blowing on platter disk.	2. Direct air should not blow onto platter.

BACKLASH

Film is wrapped tightly around centerpiece in a counter-clockwise direction due to platter turning too quickly.

TO CORRECT: Spin the platter by hand in a clockwise direction until the film has backed itself off the centerpiece. While doing this, push the film against inner circumference of the print. This allows the film more room as it is being unwrapped. The motor can be disengaged so that the platter will spin easily.

CAUSE	PREVENTATIVE MAINTENANCE
1. Feed arm on centerpiece sticking while in high feed position	1. Refer to manual to learn workings of platter support arm. Make sure the filter moves freely. See that set-screw on filter is tight.
2. Platter system or disk not level	2. Use a level to maximize overall adjustment on all platter disks, using the leg adjustment on the platter stand.
3. Faulty or misadjusted speed control card	3. Refer to manual to adjust platter speed.
4. Brain feed servopot out of adjustment (ORC)	4. Adjust according to manual.
5. Centerpiece tension spring missing (Christie)	5. Replace spring.
6. LED filter assembly loose inside spindle (Christie)	6. Refer to manual and check for loose set-screw.
7. Feed arm spring missing (ORC)	7. Replace spring.

NOTE: A considerable number of backlashes occur while threading. It is not uncommon for the operator to pull the film too quickly through the centerpiece causing the feed arm to stick. This type of backlashing can be avoided by pulling the film only as quickly as the centerpiece movement allows. Always check the centerpiece after threading to be sure that the film is not backlashing.

BRAIN (CENTERPIECE) WRAP

Film is wrapped tightly around the centerpiece, or "brain," in a clockwise direction due to platter turning too slowly or not at all.

TO CORRECT: Spin the platter by hand in a counter-clockwise direction until the film has backed itself off of the centerpiece.

CAUSE	PREVENTATIVE MAINTENANCE
1. LED filter assembly loose inside spindle (Christie)	1. Refer to manual and check for loose set-screw.
2. Faulty drive motor or one in need of new brushes	2. Make sure power is off before attempting repair. Refer to manual for instructions on removing motor. Test motor by exchanging with motor from another disk. If the motor is determined to be dysfunctional, replace. Brushes are easily replaced; refer to manual for proper installation.
3. When centerpiece is removable, the assembly may not be properly seated into spindle.	3. Make sure removable centerpiece is firmly seated.
4. LED intensity incorrectly adjusted	4. Refer to manual to adjust.
5. Speed control card fuse blown or circuit breaker popped	5. Fuse must be replaced or circuit-breaker reset. On some older ORC platters, the circuit-breaker must be replaced if it pops; refer to manual.
6. Feed arm on centerpiece sticking while in low-feed position	6. Check filter assembly to make sure it moves freely (Christie); centerpiece may need to have spring adjusted or replaced (ORC).
7. Platter system or disk not level	7. Use a level to maximize overall adjustment on all platter disks, using the leg adjustment on the platter stand.
8. Faulty or mis-adjusted speed control card	8. Refer to manual to adjust platter speed; speed control card will need to be replaced if it is faulty.
9. Centerpiece feed servopot out of adjustment	9. Check servopot spring; refer to manual to adjust or replace.

THROWN PRINT

Print is thrown from the platter disk or left hanging off the edge with the centerpiece acting as a hook.

TO CORRECT: If the print is hanging from edge of platter, position it on platter in as concentric a manner as possible. If the print has fallen to the floor, try to separate the print into small sections that are still together. Label the sections with tape, working from the center outward. Follow the same numbering used for reel bands, i.e., 1H, 1T, 2H, 2T, etc. Feed the sections back together onto platter.

CAUSE	PREVENTATIVE MEASURE
1. Print not properly centered on disk when loaded, possibly after being moved by hand	1. Manually center on platter so that the film weight is as evenly distributed as possible around the centerpiece.
2. Feed arm on centerpiece sticking while in middle feed position	2. Refer to the manual to learn workings of platter support arm. Make sure the filter moves freely. See that set screw on filter is tight.
3. Platter system or disk not level	3. Use a level to maximize overall adjustment on all platter disks, using the leg adjustment on the platter stand. It is nearly impossible to get all disks perfectly level, so work toward the best average possible.
4. Faulty or misadjusted speed control card	4. Refer to manual to adjust platter speed. To determine if the speed control card is faulty, test a card from another platter in the erratic one. If the problem is in the speed control card, it must be replaced.
5. Brain feed servopot out of adjustment (ORC)	5. Adjust according to manual.
6. Centerpiece tension spring missing (Christie)	6. Replace spring.
7. Print built up too tightly so that when the ring is pulled, a bulge occurs causing an uneven feed surface	7. Manually work film through bulge while film feeds into brain.
8. Loose or worn out drive wheel	8. Platter will not keep constant speed with platter disk. Refer to the manual. Make sure power is turned off when repairing.

NOTE: A "pulsing" platter is one that repeatedly speeds up and then slows down. Over a period of time, this irregular rhythm will cause a print to slide around until it is thrown. "Pulsing" is easy to detect by simply listening. A pulsing motor will make a repetitive sound as it speeds up and slows down.

Film condition has not been listed in any of the charted problems, but it is worth considering. Problems with the platter centerpiece can be compounded, if not created, by poor print condition. Torn sprockets, dirt and oil on the film, poor splices, and creases can all impede the progress of the film through the centerpiece as well as disrupting the smooth operation of the components with which the film comes in contact.

Q: Should there be a set standard for equipment to be used with CDS systems (like THX)?

A: No, at present the manufacturer does not want to get into policing systems. The standards required already exist in the industry through SMPTE, ISO and Ashray. THX did not create the standards; therefore, anyone can use these standards to create their own theatre environment.

Q: Why does CDS use a light source as a reader instead of a laser?

A: There were problems encountered with laser sources, and with the quartz halogen lamp (running at ½ power). This means the bulb will last 10 to the 13th power longer than its programmed life. This gives the bulb thousands of hours of use. This becomes an inexpensive part of the system that will last a long time. We took the simple approach.

Q: In current optical soundheads, if the sound cells get shifted it can throw the sound out of balance in your stereo output. Will the CDS system have the same problem?

A: No, CDS is a much more forgiving system regarding film placement since it does not use the entire track width to capture the signal. The signal is serpentined throughout the track area, so it is only interested in the central area of the track to receive the signal. Therefore, weave is factored out of the reproduction system. CDS is a pretty rugged system in both the lamp and camera alignments. Both are pinned so they can be pulled out and replaced, and when replaced they are in proper alignment. The optical bench can also be replaced as a whole unit; it is a modular design.

Q: People perceive 70 mm to be better because of its sound. Is this why CDS was initially released in 70 mm? And what will it be like in 35 mm?

A: Yes, this is one thing that will sell CDS; it is better than magnetic 70 mm, and you can hear the difference. A magnetic sound track will start to deteriorate from the first play on the screen. This does not happen with CDS. It is also very expensive to produce current 70 mm magnetic prints; therefore, they are very limited in number. There are quite a few 70/35 mm projectors that are not getting many 70 mm runs. CDS began in 70 mm because of the emphasis placed on the facilities for 70 mm. The manufacturer wanted to showcase their system with high quality equipment, and compare it to 70 mm magnetic which has been highly regarded in the industry. To answer the second part of the question, 35 mm, there will be a potpourri of systems. Some systems may not adequately take full advantage of what CDS brings to the package. A discrete system will give you a better stereo image, and has the ability to create a more realistic ambience. If the theatre is not built to reproduce good sound, it will lose something. What CDS in 35 mm means to the industry is a six track sound in all of its theatres, and not just the current 70 mm houses. Digital sound should heighten the industry standards in the long run.

Q: Since the induction of CDS with "Dick Tracy" some modifications have been made. What are they?

A: The only real changes have been in manufacturing. The system design has remained the same, but we changed the front panel to make it more user friendly. We also moved the power supply into its own chassis to isolate it from any temperature problems. We basically took information from the field to simplify the system for the user.

Q: Can you go back and forth from optical to digital with the CDS system? This could be important for trailer placement.

A: Yes, the digital electronics package reads the difference between standard optical track and its digital track. There is a timer in the system that activates when the system sees analog information end, and it knows that digital information is coming through and switches over.

Q: Will this give us a chance to enhance trailers?

A: Yes, stereo trailers have been around for many years. I worked on creating a 70 mm stereo trailer for "Outland" years ago. Trailers will not really cost that much to change to digital, and it will give the audience a chance to experience the sound and feel of the film.

Q: Will editing change with CDS? And will a new mix affect Dolby, Ultrastereo, etc.?

A: Yes, with a discrete system that will allow for stereo surrounds, it will affect editorial designs, post production mixing and editing. It will give the producer and the sound editor a much wider latitude in developing a sound design that better complements the picture. The new mix will only enhance other formats, and the stereo surround system can be collapsed down to a mono surround very easily. This mix is totally downward compatible to a stereo optical mix. This does not obsolete or require any additional mixes.

Q: Will we get to a point with CDS where we are too busy turning around looking for what is behind us in the theatre?

A: (Laughs) There is a possibility of abusing any format, but what you're given with CDS having a four corner ability is the opportunity to reproduce a true quad stereo ambience. You can actually place someone in a jungle, and they would feel by looking at the picture and listening to the sound that they were in the jungle, or at least, have a good representation of what it would be like to be in the jungle. You can have cows "mooing" in the back of the auditorium, and have people turn around to look for them. That may be what the sound editor wants you to do as an editorial effect. Having the ability to have someone suddenly talking over your shoulder is an interesting effect.

Q: Do you see any sound systems beyond digital right now...is there something on the horizon?

A: I don't really think so. The next logical step would be a dual system in which the sound is stored on video discs and locked to picture using SMPTE time code, or some other house code. Dual systems are often used when attempting large format 3-D, or when you want a single button start with an automatic re-queue. Basically, you use a loop in for the film, and video discs for the sound system. These systems are currently used in some theme parks with feature film venues. It is a very expensive system whose in-cremental advantages are relatively small, and the industry could not afford the changes.

Q: What will CDS sound systems do for the patron sitting in the last row next to the wall? Will it work for him?

A: CDS is a storage system; it does not fix acoustics or bad theatre design. In the seat that you described, that patron will be able to pick out the stereo much better because he will have the speaker right next to him. You will get separation, but it will not be what the mixer perceived when the movie was mixed. That is not the fault of the storage medium as much as it is the fault of having seats too close to the wall.

Q: How far would you keep the seats away from the walls?

A: When I design a theatre from scratch, I try to keep the seats 8 to 10 feet away from the walls. In specialty venue theatres where you go for classic continental seating, you get that distance automatically because of the fire exit walkways. In a motion picture theatre, in order to get a good percentage of the floor area, you normally end up with central aisles, miniature side aisles, or two aisles with central seating, and seats that go to the wall. When seats are positioned next to the wall, you will get a poor sound and picture image that is skewed.

Q: In comparison to other changes in the industry, how significant is Cinema Digital Sound?

A: I think that people will look back at CDS and call it a milestone. Digital sound is the next logical step for the industry. The consumer industry is going quite heavily into digital sound processing. There are some major advantages for having sound stored in the digital domain. The information is much less susceptible to damage, and there is a lot of error correction that can be applied so that damage to the film can be hidden when you reproduce the sound. There is no gradual build-up of background noise that you experience in optical tracks now, or the thumps and bumps that occur with magnetic.

VILMOS ZSIGMOND SETS A "BONFIRE"

There's a scene in *The Bonfire of the Vanities* wherein Bruce Willis, as journalist Peter Fallow, emerges from a limo and works his way through a five-minute moving shot. It begins in an underground garage at the New York World Trade Center. He and his entourage ramble through a kitchen and crowd into an elevator.

"Brian DePalma wanted to direct the scene from inside the elevator, so he shaved his beard and mustache off and played a bit part," explains Director of Photography Vilmos Zsigmond, ASC.

The scene progresses as a drunk and dishevelled Willis careens through a lavish party and is swallowed up into a surging hoard of admirers. DePalma guided the cast and crew through 13 or 14 takes of the complex shot before he was finally satisfied. It was around 2:00 a.m. The cast and crew were exhausted, and tomorrow promised more challenges.

Zsigmond turned to DePalma: "In another ninety minutes, it will be dawn. The sky behind that window will be glorious." So, two hours later, the final take was completed just as the sky was turning a light shade of blue signaling the end of one day and the dawn of another. On film, it's the visual equivalent of turning the first page in a new chapter.

It's a fine example of the magic which can occur when the synergy is right between a director and a cinematographer. This marks the first time DePalma and Zsigmond have worked together since *Blowout* in 1981. He also shot *Obsession* with DePalma in 1976.

"Brian called and said he thought *The Bonfire of the Vanities* was my kind of film," Zsigmond recalls. "He and (production designer) Richard Sylbert visualized a sort of hyper-reality look for the film."

Some of Zsigmond's more recent films have featured more stylized photography, such as *The Two Jakes* and *The Witches of Eastwick*. But his body of work is eclectic: *Deliverance, Cinderella Liberty, The Long Good Bye, The Rose, McCabe and Mrs. Miller,* and *Heaven's Gate.* Zsigmond won an Oscar in 1978 for a fantasy-reality film, *Close Encounters of the Third Kind,* and he was nominated for *The River* and *The Deerhunter.*

The Bonfire of the Vanities is based upon Tom Wolfe's best-selling novel about greed, corruption, and the frailty of moral fiber. At age 39, Sherman McCoy (TOM HANKS) has it all: posh New York apartment, appealing wife and daughter, and a million dollar job as a "master of the universe"—a bond salesman. But, it just isn't enough. Out of ennui, he covets Maria (MELANIE GRIFFITH), a young wife to old money. His downfall commences when he picks up Maria at the airport. They take a wrong turn and wind up on a dark and foreboding street in a Bronx ghetto. Maria is driving his Mercedes and becomes frightened by two approaching black males. She speeds away, hitting one of them in the process.

The hit-and-run accident throws the city into racial and political turmoil. Gradually, the crime is pinned on McCoy with Maria wanting no share of the retribution that society eventually demands. The man who had it all loses everything.

To translate the story to film, Zsigmond takes an artistic perspective: "The movie screen is two-dimensional, like a painting. It's an abstract form of storytelling. That's what gives it a dream-like quality and allows the audience to temporarily suspend reality."

An obvious problem is apparent when reading the script: There are no truly positive characters. The story is populated with persons of shallow or questionable character. Satire is the thread which holds the fabric of Wolfe's scenario together. It is not pratfall kind of humor. It is more like the smile which creeps across your face when an overly-diligent traffic cop finds a parking ticket on his own windshield. There are large doses of subtle irony.

DePalma wanted to set McCoy up for the slide from paradise into oblivion with the theory of "the bigger they are, the harder they fall." Zsigmond shot large parts of the film

with ultra-wide angle lenses from low angles, creating larger than life characters, and amplifying the poshness of rich environments.

He actually crafted two complementing looks for the film. One is hyper-reality, the upscale look that DePalma and Sylbert outlined in their first meeting with Zsigmond. It is characterized by the use of acrylic colors, mainly blues, yellows, and greens, in costumes and sets. He lit for a deep stop, usually around T-4, which yielded sharp depth of field, crisp images, and a maximum amount of visual information on the screen. The second look is only slightly different. It's a downscale look which provides a visual signature for life in courtrooms, jail cells, and on the streets of the Bronx. Colors of costumes and sets are comparatively muted. Zsigmond also mixes warm yellow and orange light with cool blue moonlight more freely in these settings. The feeling is a bit more chaotic.

In both situations, he only used diffusion on the camera lens for close-ups of the actresses. Subtleties like this are difficult to achieve. The cameraman must understand exactly how the diffused footage will intercut. The audience has to *feel* rather than see the shift in the quality of the images.

Another aspect Zsigmond brought to the film was use of the super-1:85 aspect ratio for production. This allowed him to expose images right up to the edges of the frame, including the space usually reserved for the soundtrack. This increased the image area by approximately 20 percent, resulting in a richer picture. This difference should be especially evident on 70 mm release prints.

"Brian wanted to break down the limitations of the static camera and create a more spontaneous, real-life look with no impression of staged scenes," Zsigmond explains. "We were almost always moving, either with a Panaglide or on dolly tracks."

There's a sequence where McCoy is surrounded by reporters and photographers on the steps of the courthouse. It's raining hard. The Panaglide camera moves smoothly through the crowd. The audience feels what it is like to walk in McCoy's shoes as he starts his slide to the bottom.

Zsigmond credits the evolution of fast film technology with giving him more freedom to satisfy DePalma's appetite for camera movement. He notes that when a director is making 360 degree moves, there is not much room for a cameraman to hide old-style lights. His creativity called for weather balloons floating near the ceiling of the courthouse lobby, lit with a dozen 2500 watt spots on the ground to bounce light from the white surfaces of the balloons. It has the appearance of daylight pouring through a huge skylight. It's a technique Zsigmond invented when shooting *The River* with Mark Rydell. He used Eastman EXR color negative film 5296 to photograph interiors, night exteriors, and some daylight exteriors. He used

Eastman EXR color negative film 5245 to record most daylight exteriors. He rated the 5296 for exposure indices ranging from 400 (Kodak recommends E.I. 500) to 1000.

He exposed the 5245 EXR film at E.I. 50 in daylight. "It's a remarkably sharp film," Zsigmond says, "with virtually no apparent grain. It's more like looking through a window than watching a movie. That was a big help in creating the sense of reality we wanted."

However, it's the mind and eye of the filmmaker that determine the ultimate quality of images onscreen. When Zsigmond was shooting in the rain, he wanted the gloominess reflected in the mood of the film. He exposed the tungsten-balanced EXR 5296 film in daylight without using a color correcting filter on the camera lens. That maximized information recorded on the film's blue record. It was exactly the look he sought.

"You have to decide what is best for the movie," he professes. "We have a tremendous palette that we can draw on with modern films. We have to use all of it from the darkest black to the purest white. It's like composing music. You should use both the loudest and softest tones, as well as the mid-range."

Zsigmond had to do very little to augment natural light, even at night, on Park Avenue exteriors. In contrast, Bronx street scenes are darker and moodier, particularly at night because many street lights are not working. There are some effective shots into a glare of headlights, which were actually 2 K's simulating the headlights. Zsigmond observed that the T-grain emulsion in the EXR films allows him to shoot straight into light without unnatural flaring.

Zsigmond gives credit for the good things that happened on *The Bonfire of the Vanities* to effective pre-production planning and location scouting. There were great locations and no big surprises. Another plus was working with Sylbert. "He's more than a talented production designer. He knows what it takes to get images on film. He planned sets that give us the space we need to put lights behind windows. He gave us chandeliers, floor and desk lamps in all the right places. He understands that good lighting makes sets come alive," Zsigmond states.

He further praises DePalma's *auteur* approach: "Brian is a very good student of filmmaking technique. He understands that movies are more than dialogue, actors, and directing. *The Bonfire of the Vanities* bears his signature. The audience sees the film through his eyes."

Zsigmond seems pleased with the collaboration on the film: "It's hard to be sure when you are caught up in the enthusiasm of making a film, but I believe that we have created something special. I think the audience is going to have a good time with this film, and, if they do, I'll be satisfied."

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