Film-Tech

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FOR REEL PEOPLE

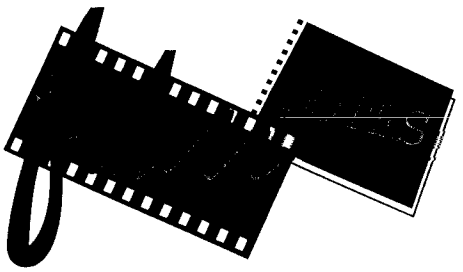
News and Information for the Theatrical Motion Picture Industry from Eastman Kodak Company

Oct. 1996

EPHRON WINS EASTMAN AWARD

AUTOMATION TROUBLE SHOOTING

ITEA ROSTER



October 1996
H-50-41

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If you have any questions or comments, please write to:

Editor
Film Notes for Reel People
6700 Santa Monica Blvd.
Hollywood, CA 90038

Pytlak's Practical Projection Pointers

JOHN PYTLAK
Senior Technical Associate
Motion Picture Systems Development Group

Q I've noticed that scope prints usually project a higher quality image on the screen than flat prints First of all, the picture is brighter. The images seem to be sharper and have less grain. The picture is easier to focus and doesn't seem to "breathe" as much, especially on our larger screens that use 4000-watt bulbs. I thought the only difference between scope and flat was the lens. Are scope lenses that much better quality than flat?

A Most people would agree with your observations. However, the answer is not the quality of the lens, but rather the fact that more of the film image area winds up on the screen. The introduction of Cinemascope by 20th Century Fox in 1953, with the feature film *The Robe*, still stands as one of the most significant engineering achievements in motion picture technology. The most common image size used for flat widescreen projection today is .825 inches wide by .446 inches high, giving a 1.85:1 aspect ratio. Scope aspect ratio today is 2.35 or 2.4:1. About 20 percent of today's releases are in scope. Typically, they are big budget, high profile movies. Last summer's examples include *Twister, Mission Impossible, The Rock, Phenomenon, Eraser, Tin Cup,* and *Independence Day.*

Why Scope Is Brighter Than Flat

Scope usually looks better onscreen simply because the scope format is more efficient in light usage from the lamphouse. Most lamphouses produce a circular cone of light, focused at the aperture of the projector. The most efficient format would use a square aperture, .825 inches wide and .825 inches high, with the lamphouse focused to uniformly illuminate the full diagonal of the square inscribed in the illuminated circle. Of course this is impractical, as changing the pulldown from the standard 3/4 inch (4 perforations) would require major projector modification. The .825-inch by .69-inch aperture of today's anamorphic format comes closer to this most efficient square format than the elongated rectangle of the .825-inch by .446-inch flat format, which has only 65

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Interview

Nora Ephron Named Eastman Award Recipient

This year's George Eastman Award winner is filmmaker Nora Ephron. She was presented with the prestigious award at the 1996 Show East convention in Atlantic City.

Nora Ephron returns to the genre of romantic comedy–and brings a fabled touch of divine intervention–with the upcoming John Travolta film *Michael*. She has received three Academy Award nominations for Best Original Screenplay for *Sleepless in Seattle* (with David Ward and Jeff Arch), *When Harry Met Sally*, and the real-life drama *Silkwood* (co-written with Alice Arlen).

Ms. Ephron began her screenwriting career after years as one of the country's best known journalists, authoring numerous articles for the New York *Post*, *Esquire*, New York *Times*, and *New York* magazine, among others. Two essay collections became bestsellers. As director, co-producer, and co-writer of Turner Pictures' first film *Michael*, she wears many hats.

Q: Did you feel that you were a bit over-extended holding so many titles in *Michael*?

A: No, not really. Whenever you direct, you do a certain amount of producing–and this is especially true when you've written the material.

Q: Was the move from writer to director a kind of natural progression then?

A: I came to directing from words. I wasn't one of those directors who starts out with a lot of visual images, and it took me awhile to start thinking that way. And I can't imagine that I'll ever really overcome my initial bias toward words. Luckily, I worked with good cinematographers, and that helps.

Nora Ephron directs John Travolta in Turner Pictures' MICHAEL ©Turner Pictures, 1996

Q: An imaginative cinematographer to assist in translating words to images must be very important to the final "look" onscreen.

A: I'd always wanted to work with John Lindley, even before I saw *Field of Dreams*. I saw *True Believer* a few months before I directed my first movie, and talked to him about doing *This Is My Life*. But I especially wanted him to do *Michael* because *Field of Dreams* is a kind of second cousin to what we were trying to do in *Michael*–which is to walk the line between reality and magic. *Michael* is a movie about a couple of tabloid reporters sent to find an angel in Iowa, and we had to find all sorts of ways to make the transition from real to where-we-are, or, as I kept saying, from Kansas to Oz.

MICHAEL is a movie about a couple of tabloid reporters sent to find an angel in Iowa, and we had to find all sorts of ways to make the transition from real to where-we-are...

Q: Have you enjoyed your past associations with cinematographers, as far as going maybe even a little further than you had imagined possible when you wrote the story?

A: A good cinematographer can even find ways to make scenes that aren't particularly interesting work. *On Sleepless in Seattle*, we were shooting a scene where Tom Hanks was on the telephone–and it was a long phone call. He was sitting on a bench with his back to the wall, which is a deadly combination visually. It was a very important scene in the movie–it was the scene where he talked about the magic of his relationship with his dead wife, and Meg Ryan hears him on the radio 3000 miles away. Our great cinematographer Sven Nykvist reflected the blinking lights from the Christmas tree onto the glass frame of a lithograph hanging behind Tom. It was absolutely wonderful and lent real magic and emotion to the scene.

Ephron wrote WHEN HARRY MET SALLY. Stars Billy Crystal & Meg Ryan, share the famous "table scene".

Q: From having seen all of your films, you've obviously been a student of some creative touches that have been successful in other movies. What are some of the films that influenced your own filmmaking?

A: Stanley Donen is my idol. There's a scene in *Indiscreet* which uses a split-screen of Cary Grant and Ingrid Bergman on a telephone call. His hand moves toward her side of the screen, and her body moves slightly, as if in response to it. I wrote several split screen scenes in *When Harry Met Sally* entirely because of that section of *Indiscreet*.

I love going to the movies. I think the whole experience is better than ever...

Q: Movie theatres continue to flourish as *the* place to experience films. Do you typically see your own movies in theatres?

A: I love going to the movies. I think the whole experience is better than ever–the drink cup holders, the number of theatres that pop their own popcorn, and especially being able to order your tickets on the phone. My complaint? Oh, I wish the prints were better. If you make movies, you really hate to see them outside New York and Los Angeles because the chances that you'll see a good print of the movie are almost nonexistent.

percent of the image area of scope. Assuming the same screen height, 1.85:1 flat has 77 percent of the screen area of 2.4:1 scope, but only 65 percent of the light to illuminate it. Instead of putting all possible light onscreen, the flat format wastes 35 percent of it. That's why scope is brighter.

Why Scope Is Usually Sharper And Less Grainy

The same image area argument applies to the image structure (sharpness and graininess) of the picture. In general, the larger the image on the film, the better the quality onscreen. A smaller image requires greater magnification, so grain and dirt look larger onscreen, and any unsharpness or unsteadiness is magnified. For example, with a screen 20 feet high, each frame of a scope film is magnified 348 times in height, and 696 times in width, for an area magnification of about 242,000. On the same screen, a 1.85.1 flat film is magnified 538 times in both width and height, for an area magnification of about 290,000. Even though the scope image onscreen is much wider, the magnification is significantly less. Please note that the image structure advantage of the scope format will depend upon how the movie was photographed. Some very successful scope movies are shot with spherical camera lenses, and a special anamorphic printing lens is used to generate the scope printing negative. These movies require greater magnification of the original negative than movies shot with anamorphic camera lenses, so the sharpness and grain advantage may not be as apparent, but will probably still be better than 1.85:1.

Why Scope Holds Focus Better

Because less magnification is needed to fill a given screen height, scope has greater depth of focus. For example, to fill a screen 20 feet high at a projection throw of 74 feet requires a very short 42mm focal length lens for flat widescreen, and a 65mm lens for scope. For a given f-number and distance to the screen, the depth of focus is greater for the scope lens (because the magnification is less), meaning that it will be more forgiving of focus drift or film "breathing." During projection, the radiant energy of the lamp quickly heats the film, usually with two 1/96 second bursts of light per frame (assuming a shutter with two 90-degree blades). This rapid heating of the frame causes deformation of the film, due to the different thermal and humidity expansion coefficients of the emulsion and base.

The advantage of scope over flat is especially important when the screen is big and the throw is short.

In other words, each frame of film "warps" somewhat at the instant of projection, depending upon the amount of energy absorbed by the film and the design of the projector gate. "Focus breathing" is usually most obvious in larger theatres because of the larger lamps and higher magnification needed to fill a large screen. The advantage of scope over flat is especially important when the screen is big and the throw is short.

Format Of The Future?

Given this background on all the advantages of the scope format, imagine a 35mm format of the future. What if this new format used the current scope image area, but with an anamorphic lens having a 1.5x "squeeze" rather than the 2x "squeeze" used for 2.4:1? What would the aspect ratio be? How would the new format impact brightness, sharpness, graininess, and focus, compared to current flat widescreen? What projector modifications, if any, would be needed? Would the improvement in image quality be obvious? For the answers to these questions, tune into my next column. (Hint: The "format of the future" has already been proposed and demonstrated. Check the tutorial by Mark Schubin and the references he cites in the August 1996 SMPTE Journal).

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SHOWEST 1997

For Theatrical Exhibition And Marketing Promotions

QUALIFICATIONS & ELIGIBILITY DATES

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

- Community Relations
- Contests
- Charity Benefits
- National Promotion Tie-ins
- New Theater Openings
- Lobby Displays
- Senior Citizen Groups
- Youth Groups
- Local Merchants

or any other promotion activity that meets the above criteria.

Any eligible promotion that took place in an independent or chain theater between November 1, 1995, and November 1, 1996.

PREPARATION OF ENTRY

All entries must be submitted in the form of ONE SCRAPBOOK in BINDER FORM. Scrapbooks must not contain any easily breakable elements! We encourage submissions of a 1/2" (VHS) tape. Do not submit audio tape or banners. Only one scrapbook is allowed per entry and must include the following typed information and materials:

- Description of Promotion (include significance & impact)
- Explanation and Detail of Promotion Implementation (include time-line)
- Promotion Budget (total amount spent including trade outs)
- Attendance & Theater grosses during Promotion
- Photographs of the event/promotion
- Media Coverage

JUDGING CRITERIA

All entries are judged in the following areas by a prestigious panel of industry distribution, exhibitor relations and marketing executives:

- Originality, Ingenuity & Creativity
- Execution of Promotion
- Embellishment of National Promotion Materials (if used)
- Utilization of Community Resources
- Attendance & Results (including increase in attendance and boxoffice grosses)

NOTE: Entries are judged on the promotion components only, not the binder presentation.

ENTRY FEE

$75.00 per entry (no refunds). Payment must accompany entry form and may be submitted by check, payable to The Hollywood Reporter or by credit card (American Express, MasterCard, or Visa).

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

ENTRY DEADLINE

November 8, 1996

AWARDS

Over $4,000 in prize money will be awarded at the 1997 ShoWest Convention in Las Vegas. First, Second and Third Place Awards will be given along with the Kodak Award presented to the best promotion aimed at attracting infrequent ticket buyers, and a special International Award for the best foreign in-theater promotion.

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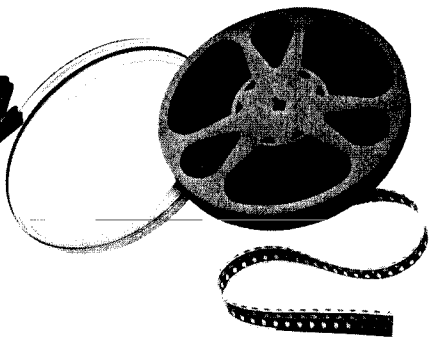
Technology

Movie Theatre Automation Systems



By Pat Moore, Strong International

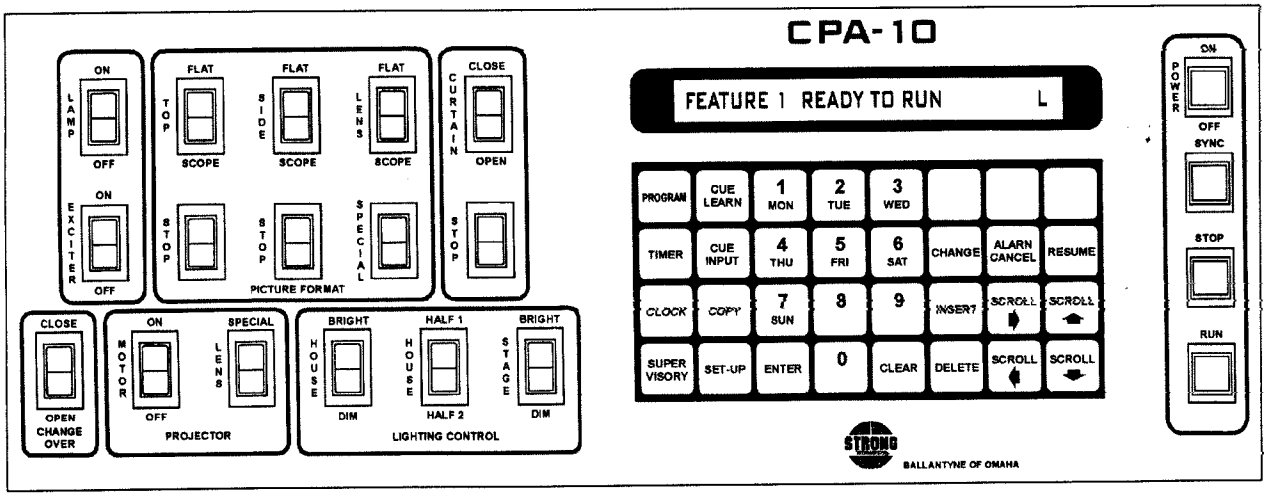
Part Two

The previous issue of this publication featured an automation primer and an overview of the functions capable of being performed by an automation system. The following completes that article and provides a troubleshooting chart that addresses the most common problems.

The control panel of an automation is in two distinct sections: manual controls on the left and automation functions on the right. This right side operates the various functions through the system known as "automation." Programming of the system's functions during a presentation, such as film, sound formats and lens changes, are accomplished on this right side, along with the basic "start" and "stop" functions.

A well-designed system will also have manual controls on the other side. These switches duplicate the most important outputs of the automation, such as the projector motor, changeover, exciter lamp and other functions. These controls should bypass the automation entirely and are necessary for manual operation of the system components should the automation fail to operate. Those basic controls should always be present on the system, and some additional controls for other booth components might be present as well. Depending on the booth and the automation itself, some manual controls may not be present on its control panel. In those instances, control of that function should be available at that system itself. For instance, automation systems generally do not have direct manual bypass switches to control the format of the sound processor, but those settings can be changed at the processor itself. A well-designed booth layout includes provisions for manual control of all external systems such as the dimmer, curtain and masking controls, and so forth.

The automation directly controls some devices, such as the projector drive motor and changeover. In addition, it interfaces with other automated devices of the theatre. For example, the automation does not directly control the theatre's house lights. Instead, it tells the house light dimming system to go to certain pre-set lighting levels. Those levels and the rates of change between them are determined by adjustments on the dimmer itself. Other devices with which the automation will interface, depending upon the theatre's complexity, include: automatic lens changer on the projector, sound processor, slide projector, intermission music source, curtain and masking control motors, and other components.



TROUBLESHOOT

PROBLEM	PROBABLE CAUSE	REMEDY
Automation non-functional	No AC power	Check circuit breaker, AC power switch, AC fuse
	No low voltage power	Check secondary fuse or circuit breaker for system LV power supply
		NOTE: Most systems use indicator lights on the control panel to show status. They operate from the LV power supply. The POWER indicator generally shows the presence of 110 VAC, while other indicators show that LV power is present
System will not start presentation	Failsafe threaded improperly	Thread correctly (indicator light will be on)
	System threaded properly, still will not start	Some systems have a FAILSAFE BYPASS switch on the control panel. Flip to BYPASS (if system starts, problem is in the failsafe or its associated wiring and circuitry)
		Press RESUME to re-start presentation and maintain show status (system may be in "mid show" and cannot operate from the START switch) Turn off system, wait five seconds and turn power back on to re-set
System Failsafe does not stop presentation with no film present	Failsafe not in normal mode	Flip FAILSAFE BYPASS switch to NORMAL. If system still starts and runs without film, problem is in failsafe or its associated wiring and circuitry
		NOTE: On ORC automations, if the failsafe drops for any reason, the projector will shut itself down unless the automation is not working properly. Make sure that the failsafe is functioning correctly or the projector will be inoperable, unless you BYPASS FAILSAFE, as noted above.
Xenon lamp will not start	The lamphouse door is not closed tight; therefore, the switch is not activated	Manually push in the SWITCH/REPLACE switch
		Either tape the switch in place or tape the lamphouse door closed
System usually operates but stops for unknown reasons during the show. System remains threaded and apparently ready to run	Incorrect number of cues or cue locations on film	Check for proper cues and cue locations on film
		Check for cues that are too long that might "double cue" the system (most detectors require cues no longer than 3–4 inches in length)
		NOTE: On ORC automations, improperly placed or cue of incorrect lengths will cause automated features of projector (curtains, house lights, music, etc.) to shut down, but motor will continue to run until failsafes are dropped.
	The INTERMISSION CUE switch is in the ON position	Turn off the INTERMISSION CUE switch
	False output from failsafe	Bypass failsafe as noted above
		Check to be certain failsafe is threaded correctly
		Check film tension to make sure it is not being taken up too loosely by the platter system
		Increase "bobbie delay" on the failsafe or automation, if equipped
	Xenon fail device activated show stop	Make Sure the xenon bulb is functioning correctly
		NOTE: some xenon fail devices do not indicate that they were the cause of the show stop)
	Cue times memorized for incorrect show	Program system to memorize new cue times and re-run program
		NOTE: Some automation systems are equipped with a cue memory feature to eliminate missed cues. The system may be operating from incorrect learned cue times)

O T I N G C H A R T

PROBLEM	PROBABLE CAUSE	REMEDY
System usually operates, but mid-show or end-show functions are always incorrect or not performed	Improper programming	Re-program correctly
	Missing cue tape	Replace cue tape
	Incorrect number of cues or cue locations on film	Check for proper cues and cue locations on film
		Check for cues that are too long that might "double cue" the system (most detectors require cues no loner than 3–4 inches in length)
System usually operates, but mid-show functions or end show are sometimes incorrect or not performed	Film cues are missed intermittently	Check quality of film cues. Clean or replace cues as required
		Check and clean contact rollers on cue detector assembly (if applicable)
All film cues are missed during operation	BYPASS detector accidentally in ON position	Be sure the feature is disabled so that system will accept cues from the cue detector (Some systems have CUE BYPASS feature on the control panel)
	System not accepting cues from control panel	Run a test program to be sure the system accepts cues from the control panel. If it does accept cues from the manual input, problem is in the cue detector or its associated wiring and circuitry (Some systems have a CUE INPUT feature on the control panel)
		Check that LV power is supplied to the detector
		NOTE: Run a "simulated" show to test the system. Use the tip of an insulated screwdriver to simulate the presence of a film cue in the detector. You should be able to hear relays activate if the detector is operational. Some detector assemblies include internal relays. If they activate and the automation still does not respond, problem is in the main automation or the wiring between it and the detector
System usually operates, but some accessory system (dimmer or sound system, etc.) does not operate	External system does not operate	Manually operate the external system to verify its proper operation
		Test wiring between the automation system and the external system using manual switches on the control panel, if available. If it functions properly, the problem is in the automation, its terminal panel or associated circuitry
	Relays or cables unplugged	Check plug-in relays and cables of the automation to be sure they are fully in their sockets

Random Operational Problems:

- Some systems feature plug-in components and circuit board modules. Inspect edge connectors and sockets for dirt or corrosion. Clean with a suitable electronic contact spray cleaner. Make sure modules are fully seated and secure in their sockets.
- Some systems are modular and are connected via cable assemblies and plugs, Inspect plugs and sockets for secure connections and loose pins. Inspect plug pins and sockets for corrosion and clean if required with s suitable electronic contact spray cleaner
- Check relays for secure fit in their sockets. Inspect relays and sockets for corrosion and clean if required with a suitable electronic contact spray cleaner

Our thanks to Larry Jacobson of LJ Technologies and Jeff Johnson of AMC for their input on the chart

ITEA International Theatre Equipment Association Membership Roster

The members of ITEA stand ready to assist you if you have any operational problems with their equipment. Do not hesitate to contact them.

MEMBERS

A&T LJUDPRODUKTION AB
Industrivagen 4
Stockholm, Sweden S-191-62
(46) 8 6230870
FAX: (46) 8 6230798
Anders Uggelberg

AB MUSIK
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(45) 86 19 87 33
FAX: (45) 86 19 84 42
Asger Bak

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FAX (909) 481-5845
Thomas H. Brenner
Sara Fuller
Viale Campania, 23
Milano, Italy 20133
011 -39-2-71941
FAX: 011 -7-010-0470
Victor Nicelli

CINESOUND & PROJECTION
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FAX (818) 706-8355
Bill Neighbors
Walter Browski

DOLBY LABORATORIES
100 Potrero Avenue
San Francisco, CA 94103
(415) 558-0200
FAX:(415) 863-1373
Ioan Allen
Sabine Gonzalez

EASTMAN KODAK COMPANY
6700 Santa Monica Blvd.
Hollywood, CA 90038
(213) 464-6131
FAX (213) 468-1568
Terri Westhafer
John Pytlak

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Route 3, Box 319
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(501) 727-5543
FAX: (501) 727-5402
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Cannon Falls, MN 55009
(507) 263-3957
FAX: (507) 263-4887
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919 S.W. Taylor Street, Suite 900
Portland, OR 97205
(503) 221-0213
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GENERAL SOUND
146 Blor Street West
Toronto Ontario M15 1P3
(403) 652-5188
FAX: (403) 652-5187
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8000 E. 40th Ave.
Denver, CO 80207
(303) 321-1099
FAX: (303) 388-0749
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HADDEN THEATRE SUPPLY COMPANY
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(502) 499-0050
FAX: (502) 499-0052
Louis Bornwasser
Rose Seidenfaden

HAFLER PROFESSIONAL DIV. OF ROCKFORD CORP.
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Tempe, AZ 85281
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Hayward, CA 94544
(510) 881-4989
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HIGH PERFORMANCE STEREO
64 Bowen Street
Newton Centre, MA 02159-1820
(617) 244-1737
FAX: (617) 244-4390
John F. Allen

HITCHFIELD ENTERPRISES, INC
11055 Alberta Drive
Brighton, Ml 48116-9661
(810) 632-9066
FAX: (810) 632-9081
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3300 North 29th Avenue, Suite 104
Hollywood, FL 33020
(954) 920-2832
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Debbie Gallagher Beans

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Nanuet, NY 10954
(914) 623-3495
FAX: (914) 623-6645
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Gorman S. White, Sr.

HUSSEY SEATING CO.
Dyer St., N.
Berwick, ME 03906
(207) 676-2271
FAX: (207) 676-2222
Jim Chadbourne

INTERNATIONAL CINEMA EQUIPMENT, INC.
100 N.E. 39th Street
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(305) 573-7339
FAX: (305) 573-8101
Steven Krams
Dara Reusch

IN-TOUCH TECHNOLOGIES, LTD.
P.O. Box 20411
New York, NY 10017-0004
(212) 697-4600
FAX: (212) 697-4652
Jay Maller

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Grand Rapids, Ml 49501
(616) 784-2621
FAX: (616) 7845819
Bill Marsh
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JBL PROFESSIONAL
8500 Balboa Blvd.
Northridge, CA 91329
(818) 895-3481
FAX: (818) 830-1220
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(610) 543-4677
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17 Washington Street, 3rd Floor
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KING CINEMA SERVICES, LTD.
14566 Yellowhead Trail
Edmonton, Alberta (Canada) T5L 3C5
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Terry Yushchyshyn
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KINOTECHNIKA PRAHA a.s.
Vaclavske nam. 43/11 Sch.
Praha 1 Czech Republic CZ-11648
0042-2-24228888
FAX: 0042-2-24215177
Jaroslav Novotny
Jiri Folvarchi

KINOTON GmBH
Industriestrabe 20a
Germering, Germany 82110
(089) 89 4446-0
FAX (089) 8 404002
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KINOTONE, INC.
617 Route 303, Blauvelt, NY 10913
(914) 353-1400
FAX: (914) 425-1250
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John Galucci

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999 Regency Drive
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Douglas E. Kremer

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LJ TECHNOLOGIES, INC.
9017 W. 51st Street
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(913) 789-8111
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3500, rue Rachel St. est
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(514) 526-2686
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MARIPLEX CINEMA SUPPLY
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Stellarton, Nova Scotia BOK 150
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245 West Roosevelt Road Bldg. 8,
Suite 51, West Chicago, IL 60185
(708) 229-1295
FAX: (708) 229-1299
Janine Masten

MONARCH THEATRICAL SUPPLY
104 N. 6th Street
Springfield, IL 62701
(217) 788-5220
FAX: (217) 788-5207
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MOTION PICTURE THEATRE ASSOCIATION OF CANADA
1303 Yonge Street
Toronto Ontario M4T 2Y9
(416) 323-7214
FAX: (416) 323-6633
Dina Lebo

MTS NORTHWEST SOUND, INC.
7667 Cahill Road
Minneapolis, MN 55439
(612) 829-0161
FAX: (612) 829-0166
John Ayotte
1802 Victory Blvd.
Glendale, CA 91201
(818) 247-8667
FAX: (818) 247-3508
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NATIONAL AMUSEMENTS, INC.
200 Elm Street
Dedham, MA 02026
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FAX: (617) 461-2955
Glenn A. Terrell
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NATIONAL CINEMA SERVICE CORP.
1305 Distributors Row, Suite I
Harahan, LA 70123
(504) 734-0707
FAX: (504) 734-0700
Charles A. Achee, Jr.
Christopher Pierce

NCS CORPORATION
4897A West Waters Avenue
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(813) 887-3957
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P.O. Box 5001
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Cheswick, PA 15024
(412) 274-6646
FAX: (412) 274-4808
Nick Mulone

NORTHWEST THEATRE EQUIPMENT COMPANY
17 South Idaho Street
Wendell, Idaho 83355
(208) 536-5489
FAX: (208) 536-5308
John Eickhof

OKLAHOMA THEATRE SUPPLY COMPANY
628 W. Sheridan Avenue
Oklahoma City, OK 73102
(405) 236-8691
Maxine Peek

OMNITERM DATA TECHNOLOGY LTD.
2785 Skymark Avenue, Unit 1
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(905) 629-4757
FAX:(905) 629-8590
Ed Coman
Gregory Coman

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George Bachar
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100 Endicon Street
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(64) 4 527-8821
FAX: (64) 4 527-8961
Ewan Cole

PACER-CATS
3701 Wilshire Blvd., Suite 9th Floor
Los Angeles, CA 90010
(213) 388-7100
FAX: (213) 388-8666
Del Banjo
355 Inverness Drive South
Englewood, CO 80112
(303) 649-9818
FAX: (303) 643-3868
Jon Nottingham

PHOTOVISION
397-A-1B Shop No. 7
Naaz Cinema Compound
Dr. Bhad Kamkar Marg
Lamington Road, Bombay 400 004
(91) 223862345
FAX: (91) 223862342
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PROCTOR COMPANIES
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Bruce Proctor

PRODUCT SALES ASSOCIATES, INC.
170 Cherry Valley Avenue West
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(516) 485-9181
William J. Gearns

QSC AUDIO PRODUCTS, INC.
1675 McArthur Blvd.
Costa Mesa, CA 92626
(714) 754-6175
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Peter Kalmen
Barry Ferrell

RINGOLD CINEMA EQUIPMENT CO, INC.
11155 D. South Towne Square
St. Louis, MO 63123
(314) 487-3283
FAX: (314) 487-3297
John M. Mattler
Michael D. Mattler

RMS SERVICE AND ELECTRONICS, INC.
250 West 49th Street
New York NY 10019
(212) 586-4900
FAX:(212)586-5069
Roger Getzoff

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Robert E. Schult
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San Diego, CA 92117-3429
(619) 581-5715
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James Walsh

SHIP'N OUT COMPANY
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(914) 278-6878
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John G. Soltes

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(402) 341-5715 FAX: (402) 341-7856
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10202 West Washington Blvd.
Culver City, CA 90232
(310) 280-5777
FAX (310) 280-2024
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10 Ivy Lane #9
Englewood, NJ 07631
(201) 894-8750
FAX (201) 894-8685
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22 Sprague Ave..
Amityville, NY 11701
(516) 789-2222
FAX: (516) 789-8888
Stuart Stein
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SYSTEMS & PRODUCTS ENGINEERING CO. (SPECO)
709 N. 6th St.
Kansas City, KS 66101
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FAX: (913) 321-7439
George W. Higginbotham
Eugene R. Higginbotham

TANKERSLEY ENTERPRISES
P.O. Box 2039
Denver, CO 80201
(303) 296-8077
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Robert K. Tankersley
Steve Tankersley

TECHNIKOTE CORPORATION
63 Seabring St.
Brooklyn, NY 11231
(718) 624-6429
FAX: (718) 624-0129
Sol Shurpin
Mitch Schwam

THEATRE SERVICES CORP.
800 Brookhurst Drive
P.O. Box 835932
Richardson, TX 75080
(214) 690-0615
FAX: (214) 699-7355
Al Wigington
Barbara Wigington

THEATRE SERVICE & SUPPLY
9826 Glenoaks Blvd.
Sun Valley, CA 91352
(818)767 0068
FAX: (818) 767-0540
Bill Miller
Lori Morris

TECHNICOLOR ENTERTAINMENT SERVICES
202 Rochester Avenue
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(909) 467-2222
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18730 Oxnard St., #208
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FAX: (818) 609 7408
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(412) 469-8324
FAX: (412) 469-9351
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Palenque No. 663
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FAX: (525) 605-9656
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WAGNER ZIP CHANGE, INC.
3100 Hirsch St.
Melrose Park, IL 60160
(708) 681-4100
FAX: (708) 681-4165
James W. Leone
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WIL-KIN
70 East Lake Street Suite 1600
Chicago, IL 60601
(312) 726-5300
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921 S. Jefferson Street
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(312) 939-2720
FAX: (312) 939-0654
Charles Wolk
Norman Lauterbach

WORRELL SOUND & PROIECTION SUPPLY
Drawer 1527
Whiteville, NC 28472
(800) 552-7502
FAX: (800) 552-7501
Bruce Worrel
Diann Worrell

XENOTON LLC
Pwtyoke U.6.
Budapest Hungary 1225
(36-1) 226-3507
FAX (36-1) 226-3507
Edit Mathe

EXECUTIVE DIRECTOR
244 W. 49th St. #200
New York, NY 10019
(212) 246-6460
FAX (212) 265-6428
Robert Sunshine

Advent of Silverless Soundtracks

Silver analog soundtracks on motion pictures have been the standard since sound was introduced to movies. In recent years, environmental concerns have arisen regarding silver-bearing products.

Recent developments of bright red LED's, audio technology, and learnings from digital tracks now make a path toward silverless analog tracks feasible. This is an important project, not only from a quality perspective, but also from an environmental one. Both the silver itself and the accompanying chemicals used in the applicating process are coming under closer scrutiny due to potentially damaging properties. The conversion to infrared soundtracks on film would eliminate those concerns.

Currently, projector and equipment manufacturers are developing and marketing red LED readers for many advantageous reasons: dual digital and analog capability, longer xenon bulb life, increased stereo separation, wider frequency response, and reduction of noise distortion. It is this technology that will allow analog tracks without silver to be introduced.

The path toward this conversion, which is strongly advocated by a number of manufacturers and laboratories, is a multi-step process. The first step will include some changes in the way silver soundtracks are made, to enable prints to be used at maximum performance on either red LED readers or the existing readers meant for silver tracks. The second step will be the wide conversion of projectors to red LED readers. The final step, when the population of red LED readers is sufficient, will be to convert to silverless soundtracks and implement procedures that will minimize quality degradation in any remaining non-LED projectors.

No small group of companies can make this conversion occur overnight. It will take the support of the studios, sound houses, distributors, equipment manufacturers, and the theatres.

If you are interested in learning more about LED red readers, Dolby and Ultra-Stereo are two of the primary manufacturers. All of the major projector manufacturers have these readers available as well and are equipped to provide theatres with the technology.

EASTMAN KODAK COMPANY
343 State Street
Rochester, New York 14650-0315

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Publication No. H-50-41 • Printed in the U.S.A. Oct./96

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