

JUNE 1981

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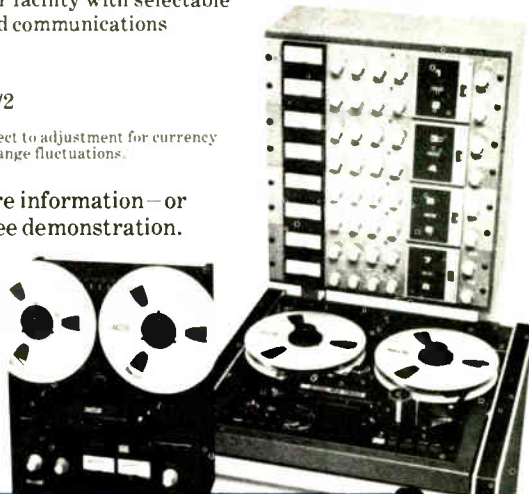
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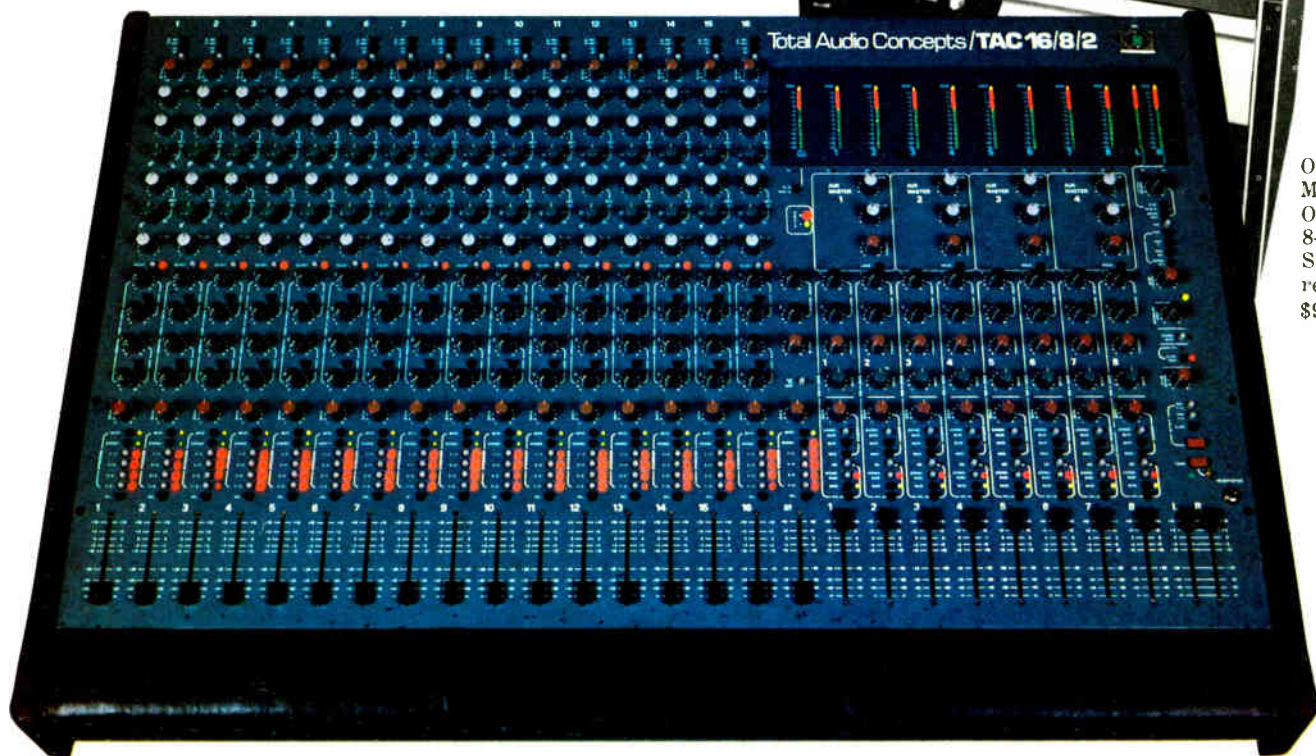
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# Mix

Cover: Sound Recorders in Kansas City, Missouri, is a unique complex of studios and edit suites which phase-lock all formats of video tape to all formats of audio tape (including digital.) Shown is Studio A, with a complement of 1" video, 24-track analog, SMPTE synchronizer and automated mix. Not shown is the 2000 sq. ft. hard-CYC sound stage which ties to Studio A for video interlock recording.



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**JUNE 1981**

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We've been looking forward to this issue with great anticipation. This issue marks a major new commitment for us—to include the realm of video recording within the scope of the Mix. Beginning this month we will be following the news, developments and personalities of video in a special section of the magazine called Video Focus.

Why do we feel that after all these issues of dedication to the audio recording industry we should devote such an emphasis to a new industry like video? Because the crossover between both technologies has grown so important that understanding and communication are essential; because diversification by recording studios is becoming necessary for survival; because television sound will very shortly be moving into the territory of stereo hi fidelity, demanding expertise not presently available in the television industry; because opportunities in audio and video programming for cable television, satellite broadcast, video cassettes and video disks will very likely supply a business boom to fill the void left by an ailing record industry: because...well, you get the picture.

• • •

So how do we make our entry into this new field? We'll begin by playing the hits. First, well respected audio/video writer and critic Mark Schubin unfolds a custom tailored piece to introduce the audio expert to the hardware, software, language and how to's of video. Then Ken Fay presents a historical perspective on the development of the first video tape recorders. Next we move into the personality spotlight with two features by Bruce Pilato. The first is a piece on Regent Sound's Bob Liftin, perhaps this country's leading pioneer and authority on quality audio for television. The second is an interview with Moogy Klingman, who is quickly becoming legendary in his approach to new wave television. Following these features is a guide to the principal manufacturers of video equipment.

• • •

We feel that this first Video Focus package is one that you'll find informative and entertaining and, as always we invite your comments and suggestions.

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# TRACKS

# CURRENT

## MCI Adopts Sony Digital Standard

MCI, Inc., of Fort Lauderdale, Florida, and Sony Corporation of Tokyo announced that MCI has adopted the common format for multi-channel stationary-head digital audio announced last year by Sony Corporation and Willi Studer of Switzerland.

MCI is the largest manufacturer of multi-track recorders and studio consoles in the United States.

In making the announcement, MCI president Jeep Harned said that the company is confident the Sony format will be widely accepted in the industry as an international standard in multi-channel stationary-head digital audio recording.

According to M. Morizono, senior managing director of Sony Corporation, "Sony welcomes MCI's decision to adopt our format. Along with MCI, Sony expects to explore possibilities for mutually utilizing technology for future research and development in a wide range of digital audio applications."

## Caribou Announces Studio Workshops

Caribou Ranch, the 4,000 acre recording studio complex located in the Rocky Mountains above Boulder, Colorado will initiate a workshop seminar program on multi-track recording in August, 1981.

Two courses will be offered, each running for 15 days with 120 hours of lecture, demonstration and "hands on" studio experience. Both the introductory session (August 1-16) and the advanced program (August 16-31) will be held at the Caribou Ranch Studio, conducted by the Caribou Staff and augmented by special lectures by guests from the recording industry.

Topics to be covered include: recording console theory and operation, studio maintenance and trouble-shooting, disk mastering, acoustic analysis and design, theory and operation of signal processing equipment, noise reduction systems and psychoacoustics.

Enrollment is limited to 24 people per session. For more information, contact Caribou Ranch by mail—Box 310, Nederland, Colorado 80466—or by phone: (303) 258-3215.

## Covert Named GM of Ampex Audio Group

Charles P. Covert has been appointed general manager of the audio products group of the Ampex Audio-Video Systems Division, it was announced by Donald V. Kleffman, vice-president—general manager of the division.

Covert will be responsible for the development, manufacturing and marketing of all

Ampex audio products in his new position. He succeeds Lee Cochran, who resigned.

Covert was most recently senior product manager in the video recorder group of AVSD. He was previously operational systems manager in the controller's department for the division and inventory manager for the International division.

## Altec Lansing Names VP

Gary Rilling has been appointed Vice President of Commercial Sales at Altec Lansing in Anaheim, CA. Rilling entered the professional audio industry in 1959, working for Altec sound contractors on the East coast. Named Mid-Atlantic Regional Sales Manager for Altec Lansing in 1974, he was appointed National Sales Manager, Industrial/Professional Sales, in 1979.

As Commercial Sales VP, Rilling will oversee the marketing of Altec Lansing's wide range of professional and industrial sound system components, including the well-known 'Voice of the Theatre' systems.

## Billboard Announces 3rd Video Conference

Billboard Magazine's 3rd annual International Video Entertainment/Music Conference is scheduled to take place this November 12-15 in Los Angeles. Announcing the event, to be held at the Beverly Hilton Hotel, was Billboard Sound Business/Video Editor Jim McCullaugh, who serves as conference organizer and chairman.

According to McCullaugh, "The creative direction of video entertainment will be our central theme. We plan to explore all aspects of this important new artform, offering sessions of interest to technical people, producer/directors, manufacturers, retailers and artists."

The four-day conference will feature a series of panel discussions, workshops, product exhibits and daily video showcases. Seminar highlights will include developments in hardware technology; the successful marketing of video software; programming; licensing/copyright agreements; as well as the impact of video entertainment on a changing music industry.

For further information regarding registration and exhibits contact Billboard Magazine's Conference Bureau in Los Angeles, at 213/273-7040.

## MUSICVISION To Offer Video/Music Production

MUSICVISION, a newly formed subsidiary of Third Coast Video, Inc., Austin, Texas, has been created to offer broadcast quality video tape programs to music producers and musicians.

The new firm combines the resources of

Third Coast Video, a computerized 1" video facility; and Third Coast Sound, a 24-track audio recording studio.

MUSICVISION is located at Third Coast Studios, a major media production center in the southwest, and draws heavily on the well-established music production industry already in existence in Austin for technical expertise and its creative pool.

## Recording Workshop At U. of I.

For the second year, The University of Iowa is offering a two-week workshop in audio recording. The guest lecturer is Stephen F. Temmer, President of Gotham Audio Corporation, New York and Hollywood. Participants in the seminar may earn 3 semester hours of university credit; the registration fee is \$135.00.

The course will emphasize fundamentals of acoustics; microphone theory; standards, measurements, and terminology; metering; echo, delay, and reverberation; limiting, compression, and noise reduction; and phonograph record mastering and manufacturing. The level of the course is addressed to persons who use recording equipment in their professions or who are already familiar with studio technology and the techniques of audio recording.

For further information contact: Prof. Lowell Cross, School of Music, The University of Iowa, Iowa City, IA 52242; telephone: (319) 353-5976.

## Paul Nagle To Head Fostex Sales

Paul Nagel has joined the Fostex sales team at Interlake Audio as Corporate Sales Manager, and will be developing an intensive dealer support program for the more than 50 dealers currently handling Fostex transducer products throughout the United States and Canada. The announcement was made by Michael A. Gillespie, President of Interlake Audio Inc.

Mr. Nagle brings over 13 years of experience in electronics technology, sound reinforcement system design, marketing and sales management to the Fostex operation. As a design consultant for industrial sound applications he was responsible for the design and installation of sound reinforcement systems for large convention centres, concert halls and auditoriums.

## Robbins Appointed Service Manager At JBL

John Robbins has been appointed National Service Manager at James B. Lansing Sound, Inc., it was announced by Stewart Greenberg, JBL Vice President for Sales and Marketing.

"I am pleased to report that John Robbins

has assumed this key post in the JBL organization," commented Greenberg. "In the coming year, we plan to enact programs and policies which will streamline JBL's customer service function; I'm confident that with his twenty-year sales and technical background in the audio industry, John will add great support to these efforts."

In his new position, Robbins directs JBL's Customer Service Department, and supervises the operation of the company's field service agencies.

### Synergetic Audio Concepts

Synergetic Audio Concepts (Syn-Aud-Con) of San Juan Capistrano, CA, has announced their Sound Engineering Seminar schedule for the Summer and Fall, 1981.

June 23-25, 1981 July 21-23, 1981, August 18-20, 1981, September 22-24, 1981, October 20-22, 1981, November 17-19, 1981.

The Syn-Aud-Con seminars, now in their ninth year with over 4,000 graduates, will be held in their new \$1,000,000 Seminar Center located in the proposed San Mateo Canyon wilderness area in the Santa Ana Mountains of Southern California.

For further information write or call Syn-Aud-Con, P.O. Box 1115, San Juan Capistrano, CA 92693. Phone (714) 496-9599.

### EV Opens Offices in Japan

The formation of Electro-Voice, Ltd., a subsidiary of Gulton Industries was announced by Robert Pabst, President of Electro-Voice. The company will function as an operating unit of Electro-Voice, Inc., of Buchanan, Michigan. Kazuyasu Takane will head the new Japanese company as President.

Electro-Voice currently has additional subsidiaries and licensed distributors operating under the Electro-Voice name in Switzerland, Germany, Canada, South Africa and Australia, plus other distributors operating world wide.

### Connector Supermarket Opened

Connector Distribution Corporation, a twenty year old Los Angeles company specializing in military and industrial connection devices has recently announced their remarketing direction to serve the audio and video recording industries. In this new stance CDC will specialize in hard to find connectors for all applications, including the complex needs of audio and video interfacing.

### SONGFINDERS Reactivated

Murray Deutch, President of Buttermilk Sky Associates and music consultant to Columbia Pictures, announces the reactivation of SONGFINDERS, a casting service for songs. SONG-

FINDERS was originally created and founded several years ago by Morton Wax, President of New York public relations firm Morton Wax & Associates. SONGFINDERS will locate and negotiate the rights for standard and hit songs for use on TV and Radio commercials, feature films, movie trailers, training films, educational films and tapes, cable TV, home video and live expositions.

Stu Cantor, professional manager for Buttermilk Sky's music publishing companies and slated to head the new SONGFINDERS division, says "SONGFINDERS will fill a void that exists between in-house ad agency producers and sources of musical material that they are interested in using."

SONGFINDERS can be reached through Cantor in 515 Madison Ave., NYC 10022, (212) 759-2275.

### Western Broadcast Formed

Formation of Western Broadcast Systems was announced by Homer Hull in Cupertino, California. Western Broadcast Systems will specialize in the sales and marketing of broadcast quality audio and video products.

Hull was formerly Marketing Manager of Scully Recording Instruments and most recently, Director of Marketing for CEI. He brings almost twenty years of sales/marketing experience to his new company.

# COMMITTEE REPORT

### SPARS Nashville Convention

SPARS Conference '81, titled "Partners in Progress for Profits!" is scheduled for August 27-30 at the Opryland Hotel in Nashville, Tennessee.

Exhibits will be an integral aspect of SPARS Conference '81. Exhibitors will have the opportunity to "openly sell" and conduct demonstrations in a leisurely and unencumbered manner to recording studio owners and engineers, record producers and recording artists...for the first time. Spot lighting their wares and technology will be audio and video manufacturers, distributors and suppliers, hardware, and software manufacturers, manufacturers of studio musical instruments, and recording studios.

The Audio/Visual SPARS Bazaar! will make its debut at SPARS Conference '81, employing large video screen technology to connect buyers with sellers of previously owned or "demo" models: consoles, tape machines, faders, speakers, amplifiers, musical instruments, microphones and rock n' roll memorabilia.

SPARS Conference '81 will also feature informative seminars and workshops covering:

- Computers—What Is It? How Does It Operate (Part 1) Where Do We Go From Here? (Part 2)
  - Diversification—Expanding Your Product Base
  - Finance—Money Matters & The Recording Studio
  - Legal & Management Approaches To Recording Studios
  - Marketing & Merchandising Concepts In The '80's
  - Microphone Techniques
  - Post Production Sound
  - Remotes
- General sessions will encompass:
- Digital Vs. Analog! You Decide
  - How To Record A "Hit Record"
  - No One Can Give You Today's Services At Yesterday's Prices...And Be Here Tomorrow.

Further information may be obtained by contacting SPARS at (215) 735-9666, 215 South Broad Street, 7th floor, Phila., Pa. 19107.

### BMA Presidential Award To Henry Allen

Henry Allen, president of Cotillion Records and senior vice president of Atlantic Records, was honored as the recipient of the Annual Black Music Association (BMA) Presidential Award on Monday, May 25, at a special dinner tribute during the Third Annual BMA Conference: May 23-27, Century Plaza Hotel, Los Angeles.

The esteemed award recognizes an individual's superior level of achievement in the entertainment arts industry as well as major contributions to the growth of Black Music. Ewart Abner, former president of Motown Records and personal advisor to Stevie Wonder, received the 1980 BMA Presidential Award.

Allen, associated with Atlantic Records since 1957, has been the catalyst in developing the careers of such musical giants as Wilson Pickett, Aretha Franklin, Sister Sledge, Roberta Flack, Ben E. King, The Spinners, Les McCann, Herbie Mann, Otis Redding and The Drifters.

### VPA Salutes Video Tape's 25th

A special program to salute the 25th anniversary of video tape has been planned by the Videotape Production Association, announced Joe DiBuono, New York Chapter president.

The event, dubbed "Video Tape—A Silver Celebration—Reunion," will be held on June 16, 1981, at the New York Hilton (NYC). According to DiBuono, the ballroom will contain artifacts from the early days of video, such as the first video tape (Sctoch 179), first color camera and recorder (RCA), first 3/4" U-Matic (Sony), and early splicing blocks.

Tickets for the "Reunion" are \$45 and are available from: Grace Polk, Videotape Production Association, 236 East 46 Street, New York, NY 10017. ■

# SESSIONS

## NORTHWEST

The finishing touches are being done in the transfer from PCM-Digital to Disk Masters of six recently recorded Master Recordings at **Sonic Arts Corporation**, San Francisco, CA. **Stephen Kates**, cellist, the Silver Medallion winner in the prestigious Tchaikowsky International Competition, accompanied by **Carolyn Pope-Kobler** on the 74" Boesendorfer Concert Grand Piano which the studio recently acquired, recorded an album of Rachmaninoff, and one album of French composers for their new release on the Sonic Arts Digital label.

Action at **The Automatt** in San Francisco includes, **Gay Men's Chorus** recording an album with **Don Miley** producing for **David Rubinson and Friends**, **Fred Catero** engineering and **Wayne Lewis** engineering.

The **Bodacious Audio** remote truck, San Mateo CA., had the privilege of taking part in the production of **BAM Magazines Fourth Annual Bay Area Music Awards Show**, "The Bammies", held at the **Fox Warfield Theatre** in San Francisco. Groups included **Journey**, **Herbie Hancock**, **Narada Michael Walden**, **Ronnie Montrose**, **Marty Balin**, **Sylvester**, **Norton Buffalo**, **Lacy J. Dalton**, and many other special guests.

## NORTH CENTRAL

**Leo Graham**, a familiar face in the studios of **Universal Recording Corporation**, in Chicago, Ill., was back recently finishing up production of the upcoming **Tyrone Davis** album. **Graham**, who produced the **Manhattans**, the **Emotions** and **Champaign** during the last year, works in tandem on the **Davis** lp with arranger **James Mack** and **Universal** engineer **Stu Walder**.

Recording activity at **Studio A Recording** at Dearborn Heights, MI includes **Cindie Harris** and **Bernard Terry** finishing their upcoming single release. **Jack Harris** executive producer and **Eric Morgeson** at the board. **Vanessa Armstrong** just completed her first album with producer **Rudolph Stanfield**, executive producer **Samuel Armstrong** and engineer **Eric Morgeson**.

**TMK & Associates**, a custom music house located in Chicago is now recording their sound tracks for films, industrial shows and commercials at **Universal Recording** with **Mal Davis** engineering.

## NORTHEAST

**Frankford/Wayne Mastering Lab's** New York location recent projects include **Sylvia Striplin's**

new release (**Roy Ayers**—**Uno Melodic**), **Firefly's** new Disco release "Love is Gonna Be On Your Side" (**Emergency Records**), currently #8 on the Disco charts, and **Carol Jiani's** "Hit and Run Lover" (#16) for both Canada (**Matra Records**) and the U.S. (**Arista**), all cut by engineer **Herb Powers, Jr.**

At **M&I Recording** in New York, NY, **Michael Moriarity** is working on his one man show, "White Jazz". Engineered by **Phil Kapp & Mitch Yuspeh**. **Glenda Jackson** just completed the narration for the soon to be released film "Burt's Bikers". Produced by **Bat Track**, engineered by **Ira Yuspeh**.

Recent sessions at **Stillwater Sound Studio**, Stamford, Ct., include an album project with **Mantis** self-producing. Several tracks have been cut for **Patti Ann Burke**, with **Richard Nafey** producing. Engineering for both projects was **Dominick Costanzo**.

**Rick Wakeman** has recently completed recording the soundtrack to "The Burning"—(A **Filmways Feature** horror film), at the **Workshoppe Recording Studios**, Douglaston, New York...with **Kevin Kelly** at the board.

**The Talking Heads** and producer **Brian Eno** have completed a remix of the single, "Houses in Motion," at **Sigma Sound Studios/NY** for **Talking Heads Tours**. Additionally, they are working on a new project with producer **David Byrne**. **John Potoker** is the engineer for both.

## SOUTHERN CALIFORNIA

**Heritage Studios** in Hollywood, CA currently has **Jim Ed Norman** doing overdubs and polishing new sides on artist **Jennifer Warnes**... **Erik Prestige** at the board.

Working at **Larrabee Sound** in Los Angeles, CA, **SOS Band**—digital mixdown with **Sigidi** producing and **Steve Williams** at the board assisted by **Sabrina Buchanek**; **Dynasty**—produced by **Leon Sylvers** with **Steve Hodge** at the board and **Judy Clapp** assisting.

**Billy Preston**—"The Way I Am", "Keep On Truckin'" recorded and mixed at **NSP Studios** in Hollywood, CA. **Syreeta**—"Syreeta", "Signed, Sealed, Delivered (I'm Yours)" and "Dance, Children, Dance" recorded at **NSP Studios**.

At **Sunset Sound Studio** in Hollywood, CA, the **Doobie Bros.** doing production for songs to be released in Japan. **Ted Templeman** producer. **Jim Isaacson** engineering with **Stephen McManus** assisting.

At **Gold Star Studios** in Hollywood, CA, **Dick Clark** is working on a 20-Year Tribute To The **Beach Boys** radio special to be aired Memorial

Day. **Gold Star** co-owner/producer/engineer **Stan Ross** was interviewed for the show, as many of the **Beach Boys** hits were recorded at **Gold Star**.

Scheduled for June release is **Alice Cooper's** new Warner Bros. album recorded at **American Recorders** in Studio City, CA. Backing up **Alice** are **Erik Scott**, **Craig Kramf**, **Mike Pinera** and **Duane Hitchings**. The project was produced by **Richard Podolar** and engineered by **Bill Cooper**.

## SOUTHEAST

**Joe Waters**, a new artist from Chillicothe, Ohio, recently produced a digital mix at **Sound Emporium** in Nashville, TN, on his first nationally-released single, "Queen of Hearts." The country-rock tune is scheduled for a June 22 release on the **New Colony** label. The **Waters** release, which contains **Sound Emporium's** first digital mix, was mixed on a **JVC** digital two-track recorder system, with **Billy Sherrill** engineering.

At **Polymusic Studios, Inc.** in Birmingham, AL, **Johnny Sandlin** is producing/engineering tracks for southern rock band, **Telluride** for their first album. **Michael Panepento** is assisting on the project.

At **Stonebridge Recording** in Maryville, TN, songwriter **Alan Janruz** is currently working on new material and producing the sessions. Californian **Michael Ishibashi** engineering.

In Studio A at **Audiofonics** in Raleigh, N.C., **Randy Schumacher** and **Robert Kirkland** producing an album project for **Luky Owens** and **Revolver**. **Schumacher** engineering this popular N.C. based rock band's first effort.

**Catfish Bay Sound Studios**, Clarksville, TN, recently spent 3 months on location recording for **Hal Leonard Publishing** and **Warner Bros. Educational Publishing**. Recording sites included **Phoenix**, **Arlington** and **Houston, Texas**; and **Ruston, LA**. Back in the home town, the next venture was to provide the sound reinforcement and recording of the **State of Tennessee Old Time Fiddlers' Championships**. Selections are now being culled for a forthcoming album. **Chuck Emery** and **John Moseley** engineers.

## SOUTHWEST

**Naomi** has just recently completed her album with **John Rollo** producing. Rock group, **Visitor**, completing album at **Indian Creek Recording**, Uvalde, Texas with **John Rollo** producing.

**Huddleston's Recording**, Dallas, Texas recently finished the **Luanne Oakes** album, which was engineered by **Gene Huddleston**. At present, they are working on an album for **Pete Nevin**, produced by **Kerry Marx** and engineered by **Paul Hill**.

# SONY DIGITAL. THE EQUIPMENT MORE AND MORE PROS ARE USING TO MINE FOR GOLD AND PLATINUM.



If you've heard digital audio and the experience left you less than bowled over, but you haven't yet heard Sony digital, observe what happened when other leading professionals did. Over the past two years, they've made Sony digital audio a leader in the industry.

That's why the only way to judge Sony is through a personal introduction to our growing family of digital products. To arrange that, call (201) 871-4101 on the East Coast. On the West Coast, (213) 415-4900 or (213) 537-4300. Just ask for Digital Audio.

**SONY**  
Digital Audio

**Canyon Recorders** of West Los Angeles, CA, is targeting a mid-July date for the opening of their million dollar rock & roll video editing facility. Specifically designed for editing multi-camera rock & roll and musical specials with emphasis on visual effects, the room also incorporates a dual multi-track stereo playback system for unparalleled audio capability. The edit bay will feature new equipment recently introduced at the NAB show: the Grass Valley 1600-3K video switcher with effects memory (E-MEM), the Harris EPIC editing system (enabling composite edits from up to 7 simultaneous playback sources), Ampex VPR-2B and Sony BVU 80C VTR's, Harris Frame Synchronizers, Conrac monitors and the new Sony 30" broadcast monitor.

**Gladys Hopkowitz**, after 15 years as chief disk cutter at Mastertone Recording Studios, N.Y.C., has opened her own disk-mastering facility: **Sound Technique Inc.** Ms. Hopkowitz has mastered all types of music, ranging from classical thru contemporary, including jazz and reggae/dub. Sound Technique is also equipped to produce audio-visual records in all formats, including DuKane.

Recording studio architect **John Storyk** has been engaged by Elektra recording artists "The Cars" to design their new Boston-based **Syncro Sound** facility. Originally the home of Ross Cibella's respected **Century III Studios**, a prominent rock studio in Boston, the new facility will feature a variety of Storyk design innovations including a two-level studio environment complete with a unique spiral staircase and a speaker monitor system co-designed by Storyk and Ted Rothstein.

**Spectrum Recording Studios, Inc.** has recently completed construction of their new 16-track facility in Deerfield Beach, Florida. Featured is a live-end dead-end studio, and a control room designed by Studio Supply Company of Nashville. Equipment additions include a Sound Workshop Series 3028MB 28 x 16 console, Lexicon Prime Time, Ecoplate reverb, UREI LA-4 compressor/limiters, Prophet 5 synthesizer, and a totally rebuilt 6' 2" Ivers & Pond grand piano.

# Studio News

**Hal and Vio Michael** have just announced their completion of **Spindletop Recording Studios** in Hollywood, CA. Spindletop, co-designed by Hal and Vio Michael and **Scott Putnam**, and built by Scott Putnam demonstrates the current state of the art in design, decor, construction and equipment, showcasing the latest MCI innovations.

**Northstar Recording Studio** in Portland, OR, had a grand opening of a new 16 track facility on May 1, 1981. It will feature the new Sound Workshop Series 30 console with fully sweepable EQ, Penny & Giles Faders, etc.; Tascam 85-16 recorder; Oran mixdown, MICMIX reverb, noise gates, UREI limiters, JBL monitors, BGW power amps, Neumann U-87, KM-84, AKG 414, Sennheiser 421, E-V RE-20, Shure SM-57's and Lexicon Prime Time DDL to name the basics. The control room features a unique acoustic design

while the studio allows for a wide flexibility of recording environments. Northstar is situated on a quarter acre in a peaceful country setting.

**Rusk Sound Studios** in Los Angeles, CA has added an audio sweetening service for video in addition to its present multi-track recording capabilities. Technical Director/Engineer **Roman Olarczuk** reports that audio sweetening has been greatly simplified with the addition of an Audio Kinetics Q-Lock 310 synchronizer. This newly purchased unit allows lock-up of three audio and video machines in any configuration via SMPTE time code. In addition, up to five auxiliary audio machines can be commanded by the Q-Lock 310 to provide additional sound effects as desired.

**Sear Sound** in N.Y.C. has announced the appointment of **William Titus** to the position of Chief Engineer. Since 1979, Mr. Titus has been a staff maintenance engineer at A&R Recording and was previously the Director of Audio Services at the Mannes College of Music.

**Larry Gardner**, owner and president of **Audiofonics, Inc.** Raleigh, N.C., announces the installation of a new Soundworkshop Series 40 mixing console. The console was purchased through The Valley People in Nashville, Tenn., and is the first of its kind delivered and installed in the country according to Soundworkshop's president, **Emil Handke**.

**Huddleston's Recording**, Dallas, Texas is proud to announce the addition of a MCI JH24-16 with AUTO-LOCATE 3. The studio offers **Gene Huddleston** and **Paul Hill** as engineers and a live rhythm section.

# COLLECTABLES

**Vol. 4 #11**

- Tape to Disc Supplement
- Mastering and Pressing
- Leon Russell
- Stan Ricker
- Frankford/Wayne

**Tape to Disc Supplement**  
Mastering and Pressing  
Leon Russell  
Stan Ricker  
Frankford/Wayne

**Mix**

**Vol. 5 #2**

- Norbert Putnam
- Ardent Recording
- Roy Stevens
- Listings: Studios of the Southeast

**Vol. 5 #3**

- History of the Tape Recorder
- The Producers Role
- Indian Creek Recording
- Focus: Texas and the Southwest

**History of the Tape Recorder**  
The Producers Role  
Indian Creek Recording  
Focus: Texas and the Southwest

Send \$2.50 per back issue to **Mix Magazine 2608 Ninth St., Berkeley, CA 94710**

Vol. 4 #11

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**New Products**  
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# PROGRESSIONS

by Larry Blakely

I am often amazed when listening to older phonograph records, especially those of the late 1950's and early 1960's. Whether stereo or just mono, when we think of how little the recording engineers had to work with in those days relative to what we commonly use today it staggers the imagination. Many of these recordings have captured outstanding sounds of instruments and vocals with exceptional detail and full tonal color. Perhaps the most amazing quality to me lies in the mixing. Good examples of this care and skill are quite apparent in the early

Learn the art of microphone placement. By experimenting with your selection of microphones at different distances and positions from the vocal, instrument or ensemble, you will find that you can create a large number of textures and tonal variations. Do not place the microphone too close to the instrument if it is to sound natural. The best method of all is to go out into the studio and put your ear where you consider placing the microphone.

Use as few microphones as possible. Some of the best sounds are obtained by very few microphones that were carefully chosen and placed. In fact some of the best drum sounds are

record levels are too high these transients will be lost due to tape saturation. For vocal ensembles, keep the record level below  $-2$  VU to lessen the intermodulation products (distortion), a common problem when recording vocal groups at too loud a level.

I think that you can see that these few methods and philosophies are in contrast to many of those that are used in today's recording industry. This is much of the controversy between the old school and the new school. Who is right? I'm sure that some of these fine engineers of the older school would scream if they were to see the needles

## Two Steps Forward...

60's recordings by Sinatra, Harry James, Stan Kenton and Howard Roberts.

So what is so great about these recordings? Are they better than what we produce today? First of all, if you listen to some of these classics it might amaze you to know what they used and did in their recording process. You might think, "No problem, they used a lot of microphones, equalizers, limiters, etc, so what's the big deal?"

The big deal is that these recordings were made with far fewer microphones than are typically used on today's recordings, there was very little (if any) equalization used, and compres-

sion and limiting were used only on rare occasion. It was all done with very straight forward recording techniques.

obtained from two microphones, one overhead and one on the bass drum. The use of a lot of microphones often results in phase cancellations and other problems.

Some of today's recording engineers do not spend enough time on the other side of the glass, choosing and placing the microphones. Instead they stick up a microphone and go back into the control room and use equalizers, limiters and other kinds of devices to correct a problem that wouldn't exist if the microphone had been a better choice or was in a different place.

EQUALIZERS—use them only when absolutely necessary. As we just

on the VU meters of a tape recorder laying hard over against the pins as is sometimes fashionable. They would cringe if they saw 12 or 18 dB of boost used on an equalizer for something other than a "freaky effect".

I agree that things do change and often this is necessary. But it is important for us to realize that sometimes there is change for no really good reason. In fact at times such changes are detrimental to the end product.

Some of these older and more conservative methods may work for you and others may not. But I do not think the old men are crazy, in fact we might be making better records today if we

## ...One Look Back

listen to them a little closer.

• • •

A few more words on last month's digital recording special...The comparative chart we presented was only intended as a convenient display of digital recording products and not as a showdown. Most importantly, I want to stress that since standards have not yet been established, different methods have been used to generate specifications and any fine comparisons between products are not really appropriate at this stage of the game. ■

Microphones—are to be carefully chosen. Each microphone has a different sound and characteristic. Listen to various vocals and instruments using different kinds of microphones, without any EQ or other devices, just the microphone itself. In this way you can hear what the microphone contributes to the sound, unencumbered.

RECORD LEVELS—are important to watch. When recording instruments with large transients, try to hold the record level down (maybe  $-2$  to  $0$  VU). This will allow additional headroom on the tape and preserve more of the sharpness so that your recordings will have more edge, bite or snap. When

# STUDIOSCOPE

by Earl R. Dingman

*You have just accepted a booking from a new client. When this client arrives for the session, a checkbook is produced and the client says: "You do accept checks, don't you?" You take a deep breath and wonder...*

The cornerstones of this industry—those companies who have been in business for many years—are used to the ins and outs of dealing with credit and checks. Newer operations are often too eager in grabbing for a share of the marketplace, or too green to know better, and may take chances until they get **burned**. Then business becomes **cash only**, but this approach can lose much potential business. For those studio owners and operators whose expertise lies in the artistic end of engineering and production, I now offer you a short course in CREDIT MANAGEMENT.

First, one person must be appointed the task of credit manager, and this person must have the one and only say in regard to the method of payment a particular client may use. This person should never be the engineer, for that person must deal with the client and must be free of any stigma a job such as this may cause. Next, the credit manager and the owner must establish policy and procedures for cash, check and credit—the **terms**—and stick to these policies. These must be in writing and it is always wise to consult with an attorney; it will cost you some front money, but in the long run, it will pay off.

Payment from all new clients should be Cash In Advance (C.I.A.) A personal check is not cash, and the client must be made aware of this fact when the booking arrangements are first made.

For personal or business checks the following guidelines may help you: Checks should be drawn on a local bank. If the check is presented during normal banking hours, phone the bank. For a personal check, you should inquire if there are sufficient funds to cover the amount in question. Additionally, for a company check, inquire as to who is authorized to sign the document. It would be wise to phone the company, as well, to determine that the check was authorized.

Identification is a common business

## CASH CHECK OR CHARGE

policy for acceptance of a check. A driver's license is the worst possible format for this purpose, but the most universally required form! Obtaining a person's license number is no assurance that you can trace that person down at a later date if the check returns NSF (not sufficient funds). Anyone with the intent of defrauding will begin the charade at the Motor Vehicle Department. Furthermore it is starting to become difficult to obtain information on another person without official and legal cause. The days of paying a nominal fee to a state agency and receiving a person's life history are coming to a close.

A system that guarantees payment of the check is desirable. A bank-issued

check guarantee card is usually valid up to \$100 or \$200, and then, only if the person has not defrauded the bank.

Another idea along these lines that many firms use is called TELECREDIT. It is a subscription service, and a fee is charged to **you** for every check insured by them. You, in turn, may pass this service charge on to the client for the convenience of taking the check. Using Telecredit is fast and simple. You phone a designated number, provide the information necessary and the Telecredit people either approve the check (and issue a number that insures it up to \$600) or reject the document. They assume many of the risks involved.

An alternative to these measures—not the best possible means, but far better than just jotting down a simple driver's license number—would be to obtain several forms of I.D. and verify each against the other. The driver's license which shows a picture and signature, a check guarantee card with a number and signature (that matches), a major credit card—I'm speaking of VISA, MASTERCARD, not some department store or gas company card.

Some may feel a credit card system offers convenience. Remember, however, recording studios deal in services, not a tangible product that can be repossessed to cover the loss. Also, the laws governing credit cards protect the **buyer** of goods and services, not the seller. In a dispute, the credit card company may legally withhold payment at the request of a dissatisfied client.

Any client that really warrants such courtesies as check and charge privileges should be providing your studio with enough regular business to warrant them. It would be a wise policy to set such clients up as "open accounts"—thus **YOU** would set the terms and conditions of credit. Consult with an attorney for your written documents and examine the credit applications of other businesses.

The client fills out the application and signs the contractual agreement of terms, which also should release you to investigate the information on the application.

Among the information required would be the names of all partners, with addresses, trade references, all banking information, all liabilities and assets (request a financial statement or current tax return), all credit accounts, vehicle information, social security numbers, etc.

Your terms would include interest on past due accounts (commonly 1½% on the unpaid balance 30 days or more past due), reasonable legal fees when collection is required, and other times your attorney might recommend.

Contact all sources on the application, and request verification. This must be done on your firm's letterhead. Keep it short and simple. (The client has given you as a credit reference, please verify the following, thank you.) As the replies come back to you, look over the information and come to a decision on this particular client, based upon income, existing credit (liabilities), past payment history, time in the area, and gut feeling.

This assessment period may take up to 120 days to complete, advise the client that s/he must continue payments C.I.A. You might switch to C.O.D. (payment upon completion of the session) and eventually try a check. Observe the client, see if payment is ready and up front (is s/he working with you).

When you have approved the account, assign a credit limit, number and set up a ledger card that would show the session dates, charges and payment dates. Check this card periodically and before each new session begins. If the account starts to get behind, ask the client for some money. Make this point friendly, but firm. (Only YOU can approve a session.)

Get to know both your peers and your clients. Have an occasional lunch with one of them every so often. Talk shop. Exchange notes. Don't gossip, however, as this is a confidential business.

When an account becomes very delinquent, talk with an attorney. See if you can attach something. Consider all options. If the amount is under \$700 you can go to small claims court without an attorney for about \$40 in fees. The final route is a collection agency. They will split 50/50 with you on what they can collect (usually never the full amount).

Offering discount rates for cash is good incentive. It keeps a constant money flow, while saving the client a few bucks. A check from an "open account", when paid at the session date, would qualify. This negates the cost of billing, invoicing and a monthly statement. Make sure the client knows s/he can get the discount rate by paying now, instead of a week or month from now.

Accepting a check or establishing an account for some clients will certainly expand your business potentials. The policies and terms are yours to enact and enforce. Applying good credit management will keep your mind more at ease about business, and your fiscal matters as sound as possible. ■

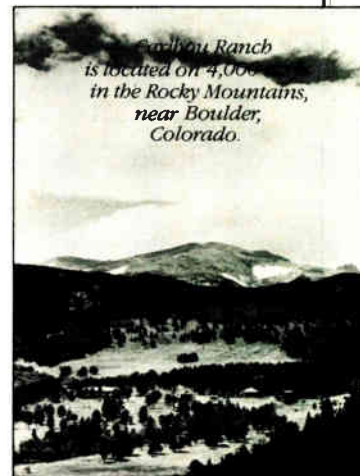
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# PRODUCERS DESK

by James Riordan

Gregg Ladanyi's rise from second engineer to a producer of major importance was virtually meteoric compared to the struggle most go through. "I never thought I was going to be a producer until it started happening. It was the same with engineering. I went from managing bands to being part owner of a studio in North Hollywood. I ran the business and my partner was the engineer. One day Captain Beefhart was recording and they couldn't work with my partner. I told them I'd engineer because we needed the money. So, there I was, discreetly on the phone all during the session asking how to do everything. After that I got a few lucky breaks and went to work at the Sound Factory as Val Garay's second. One of the things I learned from Val was how to take a record and make the most of it in every direction.

"I began engineering with Jackson Browne on the *Pretender* album. After engineering *Running On Empty*, Warren Zevon's *Excitable Boy*, and several others, Warren and I decided to co-produce his next album. I had to choose between becoming a producer/engineer or just remaining an engineer. The more I learned, the more I wanted to be involved, so I started producing with Warren's *Bad Luck Streak In Dancing School*."

With the *Hold Out* album Ladanyi co-produced with Jackson Browne as well. "I learned a lot about music and songs, as well as producing, from Jackson. I spent a lot of time with him on the road so that I could hear what the songs sounded like coming off the stage. I wanted to hear the energy so that I could create it in the studio.

"I feel I have to stay on top of what is being done on record. I listen to records all the time so that I can then interpret the production and sound techniques in my own way if the situation arises."

Ladanyi feels that a producer must be involved with the artist. "A good producer is sensitive to the material and the artist. Those things are private things to me. What happens in my projects with Jackson does not happen with other people because it's not supposed to. With Phoebe Snow there is more of an active involvement in developing the songs whereas Jackson has already done most of this in his head."

Ladanyi recently completed Phoebe Snow's *Rock Away* album. "It

was my first step away from the home base. I did it on the east coast with Richie Cannatta. Phoebe wanted to move into more of a rock style. She has the power to take anything and manipulate it any way she chooses with that voice of hers. She didn't have a lot of things written for the album so it began

## Gregg



## Ladanyi

with picking out material. I was against that because Phoebe Snow, to me, is also known for writing great songs like "Poetry Man". I must have listened to 300 songs for the record. It was hard to pick out ten songs written by other people and still get the feeling that Phoebe meant everything she was singing, that's what I was going for. We tried to make it kind of a concept record in that the songs related to her life and personality. I think "Games" put a big element in the record. We needed another killer song with her special performance to complete the change that was happening on the record."

Ladanyi and Jackson Browne have just co-produced the David Lindley album, *El Rayo X*. "Producing David Lindley was very exciting. He's an in-

credible musician and I think the album is especially interesting because it's a mixture of reggae, ska, and rock n' roll music. There were many things happening on the record that were not standard recording techniques, partly a result of the great communication Jackson and I have in the studio. There are instances where nothing is said and the right things just happen. As a co-producer, I'm like an extension of him.

"As far as new projects go, I'd like to find a band to produce. I've been working with single artists the last four years, but my roots are rock n' roll bands, and the craziness that goes with them."

Unlike many producers Ladanyi puts a lot of stock in good lyrics. "It's hard for me to do songs that are not lyrically involved because I've spent so much time working with great lyricists. I can't get behind something that means nothing to anybody, especially the artist that's singing it. For me, producing a record is working with an artist that is serious about what they want to deliver. A song that says something enhances what's happening throughout the record."

Ladanyi feels he works best with artists who have a definite direction with some degree of studio experience. "Then I can concentrate on bringing out the fine lines and qualities. I keep them in a spot where they don't panic and nothing weird happens to them while they're making their music. I may make some arrangement changes though, or help them with some lyrics.

"An engineer or producer has to have an incredible amount of patience. An artist may have to resolve something for himself before he can learn anything else about it and the producer has to allow him to do that in order to really keep the communication open."

Ladanyi does not work with an engineer and plans to continue doing both jobs in the studio. "A lot of what I do is based on the fact that I do it myself. The extension of being a producer as well as an engineer is that I am able to immediately make the connection happen between sound and subject. I find it much more satisfying, when I think of something, to be able to reach up and immediately do it. That's part of what I offer an artist."

Ladanyi stresses musical awareness in his advice to engineers. "It's important to develop what you can offer an artist on a musical level, besides the technical level. ■

WEDNESDAY

17

JUNE 1981

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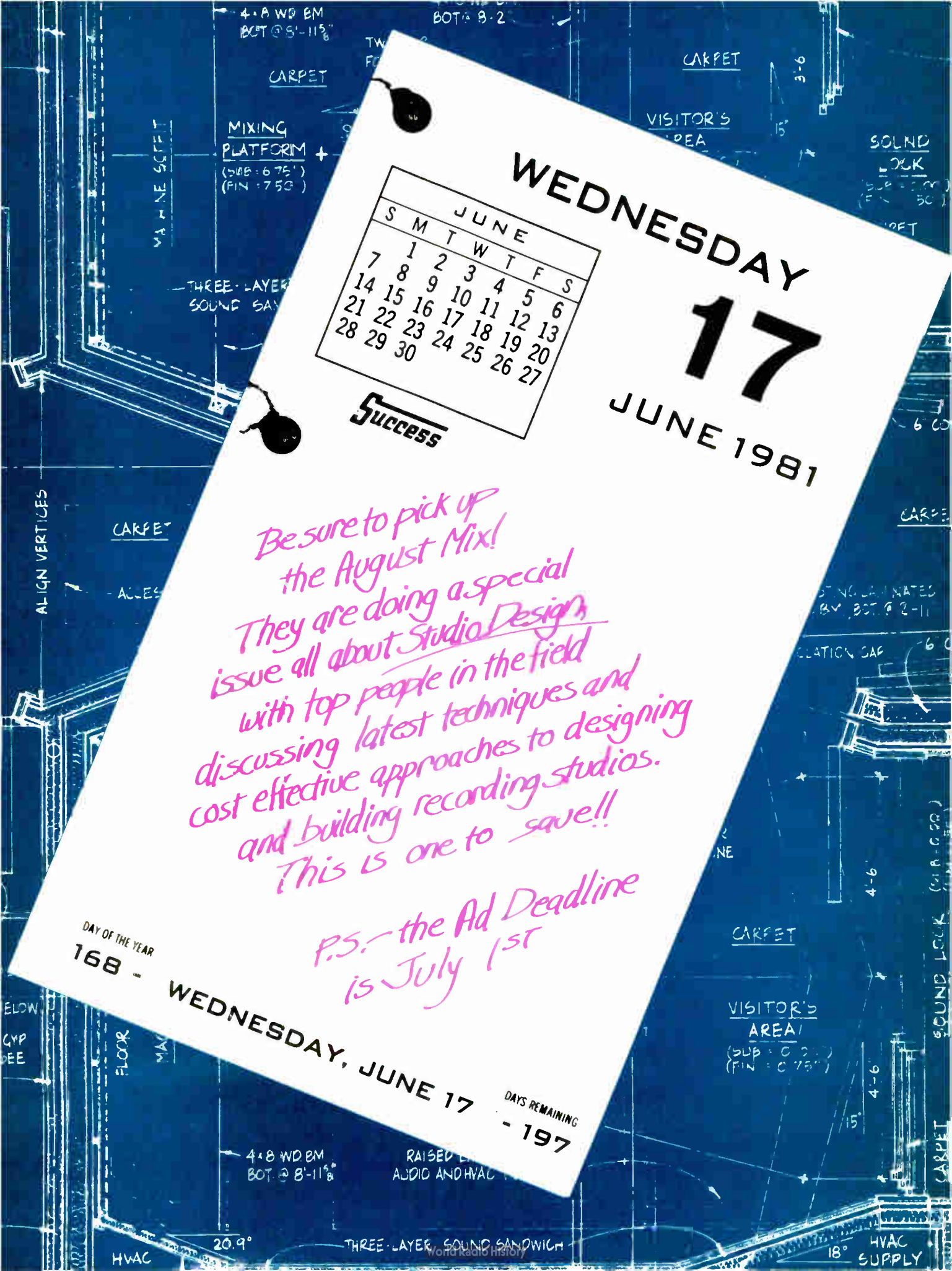
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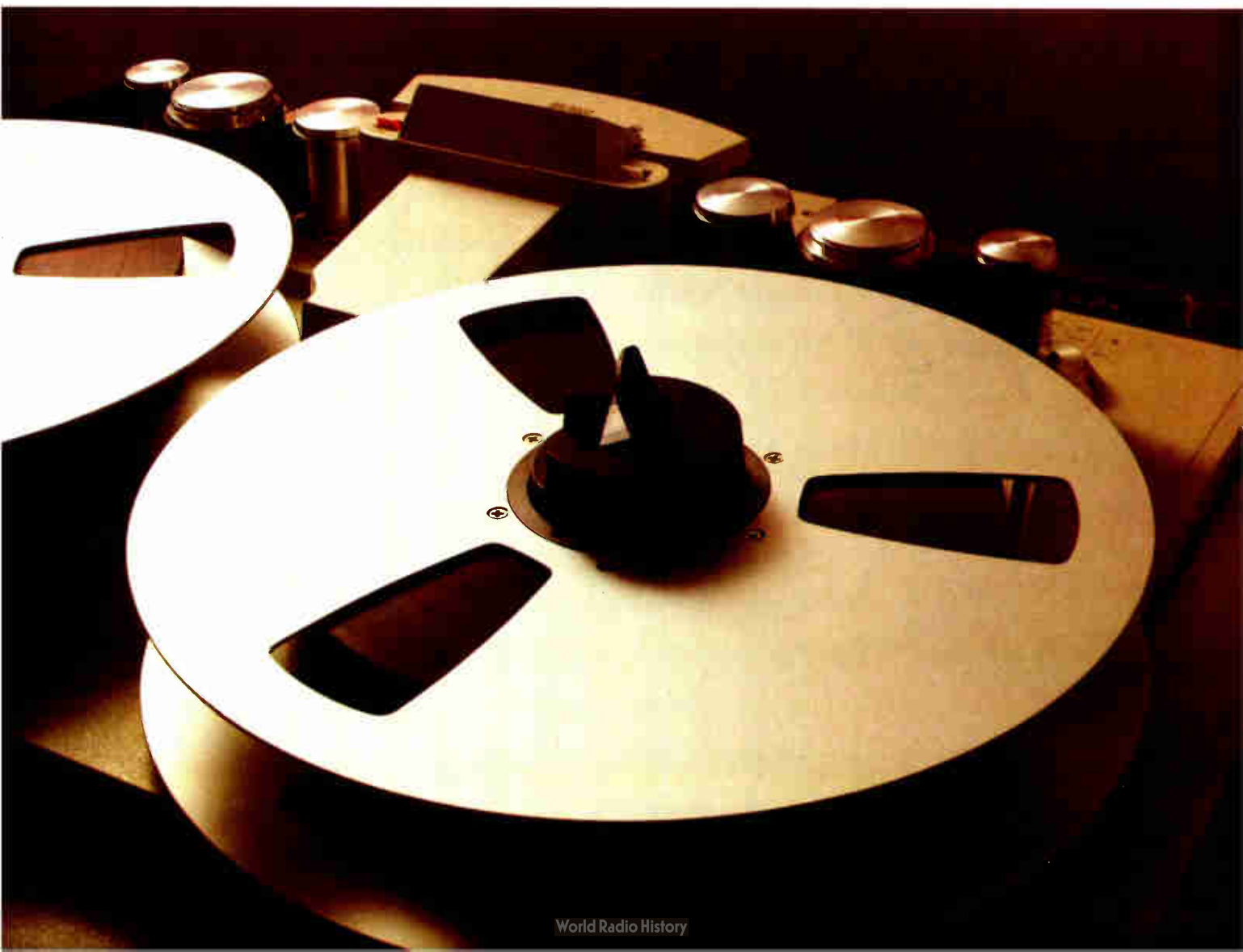
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CONGRESS CENTRE

# 68th AES Convention HAMBURG 1981

by Fritz Fey

The German recording industry has been one of the fastest developing markets in Europe during the past four years, with nearly 300 new recording studios set up. This might not seem very much considering US dimensions but it is a phenomenon in a place like WestGermany. Of course the European AES Conventions have come to an increasing importance during this period too.

As you know, the US conventions of the AES are always held at the same venues, Los Angeles and New York. In Europe the Audio Engineering Society chooses different countries for each year's convention. This is rather a problem because the conventions have grown to a size making it difficult finding a suitable venue in each country. The purpose-built Congress Center in Hamburg which already was considered to be an ideal place for the AES Convention in 1978 was again chosen for 1981. Not as with previous European 'Hotel-Conventions' the exhibition was split in only two main areas enabling the visitors to find their way through very easily. (I wonder if you can imagine an AES Convention spread over ten floors in two different hotels as we experienced in London last year.)

This year's convention itself, discussions, technical papers and so on, took place in the congress rooms of the CCH, very close to the exhibition area. The demonstration rooms were positioned on the first floor. According to some of the visitors, the convention program as a whole has not been found very interesting, although the main subject areas 'Digital Recording', 'Automation' and 'Acoustics' have been featured.

At an increasing rate the exhibition, once being just a small ingredient of the convention, has grown to an independent (and as many professionals say the more important) part of the convention that seems to lose its once clearly defined character as a non-commercial event.

In Hamburg nearly 130 exhibitors were showing their products, some presented for the first time in Europe. Here are some of the 1981 highlights of the 68th AES Convention.

## AUTOMATION

A new digitally controlled mixing console was presented by CALREC AUDIO from England, known for their development of the Soundfield microphone system. This console may be fitted with up to 60 channels and 24 groups with stereo, mono and main clean feed outputs to

full broadcast specification. Parametric 4-band-equalizer, Hi- and Lo Pass filters and compressor/limiters are standard. All DCAfaders in channels and groups and many of the channel- and group-functions are under control of a central microprocessor logic system.

One of Germany's approaches to automated mixing is the PARAM centrally programmable equalizer system capable of 128 channel operation developed by the German engineer H.P. Leunig, Cologne. The actual filter response is shown on a CRT display. The control elements have been reduced to 25 keys and a joystick integrated into a small central control panel. The desired filter response is drawn on the CRT by using the joystick while the computer works out a realistic response that can be achieved by the assisting filters. The result can immediately be heard and at the same time be observed on the CRT. The equalizer has six sweepable bands with 16 dB boost or cut. The entire console equalization can be stored in one of the 64 console memories. Optionally the read out key-function can be replaced by a control signal from the multi-track-recorder synchronized to the music program offering new dimensions for mixdowns of complex material. Storing of standard equalization curves, comparisons even of entire console settings can be easily achieved by the system. The contents of memories, channel status, channel failure and number of overloads are additionally displayed on the system monitor.

NTP from Denmark were showing a remote controlled attenuator, an electronic crosspoint system and a programmable disc-cutting equalizer. The crosspoint system is modular in design and usable for building very small manually controlled systems as well as bigger microprocessor controlled single or multistaged systems. The smallest units are the crosspoint cards with 128 crosspoints carried by a 19"-frame. The output cards are integrated in a separate frame as well as the computer system and power supply. For very small systems with a maximum of 32 inputs to 32 outputs a frame called combi-module is available. It combines all components in a 19"-frame, 3 units high. It is controlled and power supplied by a manual control unit with pushbuttons for the selection of sources and destinations.

## DIGITAL RECORDING

MITSUBISHI's digital recording system has been introduced in Europe for the first time. The system comprises a 32 track PCM recorder and

a 2 track PCM master recorder. Both recorders have additional digital and analogue tracks for SMPTE operation, error correction and automation data. Punch in/ out is achieved by an automatic crossfade system controlled by the integrated computer. Other features are +/-10% Varispeed, autolocation with 100 tape positions, channel status programming and internal SMPTE generator. Beside electronic editing the X-80 master recorder also offers the possibility of manual tape splicing, as with conventional analogue recorders. It really works!

## ANALOGUE & DIGITAL SIGNAL PROCESSING

The digital delay lines of Advanced Music Systems (AMS) from England were shown with a new Digital Loop Editing system. It is an ideal tool for creating vocal/backing/drum loops. The musical information can be captured in the system memory and nondestructively edited via a keypad. Loops may be run continuously or triggered for special effects and drop-ins. It is also possible to varispeed the loop for tempo and pitch corrections. Also on show from AMS was a new digital reverberation system as add-on peripheral to the AMS digital delay lines. Up to nine programs can be changed as desired. These parameters are pre-delay, decay-time and high and low frequency decay profiles. Any alteration to the program variables can be stored in memory locations which are not lost on power-down of the system.

New from AUDIO & DESIGN, England, was the Transdynamic triband processor designed primarily for the use in broadcasting but with many uses in the recording studio, too. The unit divides the audio spectrum into three frequency bands which can be processed separately allowing the set up of dynamic equalization curves, selective limiting and also makes possible the American 'AM-Radio' 1 dB dynamic range sound for heavy rock mixdowns. Some of the features are 12/6 dB phase compensated band splitting, internal wide band limiter, preemphasis 25, 50 and 75 micro seconds 'off-air' monitor output and LED bargraphs.

The next European AES Convention will be held in Montreux, Switzerland. I'm sure you will want to prepare with a few ski lessons. ■

• • •

Fritz Fey is the Editor/Publisher of Germany's Studio Presse.

# Artist Studios

## RONNIE MILSAP'S GROUNDSTAR LABORATORY

Engineer Ben Harris in Groundstar control.



PHOTO: SAM BORGERSON

### by Sam Borgerson

Was it Colonel Sanders who provided the inspiration for country superstar Ronnie Milsap to build Groundstar Laboratory? Could be, if you believe a story related by Chief Engineer Ben Harris.

"It all happened before I came here," Harris cautions, "but he told me he was playing a session at another studio here in town when he heard something in the piano that sounded really strange. He started feeling around up on the strings and found a chicken leg. He said, 'That's it! I'm going to build a place of my own where I can go in at any time—even two in the morning—and have everything just right.'"

Fed up with chicken, Milsap decided to go whole hog. Early in 1978 he purchased U.S. Recording from Roy Orbison, then had the fortress-like red brick building gutted to the bare walls. He sat down with Bob Todrank of Valley Audio and worked out the basic room design, placing each instrument location just the way he wanted it. Specifications included an isolation room to enclose the 9' Steinway's sounding board while leaving the keyboard out in the main room. Then ace builder Rudi Breuer was brought in to finish the job, constructing an immaculate interior with gorgeous, hand-fitted California redwood. Breuer's crowning touch was a unique string balcony which sits atop an interior tower 20 feet above the main floor.

Inside the control room, Milsap's penchant for perfectionism—and gad-

getry—is strikingly evident. The console is a shiny new Neve 8078A with Necam. Tracks are cut on a Studer A80 and mixed onto either a Studer A80 ¼" or a new Ampex ATR 100 ½" 2 track. Both Dolby and dbx are available for all tracks, and you can reverberate with EMT (250 or plate), Lexicon, MICMIX, or AKG. The rack is crammed with parametrics, DDL's, compressor/limiters, vocal stressers, flangers, and a host of other goodies.

Groundstar's most recent additions are new Sierra monitors, which Milsap found particularly pleasing to his demanding ears.

All this expensive gear is a clue to the origin of the studio's peculiar name. "Ronnie is an electronics whiz," says Harris, "and he originally wanted an analytical type of recording environment—one that was very dead and extremely accurate as far as frequency response. He wanted a place where he could dissect the music. The name started out kind of like a joke, but it stuck because Ronnie liked it."

In its two years of operation, Groundstar has remained pretty much the personal workshop for Milsap. According to Harris, about 90% of the time booked is for either Milsap himself or his publishing company. Bookings of outside clients are not allowed at all except when Milsap is out on tour. When he did leave recently, producer Kyle Lehning came in to do overdubs and mixing on the new Firefall release. He picked the studio because the packed racks of outboard gear saved him from lugging in his own extensive collection.

Other scattered bookings include work for Electra and gospel sessions for Word Records.

Although his studio is already one of the best in the Southeast, Milsap seems nervous about not having all the "newest and best." He has talked about trying the 3M digital or strapping on a second 24 track, but no definite plans have been made.

As an engineer, Harris has found that working for a client who is also your employer brings unique problems and rewards.

"When you're working for an artist who, for all practical purposes, signs your checks every week, you have to mix more to his way of thinking. And, God knows, we all hear differently. Consequently, what he may want at any one point may not be exactly what I hear. So mixing for some outside client—especially one who isn't nearly as involved in the process as Ronnie—would be a lot easier.

"I guess Ronnie is both the hardest and the easiest person I've worked for. He's hard to mix for because he's so particular. I think he hears better than any man I've ever met. He says he doesn't hear any better, he just listens better. It's hard to come up to his standards. But, on the other hand, he'll give you all the time you need to get it right. If you want to spend 6 hours getting the drum sound just so-so, he'll have all the patience in the world."

Of course, such patience comes much easier when you don't hear that meter ticking away at the rate of about \$2.50 a minute. ■

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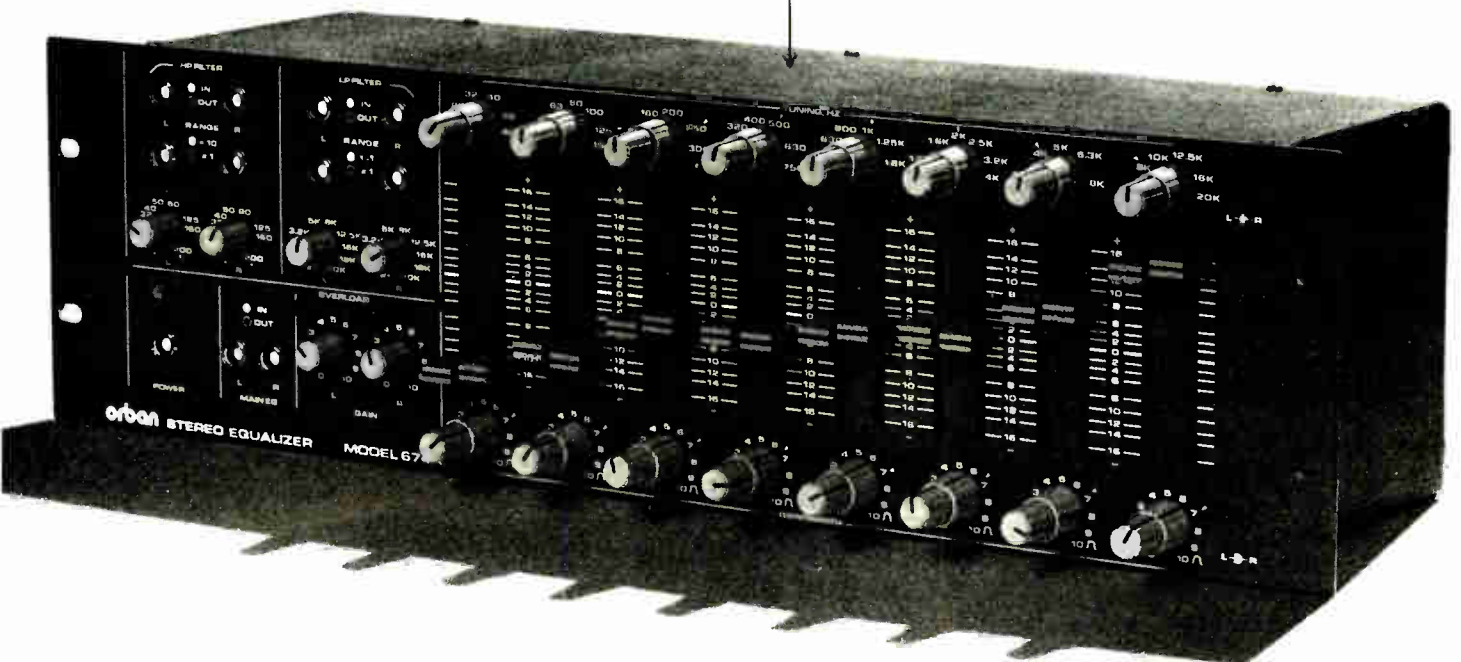
The 672A now has a stereo twin—the new 674A. The 674A packs all of the power of two 672A's in the same size 5¼" rack mount package. And controls are configured so that both stereo channels can be effortlessly adjusted together.

Naturally, the 674A is built to full Orban professional standards, with industrial-quality components RFI suppression, a heavy-duty roadworthy chassis, comprehensive back-up support, and a complete and informative manual.

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# Other Side of the Tracks

## Barely

# TRUE

by Mr. Bonzai

This is the story of Ryan Recording's first attempt to interface with the new video market. We had our audio kit together, but video was a whole new maze of vertical intervals, resolutions, spinning heads, and immense expense. So, we decided to form a limited partnership with a wildcat video company and do a job on spec.

Our first joint project was to be a six minute rock promo for Harry Marlboro, the California balladeer from the middle-class slums of Rancho Bernardo. Harry had wandered the wild dogsleds of the local country clubs and he had stumbled through the bleak landscapes of the monstrous shopping malls. He sang of the spiritless shadow that darkens sunny California. Harry had become a spokesman for the suburban hoboes and had adopted a stylized derelict appearance. In fact, Harry was so authentic that he had posed as the poster boy for The Salvation Army for the past eight years.

Harry's last tour had been very successful, but his records weren't selling very well. To get this video project off the ground, his manager, Clyde Clark, had accumulated a few hundred dollars and some slightly used videotape. If the record company liked the production, we would all get "points." (This means we might get paid later in the century, but you audiophiles know all those gory details.)

We met at a warehouse production studio in North Compton with our selection of microphones, a portable 4-track, and a little mixer. Harry would be singing his vocal live to an instrumental mix from his album. Since we were going mono, we put the album mix on one track, sync pulse on another, leaving two whole tracks for vocals. We redubbed the sequence many times to allow for additional takes.

Then the fun began. We had recreated a scene from Harry's last tour—the one where he sings "Human Groceries" to a stripper in a mock shopping mall. We could hardly wait to see

him singing his dreamy, romantic ballad as the dancer dropped her cast-off clothing like rose petals to an imaginary audience.

Clyde Clark had many connections in show business and he had arranged for a selection of exotic dancers to audition for the part. Cart Ryan, our studio owner, and Smilin' Deaf Eddie, our tech man, were occupied with audio preparations, so I volunteered to assist Clyde with the girls.

"How many dancers will be showing up, Clyde?" I inquired.

"We've got four real professionals: Sherry, Shelly, Shirley, and Sheila. Sherry should be here shortly."

Sure enough, Sherry showed up right on time, out of breath, and sweating like a Palomino.

"I got here as fast as I could, Clyde," she puffed. "I was dancing this afternoon at the opening of that new department store in La Manana."

Sherry loped behind a dressing screen and started trying on the gaudy, sequined outfits. After unanimously agreeing on the red dress with the lumilar trim, we proceeded out to the soundstage for a rehearsal. Cart and Eddie had a shotgun microphone ready to record Harry's vocal.

Our set consisted of a mock supermarket loading dock. On cue, Harry meandered out smoking a cigarette, sipping a wine cooler in a can, and began to sing his song. He casually stepped off the edge of the dock and fell in a large blue trash bin. Luckily, the discarded lettuce and bananas broke his fall. The camera continued to roll.

Take two went a lot better and Sherry did a very professional job of taking her clothes off. The crew was new to this type of scene and the sight of her animated pasties put their eyebrows through minor gymnastics.

We discovered that everytime Sherry danced in front of Harry we got somewhat interrupted pickup from the shotgun, so we switched to a wireless microphone. Unfortunately, one of the cameramen wore a pacemaker, and he was so excited that his electronics kept interfering with the reception. We final-

ly decided to use a lavalier microphone with a cable inside of Harry's clothes.

At this point we couldn't find the special cable for the mike. Eddie rummaged through the equipment box and still couldn't find it.

"I don't understand it. I'm sure I packed it," Eddie reassured us. "Hey, what's this bag here? It's the pastrami sandwiches. Maybe the cable is in the fridge."

A quick trip to the canteen provided us with our cable, although it was nearly frozen. When Harry slipped the cord down his pantleg he let out a yodeling shriek and did a very fancy Highland Fling around the room. We got that on tape, too.

Only one of the remaining dancers showed up. It was Shelly, and she had lied about being a professional. I tried to explain to her what was necessary.

"Are you a good dancer?" I started off.

"Oh, yes, Mr. Bonzai...I won the disco contest last month at Bizarri's."

"Well, this is a little bit different," I continued. "You have to take off your clothes."

"I do?" She smiled in embarrassment.

"Yes, I informed her. "Perhaps ten or twelve times."

"O.K.," she agreed.

The crew sounded off, in unison, "YOU WILL?!"

Shelly giggled and wiggled and we got back to work. Sherry had had a hard edge to her style, but Shelly gave just the right amount of grace and youthful enthusiasm to bring off the desirable, dreamy image we wanted. Harry was inspired by her *joie de vivre* and delivered a powerhouse of a vocal. We wrapped it up in about half an hour and packed to go home.

This all happened a while ago. We never saw a dime from the record company but, luckily, I had the rights secured for the outtakes and we put together a documentary for the cables called "Barely True." We have an award on top of the file cabinet and an accounts receivable in the drawer underneath. ■



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***The Professional Advantage***

Maxell Corporation of America  
60 Oxford Drive, Moonachie, NJ 07074

by **Mark Schubin**

Don't worry.

Video is just like audio, more or less. For example, video's bandwidth covers more octaves than audio's but its signal has much less dynamic range. Video tape recorders cost more than their audio counterparts, but usually offer less tracks. The least directional television camera is more directional than the most directional microphone, but is much less simple to mount.

Perhaps it's easiest to break everything down into five categories: acquisition (the process by which sounds and images are turned into electronic signals), storage (the means by which those signals are kept for a while), processing (the means by which the signals are changed in any *desired* fashion), distribution (the means by which the signals are made available to their audiences), and presentation (the process of changing the signals back into sounds and images).

### • ACQUISITION •

How do you change sounds into an electronic signal? With a microphone.

The TRT-LAC, the first video tape recorder to have color and black and white capabilities, designed and built by RCA, consisted of six racks of equipment.

# An Introduction To Video

## For the Audio Recordist

How do you change images into an electronic signal? With a television camera. Sounds simple? It isn't.

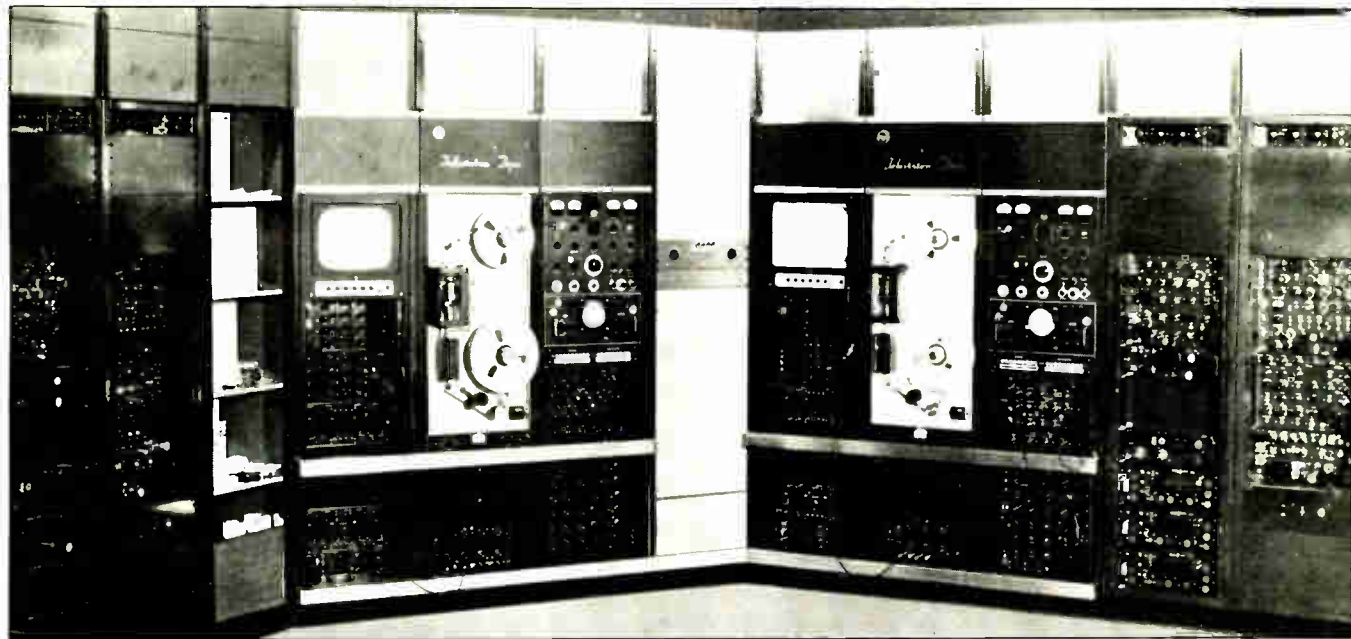
The real world, not the electronic world, is actually where the biggest differences between audio and video lie. Sound, as you well know, is a material pressure wave. Light, on the other hand, is an electromagnetic phenomenon.

Light travels in straight lines, bounces off mirrors and lodges itself in velvety blacks. Sound caroms from air molecule to air molecule in drunken Brownian motion, creeps around closed doors and respects no boundaries short of the vacuum of space.

Microphones detect pressure changes from all over. Television

camera tubes do the same for light, usually by varying the current that can flow through them in response to the light falling on them. However, just as a microphone element on the ceiling of a crowded bus station won't allow you to listen to a particular conversation unaided, a camera tube can't make heads or tails out of an image without a lens. You can think of a television camera lens as a rough equivalent of the interference tube on a shotgun microphone. It's a mighty rough equivalent, however—television sound people realize just how rough the first time they are sent to shoot someone across a busy street. The lens just zooms in for a closeup of the star's face; the interference tube prefers the car with the lousy muffler.

It's in the camera, by the way, that sync first raises its ugly head. Think back to the transducers, forgetting the



directional elements. A pressure change at a microphone element causes a signal change on the output wire, right? Okay, what happens in the camera tube? A change in light causes a change in signal, right? Well, where? At the upper right hand corner of the image? In the middle? At the bottom?

The earliest television proposals (back in the 19th century) had no difficulty answering those questions. There would be a light-to-signal transducer at the upper right hand corner, another in the middle, another at the bottom—in fact, one for every **picture element** in the image—each with its own wire connecting to its own signal-to-light transducer. An image with a **resolution** (the ability to make out details) of ten by ten elements would have 100 transducers in the camera, connected to 100 wires.

Unfortunately, you can't make out very much with a resolution of just ten by ten elements. In fact, even the oft berated resolution of plain-old U.S. television is 484 by 441 elements, give or take a few. That comes to 213,444 picture elements. You may accept as truth the fact that no television camera in existence, planned or junked, ever had, has or will have 213,444 wires coming out of it. Instead, they make use of sync and scanning.

Inside each camera tube, there is an electron beam, and that beam, a part of the signal circuit, is scanned across the face of the tube by varying electrical or magnetic fields. Starting in the upper left corner of the image, the beam slides to the right till it gets to the edge of the image and then **flies back** to the left, roughly two picture elements lower, and starts off to the right again. Each of these horizontal paths is called a **scanning line**, and they occur roughly

15,734 times a second.

When the beam reaches the bottom of the image, it jumps back up to the upper left, but one picture element lower than before. Thus, it fills in the scanning lines which were missing the first time. The first run through, tracing all of the odd numbered scanning lines, is called the **odd field**. The second, **interlaced** between the lines of the first, is called the even field. Together, they make one television frame, and these occur roughly 30 times a second.

Why the doubled tracing? Well, the eye can detect flickering pretty easily in images which occur only 30 times a second, but at 60 Hz (the **field frequency**) the eye sees smooth image blending.

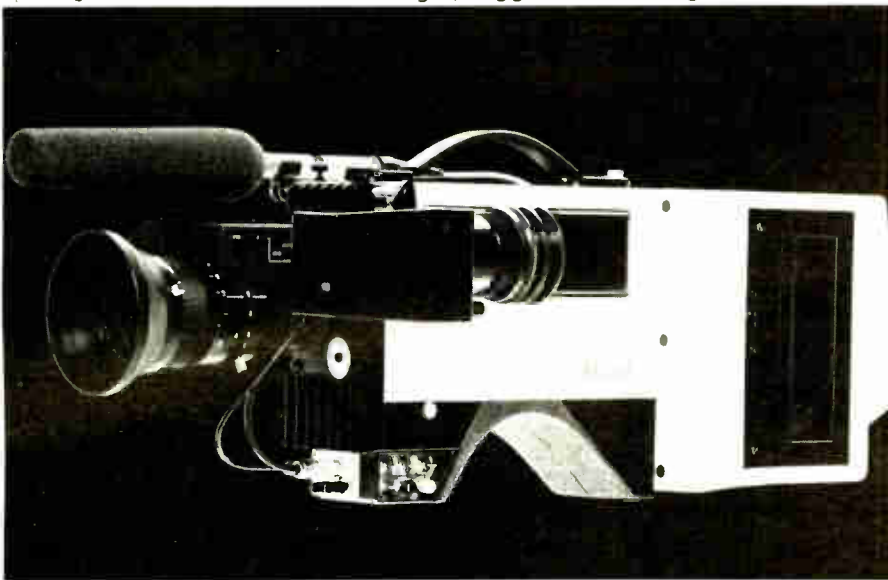
Okay, so now the camera tube produces a signal sometimes proportional to the brightness at one picture element and sometimes proportional to the brightness at another. How does the tv set know which picture element is which? Sync.

Sync is a blacker-than-black spike added to the video signal every time the electron beam flies back to the left. The fact that it's blacker-than-black **blanks** out the beam so that it doesn't scratch a hole through the recently traced scanning line. A peculiar nine-line sequence of blacker-than-black pulses lets the set know that the bottom of the image has been reached but, since the beam still has to travel all the way back up to the top of the picture, another 11 or 12 lines of beam **blanking** are provided in each field. That's why the U.S. television system, often called a 525-line system, has only 484 scanning lines of of picture information.

## • STORAGE •

A video signal coming out of a

The heart of RCA's new Hawkeye system is the single-unit recording camera, designated the HCR-1, which combines camera, recorder, microphone and batteries in a single, rugged weather-tight unit.



camera doesn't do much good unless something is done with it. One of the most common things done is storing the signal for later use. In audio, such storage usually takes place on magnetic tape. The same is true of video, but the recording process is very different.

How do you record a signal on audio tape? Simple: You send a current representing the signal into a coil which causes a magnetic field to form, inducing magnetic information onto the tape. Why are higher recording speeds usually preferred to slower ones? Well, if you're going to record a 15 kHz signal, it'll magnetize areas a thousandth of an inch apart on a tape running at 15 ips, five ten-thousandths of an inch apart at 7 1/2 ips, 25 hundred-thousandths of an inch apart at 3 3/4 ips, and half that at the leisurely cassette pace of 1-7/8 ips. All other considerations aside, the slower the tape moves, the harder it is to keep magnetized areas distinct.

Got that? Good. Now, how high a frequency do you have to record in audio? Just 20 kHz, right? Well video, even in the U.S. television system (the narrowest bandwidth system in use), requires 4.2 MHz to be recorded, exactly 210 times higher than the highest audio signals. If studio audio recorders operate at 15 ips, does that mean video recorders need to operate at 3150 ips? Not exactly.

The first video recorder demonstrated used 10 tracks to try to cut down on the speed necessary, but ran at 100 ips anyway. It was terrible. An improved version used five tracks and ran at 360 ips (30 feet per second!). It was okay, but got only 4 minutes of playing time onto a 17-inch diameter reel. Finally, the first successful video tape recorder (VTR) was introduced in 1956. As far as tape consumption was concerned, it ran at a mere 15 ips. As far as magnetized areas were concerned, however, it ran at nearly 2000 ips.

The secret was the use of moving-to-light transducer. An image with a **resolution** (the ability to make out details) of ten by ten elements would have 100 transducers in the camera, connected to 100 wires.

## Video Focus

heads. Four heads were arranged symmetrically around a small wheel. The wheel spun *transversely* across the width of the tape, tracing rapid, short tracks. As a result of the number of heads used, this type of recorder became known as a *quadruplex* or *quad* machine.

A second form of video tape recorder utilized videotape wrapped in a single spiral or helix around a large, spinning head drum. Rather than tracing very short tracks, such recorders traced very long ones, related to the circumference of the head drum. Taking their name from the shape of the tape path, such recorders are called *helical* machines, and include all present video cassette recorders, consumer or professional, as well as the most common new professional reel-to-reel recorder, called *Type C* machines, utilizing 1" wide tape.

As you know, audio can also be recorded on disks, on film, or on semiconductor memories. Except for rare exceptions, such semiconductor recording is usually limited to a few seconds of delay, used either for live radio talk shows or special effects. As might be expected, video recording on semiconductor memories is even more limited than audio (due to the larger bandwidth) and is usually limited to tiny fractions of a second.

However, whereas a sixtieth of a second of audio storage isn't good for much more than signal processing, a sixtieth of a second of video memory, played over and over, will present a television picture (one field). This property can also be applied to helical video tape recorders and most video disk players—in the former, though tape motion is stopped, a rotating head drum can continue to display a video picture; in the latter, it's the head or other pickup device which stops moving (radially), and the spinning disk continues to display video pictures. Disks which rotate at 1800 rpm will display one frame; those rotating at 900 rpm will display two frames; and those rotating at 450 rpm will display four frames. The more frames displayed, the blurrier action events will get. Sometimes even one frame may be flickery, if action is fast enough to cause

an appreciable difference in image between fields.

The same ability of helical recorders and disk players to display images independently of either tape or scanner speed enables them to display variable speed motion as well, from the slowest of slow-motions to the fastest scanning, though picture defects usually appear under these conditions.

### • PROCESSING •

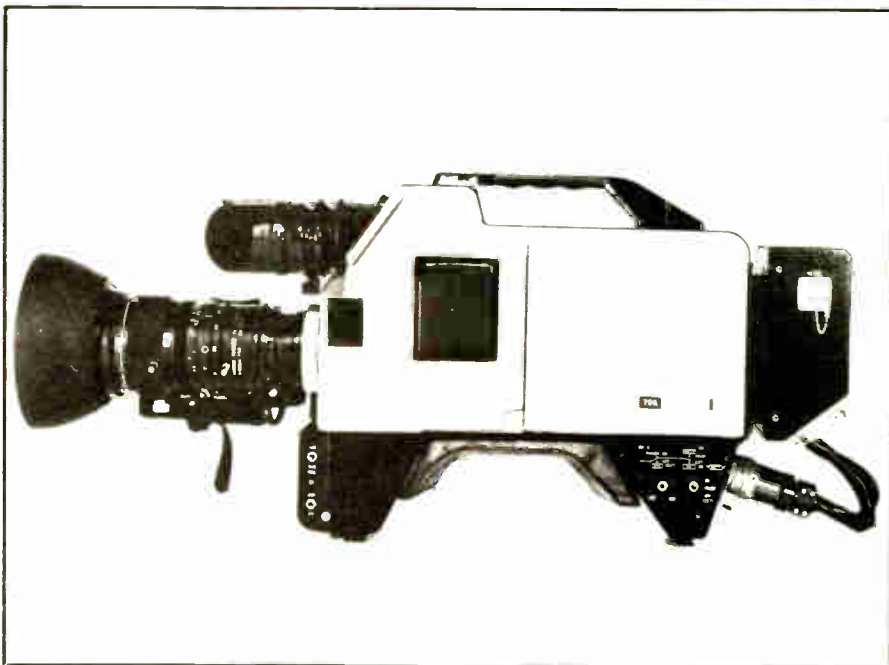
What's the easiest processing you can do to an audio signal? Change its level? Mix it with another signal? Both are pretty easy. In video, they're both nightmares, thanks to sync.

How do you change the level of an audio signal? Stick it into an attenuator

to the left or right, because it is the sync pulses which define the image's position. Incidentally, "precisely," in this case, means within billionths of a second.

Now, how about mixing two signals? Well, as before, the sync needs to be stripped, delayed and reinserted, lest its level change. In addition, however, the two signals to be mixed must have precisely the same sync relationship, again to within billionths of a second. With the tiniest errors colors will shift through the spectrum and larger errors will cause the image to shift as well.

How do you match the two signals? If they're cameras, you start by making sure they're running off the same sync



The **IKEGAMI HL-79A** is a dual purpose studio-location camera. The darling of the **EFP (Electronic Field Production) Industry**, this camera can be found on most location shoots.

or amplifier, right? Well, what happens when you do the same to a video signal? You change the absolute level of the signal, all right, but you change the level of the sync pulses as well. Relatively, video retains its relation to sync and that relationship is used by many video devices for automatic gain control. Thus, if you affect absolute levels slightly, nothing will happen to the pictures. If you affect them hugely, the pictures will disappear altogether because sync won't be able to be detected.

To accomplish something as easy as a slow fade out, sync must first be removed from the video signal, the remaining signal must be attenuated, and then the sync must be reinserted after being delayed by *precisely* the same amount of time that it took the rest of the signal to pass through the attenuator. If the delay is wrong, the image will shift

signal generator, or, in the case of internal generators, that one is locked to the other, a state called *genlock*. That's not all, though. Even the cable lengths must be precisely matched or compensated for—a few feet one way or the other and someone's face can change from sunburned to nauseous.

With videotape recorders you've got the same problems in addition to making sure that the tapes are playing back with precisely the same synchronism. Automatic variable delay lines, called *time base correctors*, help correct small errors.

The video equivalent to a mixing console is called a switcher, because it's used far more often to switch signals than to mix them. Let's face it—how many images could you stand to see superimposed on one another?

A crossfade in video is called a *dissolve*, but that's one of the few areas



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## Video Focus

where video switcher functions correspond to those of an audio mixer. A fade-out is a fade-to-black, but "black" is not the absence of signal; it's a signal with sync, which just happens to be black. Video equalization is electronically similar to audio equalization, but, operationally, it's a purely technical function, not one used to alter the aesthetic character of an image. To do that, color correctors, image enhancers and video effects units are used, the last corresponding roughly to the various audio processing devices (such as delay lines, flangers and pitch changers) available today.

Another type of signal processing is called editing. In audio, that's often accomplished with a razor blade and splicing tape. Quadruplex video tape

can actually be spliced. However, to do so, you need to first "develop" the tape with an iron particle solution that makes the magnetic tracks visible, then examine the tape with a microscope to find frame markers on the tracks, then carefully position the tape under the blade with micrometer adjustments, gazing through the microscope all the while.

Helical video tape, with its huge, shallow-angle tracks is impossible to splice (at least, no one's successfully done so). Fortunately, it is possible to edit video tape electronically, and the SMPTE time code helps quite a bit.

The SMPTE time code was developed specifically for video editing, a fact which, unfortunately, has caused some audio studios grief. The time code is a stream of digital data running at a rate of 80 bits per frame. It doesn't matter whether the frames are occurring 30 times a second or 25 times a second or even (in a new version developed for film) at 24 frames per second—the data rate is *always* directly related to the frame rate.

Audio, however, has no frame rate. Therefore, the data rate of a time code generator used in audio is undefined. Most studios assume a relationship to color video, but *without a video*

*reference, the data rate will probably fluctuate with the vagaries of power line frequency.* Thus, time code used at one moment may be quite different than time code used at another. That's why such *audio* studios as Regent Sound in New York have always used a video sync generator as a reference for their time code generators.

### • DISTRIBUTION •

The most common means of distributing video programs is through television stations. When television broadcasting began in Britain and the U.S. in the late 1920s, there was absolutely no difference between a television station and an AM radio station. Pictures utilized just 30 scanning lines at very low frame rates and the resulting signals had audio-like bandwidths. The audio itself was transmitted on a different AM station.

Today, video signals are still transmitted using a form of AM modulation, but the video bandwidth transmitted in the U.S. is 4.2 MHz and the sound is now included as a 25 kHz deviation FM carrier, precisely 4.5 MHz from the picture carrier. That precise relationship between sound and picture enables set manufacturers to

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**Sony's CVM-1900 Trinitron video monitor.**

utilize some shortcuts in their sound pickup sections, but also causes a number of problems.

One problem is audible on many occasions when bright or heavily colored titles appear on the screen. Sometimes the energy excursions from the black edges of these titles to their bright centers is more than the television system can handle. Video is transmitted upside-down, i.e., the brighter something gets, the lower the level of transmission. Therefore, if one of these excursions causes a significant overshoot, the picture carrier will momentarily disappear. Without a picture carrier, the set has no reference for a sound carrier and buzzes its displeasure. Then your friends all complain to you about the audio buzz that you know wasn't there in the final mix. Perhaps someday a standard for such titles will eliminate this problem.

Another problem, unfortunately, was caused by a standard. When the National Television Standards Committee reconvened in the early 1950s to figure out how to squeeze color into a channel already filled with black and white signals, they came up with a brilliant idea: *frequency interleaving*. They reasoned that, since the spectrum of a television signal consists primarily of spikes at multiples of the line frequency (the rate at which scanning lines occur), there would be room to *interleave* spikes of a color subcarrier at odd multiples of one-half the line frequency. However, intermodulation products with that 4.5 Mhz sound separation had to be considered, too. Eventually, a color subcarrier frequency of 3.579545 Mhz was selected, and given the relationship of 455 times half the line frequency.

Well, until color came along, television was transmitted with 525 lines at exactly 30 frames a second, producing a line frequency of 15,750 Hz. Unfortunately, 3,579,545, divided by 455 times 2 equals 15,734 Hz, plus change. Since the picture must have an integral number of scanning lines, that caused the frame rate to change to 29.97 frames per second, five or take a smidgeon.

Time code, you will recall, is locked to the frame rate. At 29.97 Hz, a time code reader will gain 3.6 seconds every hour, throwing time code related clocks off by a minute and a half a day. To get around that problem, some time code generators have a *drop-frame* mode, which drops two frames every minute except every tenth minute, keeping the time display in sync with time-of-day. Unfortunately, if you're editing and you try an offset by a certain number of frames or tell a machine



to "go to" a certain frame, things may not work out quite as you'd desired.

This un-relationship of color video to the 60 Hz power frequency can



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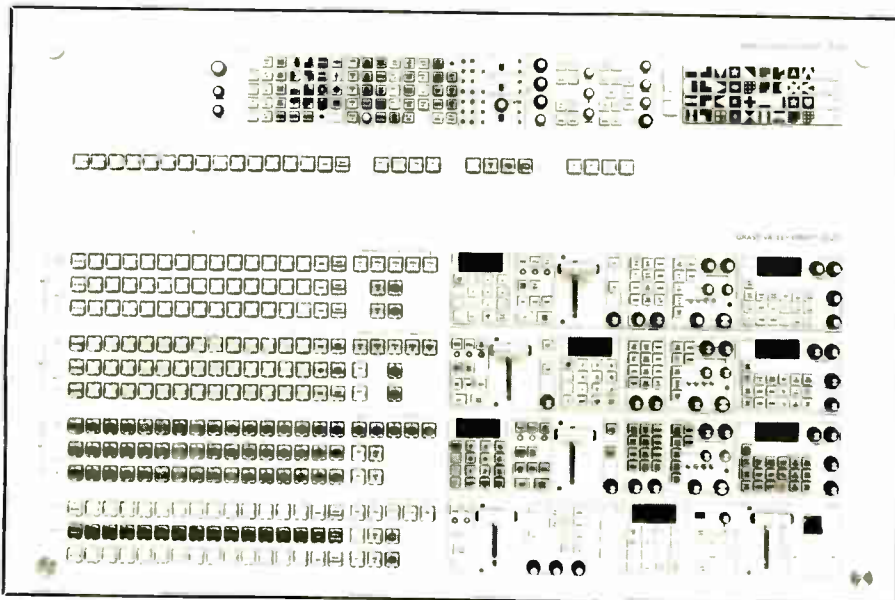
# Video Focus

cause still more problems. Video distribution, with some extremely rare exceptions, takes place through 75 ohm coaxial cables—unbalanced. As is the case with unbalanced audio, such video distribution cries out for ground loops. In the black and white days, those loops often went unnoticed—the situation was something like picking up a 60 Hz hum while you were trying to record a 60 Hz signal.

In color, however, the situation is like picking up a 60 Hz hum while you're trying to record a 59.94 Hz signal. The result would be a slow level change every 17 seconds or so. In video, that level change looks like a horizontal band of a different brightness, slowly rolling vertically through the picture.

There are still more transmission problems. Let's say part of a show is originating in New York and part in Washington. Remember that for a video switcher to work, all of its inputs must be in perfect synchronism. Well, it's difficult to keep remotely separated cities in sync, so what's often done is to feed the remote signal into a device called a **frame synchronizer**, a digital memory of approximately one frame

A 16-input version of the Grass Valley Group 300 Series production switcher.



capacity, which reads-in in sync with the remote feed and reads-out in sync with the switcher's inputs. Unfortunately, the frame synchronizer delays the video by about a frame (depending on the difference in sync positions).

Signals from Europe, Africa and parts of Asia and South America need to be **standards converted** to change them from 625 scanning lines at 25 frames per second to 525 scanning lines at 30 frames per second. Standards converters usually introduce a video delay of one or two frames. Finally, the digital video effects units associated with video switchers introduce their own delay of a frame. The result? Audio and video may end up out of sync by from one to four frames.

Video is also being distributed these days by satellite, cable television, cassettes and disks. Of these, the only one causing problems for television audio people is cassettes. Remember 15 ips versus 7½ or 3¾ or 1-7/8? Well, home videocassette recorders operate at speeds of less than half an inch per second! Bear in mind the resulting frequency response if you're mixing for that medium.

## • PRESENTATION •

Though paper cones connected to electromagnetic coils are the most common transducers from audio signals to sounds, they are by no means the only ones. There are electrostatic speakers, corona discharge speakers—even blowtorch speakers. Still, everybody thinks of the same thing then they hear the word "speaker."

The same thing is true in video. There are video projectors and there are flat-panel video displays, but the primary device for viewing a television picture is the television picture tube.

Like the camera tube, it contains an electron beam, this time striking a photoemissive area rather than a

photoconductive one. Like the beam in the camera tube, this one is swung around by magnetic fields generated by a **yoke** of coils around the tube's neck. In a color picture tube, the magnetic fields need to be extremely precise, since a misadjustment will cause colored fringes to appear.

Here is one of the areas where video and audio just don't mix. A video picture tube is very sensitive to magnetic fields; a speaker contains a large magnet. Stick a video monitor on top of or next to a speaker and you'll distort the color, at the very least, and possibly the image as well. Where, then, do you place a video monitor? On top of an audio mixing console? That's not a very good idea, either. The coils that generate the magnetic fields used for deflecting the electron beam can induce noise in many audio circuits. In fact, even sitting on a stand in the middle of nowhere video picture tubes can be a problem in audio studios—the horizontal line frequency is occasionally audible, depending on the construction and condition of the set.

By the time tv sound gets to the consumer, it'll arrive either via a tv set or as an FM stereo simulcast. Though sets are improving, there are an awful lot out there that make that sound of a pocket transistor radio seem great by comparison. The dynamic range of a video signal is ultimately limited by the brightness capability of the picture tube and the light on in the room where it's being watched. That's about a twenty-to-one ratio at best, so tv engineers compensate by using manual or automatic contrast compression techniques. The dynamic range of a tv audio signal is also quite limited (by the set and listening environment) so tv transmitter engineers compensate for that as well by compressing and/or limiting the audio signal severely. As the equipment used at a tv transmitter is unlikely to match the quality of that available to an audio mixer, you might want to do some of that compression yourself, before the program gets to the transmitter.

## • FROM IMAGE TO IMAGE •

Ready for a review? Okay, here's how a television picture gets from scene to screen:

A lens (roughly equivalent to a microphone interference tube) focuses the image on a television camera tube (roughly equivalent to a microphone element), turning the image into an electronic signal. Part of that signal is synchronization information, coming from an internal or external sync generator which has no audio equivalent. The signal may be recorded on video tape recorders, which are equivalent to audio tape recorders, but which utilize



## Video Focus



Ampex systems shown at the National Association of Broadcasters convention include (clockwise, from lower right) the VPR-2B helical videotape recorder, the SMC-100 slow motion controller, the HPE-1 edit motion controller, the VPR-20 helical protable VTR, and the TBC-2B digital time base corrector.

rapidly spinning video heads. The signals from two recorders may be mixed, but to do so, their signals must be synchronized to within billionths of a second. A video switcher is roughly equivalent to an audio mixer, but is more complex, due to the sync signals. It also tends to have far fewer inputs and outputs than an audio mixer. Image enhancers and color correctors are roughly equivalent to audio equalizers. Video equalizers exist, but are used only for circuit compensation. Digital video effects units and such switcher functions as wipes and keys are roughly equivalent to audio processing gear. Video editing stopped using razor blades a long time ago; video editing equipment is now most similar to audio synchronizing equipment with a few bells and whistles thrown in. Time, in color television, runs 3.6 seconds an hour ahead of the real world. After editing, or, occasionally, with signals from a live source, a program might have to be re-synchronized as part of the transmission process. This re-synchronization process (and other video processes) can create an offset of one to four frames between video and audio. Then bright titles will cause many sets to buzz, the transmitter's limiter will reduce your audio's dynamic range to 6 dB, and a tv critic will record the show on a home videocassette recorder, reducing the upper frequency range to perhaps 3 kHz. The video, on the other hand, will be transmitted perfectly (thanks to test signals which monitor and even correct transmission circuits while they are in service) and viewed with great pleasure.

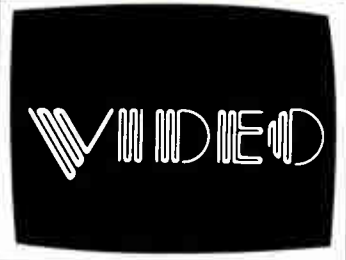
The program will get a great review, qualified, of course, by a comment about the audio.

Oh, well. ■

3M/NEC TT-7000 Video tape recorder.



# Developing the First VTR



## INTERFACE

## An Historical Retrospective

by Ken Fay

In April 1956, the ability to broadcast from tape revolutionized the television industry. The event climaxed four years of work by a six-man team at Ampex Corporation that would not give up its dream of recording television pictures on magnetic tape.

The story of how that dream came true started in 1951 with the arrival of Charles P. Ginsburg at Ampex. Ginsburg, now vice president—advanced technology planning, joined the Redwood City, California, firm for the express purpose of putting pictures on tape.

At the time of Ginsburg's arrival, Ampex made professional audio tape recorders for radio broadcasters and recording studios. But it didn't take much business acumen in the early '50s to realize that recording pictures on tape with the same ease and versatility with which sound was being done would lead to a large pot of gold at the end of the rainbow.

While the prize was obvious, the path to it was strewn with so many technical roadblocks that only the rich or foolhardy could pursue it. Two affluent organizations—RCA in the U.S. and the BBC in England—were committing skilled staff and healthy budgets to developing high speed videotape recorders if only to prove that pictures could be put on tape. The machines worked to some degree, but they gobbled up thousands of feet of tape in a few minutes and were commercially impractical.

While Ginsburg and his team were quietly experimenting with rotary head principles (the tape moves slowly and a magnetic head revolves rapidly), singer Bing Crosby also recognized the financial potential and set up his own experimental group in Hollywood.

Fortunately for Ampex, this well equipped and amply funded group also went the route of fixed heads and high speed tape, a blind alley that was eventually to be abandoned by everyone when the first Ampex videotape recorder was introduced in 1956.

What was so difficult about developing a VTR? Surrounded now by a gamut of tape machines of all sizes and shapes, it seems in retrospect that it

must have been easier than it was.

In the late '40s, high fidelity audio tape recording was still a technical achievement of some novelty. While our ears need only 15,000 cycles per second to hear satisfactorily, our eyes demand at least 4 million cycles per second for acceptable pictures and no known magnetic mechanism of that era could even come close to that figure.

Ampex explored the idea of departing from narrow (1/4" wide) tape moving over stationary magnetic heads and trying wider (2" wide) tape moving

**The Ampex Video Tape Recorder Design Team (l. to r.) Phil Gundy, Shelby Henderson, Alex Maxey, Fred Pfost, Ray Dolby, Charlie Ginsburg and Chuck Anderson.**

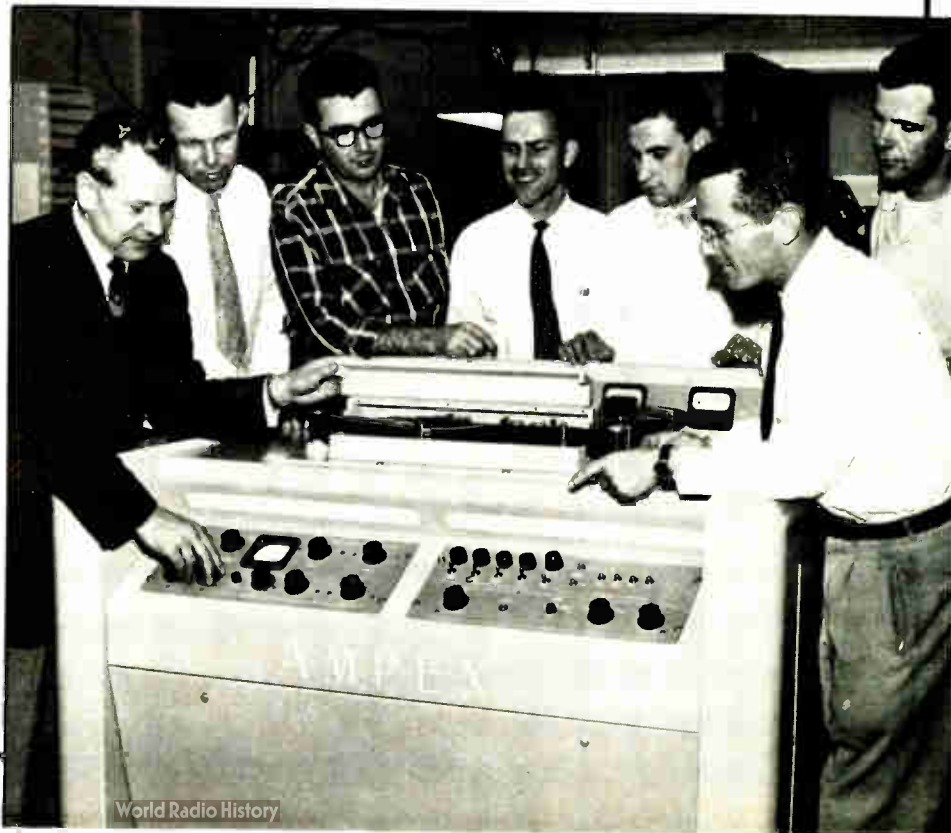
During the early development of the VTR, Mr. Ginsburg had an associate by the name of Ray Dolby. This young and brilliant student contributed enormously to the project. As his employment was only a summer job, the team feared the loss of Mr. Dolby back to academia in the

relatively slowly (15" per second) past rapidly revolving heads.

After some early experiments that were disappointing, Ginsburg was fortunate to encounter a part-time Ampex employee and college student, Ray Dolby, whose interest and dedication to the early video recording attempts led to some measure of success.

By November of 1952, Alexander M. Poniatoff, the company founder, thought it appropriate to issue a memo attesting to a witnessed video tape playback whose spectators were him-

quickly approaching fall semester. Sensing Ray's value to the project, Mr. Ginsburg went to his Ampex superiors with a request for a raise for the young engineer. Permission was granted and Ray received a whopping \$300/month raise, all the way to \$350/month! In response to this vote of confidence, Ray dropped out of school to pursue this opportunity...just long enough to lose his student deferment and become drafted into the service.



World Radio History



## Video Focus

In a paper given to the Society of Motion Picture and Television Engineers, on Nov. 13, 1980, Charlie Ginsburg shared his feelings on Ampex's recently departed founder.

"Alex Poniatoff died on October 24, at the age of 88. He was an energetic, enthusiastic, warm and appreciative man, who provided us at the most critical times with the only kind of environment in which that development (video tape recording) could have taken place—isolation from management.

"At a particularly discouraging point in my career at Ampex, I had the incredible distinction of being physically grabbed by the shoulders and shaken by Alex—who was then the Chairman of the Board—and told that if I had any guts, I'd stick it out, and that the good guys win in the end. He still recalled and laughed about it with me less than a year ago. We will miss him."

self, Ginsburg, Dolby and the company's patent attorney. He commented in the memo that this was being done in case of future patent problems, a prophetic statement in view of the subsequent scramble to patent other VTRs around Ampex's original creation.

Ampex was neither large nor wealthy enough at that time to assign unlimited priority to what was then called the TVR project. But that didn't prevent Ginsburg and Dolby from living and breathing the dream of committing pictures to tape.

In 1953 Ginsburg convinced management to spend a few more precious hours and dollars. The results were promising enough to increase the development team to six people, including engineers Charles Anderson, Alex Maxey and Fred Pfost. The final member was Shelby Henderson, a machinist who built and designed the mechanical components.

The group faced some difficult problems. In 1954, no tape manufacturer made a suitable tape, no magnetic heads worked at the desired frequencies, no signal systems could cope with the fluctuations from poor tape, and no motors rotated smoothly enough to make stable images.

The list of secondary problems was endless, and most agonizing was the inter-dependency of the solutions; curing one thing often upset something else. The task was split up so that each man worked on his area of interest and expertise.

While there was a high team spirit and endless effort toward their mutual goal, there were also some low psychological valleys when announcements of imminent success came from RCA or the Crosby organization. But the group maintained its optimism by reading the fine print in the news releases; there were still a few minor technical details to clean up, like getting more than a few minutes of playing time from a reel of tape three feet in diameter.

Ginsburg is credited by his colleagues for not only the concept but, more importantly, for maintaining the momentum of the project in the face of

seemingly unattainable objectives. Each team member worked with patience and precision to break the bottlenecks: switching, the FM signal system idea, the miniscule magnetic head assemblies, and the dynamics of tape scanning to build a basic system that has held for 25 years.

The fruits of their labors became apparent April 14, 1956, when the first videotape recorder was demonstrated at a meeting of 200 CBS affiliates in Chicago.

The audience of TV engineers and

station managers, realizing they were witnessing history, stood up, stamped, cheered and whistled their approval.

The National Association of Radio and Television Broadcasters convention followed that demonstration, and Ampex left the convention with orders for \$4 million worth of its magnetic miracle.

Today, the worldwide broadcast industry has absorbed well over \$1 billion worth of high quality VTRs and accessories for TV program origination, sophisticated editing, slow and stop or reverse action, and all the other unique effects that are daily fare on the airwaves. ■



This photo of Richard Nixon and Nikita Khrushchev observing one of Ampex's first color VTR's was actually the beginning of the famous Kitchen Debate. Originally Nixon and Khrushchev were supposed to have a short ceremony opening the American National Exhibition in 1959. This ceremony developed into a full scale debate with barbs exchanged in both directions. Ampex had been authorized to tape this ceremony and unexpectedly captured the entire exchange. Phil

Gundy then Ampex division manager, had the presence of mind to place the tape in his suitcase and quickly head for the airport. Whether the Russians didn't understand the technology or some poor customs agent didn't get the word, Phil and the tape made it to New York.

By the following day Richard Nixon had captured the attention of United States patriots with his bold defense of truth, justice and the American way.

**Video  
Focus**



PHOTO: ELISSA KLINE

# BOB LIFTIN REGENT SOUND

## MERGING TECHNOLOGIES

by Bruce C. Pilato

“We link the audio to the video,” said Elissa Kline summing up in one basic sentence the purpose of Regent Sound Studios. “We may not be glamorous, but we sound great.” Kline, who describes her job with the studio as

being “everything from the janitor to the boss to the cop to the mommy,” is in reality the studio manager, and since her association with the studio (which began in 1977), there have been a number of drastic changes.

Located on West 56th Street in the heart of New York City, Regent Sound Studios was known since its inception some 23 years ago as primarily an

audio facility for *records*, until a few years ago when it became almost exclusively an audio facility for *video*.

The owner and mastermind behind the large operation is long time audio engineer and innovator Robert Liftin. Liftin, who reminded me of someone out of a Charles Dickens novel, is probably one of the leading audio recording experts in the world. Aside from

*Continued on page 34*



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*Continued from page 32*

being one of the true pioneers in modern recording, the man is one of the most sought after television audio engineers in the business. Among his credits are Saturday Night Live, The Miss America Pageant, The Grammy Awards, and countless others. In addition to being a walking history of recording technology, Liftin has long had close ties with major manufacturers such as Ampex and MCI and has worked with their engineers to develop substantial improvements in equipment that most engineers probably just take for granted.

Liftin has come a long, long way with Regent Sound in the last 23 years, but, proportionally speaking, his greatest achievements have probably come in the last five years. When it comes to adding audio to a film or video work, Regent Sound stands alone as the king in terms of accuracy and fidelity.

There are three studios inside Regent, Studio A (46' x 32'), Studio B (20' x 16') and the nearly completed Studio C (17' x 10') which will be used mainly as a vocal overdub room. Each studio has a fairly large control room, measuring 16' x 18', 16' x 20' and 16' x 14' respectively.

The studio has four Ampex MM1200 (with P.U.R.C. and rehearse functions) 24 tracks, plus several other Ampex machines and each control room employs MCI 528 consoles.

All film and video projects are transferred to 3/4" video tape cassettes and the studio has Sony 2800 and 2860A U-Matic machines with joy sticks for playback. It also has two Ampex VPR-2 type C 1" video machines with Dolby, Convergence 103 C Editors with ADR, and Magnatech 16/35 mm Mag Dubbers. The studio's single most important piece of equipment is probably its EECO MQS computer, which links up three machines for synchronization.

The studio is now almost exclusively a video post production house, although they do some pre-production, when required. It was just recently that the studio cut out record work, yet the change came about gradually. "It started out with a few agencies saying 'Well, can you put this to picture instead of recording it here and then taking it to a video house?' Kline told me. "The clients wanted to do more and more here because it became easier and Liftin got more and more into video."

The history of Regent is one of progression and modification through trial and error and a hell of a lot of ingenuity. Regent opened on March 15, 1958 with one studio and a disk cutting room with two lathes. Johnny Maestro & The Crest's hit, "Sixteen Candles" was the first chart record to come out of studio A. By the end of its first year, the studio had also chalked up hits by Little An-

thony & The Imperials, The Chantels and The Flamingos.

The following year Liftin added Studio B and installed the first Neumann Lathe with variable pitch. There was a period of three consecutive weeks that year when 37 out of the Billboard Top 100 records were either cut or mastered at Regent. In the late 1950's and throughout the sixties and seventies the studio played host to the likes of Connie Francis, Duane Eddy, Gary "U.S." Bonds, The Duprees, Roberta Flack, Aretha Franklin, Eric Clapton, Les McCann, Roland Kirk, John Coltrane, Tony Bennett, Bette Midler, The Allman Brothers and countless others.

In 1973, jazz artist Les McCann came to Regent to record an album and inquired if more than 16 tracks could be made available. This was something that Liftin had been working on and by purchasing the first synchronizer from EECO he was able to lock the 16 track machine in Studio A with the 16 track in Studio B to achieve a total of 30 audio tracks. It was this innovation that eventually led Liftin and Regent into pre and post production of television shows, films and commercials.

**W**hen I asked Liftin to *briefly* explain Regent's transition from audio to being a pre and post production video/audio center, his reply, in essence, covered the entire history of modern recording and how it revolved around Liftin and his studio.

"You have to go back a little to the beginning of 16 track," he told me at the onset of our interview. "The 16 track medium was really an outgrowth of being able to store massive amounts of information without having to commit them to a mix. 16 track was designed so that you could mix down in true stereo. In the old days when we just had four track and eight track, you really had to commit stereo mixes for piano, keyboards, drums and that kind of thing because you just didn't have enough tracks. A problem arose with the advent of sweetening, where you were able to overdub strings and horns. Prior to 1965 it was illegal to have musicians come in and overdub parts without paying the rest of the band." (By the way, it is still illegal in television where you cannot split an orchestra.)

According to Liftin the problem actually goes back even further, to 1958, the same year that he opened Regent. Back then the American Federation Of Musicians (AFM) contract stated that the artist and the band could not be split, therefore overdubbing itself was illegal. It was also hard to break these rules because the union strictly enforced them. Liftin, at this point was working with 2 track mono machines.

The following year, Liftin purchased one of the earliest 3 track machines and began making stereo recordings, putting the orchestra on tracks 1 and 2 and the vocalist on the third.

Then 4 track became available, which enabled an artist to have a band, and backup vocalists. "That was really the thrust of four track," said Liftin. "You couldn't put backup singers on a separate track previous to that. The union also allowed overdubbing and band/artist split by this point which brought on a method of overdubbing which is also known as track bouncing.

Liftin pointed out that many early recordings of 4 track machines in the 60's, such as *Meet The Beatles* were not true stereo recordings, but rather tracks that were committed to either right or left channel's. "Well, in essence what you were doing was combining and layering."

Hence, the race for more tracks began with Les Paul and Atlantic Records house producer Tom Dowd in the forefront, and Liftin not far behind. Dowd and Atlantic had the first 8 track machine in the late 50's and early 60's, made by Ampex especially for them. However, it was not without problems. Liftin said that the head stack would get so hot on that machine that if you stopped the tape you could burn a whole in it, if left unattended.

In 1962 Liftin went to Chicago and met with a company called IEM who custom built him an 8 track head stack which Liftin mounted on an Ampex 300 4 track machine. "I bought some one inch tape guides, four more electronics for the doghouse and hung them on the transport. And that was our first eight track. I mean, it was a real kludge, but it worked."

By 1964 Liftin was off and running on a regular basis with 8 tracks. He was mostly involved with making records and was also heavily working in putting together sound systems for that period's hottest Broadway shows.

In 1969, Ampex came out with the MM1000 8 track machine and Liftin had the ninth one to come off the assembly line. The console was expanded from 12 to 18 inputs and a few years later when 16 track became available, it was increased to 20 inputs.

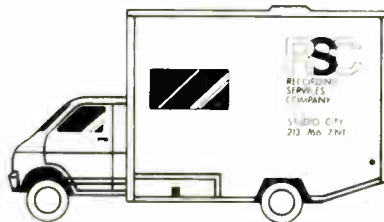
It was also in 1969 that Regent began doing recorded music for television. "We'd give them four tracks," said Liftin. "Rhythm on one channel, strings on another, brass on another channel and vocals on the fourth. And then they would hot mix directly to mono in the studio."

"Up to this point, most music on television did not use tracking, or rather playing back to audio tapes. Everything

*Continued on page 36*

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Continued from page 35

PHOTO: ELISSA KLINE

was recorded live and recorded onto video all at once. But the motion picture industry from early on was recording music separately and playing it back on the set. Remember, the motion picture industry had a way of synchronizing sound through sprocketed 35 mm film, as well as Nagra Pilotone, which was a sync signal placed on a 1/4" tape that allowed you to play back something exactly the way you recorded it. So the motion picture industry had multi-channel sound years ahead of the record or television industry.

"The way the motion picture industry operated was that they would record one track on a mag dubber and then they would interlock many mag dubbers, as many as thirty machines to allow for up to thirty tracks. In fact, if you look back to 1957 or 1958 all of Bob Fine's Enoch Light recordings, you know, Persuasive Percussion and all those albums, were recorded on 35 mm film.

"So, getting back to 1969," said Liftin realizing we were getting off the track, "we started doing these TV shows and doing the music for them. The problem was once you did the music and the guy played it back into the recording, that was it... you were stuck with it. That was the mix because, obviously, video tape had no multi-channel machines attached to it.

**A**s the early seventies arrived, video editing became more and more frequent. Liftin was determined to get audio prerecords mixed onto video tape and do it with a relatively easy and accurate process. It was in 1973, when Les McCann asked Liftin to come up with more than 16 tracks, that the real progress was made.

Liftin, in working with the Ampex company, set out to overcome two major problems with audio tape machines:

synchronizing their motors and getting the audio tape to line up exactly.

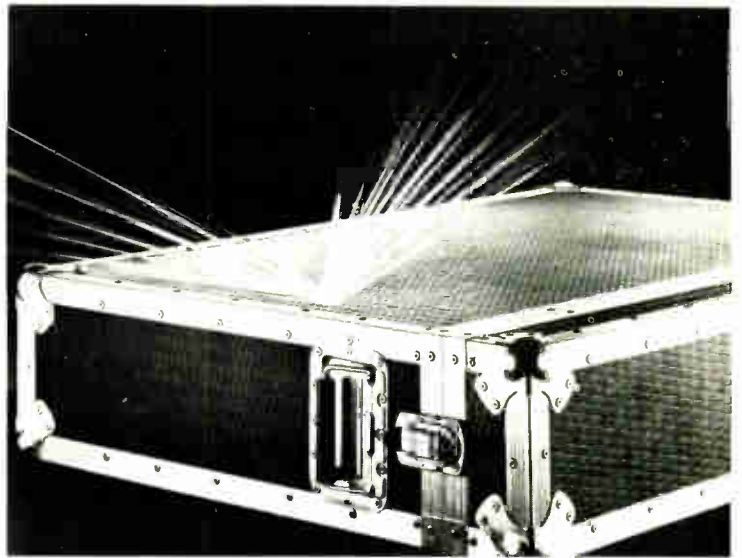
"You see," Liftin told me in an animated voice, "there are two terms that are bandied around that people don't understand. One is the term sync and the other is the term synchronization. The two are not the same. What sync means is that you can run a machine at the exact speed that it was when it was originally recorded. Now the problem with sync is that if you ran two machines, how do you start them exactly together? In order to get them to run exactly together, that's synchronization."

In working with the engineers at Ampex and other companies, Liftin helped solve both these problems with the innovation of SMPTE time code (which in effect put imaginary sprocket holes on the audio tape allowing for synchronization) and the DC servo motor, which solved sync problems with motors and then brought about variable speed pitch control.

During the period from 1975 through 1977, Liftin worked with engineer George Sweatland from EECCO and made innovations which resulted in the new generation of synchronizers. "The change that we made was that when the slave machine addressed the master machine so that the numbers would be the same, once the numbers were clocking the same, each machine would then look to one central sync source to clock its time code numbers. So now, if anything happened to the master machine (such as a hic-up) it would not be reflected in the slave machine and that reduced the wow and flutter on the original machine."

In the same time period Ampex came out with a device called the RA4000 which allowed a person to put different time codes on different tapes. This was originally designed for video editing, allowing for different time codes to be intermixed.

Continued on page 38



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## Video Focus

**B**ut a problem resulted from this new invention nearly every time a video edit was made. "The way they would edit was to copy the video tape again onto another tape. In video the loss of a generation isn't too bad because of the many correction devices that exist, such as time base correctors, so they could reconstruct the video picture and go four or five generations without any major degradation in the video quality. But the audio just kept being copied over and over again! This problem was further compounded by the fact that on the original Quad 2" video machines with four video heads, they recorded over the entire surface of

the tape; which meant that they over-recorded on top of the audio track. That is why on television programs we sometimes hear a low grade buzz. That buzz is the video head scanner going over the audio track. So, we've got this mass of information on 30 tracks and we're recording all this TV sound that is getting butchered because it's getting copied over and over again."

By this point, 1975-1976, Regent Sound was still heavily into record production, but was increasing its video post production work on a regular basis. Liftin took a good long look at trends within both the record and television industries.

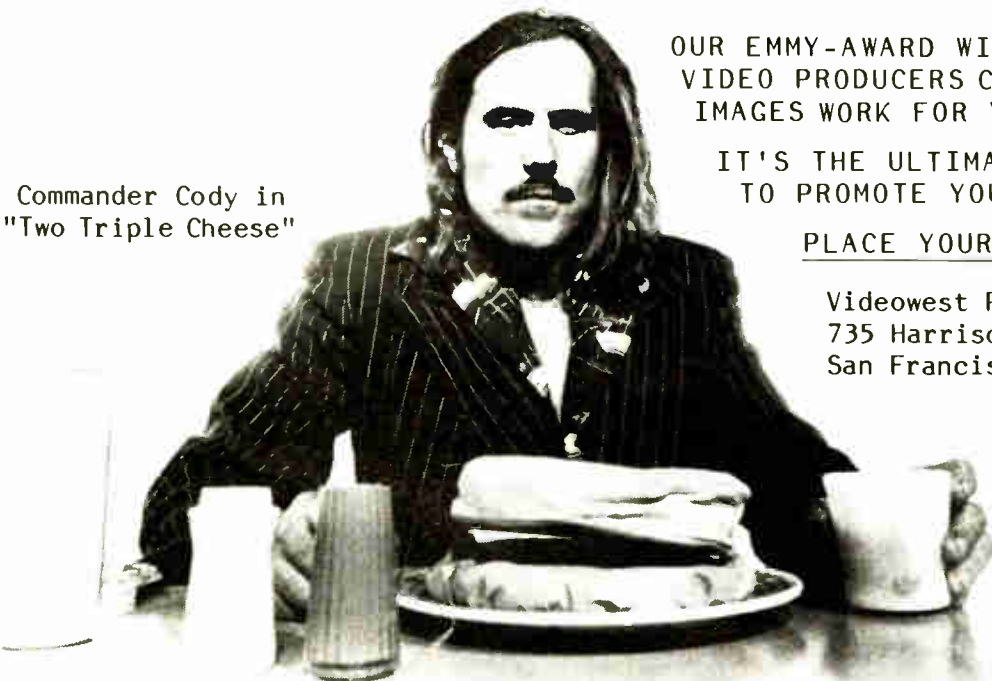
"I felt two negative things were happening, I was dissatisfied with one: the quality of sound on television; and two: with the increased track capacity and storage medium (which is what it was designed as.) In other words, instead of having to get a perfect take, you get a good take of the first eight measures, a second good take of the next eight measures, so on and so forth. And then you could mix them together to get the best takes of the best measures, thereby having a mix that would save time and money. However, the reverse happened. It started costing much, much more money because they ended up spending much more time in

the studio and the studio time was much more expensive because you had to pay for all this equipment. So, whereas we used to record a 16 track session for \$95 an hour, the initial 30 track sessions ran for \$175 an hour just to amortize this expensive equipment. So all of a sudden you were ending up with all these albums that were running up studio time of between \$50 and \$100,000, which was not economically feasible for record sales. Now we tried to correct this by building micro-processor systems that would make the machines work faster but this wasn't really helping anything because the producers and the artists were so overwhelmed by this flexibility and the dimension of it. The layering was fantastic, I mean, the sound was incredible, but the cost was astronomical.

**S**o, in late 1976 Liftin started concentrating heavily on television sound and primarily on trying to figure out a way that he could edit sound so that after he had gone four or five generations with the video, the original audio could be laid back to the finished video master. This would not only get rid of the annoying low grade buzz but would allow a person to have 2nd generation audio, as opposed to 7th, 8th or 9th

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generation audio.

"We continued with the record business because the television audio business did not exist in 1976. Because, when you went to a video house in 1976 or 1977 to edit your video show the audio was free. It was just there, you didn't pay for it. So why should a producer spend money now to post produce his audio when that wasn't even an expense that was in the budget?"

Little by little business did start to filter in and Liftin started doing programs where he was able to lay back audio on to Quad video tape. Liftin couldn't afford to go out and buy a Quad video tape machine because even an inexpensive one was in the area of \$50 to \$75,000. "And what do you charge for that thing? I mean, the video houses were getting \$100 an hour per machine but an audio house could not get \$130 an hour plus \$100 an hour for the video machine, so we had to think of another way."

That other way emerged when Liftin had Ampex build him an audio head stack for a Quad video tape machine that would plug into and fit on top of a 16 track machine. This allowed Liftin, by using SMPTE time code of a cue track, to synchronize the original audio masters with the Quad video master (since both employed 2" tape) and then

lay the audio back on an audio tape machine which had better electronics than a video tape machine. Liftin was now also working with a better signal to noise ratio and was able to put a better level on it.

"**A**t this point we started laying back all the stereo audio for the Great Performances series on PBS. This was 1978. So now we had a method for laying the audio back. But... we had another problem! How did we look at the video while laying the audio back? Because, as you remember, we didn't have a video machine, we had an audio machine.

"So we went to 3/4" cassette and we had the video house copy the Quad video tape onto a 3/4" cassette placing the time code that was on the Quad master tape on one channel of the cassette tape. And then we had that synced with our audio situation, but that created another problem because the cassette machine had very huge time base errors and had tremendous wow and flutter. So we went back to our original plan which was to lock up the cassette machines first to a house sync source and let the motors sync up. And the video was locked to a phase reference, or a sync reference. Then the



audio machines would address the video machines so the time code numbers would be in synchronization. Once the audio machines got in synchronization, they would then take their time codes and look at the sync signal and clock to the house sync so that they were not reflecting the wow and flutter of the cassette machine. And the interesting part of this whole method, which we designed and many synchronizers didn't have, was that we ran into this problem in 1973 with two 16 track machines!

"It occurred to me that the way the '80s were gonna move was that records were not going to die, just like radio didn't die and movies didn't die. Video disks and cable were not going to replace the audio record. But, what in-

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trigued me was that video technology was moving at a rapid pace based on productivity. In other words, when you did an editing session on video in 1977 and you paid \$250 an hour, in 1981 you may pay \$400 an hour but you can do the same edits that you did in 1977 in half the time because the editing machines are faster. The reason you're paying \$400 is because you're paying for more peripheral gear, special effects generators, chromikeys, and that kind of stuff. So, it occurred to me that the video industry was going to be forced to be competitive (to keep the industry alive so it didn't bankrupt itself) to be productive.

Liftin figured if he could take the productivity of the video technology and marry it to audio he could upgrade his equipment, increase his productivity, stay competitive and not bankrupt his customer. "And that's when I started going to NAB (National Association Of Broadcasters) shows to take a look at what the video people were doing and how they were doing it, then relating that technology to audio techniques and film techniques. And that's where we made the change and we were different from everybody else.

"We didn't say 'You have to take video technology and re-learn how you do things.' What we said was, 'Let's use the techniques that we've used over the years with film and records, and let's marry it to the current technology. Let the technology relate to us with the techniques that we understand.'" "If you see the loops of this," Liftin said slowing down his quick Brooklyn pace for the first time in our lengthy conversation, "you can understand how and why it progressed."

Liftin, looking ahead, says it's only a matter of time before he and Regent Sound Studios return to recording audio records. "I see us going back into records, not right at the moment, but in the near future, with this kind of technology so that it will increase the productivity and still give the producers the flexibility and the storage capacity that they warrant. And this goes for automation, as well."

Regent Sound is automated, but as Liftin put it, "still in the very early stages of it." He also plans to transfer eventually to digital tape machines because, he says, "If you look at digital machines in the way they are edited, they are edited with video technology." That's the whole point! It ties together. It's audio using video technology."

"We've come a long way and it's been a very hard battle," said Liftin in retrospect, "but it's been well worth it. We are doing stuff today that people just a few years ago used to dream about."

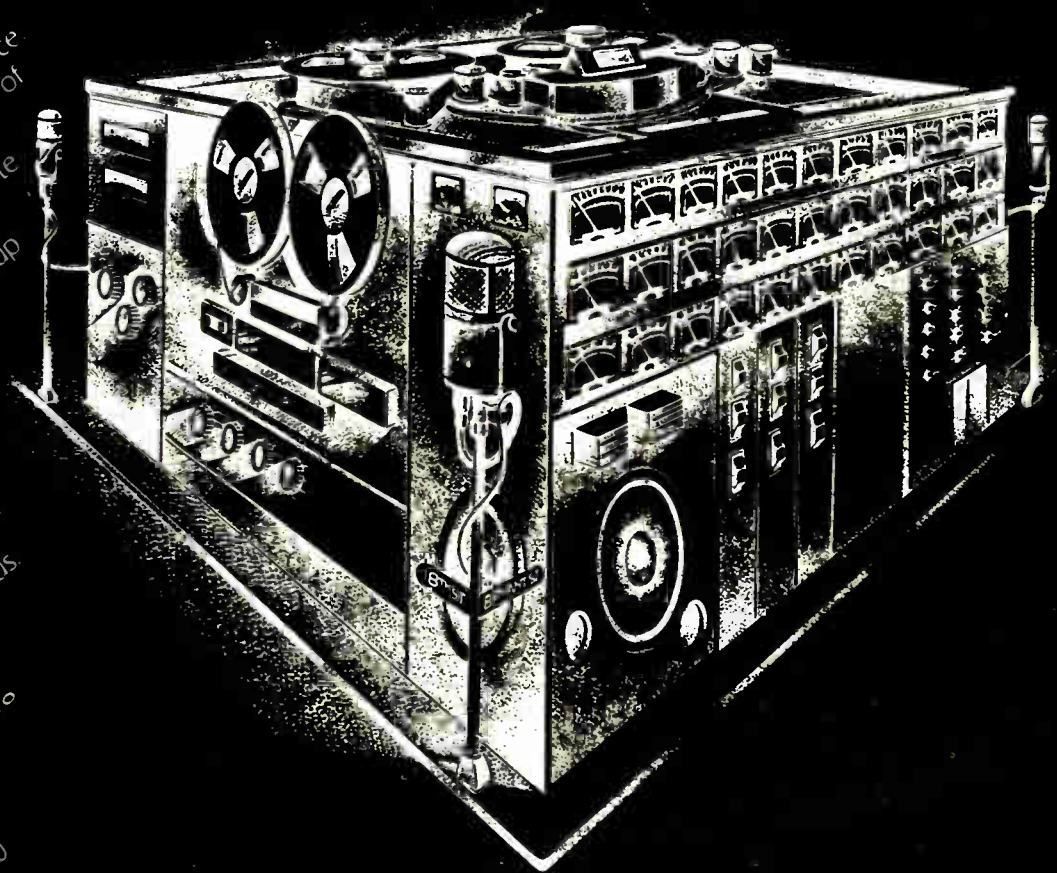


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## Video Focus



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# moogy klingman

## master of diversity

by Bruce C. Pilato

On the opposite side of 54th Street and sandwiched in between an all-male X-rated theatre and what used to be New York's swankiest disco, Studio 54, is the entrance to Hi Five audio/video recording studios. Good thing I had the street address, otherwise I'd never have found it.

The small entrance and slow, clanky elevator ride up to the fifth floor, however, are quite deceiving. Inside, the studio was alive with activity. Video editing going on in one control room, set design in another, and rock 'n' roll wafting through the reception area and waiting room.

An hour late and absolutely unphased, in walks Mark "Moogy" Klingman, president and chief executive of Hi-Five. "Hi-ya," he says with a boyish grin, "sorry you had to wait... I got tied up." Apologies aside, we toured the facility and then sat down to discuss the marriage of the audio and video industries and how it all related to Klingman and his operation.

A successful musician, composer, arranger, and producer, Klingman was

one of the few music industry people to fully realize the potential and inevitable infiltration of video, early on. Since this past January he has operated Hi Five, his third studio, and for nearly two years he has hosted and produced his own rock 'n' roll cable television show, *Manhattan Alley*.

Hi Five studios are located in what used to be Bell Sound Studios, one of America's most historic pop recording centers that, in its day, hosted the likes of Buddy Holly, Frankie Lyman, Bobby Daren, Paul Anka, The Lovin' Spoonful, The Rolling Stones and countless others.

Klingman moved into the building nearly a year ago and gradually remodeled it and filled it with the best audio and video equipment he could afford. Studio A is a 25' x 40' room with an 18' ceiling, and a 13' x 20' control room. The console is a 32 input, 16 output Tangent board, wired into a TEAC 85-16 sixteen track tape machine with dbx noise reduction. Studio A has "BIG RED" monitors and Auratone sound cubes.

Studio B is smaller (17' x 18') with a

TEAC Model 5/5ex 16 x 4 recording console and a TEAC 80-8 eight track recorder with dbx. The monitor system consists of JBL 4311 studio monitor speakers and Auratone sound cubes. Both studios have access to dbx compressor/limiters; Roger Mayer noise gates; Ashley, Pultec and Tapco equalizers; AKG reverb units; MXR flangers and live echo chambers.

The video facilities include four Sony 1610 color cameras; a Model 370 Shinitron special effects generator; a 3M Color Bar and Sync Generator; a floating video control room; Sony 3800, 2860, 2260 and 1800 video recorders; a Sony RM430 editing control unit; triple Panasonic monitors; assorted Beta & VHS machines; Davis & Sanford tripods and dollies; and a complete lighting grid.

Hi Five, in essence, is a 16 track audio recording studio with moveable video capabilities. In addition to 1000 sq. ft. of indoor space, the video facilities can even be moved to the studio's rooftop overlooking Manhattan's West end for colorful remotes.

Continued on page 44

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# Video Focus

Continued from page 42

According to Klingman, Hi Five is a complex "geared towards the developing entertainment markets and industries of the eighties." The studio is, however, very modestly priced. "For the same prices that you go into other facilities to record just your audio," said Klingman, "you can come to Hi Five and walk out with audio *and* video, including post-production work."

Moogy Klingman has been active in the music industry for nearly fifteen years. He is best known for his association with Todd Rundgren, for whom he wrote, performed and arranged. "I played with Todd for about 10 years. I did most of his solo and group albums until I quit Utopia in about '78." Klingman and Rundgren have remained close friends with Rundgren guesting on Klingman's TV show and Klingman joining Rundgren on stage at a recent Bottom Line solo performance.

While still part of Rundgren's camp, Klingman found time to write and arrange songs for Johnny Winter, Carly Simon and Bette Midler, for whom he co-wrote a hit single, "Friends." He also opened a small studio in New York with Rundgren and began producing artists such as blues harmonica player James Cotton. He remained an active studio musician



throughout, and even did a few sessions with Bob Dylan.

He left Rundgren to produce an album for Bette Midler entitled *Songs For The New Depression*, and then opened a smaller uptown audio studio called West End Sound.

It was while Klingman was operating West End Sound that he became introduced to video and, more specifically, rock 'n' roll television.

When cable began in New York City a few years back, certain stations became available to the public. For \$50 a half hour anyone could have access to thousands of viewers in the Manhattan area.

His show began in June of 1979 with Klingman primarily featuring rock 'n' roll videos supplied to him by record companies publicity departments and unknown acts that Klingman either found himself or simply enjoyed. "We presented all the unknown acts in New York, acts I was producing and acts that were friends. Then a lot of record com-

panies began to watch the show and started submitting videos."

"Doing a lot of shows with Todd was a big break," said Klingman. "We presented all his videos and we were the first to. We were the first ones to present Joe Jackson and The Police on television at all, network or cable. We scooped a lot of the networks with the Bowie videos, and of course, we've done a lot of lesser groups, too."

In addition to musical selections, Manhattan Alley is also an interview show, with Klingman, of course, the host. Among the more interesting guests have been Robert Fripp & Brian Eno and Dr. John The Night Tripper, dressed in full Creole regalia.

"I took the show off the air for about three months while we were doing construction and work on this studio," said Klingman. The show went back on this past February and is presently shown on cable TV in Manhattan and Los Angeles, Fridays at 11 PM and Saturdays at 12:30 AM. In



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The longer Klingman has produced the series, the better it has gotten. The videos that Klingman has produced himself not only feature live performances in their most energetic state, but he intersplices these scenes with backstage footage to create a "cinema-verite" work.

Since the opening of Hi Five, the show has become much easier to produce and also more financially accessible. "We used to go to one studio to shoot and another studio to edit and we'd go to another studio to use the remote equipment," said Moogy, obviously relieved. "We had to do a lot of traveling. The reason I opened this studio is so we could do it all under one roof."

Moogy and I began to discuss the present state of the music industry and the ever increasing role of video in it. Upon mentioning a recent visit to Todd Rundgren's massive Utopia Video Center in Bearsville, N.Y., and the disgust that Rundgren expressed to me with the video disk industry, Klingman was quick to respond. "He did an interview two weeks ago in Record World," he said leaning over my tape recorder as to emphasize the urgency of his statement. "And what an obscene interview! He put down the music business getting involved at all in the video disk. (He said) it was a shock, it was an illusion, it shouldn't do it, there was no money in it. He said at no costs should the music business leap into video right now. And this was the feature story in Record World! You know, the guy could have drummed up some business for himself, but all he did was spend two pages arguing against it."

"Selectavision is a big step, because there's a lot of music disks being-pressed. The Blondie disk is in the Billboard charts along with all the major Hollywood Movies. And the biggest factor is Warner Amex's new 24 hour cable video channel. It starts August 1st, which will be a big promo for the record industry."

"The world movie market," continued Klingman enthusiastically, "all across the world; England, Japan, Europe, as well as in America, ...it's being devastated by home video. Movie attendance is down now, this week, the lowest point in ten years. And what's being blamed is video cassettes, cable and all the home video stuff. At the same time the TV industry is..." At this point Moogy simply rolled his eyes upward.

"What's happening there, is to put on a television show, inflation is shooting up the prices so it costs double what it cost three years ago to make a TV show, but the revenues are down and every year they're losing the audience. so, the television industry is going into a

*Continued on page 46*

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deep slump. The movie industry is freaking out! A lot of theatres are boycotting certain companies that are putting out simultaneous releases. Like in England, the video cassettes of 9 to 5, Coal Miner's Daughter, and Fame, they've been on sale for months but the movies hadn't opened there. You know what it's like to have a video cassette out six months before the movie? It's going to be old news; it's going to kill it in the theatres there. So the repercussions of this home video thing, just in recent weeks, home video cassette, cable, disk... is just totally destroying and re-defining all the entertainment media.

Moving closer to home, Klingman then began speaking in terms of the recording industry: "Records are being hit very, very hard. Extremely hard. But so is the television industry and the movie industry. So everyone's trying to get on the new bandwagon for the new money and the new dollars. So when we talk about the video disk, the RCA Selectavision, 'It's a rip-off, it's not gonna make it.' It doesn't matter! What matters is it's another product, it's chap and it's having more dollars pumped into it than any of the previous products.

I asked Moogy if people won't just get tired of watching video and simply want to hear music only as we do today with conventional audio recordings.

"Well, the average American watches television seven hours a day. That's everyday. So why would they be any less willing to look their television sets to watch the video portion of a musical number. There are just two arguments that don't hold up: one argument is 'Do you think the audio record is going to become obsolete?' IT IS OBSOLETE! ANd it has been obsolete ever since sales started to plummet in 1978. The recording studio situation is in the gravest danger of any industry there is right now. I mean, everyone went out and bought all this expensive gear and then the bottom fell out of the record industry. That's created a situation in the recording studios that's like eating their young. People are so willing to cut each other for the cost of studio time that they just can't survive. They can only continue their slow death. I mean, if you have to sell 24 track time for \$50 an hour and you just bought \$400,000 worth of equipment that you just purchased with high interest loans, you know it's not really a viable business anymore.

There is something gravely wrong because the new trend in New York City is to open these giant rock clubs, Bonds, The Ritz, etc. They hold between 1,000 and 2,000 people and they're packed. People still want to go out and party but they don't want to buy records. It's a dicotomy; music has never been more loved, but people have never spent money more guardedly than they now do on the

music industry. But the record industry and the recording industry are dying a slow death. It's based on the obsolescence of the plastic record, along with all the piracy and home taping and video in clubs.

Klingman went on to say that he doesn't feel recording studios should go into an instant panic and run out and purchase the first pieces of video equipment they can get their hands on. This, according to Moogy, is not the answer.

"Not to give any words of discouragement, but it would be dangerous to jump the gun, so to speak. In other words, a recording studio moving into video now has to be very slow and very careful, because right now the demand isn't where one would hope it would be with the growing awareness of all the home video outlets. In the music business itself, only recently are things starting to come around (towards video). Not yet are there a whole bunch of signings or new albums being made as video albums. It's still not being done, but everyday we are moving closer and closer to it. Especially in the last few weeks.

"All I'm saying is it's not today the instant answer to go out buy a video camera, because most of America and the music business isn't geared to video. Probably in 12 or 18 months they'll be more geared to go audio and video. Right now record companies still can't see the immediate dollar return on the video promos and because they're so strapped for cash, they're not making them. So the move into video for a studio is one that should be approached with caution."

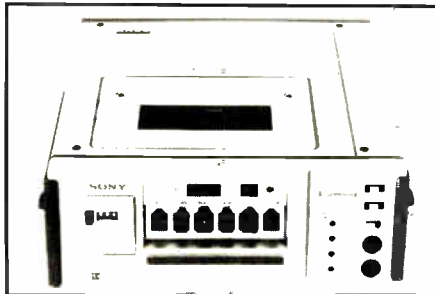
Klingman, as pessimistic as he was about the current state of the record and studio industries, also offered some alternatives for the mediums to consider. "The other ideas for an audio/video facility are not necessarily only for the making of audio/video records. Cable is a very big market. I'm doing a show for cable television now called Prime Time Sports. They're shooting on a weekly basis for cable and we're doing at least two other shows for cable."

"Opening up your studio to video doesn't necessarily mean you want to reach people that just want to make music video, but rather you're opening yourself up to a whole new marketplace: people who want to use cable and do cable programming. Let me also emphasize audio and video tape copies. If you run a copy of something on video you can charge \$50 a cassette. There are pretty high profit margins there. You're opening up into mediums that are still using tape and recording signal; a whole new marketplace and hopefully a new clientele, rather than just a hopeful gamble on trying to get your audio clients to spend more money on video."

*Continued on page 49*

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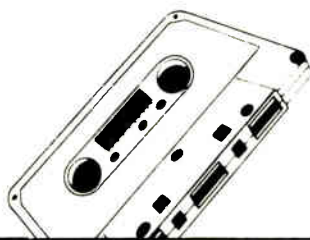
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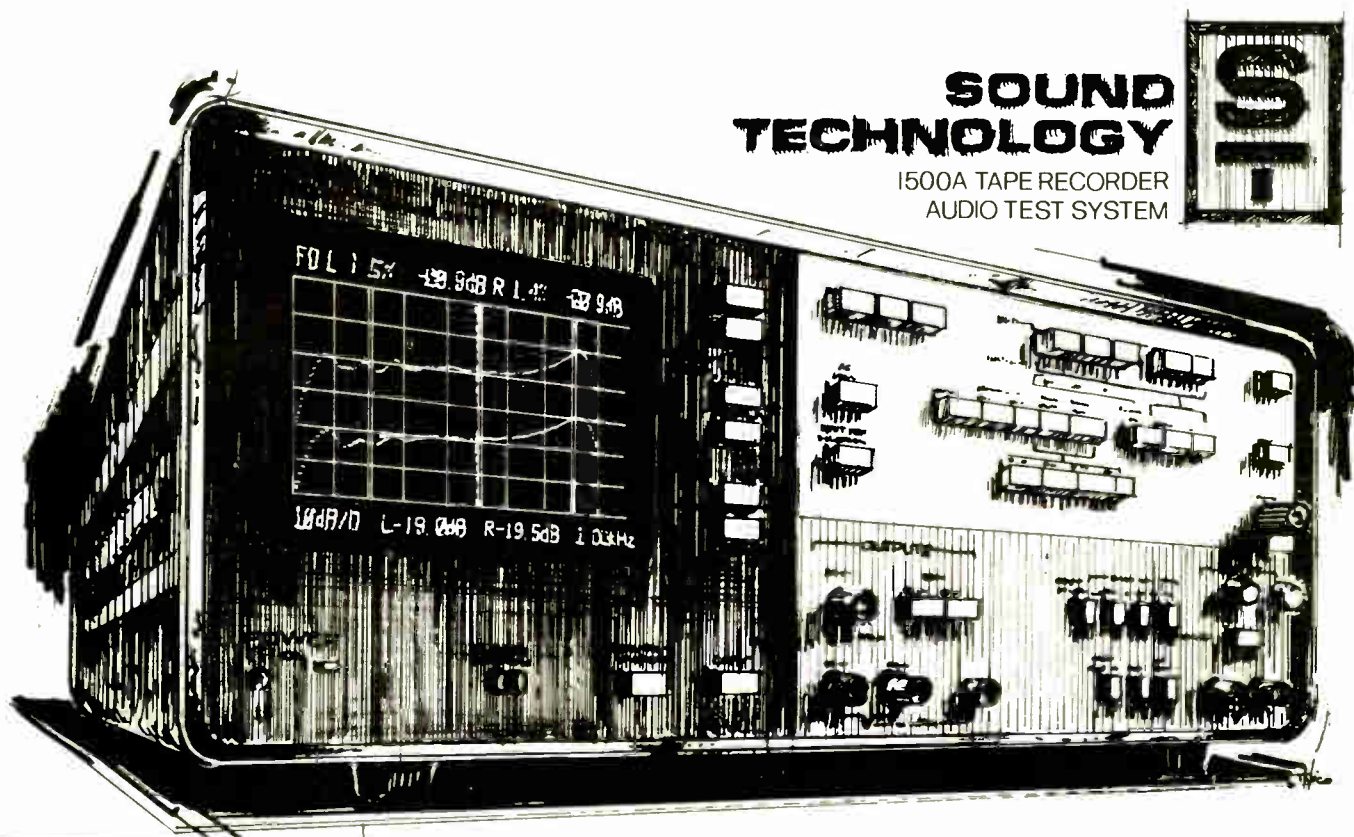
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Klingman, who prides himself on staying right on top of industry trends, has also kept busy with projects at Hi Five. He has done several promotional videos for record companies and paid the overhead by doing advertising jingles. "There's nothing wrong with jingles," he said proudly, "they pay the bills."

Moogy has started a series of instruction courses at his studio, allowing students an opportunity to learn the trade without enrolling in an expensive college or university. "There's a tremendous interest from students in video," said Klingman, "they're not as interested in audio anymore."

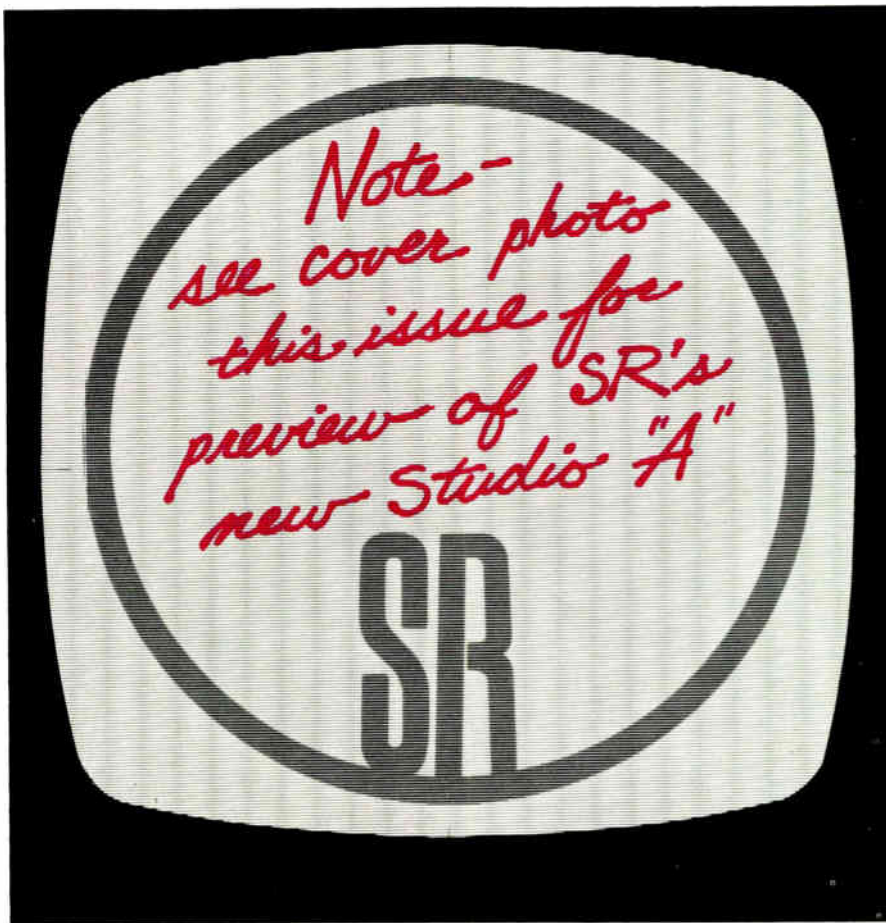
Klingman has continued producing both audio and video projects for any New York groups that appeal to him. In addition, he has formed his own trio, which has done extensive recording, as well as a series of live gigs in New York City's hottest new wave clubs. "I've got a couple of albums in the can," said Klingman, who in 1974 and 1978 released solo albums. "I hope to release them someday soon either independently or with a major (label)."

If all that wasn't enough, Moogy has even found time to help famed motion picture/stage/television star Mickey Rooney record an album of original rock'n'roll songs. Klingman, with a smile, says Rooney is the "most powerful rock singer/songwriter to hit the scene since Dylan or Springsteen," and has captured the event on both audio and video tape, for a potential future video disk.

"Hi Five will continue to turn out recorded audio/video product, but Hi Five is also a production company looking to expand into cable programming, dealing with the different kinds of acts, representing them for the new programming of cable companies and networks, as well.

"So, in terms of a production company, we're looking to not just make audio recordings or even strictly video music recordings but to expand to shows, etc., etc. And putting together a group of skilled people, I mean, I've got a guy here who knows sets, make-up and lights. You never needed those when you just had an audio studio, but when you move into video you need people like that. The people here work like actors.

At this point, Klingman dashes out from behind his desk to lead me into his video editing room where he slaps on a "best of" MANHATTAN ALLEY cassette. As the rock'n'roll insanity radiates from three small video monitors and blares out a pair of JBL monitors, Moogy leans over to me and asks, "So, tell me, whataya think? Pretty neat stuff, eh?" Realizing that all of this was just the beginning off a whole new era, I nodded my head, but my eyes never left the screen. ■



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# VIDEO PRODUCTS

## A Guide To Video Equipment Manufacturers

We have included these listings as a guide for those new in the video area to some of the more active manufacturers and suppliers of video equipment. Most of those firms listed will be happy to send catalogs or promotional information to prospective purchasers, and we strongly recommend obtaining as much information as possible before making the investment into any level of the video involvement.

In future Video Focus sections (now a monthly feature of Mix) we will list and report on other relevant components of the video recording market.

### ADC PRODUCTS

4900 W. 78th Street, Minneapolis, MN  
55435  
Contact: Warren Anderson, Product Manager.  
Video Products: Coaxial Connectors, Patch  
Cords and Panels.

### ADDA CORPORATION

1671 Dell, Campbell, CA 95008  
Contact: Mike R. Maldorado.  
Video Products: Synchronizers, Electronic  
Graphics Systems, Video compressors.

### AGFA—GEVAERT, INC.

275 North Street, Teterboro, NJ 07608  
Contact: Maria A. Curry, Director of  
Marketing.  
Video Products: Video Tape.

### AMTRON CORPORATION

P.O. Box 1150, Aptos, CA 95003  
Contact: Robert Coleman.  
Video Products: Video monitors.

### AMPEX CORPORATION

401 Broadway, Redwood City, CA 94063  
Contact: Lee Cochran, General Manager.  
Video Products: Complete line of video tape  
recorders, special effects and editing devices,  
and video recording tapes.

### ANIMATION VIDEO

(Division of Convergence Corp.)  
1315-B E. St., Andrews Pl., Santa Ana, CA  
92705  
Contact: Carl R. Schultz, General Manager.  
Video Products: Frame-at-a-time animation di-  
rectly onto video tape.

### EMIL ASCHER MUSIC, INC.

630 Fifth Avenue, New York, NY 10111  
Contact: Robert Sandler, General Manager.  
Video Products: Recorded production and  
background music library for all A/V needs.  
More than 1,600 hours of music.

### AUDIOTRONICS VIDEO DISPLAY DIVISION

8299 Central Ave., N.E., Spring Lake Park,  
MN 55432  
Contact: Steve E. Sims, Product Manager.  
Video Products: Audiotechnics Video Display  
Division designs, engineers and manufactures  
video displays and monitors for closed circuit  
television and computer based information  
systems. These displays range in a variety of sizes  
from 5" to 23".

### AVANTEK INC.

3175 Santa Clara, CA 95051  
Contact: Don Smith.  
Video Products: Low Noise Amplifiers for  
satellite earth stations.

### BTX CORPORATION

12 Huron Dr., Natick, MA 01760  
Contact: Ron Barker.  
Video Products: SMPTE Time Code Jam Sync  
Generators. SMPTE Time Code Readers.

### BEAVERONICS, INC.

8 Haven Avenue, Port Washington, NY  
11050  
Contact: John Busharis.  
Video Products: Video Switching Systems; Pro-  
duction, ENG, and Master Control.

### BERKEY COLORTRAN INC.

1015 Chestnut St., Burbank, CA 91502  
Contact: Ken Boyda.  
Video Products: Lighting fixtures, hardware for  
television and motion picture studio and location  
lighting.

### BROADCAST CARTRIDGE SERVICE, INC.

15131 Triton Lane-Suite 108, Huntington  
Beach, CA 92649  
Contact: Bryant W. Ellis.  
Video Products: Broadcast Tape Cartridges,  
Alignment Tools, storage systems, etc.

### CENTRAL DYNAMICS CORP.

P.O. Box 98, Elmsford, NY 10523  
Contact: A.C. Boland.  
Video Products: Production Switchers, Master  
Control Switchers with automation control.

**CINEMA PRODUCTS CORPORATION**  
2037 Granville, Los Angeles, CA 90025  
Contact: Don Dunbar.  
Video Products: Steadicam Video/Film Camera Stabilizing System.

**COMPREHENSIVE VIDEO SUPPLY CORP.**  
148 Veterans Drive, Northvale, NJ 07647  
Contact: Skip Dunn.  
Video Products: Complete line of video supplies and accessories.

**CONNECTOR DISTRIBUTION CORP.**  
5855 W. Centinela Ave., Los Angeles, CA 90045  
Contact: Anne Woodbury.  
Video Products: A large variety of hard-to-find and obsolete connectors.

**CONRAC SYSTEM EAST DIVISION**  
32 Fairfield Place, West Caldwell, NJ 07006  
Contact: Len Blascovich, Product Manager.  
Video Products: Sales service and rental of Eidophor, large screen television projectors.

**CONVERGENCE CORPORATION**  
1641 McGraw, Irvine, CA 92714  
Contact: Richard Moscarello.  
Video Products: Microprocessor-based video-tape editing systems.

**CRAMER AUDIO/VIDEO**  
120 Hampton Ave., Needham, MA 02194  
Contact: Bob Manosky, Production Manager.  
Video Products: Provides everything needed for videotaping—scripting through editing and special effects.

**DATAMETRICS INC.**  
340 Fordham Road, Wilmington, MA 01887  
Contact: Walter Hickman.  
Video Products: SMPTE Time Code Generators, SMPTE Time Code Readers.

**DATATEK CORP.**  
1121 Bristol Rd., Mountain Side, NJ 07092  
Contact: Mervyn Davies.  
Video Products: Video, Audio and time code routing switchers.

**VICTOR DUNCAN, INC.**  
2659 Fondren, Dallas, TX 75206  
Contact: Alan Sheffield.  
Video Products: Full range of video and motion picture production equipment services.

**EDUTRON INC.**  
6649-A Peachtree Industrial Blvd., Norcross, GA 30092  
Contact: Dave Comstock, Director of Mktg.  
Video Products: Video Time Base correctors.

**FERNSEH INC.**  
The Video Corporation of Bell & Howell & Robert Bosch  
P.O. Box 15068, Salt Lake City, UT 84115  
Contact: Robert B. Pfannkuch.  
Video Products: Video Tape Machines, Studio Camera, VTR Editing System.

**FORT WORTH TOWER CO., INC.**  
P.O. Box 8597, Ft. Worth, TX 76112  
Contact: Fred Moore.  
Video Products: Earth Stations and Components.

**FUJI PHOTO FILM USA, INC.**  
350 Fifth Avenue, New York, NY 10118  
Contact: Len Stein, Public Relations Consultant.  
Video Products: Video cassettes (VHS and Beta formats), U-Matic cassettes; 1" and 2" video tape; Video Head Cleaners.

**HARRISON SYSTEMS, INC.**  
P.O. Box 22964, Nashville, TN 37202  
Contact: Dave Harrison.  
Video Products: Automated Post Production Console, High-Resolution Video Graphics Metering Subsystem.

**HITACHI DENSHI AMERICA, LTD.**  
175 Crossways PK. W., Woodbury, NY 11797  
Contact: Ryuzo Muto.  
Video Products: A full line of broadcast, studio, and ENG/EFP cameras.

**HORIZONTAL EDITING STUDIOS**  
2625 W. Olive Ave., Burbank, CA 91505  
Contact: William Carlquist, President.  
Video Products: Synchronizers, Video & Film, Post production services.

**IKEGAMI ELECTRONICS (USA)**  
37 Brook Ave., Maywood, NJ 07607  
Contact: John Chow.  
Video Products: Studio/field Color TV Cameras.

**LOWEL-LIGHT MGF., INC.**  
421 West 54 St., New York, NY 10019  
Contact: Marvin Seligman.  
Video Products: Location lighting and support equipment.

**LYON LAMB VIDEO ANIMATION SYSTEMS**  
8255 Beverly Blvd., Los Angeles, CA 90048  
Contact: Bruce Lyon.  
Video Products: Broadcast Color Video Animation System.

**3M-MAGNETIC AUDIO/VIDEO PRODUCTS DIVISION**  
3M Center, 223-5N, St. Paul MN 55144

Contact: Dennis Farmer.  
Video Products: Video Tapes.

**MARCONI ELECTRONICS, INC.**  
100 Stonehurst Ct., Northvale, NJ 07647  
Contact: A.O. Moore.  
Video Products: Studio and portable cameras, VTR's.

**MAXELL CORPORATION OF AMERICA**  
60 Oxford Drive, Moonachie, NJ 07074  
Contact: T. Okada.  
Video Products: Blank video recording tape.

**RUPERT NEVE INCORPORATED**  
Berkshire Industrial Park, Bethel, CT 06801  
Contact: Anthony H. Langley, Marketing Mgr.  
Video Products: NECAM II post production automation system for audio using SMPTE based control and floppy disc/minicomputer storage. 5316, 8 bus stereo TV production console. 5313, 4 bus stereo TV production console.

**ORBAN ASSOCIATES**  
645 Bryant St., San Francisco, CA 94107  
Contact: Sid Goldstein, Marketing Manager.  
Video Products: Parametric Equalizers, De-Essers, Reverb unit, Limiter/Compressor, and Stereo Synthesizer (for instant stereo television sound).

**ORROX/CMX**  
2675 Bayshore Freighting #602, Mt. View, CA 94034  
Contact: Jerry Fontaneau.  
Video Products: Video editing systems.

**PANASONIC CO., VIDEO Systems Division**  
1 Panasonic Way, Secaucus, NJ 07094  
Video Products: Full line of video products.

**RCA CORPORATION**  
Front & Cooper Sts., Camden, NJ 08102  
Contact: J.A. Gimbel, Director, Marketing.  
Video Products: Full line of video products to turnkey facilities construction.

**SCIENTIFIC-ATLANTA, INC.**  
One Technology Parkway, Box 105600  
Atlanta, GA 30340  
Contact: Allen Ecker.  
Video Products: Satellite Communications Equipment.

**SHARP ELECTRONICS CORPORATION**  
Professional Video Products  
P.O. Box 588, Paramus, NJ 07652  
Contact: Bob Garbutt.  
Video Products: Color Video Camera Systems, Monitor/Receivers, Video Tape Recorders.

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The totally unique VCA's at the heart of the Dual Limiter provide an exceptionally wide dynamic range with low levels of distortion. Continuous bass distortion is much lower in level than typical compressor-limiters, allowing more freedom in setting release characteristics.

The Dual Limiter is also a forgiving limiter. Attack and release characteristics dictated by the front panel controls are modified by program dynamics and compression requirements. The slope increases smoothly past the threshold point, allowing a *gradual* transition into compression. Varying the Dual Limiter's threshold region produces a variety of intermediate slopes with the primary slope being that chosen by the slope switch. These features permit apparent dynamics to be maintained even though the dynamic range is being controllably limited.

The Dual Limiter's remarkable versatility is based on the fact that it can be viewed as two independent mono limiters that can be patched together via front panel switches for stereo limiting applications. Each channel has an In/Out switch, Slope switch, Input, Output, Attack and Release controls and an LED display, showing the amount of gain reduction. On the rear are

both XLR and 1/4" phone jack (ring-tip-sleeve) input and output connectors. Each channel's detector is accessible via rear panel phone jacks to permit external tailoring of the detectors' frequency response. This feature allows for de-essing (reduction of vocal sibilance) and a wide variety of frequency dependent limiting needs.

Because virtually every form of musical signal was used to evaluate the Dual Limiter's response during the initial stages of development, its sophisticated internal circuitry enables it to sound musically *natural* — even at extreme compression settings.

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PRODUCTS GROUP

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740 Driving Park Avenue  
Rochester, New York 14613  
(716) 254-2910

**SHINTRON CO., INC.**  
 144 Rogers Str., Cambridge, MA 02142  
 Contact: Shintaro Asano.  
 Video Products: Special Effects Generators,  
 Edit Code Generators/Readers.

**SKOTEL CORPORATION**  
 1445 Provencher, Brossard, Quebec, CAN  
 J4W 1Z3  
 Contact: Stephen Scott.  
 Video Products: SMPTE/EBU Time & Control  
 Code Equipment.

**TDK ELECTRONICS CORP.**  
 755 Eastgate Blvd., Garden City, NY 11530  
 Contact: Edwin E. Pessara Jr., National Video  
 Product Mgr.  
 Video Products: Full line Super Avilyn VHS,  
 Beta and Head Cleaning Video Cassettes.

**TENTEL CORP.**  
 1506 Dell Avenue, Campbell, CA 95008  
 Contact: Wayne B. Graham  
 Video Products: Tape Tension Gage for U-  
 matic.

**THEATER VISION, INC.**  
 671-A Southlawn Lane, Rockville MD 20850  
 Contact: Lee S. Girson, Chairman of Board,  
 President.  
 Video Products: Giant Screen TV's (Color Pro-  
 jection).

**3M CO., VIDEO PRODUCTS**  
 3M Center, Bldg., 223-SE, St. Paul, MN  
 55101  
 Contact: B. Landingham, Nat. Sales Mgr.  
 Video Products: "C" Format VTRS, Routing  
 switchers, machine control system, character  
 generators, graphic generators, digital audio  
 recorders, procession amplifiers, colorizer/  
 keyer, NTSC sync generator & distribution amp.

**TODAY VIDEO, INC.**  
 45 West 45th Street., New York, NY 10036  
 Contact: David Seeger, General Manager.  
 Video Products: Film to tape transfer- $\frac{1}{2}$ ",  $\frac{3}{4}$ ",  
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 1930 Central Avenue, Boulder, CO 80301  
 Contact: Carolyn Tremer, Inside Sales.  
 Video Products: Model 100-NTSC Color Sync  
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**VIDEOTEK, INC.**  
 125 N. York St., Pottstown, PA 19464  
 Contact: Phil Steyaert.  
 Video Products: Complete line of professional  
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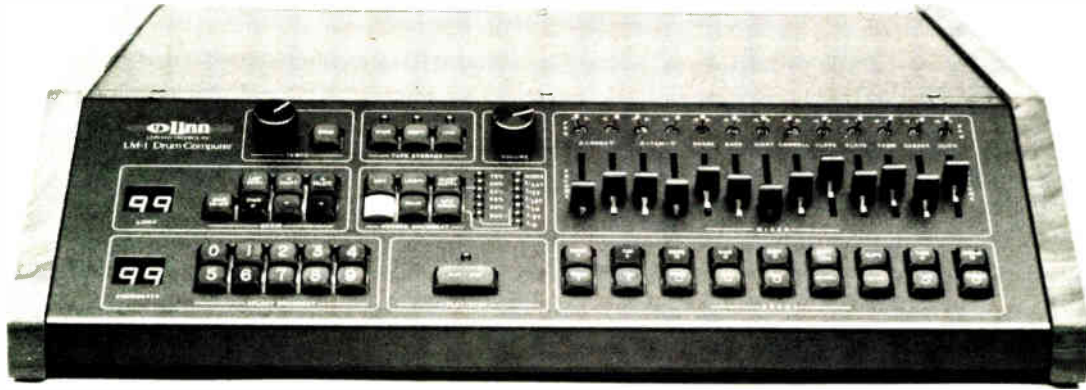


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- ★ May be synced to tape

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What is your occupation? \_\_\_\_\_

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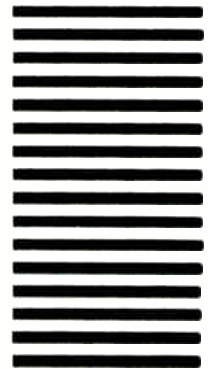
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Dear Mix:

In the upcoming July 1981 issue of Mix Magazine, you are scheduled to provide a listing of schools which teach recording engineering. Publishing such a listing without comment can actually be a "disservice" to your readers, as it implies that all such schools are essentially the same. A simple list does not take into consideration the intent, the duration or the academic credentials of the school.

The first distinction should be whether the recording school is "avocational," or "vocational." An avocational school caters to those who regard recording as a subordinate interest or hobby. There is little, if any, external controls over the school course content. A vocational school, by definition, teaches an individual a trade and skills. Therefore, the school is subject to greater governmental and licensing restrictions.

Two other distinctions, more critical to the student interested in a career in recording and in the music business, are the licensing and accreditation of a school. Certainly, the minimum expectation of a vocational school, is that it be licensed to operate within the state. State licensing normally imposes health and safety standards, truth-in-advertising restrictions, and some sort of surety bond for recovery of tuition, in case a school should become unable to continue classes and/or goes bankrupt. (In California, this is known as the Student Tuition Recovery Fund.) As a school becomes more established—normally after two years—it may seek accreditation from an accrediting agency.

Accreditation is a lengthy process by which a school voluntarily agrees to establish and maintain certain standards of conduct and educational quality. The accrediting agency, such as the National Association of Trade and Technical Schools (NATTS), will inspect the school facility, staff, curriculum and—impartially—determines whether the school meets the association's standards. If their standards are met, the school is granted accreditation. This accreditation is not static, but rather subject to review and suspension, or termination.

Obtaining and maintaining accreditation is often an accurate measurement of the school's commitment to providing high quality occupational training. The College for Recording Arts which was established in 1972, was subsequently accredited in 1974, by both NATTS and the National Academy of Recording Arts and Sciences (NARAS) Accrediting Commissions, and has maintained its accreditation ever since.

Lastly, the prospective student might want

to consider one last important difference between schools: Unlike State-supported or avocational schools, a proprietary school must prove its worth in the marketplace. Propriety schools like ours, must answer the most crucial question of all, "What is your placement rate?" The College for Recording Arts is proud to note that even during the recording industry's most difficult times (1978 and 1979), we maintained a solid 80% placement rate among our diploma graduates. (This is not a hyped figure. Employment figures and documentation from schools whose students receive GI Benefits are scrutinized by the Veterans Administration, as well as State agencies.)

To reiterate, we feel that a simple listing of recording/music business schools is unfair to prospective students. There is a considerable difference between vocational and avocational schools, licensed and unlicensed facilities, and the length, quality and educational commitment of the educational institution.

Prospective students should first determine what they will be requiring of a recording school, and then check carefully to ensure the school meets their short or long-term needs.

Yours truly,  
Leo de Gar Kulka  
President

Dear Mix:

We are just starting an audio track (in the Broadcast sequence of the Department of Journalism, Broadcasting and Film) in spite of the fact that we have a 16-track recorder, board and recording studio.

Your magazine could have great impact on our students as they come to us as bright and inquisitive individuals, and we hope to have them graduate as controlled and creative professionals. Unfortunately, our budget for magazines for this year was already spent before I happened on to your magazine.

Is it possible for you to send me a subscription without charge? I would appreciate it greatly.

Sincerely,  
Warren Pease  
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Dear Warren:

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