

**PROFILE:
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CYNTHIA WEIL**

MODERN RECORDING & MUSIC

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JANUARY 1983
VOL. 9 NO. 1

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MODERN RECORDING & MUSIC

JANUARY 1983

VOL. 8 NO. 4

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Edmunds B&W Photos: Ebet Roberts and Courtesy Swan Song

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LETTERS TO THE EDITOR

Mono Unit (Not Another Zappa)

Regarding Mr. Joe W. Berry's question in the October 1982 "Talk Back" column, ("...on my Kelsey Pro-Club +3 the effects send and return seem to be mono. If I use a mono unit, won't the stereo mix cancel out..."), it seems to me that Mr. Burekhardt misinterpreted the question and therefore left it unanswered.

It appears that the "mono unit" to which Mr. Berry was referring is his reverb unit. He was wondering if, by feeding that unit signals from different channels (some of which would be eventually panned right and some left) those signals in reality then become mono in the effects loop. Further, when conmingled with the separate stereo signals in the main busses, would there not be both right and left channel information returned to the stereo right and stereo left, thus degrading the stereo image or rendering it mono?

In order to answer this question one should try to visualize the routing. To begin, let us say that a dry signal is traveling down channel one and is being panned to main buss one, designated stereo left. At the same time, this signal has been tapped at the channel one effects send and routed to the reverb unit along with signals from various other channels. These signals are sent to and return from the reverb unit as mono. If the reverb is wanted on both stereo left and stereo right, the reverberated signal from channel one will be heard on both stereo left and stereo right. This does not "cancel out" the stereo mix because the dry signal remains on stereo left and added to that now is a reverberated signal coming from both left and right.

In a real time listening situation, reverberated signals reach both ears almost equally. Therefore, having a mono reverb signal going to both stereo left and stereo right does not degrade a stereo mix; rather, it produces a realistic reverb effect.

Mr. Berry's question is undoubtedly a common one. I hope this explanation will be of use to your readers.

—Alan Robertson
Studio Eight
Ishpeming, MI

Back to Nature

As a classical musician who is also into recording with TEAC gear, I have generously appreciated *Modern Recording & Music* for the past two years that I have been a subscriber. However, I feel compelled to react to the closing ideologies of November's "Recording Techniques Part 8."

The admonition is given to compare with...records played through "monitors like yours"...records made by other studios. And to listen for "producer's imagination" and "the studio's expensive facilities."

Whatever happened to the notion that a "recording should accurately reflect the actual performance" and that "monitors/recordings should sound like the LIVE PERFORMANCE"?

Recently in checking out some headphones for my recording needs at a local retail establishment, the phones I picked out

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for their ACCURACY were not the salesman's "favorites" because they didn't sound as much "like his stereo system." (!)

To carry that a step further, people in the recording business—behind all those knobs, meters, and "tweaks"—are responsible for producing a generation of "AUDITORY ILLITERATES" who don't know the *natural* sound of a piano or guitar.

"It's about time the "experts" in their carpeted, copper strewn, sterile throne rooms came down to reality and offered the public a semblance of realism and quit playing "audio god."

—Paul F. Becker
Plattsburgh, NY

Amplifier Advice

I have a few comments and suggestions to add to the excellent column by Rick Chinn in the October 1982 issue of *MR&M*, entitled, "The Care and Feeding of Guitar Amplifiers."

First, let me say that, even for simple tube maintenance, you should bring your amp to the nearest reliable repair shop, especially for power tube failures, as power tubes have a nasty habit of eating associated circuitry when they short out. Another reason for calling in technical help is that when you go to

purchase your tubes, there is a 50/50 chance that the tubes you buy will be defective in one way or another. (Here again, shorted power tubes will put on a very damaging light show.) Most 12AX7's and other pre-amp tubes are terribly microphonic, and this is exceptionally annoying in self-contained amplifiers, with the speakers a couple of inches away from the tubes. The speakers become acoustically coupled with the tubes, and all sorts of feedback and oscillation can result. Usually, a competent repair shop will weed out microphonic tubes and test the amp before it leaves the shop to make sure that everything is well. Also, be aware that any amp requiring bias adjustments or tube balancing adjustments (Marshall, Ampeg, SUT, New Fender Twins) must be brought to a repair shop, as these adjustments require test equipment.

For those of you who would like to take a shot at replacing tubes yourself, I highly recommend either Boogie tubes or Groove Tubes. They are constructed and tested with the musician in mind. They cost a little more, but they're well worth it. If you cannot afford those, stick to either RCA, Sylvania, or G.E. I've had

major trouble with all other brands, (with the exception of Dumont 6550's), and even the no-name imported brands are expensive, so if you are going to spend your hard-earned money, you might as well buy the best.

A word about tube amps in general: The tube guitar amp is the last of a dying breed of electronic equipment. It is one of the few pieces of electronic equipment being produced that runs on tubes, and the tube companies know this. As a result, fewer tubes are being produced, merely to accommodate a dying form of technology. These companies, feeling that this form of slavery is a drag, have drastically raised their prices over the past few years. So, if possible, try not to buy tube amps unless you can afford to maintain them. The owners of the "macho" amps such as the SUT, Marshall Major, or others that use many and/or expensive tubes already know what I'm talking about. I'm not plugging solid-state or putting down tubes, just cautioning prospective buyers. For example, the list price of a KT88 (For Marshall Major owners) is \$50.00...and climbing!

A closing hint to solid-state amp owners: If your amp starts popping fuses, unplug the speakers before replacing the fuse and turning it on again. Many solid-state amps nowadays are DC coupled to the speakers, which means that if the power section fails, there could be potentially damaging D.C. voltage present at the output. This is especially true in many of the power amps used for sound reinforcement.

I would like to thank Rick Chinn for shedding some light on this terribly overlooked topic. It's too bad nobody thought of it sooner.

—John R. Frondelli
Owner and Chief Technician
Dr. Wattz Musical Instr.
Repair Co.
Jackson Hts, NY

Correction

In the October issue we ran a review of the Adcom GFA-1A. It should be noted that in that review the price of the unit was mentioned as being \$360. First of all a distinction should be made between the GFA-1A and GFA-1AP. The GFA-1AP has 1/2-inch phone inputs, and 5 way binding posts. Its price is \$480. The price of the GFA-1A is \$450. We hope this clarifies things for any of you confused readers out there.

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Maximum output capability—10V RMS/10K ohms. Slew rate 12V μ s
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TALK BACK

Did You Ever Have to Make Up Your Mind?

I am working in a "home studio" environment on four tracks, producing electronic music tapes of my own work which I intend to eventually release in record form. The recordings which I more or less model myself after are ones which have been made on the popular Teac 3440 or 3340/Revox B77 or A77 combination for four-track recordings and mixdown. When the Tascam 22-4 machine appeared, I was impressed with it, and bought it rather than the (then) soon-to-be-discontinued 3440. I was quite pleased with this machine, and eventually decided to also choose the Tascam system 20 mixer which accompanies it.

My question now is this: the line which I have pursued in my past purchases would seem to indicate an obvious choice for a mixdown machine: the 22-2, which completes the Tascam package. However, up to now, I have always felt that the Revox B-77 would be my choice. Having recently come to the conclusion that 7" reels will suit my purpose (I find 22-24 minutes of tape time quite ample), and considering the nearly \$1000.00 difference, I am searching for advice on the matter. I know that the Revox is somewhat of a "small-studio standard," but will I really see a significant difference in master tapes, considering the machine I am mixing down from? I am aware of the extra 10 Hz of bottom end provided by the Revox, but again, I won't have it on my 4-track anyway.

—David L. Myers
New York, NY

Since you are a musician and you'll be using your recorder as a creative tool, you're probably interested in buying not only a "good recorder" but also an instrument that will allow you to fully realize your creative potential for many years to come. In this respect, we believe you should consider four points in selecting your mastering recorder.

First, longevity. Revox recorders have enjoyed a long history of professional use, especially by musicians. The Revox A77 was introduced 13 years ago, and it is amazing to see how well these machines are working after many years. I have personally checked over 250 A77's (vintage 5 to 12 years) at Revox clinics around the country, and I found only 4 units I couldn't fix on the spot. All the others were quickly brought back to factory specs! This is due in large measure to the perfectionist approach inherited from the "big brother" Studer machines. For example, the B77 chassis uses thick aluminum die castings, and the headblock is also a solid die-casting set on a stable three-point mount.

The second point is serviceability. This is of paramount importance to professionals, and that's why the B77 uses modular plug-in electronics. Most of the B77 circuit boards can be replaced in minutes by simply pulling the old board out and plugging a new one in.

Third, sound quality. As you noted, the B77 does have an extended low frequency response, but there's more to be considered. For example, extended headroom (the B77 provides 16 dB over 0 VU at 15 ips) can be very important in producing low-noise, undistorted tapes, particularly in live recording situations. Incidentally, the number of commercially released discs made from A77 or B77 masters now numbers in the hundreds.

Finally, point four. For professional quality mastering, a tape speed of 15 ips is a must. If you can get by with 22 or 24 minutes, fine. But if you foresee any live recording applications, that doubled recording time can be a lifesaver. Nobody likes to stop the act just so you can change a tape!

In the end, it's the same old story; value and price are not the same thing. The price is the best deal you can make. The value depends on what kind of machine you really need, and the results you can get from it.

—Renaud Delapraz
National Product Manager
Studer Revox America, Inc.
Nashville, TN

In a word, no. You shouldn't be able to hear any difference. In a national survey done several years ago for the IHF and presented to attendees of the Consumer Electronics Show convention and exhibit in Chicago, it was revealed that only about one American in a thousand has ever even heard true high-fidelity sound from a music reproduction system. People's exposure to good quality sound is low, and the differences in the two decks are so small as to be virtually subjective, at least in terms of sound.

Let's put it another way: If you take the \$1000 you'll save by buying the 22-2 rather than the Revox and put it into a single good microphone on the order of a Neumann U-89, an AKG C414-P48, a Milab DC-63, a Schoeps MK-6, or other mics in a class with these, the difference will be several orders of magnitude greater than the difference in tapes made on the two decks in question.

—Drew Daniels
Applications Engineer
Teac Corp. of America
Montebello, CA



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Delay Times

I am interested in sound speaker systems but am relatively inexperienced in the sound reinforcement field. I would be grateful if you could take some time to answer a few questions.

1. How do you go about figuring out delay times, and what is the best type of delay to use? At this time I have nothing of any quality in the way of delays and, as always, budget is a big factor.
2. The possibility of some kind of cancellation as a result of speaker placement bothers me. Is this unfounded? The farthest throw we will need in the near future is about 150 ft. from the stage. The least amount of space would be 50 ft. What is the best placement?
3. Right now our system is 150 watts per channel powered head, but we hope to soon expand to bi or tri amp. We are also building our own cabinets so it will be easy to build separate enclosures for woofers, horns, etc. Is there a good, reliable source of speaker plans that you would recommend?

—Bob Elligott
Cottage Grove, OH

To estimate delay times against distance, assume 1 foot = 0.9 mS. This should be adequate for estimating delay times when using delay towers, etc. To estimate appropriate delay times for use as an effect or enhancement, consider the following examples:

(A) A delay of up to 40 mS when added to a voice will thicken the sound of that voice. This is known as doubling. A delay of up to 40 followed by a second (different) delay of up to 40 mS removed from the first delay will enhance the voice even further (tripling). When using doubling and tripling, delay spacing (from primary to first delay to second delay, etc.) should not extend beyond 40 mS as distinct, very short echoes can be heard.

(B) Very short delays—.5 to 5 mS, when added to the primary signal, will present several peaks (and or dips according to phasing). If this is used with a voltage controlled-oscillator (v.c.o.) which comes with some units, the position of the peaks will shift, giving a flanging effect. A regenerated delay of .5 mS with a

shallow fast flange can give a very passable impression of the "snap" from the spring of a snare drum.

(C) Long delays 100-500 mS will give the familiar "slap-echo" given by many tape-delay units.

With regards to your budget you may have to save for a while—good delay units are not cheap. There are several good units available, although Lexicon makes a range of very versatile units which are used by TASC0. In addition, the technical information supplied by Lexicon is extremely comprehensive. To avoid cancellations when grouping together multiple speaker enclosures, ensure that the drivers of each frequency (low, mid, etc.) are lined up in the same plane—both horizontally and vertically. Also, when using groups of radial horns, it is not good practice to place them side-by-side as beaming will occur.

With regard to speaker plans, most major speaker manufacturing companies such as JBL, Gauss, E.V., etc., offer data sheets with their products, and are also only too happy to answer individual questions.

On a practical level, do ensure that the cabinets are braced strongly enough to withstand being thrown on and off stages every night (if the maximum movement of a speaker cone is $\frac{1}{4}$ " and the back of the cabinet is vibrating by $\frac{1}{16}$, $\frac{1}{4}$ of the effective power of the cabinet is going backwards. (Do not use these figures literally).

If you have any other questions please phone us at 805-499-1966.

—Steve Griffiths
Chief Engineer

Tasco
Newbury Park, CA

Everything But the Simul-Sync

Recently I had the rare opportunity to purchase a 4-channel reel-to-reel with auto reverse in 2-channel mode. However, in my excitement I failed to notice it didn't have Simul-Sync. Along with the A-2340-R came the shop manual for an A-2340 with Simul-Sync.

I compared the diagrams in the manual with the wiring of my A-2340-R's heads. The only difference I can find is the Simul-Sync PC Board and switch assembly (#50483869). My head housing

base looks different, but it just might work.

Is there more to Simul-Sync than I'm supposing, which is simply switching monitoring to play through a channel of the record head?

Teac was apologetic when asked this of them. They informed me they were in repair—not redesign. They were willing to sell me the parts if I knew which I needed. They mentioned they had been asked this question several times.

As I have this figured out, I need the aforementioned S.S. part. Then, the Head Housing must be changed to allow access for switching. A housing is available for the A-2340—#50136292 and H. H. plate 50136330. Will these fit? Can this be done, or will I need more or different parts?

—Bill Buchanan
Ada, OK

As you have discovered, the A-2340-R and A-2340 are similar. The change of the head switching P. C. board and head cover should do the trick to give you sync. Be careful of the head wiring, being sure to keep it neat and free of excess solder. You will probably need to re-align your bias traps to make sure you don't accidentally erase adjacent channels or cause feedback in the amplifier circuits.

Although Teac doesn't recommend modifications, many people do modify Teac equipment with good results. We at Teac are always interested to hear of successful modifications. When we get a large number of people doing a given mod, it sometimes turns into a new product.

—Drew Daniels
Applications Engineer
Teac Corp. of America
Montebello, CA

Washing Instructions

I know that *Modern Recording and Music* is an audio magazine, however, I feel my question concerning video recording overlaps into your area of specialization.

Having recently bought a RCA SelectaVision 600 VCR, I was amazed to learn that the manufacturer, in the instruction booklet, stresses that under no circumstances should one clean and demagnetize the heads. The task

The EV/Tapco Entertainer™

Singer-guitarist Johnny Stewart is one of a growing number of on-the-go performers who are conquering the road and winning new audiences with the EV/Tapco Entertainer. As Johnny puts it, "The Entertainer is the most portable, powerful, professional sound reinforcement system I've ever traveled with—it's worth a truckload of bulky speakers, mixing consoles, equalizers, amps and cables."

Johnny Stewart isn't alone in his praise of The Entertainer. Here's what Ed Schilling of *Frets Magazine*

had to say: "The Entertainer is an extremely portable PA system from EV/Tapco that packs the features of more complex equipment into the size and shape of several small suitcases. You can carry around the (Entertainer's) 100M mixing board and two 100S speakers as easily as you can carry spare guitars."

Terrific! The Entertainer is incredibly portable. But what about its sound quality? Once again, Johnny Stewart and Ed Schilling found the Entertainer outstanding.

Johnny Stewart: "I was quite surprised that

something so small could give such a big sound. The Entertainer provides a pure sound whether you're ten feet or thirty feet away on any axis."

Ed Schilling: "In actual testing, we found that the 12" speakers delivered a solid low-end, while the high-end potential of the Superdome tweeters wasn't even tapped by instruments such as the guitar or mandolin."

The Entertainer also scores high in versatility and convenience. At a total weight of under 100 lbs.,

The Entertainer offers 100-watt per channel power, 10 inputs, three-band equalization on each mike input, phantom powering and many other "big-system" features.

To learn

more about the EV/Tapco Entertainer and how it can help you put your "Sound in Action" on the stage and on the road, see your EV/Tapco dealer—or send for our new Entertainer brochure. Write to: Greg Hockman, Director of Marketing, Music Products Division, Electro-Voice, Inc., 600 Cecil St., Buchanan, MI 49107

"THE ENTERTAINER LETS ME CARRY A TRUCKLOAD OF SOUND IN THE TRUNK OF MY CAR."

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SOUND IN ACTION™



a gulton company

should be undertaken only at a service repair shop.

Since I have been cleaning and demagnetizing the heads of my reel-to-reels and cassette recorders for years, I wonder what makes this VHS video recorder so different from my audio recorders as far as machine maintenance is concerned.

In fact, although I don't know the name of the product, I do know that there is at least one video maintenance kit on the market today. This makes more sense to me than taking my video recorder to the shop every 50 hours for a 5-minute "authorized" clean up.

I would also like to know if I can use my audio bulk eraser on my video tapes, so that I can erase the entire 6-hour program in 15 seconds. While we're talking about tapes, what's all this fuss about splicing video tape? Won't 1/2-inch splicing tape do the trick, if my hands are clean and I do a neat cutting job?

—Mary Ellen Hays
Long Island City, N.Y.

With respect to the cleaning and demagnetizing of video heads, RCA

has been opposed to use of video head maintenance kits. Early kits contained cleaning tapes that were abrasive in nature, and when improperly used could severely damage heads. Recently kits have become available that are not abrasive in nature and are not likely to damage heads. But more importantly we question the need for head cleaning in any VCR except those used under extreme environmental conditions. Life testing in our labs reveals that heads operated to the point of wear out did not accumulate enough debris to warrant cleaning. The quality and nature of video tape and the tendency of the heads to be self cleaning eliminate the requirement for head cleaning to the majority of VCR owners. Similarly, demagnetization of video heads is not required.

There are bulk erasers specifically designed for use on video tapes. These have the extra "erasing" power required by the nature of video tape.

One should never use splicing tape to repair video tape. Video heads are easily broken and an improper splice could cause permanent head damage. Recently video tape splicing kits have become available from suppliers such as TVS (Total Video Supply),

but we have not yet fully evaluated them.

—W. T. Collins
Division Vice President
Consumer Affairs
RCA
Indianapolis, IN

The Comfort Range For Tape

It looks like the day may be coming when our blank tape is taxed for the benefit of the record companies. The Mathias Amendment (R. Maryland) now before Congress would place a tax on all blank tape sales to aid record companies in recouping their losses of record sales due to taping of albums from radio stations. It would appear that they are going after all kinds of tape. Cassettes, 1/4 inch, 1/2 inch etc., as long as it is blank, it's fair game.

I don't tape off the radio for quality reasons and 98% of my taping is original music. I suspect many other readers and small studio owners are in the same position, however, we surely will end up bearing part of the costs if this amendment is passed.

What I would like to know is:

1. What is an "ideal" temperature for storing unopened virgin tape?
2. What is the "shelf life" of say, Ampex 456 1.0 mil tape on a reel? Is it worth it to buy loads of tape now or not?

—Don Birnie Jr.
Birndudio
Worthington, Ohio

The ideal storage temperature for magnetic tape is what we like to refer to as "people conditions." Ideal conditions would be a temperature range of 60° to 80° F. and relative humidity range from 45% to 65%.

In regard to the question concerning the shelf life of Ampex 456 1-mil tape, 456 is produced only in a 1.5 mil configuration. At this point we can tell you that since 456 was introduced in 1974, there have been no known cases of shelf life deterioration. Tape purchases should be tailored to fit your own particular needs. The outstanding performance of Ampex 456 GRAND MASTER® tape will always be tightly controlled.

—Warren K. Simmons
Product Manager
Ampex Corporation
Redwood City, CA



Stevie's cassette is SA-X for all the keys he plays in.

Stevie's a wonder in any key he plays in. And so is TDK's newly reformulated SA-X high bias cassette.

SA-X offers Stevie the super wide dynamic range and the high MOL he demands. All this without distortion or over-saturation. SA-X. To Stevie it's a wonder, too.



 **TDK**
THE MACHINE FOR YOUR MACHINE®

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EVERYTHING YOU HEAR IS TRUE.



The Ashly Audio Pro FET-200

With the introduction of the FET-200, Ashly presents a new generation of amplifiers. With decided advantages in field reliability. And sonic character superior to all conventional transistor amps.

Innovative Design

The Ashly FET-200 is a full complementary, push-pull amplifier with totally discrete wide-bandwidth electronics implementing new POWER MOS-FET transistors.

The design provides lowest noise and distortion possible with excellent transient response and is entirely self-protecting. Inputs are bridging: active balanced with both 1/4 inch and XLR type connectors. Rear panel switches select stereo, mono, or bridging modes. Power levels are indicated by a two column, three color LED display.

Metal-Oxide-Semiconductor-Field-Effect-Transistor

It's a whole new component. It's faster. It's easily driven by a wideband, high-voltage circuit. And it's extremely rugged and reliable.

MOS-FETs behave better in power amp circuits than regular transistors. They extend the high frequency response. And lower the distortion. MOS-FETs are completely immune to "thermal runaway" and "second breakdown" problems—common causes of most transistor amplifier failures.



Who Says So?

In the 1982 review of the FET-200, Modern Recording reports: "... based on our examination and listening tests ... the same design approach that contributes to the FET-200's reliability also contributes to its

fine sound—MOS-FET technology ... we have no reservations about giving it high marks for design, reliability, and sonic performance."

Now Admire These Specs

IM Distortion	Transient Performance
SMPTE .007%	SLEW RATE 50V/us.
CCIF .002%	BANDWIDTH 100kHz.
IHF .05%	RISETIME 2 usec.

Sonic Superiority

Now that you've checked out the bench specs, put the Ashly FET-200 to the real test.

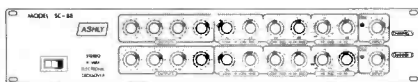
Listen to warm, rich sound with every detail in place. Sense a high end that's quick, clean and unstrained. Experience the power of a low end with incredible depth and stability. Feel the impact of sharp transients.

The FET-200 represents a striking example of new technology advancing the state-of-the-art. Compare it with any amp you've ever heard.

The Ashly FET-200 is simply the finest amplifier available.

Remember—everything you hear is true.

NOW! SPECIAL DISCOUNTS ON ASHLY STEREO CROSSOVERS WITH PURCHASE OF AN FET-200



With proof of purchase of an Ashly Audio FET-200 between December 1, 1982 and March 31, 1983, you'll get \$45 rebate on the purchase of an Ashly SC-77 Stereo 3-Way or SC-88 Stereo 4-Way Electronic Crossover. See your Ashly Dealer for details.



Ashly Audio Inc., 100 Femwood Avenue, Rochester, New York 14621, (716) 544-5191

In Canada: GERRAUDIO Distribution Inc., 363 Adelaide Street East, Toronto, Ontario M5A 1N3, Telephone: (416) 361-1667

JANUARY 1983

CIRCLE 16 ON READER SERVICE CARD

www.americanradiohistory.com

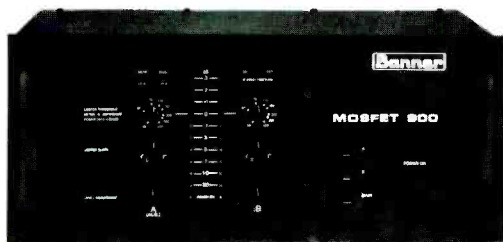
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Victors House of Music
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Sam Ash Westchester Music Corp.
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Audio Consultation By Mark
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Uncle Bob's Music Center
Milwaukee

THE **PRODUCT** SCENE

By Norman Eisenberg

PRO ITEMS FROM BANNER



From Banner, a division of Optronics Corp. of Shelby, North Carolina, comes word of two products for the pro market. One is the MOSFET 900 stereo power amplifier, rated for outputs of 300 watts RMS per channel into 8-ohm loads, and 450 watts into 4-ohm loads. In the mono bridging mode, rated power is 900 watts into 8 ohms. A dual-speed thermostatically controlled fan is built-in. The amp has level controls, LED meters and a stereo limiter whose threshold point is the zero reference point of the meter after user-calibration. The limiter slope is variable and is defeatable. The limiters also may be set for stereo tracking to prevent image shift. All controls are on the front panel, including circuit breakers and input impedance selection. Active balanced inputs on XLR and 1/4-inch connectors are standard. Price of the amp is \$1195.

Banner's other product is the RTA-1232, a real-time audio spectrum analyzer described as "not a toy" but as the only low-priced (\$1195) unit to offer double-tuned filter response. Banner has devised a new type of filter shaping circuit (patent pending) which allows this type of filtering with fewer parts, thus reducing manufacturing cost.

CIRCLE 45 ON READER SERVICE CARD

ORBAN "STUDIO OPTIMOD"

Described as a Gated Compressor/Limiter/De-Esser, Orban's model 422A/424A or "The Studio Optimod" offers a system approach to dynamic range control featuring a full-function, variable compressor/limiter with adjustable attack and release times followed by an independent de-esser. Aimed at recording and broadcast production studios, video/film sound-sweetening rooms and sound-reinforcement systems, the device's de-esser section provides 25 dB of available de-essing gain reduction in addition to 25 dB gain reduction from the compressor/limiter. Featured is a defeatable gate with adjustable threshold. An output trim control allows the user either to purposely cause or to prevent peak clipping in the VCA, and a "true peak-reading" VCA level meter provides convenient monitoring capability. The 422A is a mono unit priced at \$569; the 424A, costing \$899, is a two-channel version with stereo coupling capability.

CIRCLE 46 ON READER SERVICE CARD

ACTIVE EQUALIZERS

White Instruments, Inc. of Austin, Texas has announced two L-C active equalizers. One is the model 4100A, a two-channel octave-band unit claimed to be "perhaps the quietest ten-band graphic equalizer in the industry" and aimed at recording engineers for use with the demanding 30-ips half-inch and digital formats. The other is the model 4400 one-third octave monitor equalizer. This unit features twenty-eight filters from 31.5 Hz to 16 kHz each with a ± 10 -dB range. The 4400 also includes adjustable 12/dB per octave high-pass and low-pass filters, tri-amp capability with three level trimmers, transformerless operation or optional plug-in input and output transformers.

CIRCLE 47 ON READER SERVICE CARD

BASF SETS UP PRO DEPARTMENT; ISSUES MUSIC TAPE



BASF's newly established Professional Products Department will consolidate sales and marketing of BASF professional products which include duplicator tapes, broadcast cassettes, IEC calibration and reference tapes, Headmaster and audio/video cassettes. At the Consumer Electronics Show (Chicago, June 1982) BASF introduced its IEC (International Electrotechnical Commission) Standard Calibration Cassettes, the first to extend response to 18 kHz, and IEC Reference Cassettes from the batches selected by the IEC as official world-reference standards for Type I (ferric) and Type II (chromium-dioxide and chrome-equivalent). In addition, BASF now offers a full line of NAB studio calibration tapes with response to 18 kHz. This line includes a range of speeds (1 $\frac{7}{8}$, 7 $\frac{1}{2}$, 15 and 30 ips) and of widths ($\frac{1}{4}$, 1, 2-inch) for calibrating virtually any studio or duplicating machine. On reel or NAB hub, they range in cost from \$88 to \$577.50.

Including reference level, azimuth alignment and frequency response test sections, BASF 70- μ sec and 120- μ sec calibration cassettes are said to be accurate to within ± 0.5 dB. Manufactured according to the official standard worked out by TEAC and BASF, both are priced at \$140.

CIRCLE 48 ON READER SERVICE CARD

PORTABLE REVERB

Designed to provide the quality and operating features needed in studio applications is the BX-15E. AKG's new two-channel reverb system that may be rack-mounted or used in vans or mobile studio vehicles. As in the larger AKG BX-25E, the new device uses AKG's patented torsional transmission line principle. A spring system, it is said to offer a natural reverb quality as a result of the high degree of diffusion in the transmission line. The torsion elements consist of several parts with micro and macroscopic variations of the line parameters. Controlled damping and supporting elements are placed at statistically determined distances along the spring system. Additional electronic damping, using motional feedback, permits varying the decay time. A five-position switch provides decay-time selection of 1.5, 2.0, 2.5, 3.0 or 3.5 seconds. Also featured are high- and low-frequency equalization, and reverberation/dry signal mixing for the two channels, each of which may be used and controlled separately.

The reverb spring unit is enclosed in an insulated steel box within a thick-walled, foam-lined wooden case. There is no danger of acoustical feedback even when the BX-15E is placed near monitoring loudspeakers. Full insulation against vibration and structure-borne sound is provided by the two-point pendulum suspension of the reverb unit. Weighing 47 pounds, the BX-15E requires no special base or separate room for installation, nor any locking or readjustments for transportation.

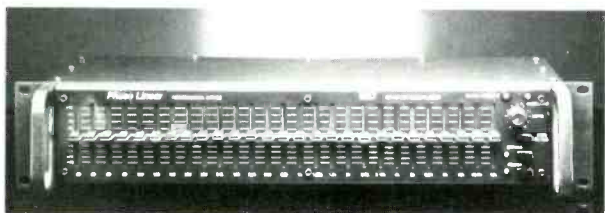
CIRCLE 49 ON READER SERVICE CARD

HEAD DEGAUSSER

The model PF-208 degausser announced by Nortronics is listed as a professional tool designed with a super high-flux coil-core to demagnetize heavy-duty 2-inch tape heads and guides. Its peak magnetic field strength of 1000 gauss is said to mark the new model as the most powerful hand-held degausser currently available. Features include an auto-reset thermal protection device, positive snap action on/off switch; thermal plastic/rubber covered probe tip; high-impact plastic housing; lightweight 12-ounce design; and UL approval. Price is \$40.

CIRCLE 50 ON READER SERVICE CARD

PHASE LINEAR ADDS TO PRO LINE



Recent additions to Phase Linear's products aimed at professional users include the PRO 700 stereo power amplifier, and the E27 equalizer. The amp is rated to deliver 360 watts RMS per channel into 8 ohms, or 550 watts into 4 ohms. Features include a rugged steel chassis, dual high-volume fans, stepping input attenuators and individual channel LED level display meters with range select and overload indication. Price is \$1395.

The E27 is a single-channel, 27-band graphic equalizer utilizing state-variable filters to achieve amplitude change independent of bandwidth, which—PL explains—ensures one-third octave EQ throughout the adjustment range. Control range is +12, -15 dB. A switchable 40-Hz high-pass filter is included. Price is \$549.

CIRCLE 75 ON READER SERVICE CARD

PORTABLE P.A. SYSTEM

Dubbed "The Entertainer" is the E-V/TAPCO Model 100S, described as a portable club P.A. system. Heart of the system is the model 100M stereo powered mixer, equipped with ten inputs (eight with three-band EQ), a dual eight-band graphic equalizer and a power amp section rated at 150 watts per channel into 4 ohms or 100 watts into 8 ohms. Other features include E-V's Powerlock circuit that guards against clipping; reverb color control; mono/stereo function switch; fluorescent bar graph display. Complementing the 100M are the model 100S speakers. Housed in a high-impact plastic cabinet, the 100S mates E-V's constant-directivity horn to a vented low-frequency driver. The complete system costs \$2,818.

CIRCLE 51 ON READER SERVICE CARD

AMPLIFIER "WALKS DOWN" SPEAKER LINE

The new Delta Omega™ 2000 amplifier by Crown uses an electronic sensing and control system which, says the Indiana manufacturer, "walks down" the speaker line, through the internal speaker networks and finally the voice coil, correcting any speaker circuit anomalies. Described as an "interface velocity controlled amplifier," the model 2000 does not depend on extra sensing cables or feedback. In a typical setup, the user adjusts a potentiometer which introduces the compensation needed for speaker circuit non-linearities. The idea behind it is to reduce or eliminate effective radiated distortion (ERD), an interface effect resulting from speaker-amplifier interaction. Crown says that the new amp is the first that is able to correct problems introduced by poorly chosen speaker cable, crossover resistances or by that portion of the voice-coil which may be momentarily functioning in a purely resistive mode. The net result enables listeners to "hear the music, not the speakers." Recording studios will now be able, Crown continues, to electronically modify any speaker system to reproduce the particular sounds of any other speaker system. A monaural amp, the model 2000 is rated to deliver 600 watts into 8 ohms, 1,000 watts into 4 ohms or 1,200 watts into 2 ohms.

CIRCLE 52 ON READER SERVICE CARD

DIGITAL DELAY UNIT

ADA Signal Processors of Berkeley, California has announced its model D1280 Digital Delay, listed as a full-function delay processor designed for both "live" performance and recording studio use. Delay times from 0.156 ms. to 1280 ms. are provided, all at a full 15-kHz bandwidth. Seven delay range push buttons, and a delay multiplier control allow access to any setting. Delay time is displayed via a real-time system using an LED delay rate indicator. A flashing LED shows its blink rate as delay time is increased, which—says ADA—provides the first logical method of matching delay time to tempo for accurate setting of echo repeat rates in performance. Special effects are produced by the unit's regeneration, modulation, and repeat-hold features. Options include the FS-2 footswitch for effect and repeat hold in/out, and a 240 VAC power supply. Price of the D1280 is \$800.

CIRCLE 53 ON READER SERVICE CARD

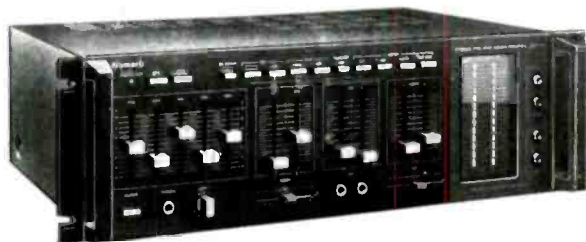
NEW MOTOR POWERS DECK



A "radically different motor" which is claimed for the first time to eliminate "belt wow" without introducing "direct-drive flutter" is featured in the ZX-9 discrete three-head cassette deck from Nakamichi. The take-up capstan is directly driven by the new super-linear-torque (SLT) motor with wow-and-flutter said to be a mere 0.022 percent WRMS. The reduced wow-and-flutter as well as the elimination of coupling capacitors in the electronic circuitry is credited with improving sound clarity. The deck has individual bias, recording-level and azimuth-calibration controls and it includes the test oscillators and metering needed for accurate calibration. Both Dolby-B and Dolby-C are built-in. The transport is microprocessor-controlled and uses the asymmetrical dual-capstan diffuser-resonance design. Also featured are two-speed cueing, cue rocking, punch-in recording and more. Price is \$1550.

CIRCLE 54 ON READER SERVICE CARD

MULTI-PURPOSE AMPLIFIER



From Numark Electronics of Edison, N.J. there's news of its MA4700, characterized as a stereo sound control amplifier that combines the qualities of a broadcast mixing console and the flexibility needed by a disc jockey, including fader mixing and headphone cueing. Rated power output is 70 watts per channel into 4-ohm loads, or 60 watts into 8 ohms. A bridging circuit will accommodate any external amplifier if higher power is needed. The unit also includes mixing facilities, a low-noise preamp, a built-in five-channel stereo equalizer and a multicolor high-speed LED indicator which functions both as input level and output power meter. Slide controls, cueing circuit for headphone monitoring and a talkover switch also are included. Supplied with 19-inch rack adapters and handles, the MA4700 is priced at under \$500.

CIRCLE 55 ON READER SERVICE CARD

RECENT SUPERDISCS

This seems like a good month for one of my periodic rundowns of recent super-recordings. From Sheffield Labs there's *The Sheffield Track Record* (Lab 20). This direct-to-disc release features a six-man rock group who combine tasteful artistry with terrific energy. It all is superbly captured with great dynamic range, transient impact, wide frequency span and myriads of tonal color. The groove is wider than usual to allow for full bass swing of the record cutter without the use of signal compression. This accounts for the short playing time of each side (8:20 and 7:35 minutes, respectively), but really, this is how pop/rock albums should sound.

Jazz from hot and crazy to tepid and moody may be enjoyed as played by Jack Sheldon's *Late Show All-Stars* (*Jack Sheldon: Playin' It Straight*; Realtime Records RT-303) on this digitally-mastered album. Among other niceties, it has a sense of "live" ambience and built-in stereo imaging.

From CBS Mastersound comes a digitally-mastered new Brubeck opus. It's *La Fiesta de la Posada* (Festival at the Inn) a Christmas Choral Pageant (CBS LM 36662) and it includes soloists, vocals, Latin percussion, choral groups and the St. Paul Chamber Orchestra. An extremely clean recording.

Recent Telarc digitals remain a joy to hear. Following their triumph last year with Beethoven's Emperor Concerto performed by Rudolf Serkin and the Boston Symphony under Ozawa (no. 10065), Telarc has released Beethoven's Fourth Piano Concerto with the same cast (DG 10064). The performance was recorded by Soundstream in Boston's Symphony Hall, one of the world's best for large-scale music. Natural ambience complements the artistry and power of the BSO which creates a nice framework for Serkin's masterful pianism.

Other current Telarc's that merit mention include the BSO doing Vivaldi's *Four Seasons* (DG 10070) which generates some awesome power, perhaps surprisingly so, since it all comes from stringed instruments. The album *Encores a la Francaise* (DG 10069) is a good workout—acoustically and artistically—on the big organ at Symphony Hall played by Michael Murray. Rousing, yet sensitive, performances of Gershwin's *Rhapsody in Blue* and *An American in Paris* are offered by the Cincinnati Symphony conducted by Erich Kunzel with Eugene List at the piano (DG 10058).

A new winner from dbx is *The Tip of the Weisberg* produced digitally by Nautilus and mastered by dbx with its 2:1 encoding (use the dbx decoder for playback). Closeup effects of instruments on this rock album are startling.

Studio Notebook #11

By James F. Rupert

Well, as we've said at the beginning of the last three installments, here is the article that everyone has been clamoring for. (Three months oughta be long enough for any running gag!) Now that we've covered your independent efforts to obtain financing for your future studio, it's time to consider your escape routes from the swamp should your local lending institutions give you the ol' "thumbs down."

Just because you might have been rejected for a loan application is no reason to hang your head and moan that all is lost. Times being what they are, credit is not the easiest thing to come by regardless of your qualifications, financial status and past credit experience. A lot of the big leaguers who once were able to carry out scoopfuls of dough on their signatures alone are finding themselves on the receiving end of a polite "sorry, but no" from their business bankers. The questions remains: Where do you go from here?

The smart money seems to be on heading straight for your local office of the United States Small Business Administration. Now from past mail I get the impression that a lot of readers have a mental image of the SBA as either the official government dispenser of red tape or a chariot of the gods that dumps money from the heavens at the most casual of requests. As in most cases, the truth is to be found somewhere between the two extremes.

The SBA exists to assist the nation's small businesses through a variety of programs and efforts. SBA helps new or growing businesses in meeting their financial needs, counsels small firms with their problems, offers special assistance to minority and women-owned businesses, helps small businesses to secure government contracts and acts as a special contact or advocate for small firms with other Federal or State agencies.

However, the immediate topic is business loans and

the SBA offers two basic types:

(Quoting from SBA literature)

1) Loans made by private lenders, usually banks, and guaranteed by the SBA. SBA "bank guaranteed loans" are tied to funds appropriated by Congress. The amount of loans which SBA can guarantee is much larger than funds appropriated for direct loans. Thus, the majority of loans are of the guaranteed type.

By law, the SBA can guarantee up to 90 percent of a loan made by a bank or other private lender.

2) Loans made directly by the SBA. Monies for "direct" loans also come from funds appropriated by Congress for this purpose. Direct loan monies are limited and demand invariably exceeds supply. In recent years SBA has approved an increasingly larger share of direct loans for small firms that have unusual difficulty raising funds in the private market—i.e. firms headed by women, handicapped persons and representatives of socially and economically disadvantaged groups. (End quote.)

What this means is that even after you have been turned down by your banker for financing, the SBA holds out to you the hope of obtaining the bucks you need to get rolling by either lending you money directly from SBA funds or by going to your banker and offering to guarantee that the loan will be paid back to them (up to 90 percent) no matter what may happen to you. If the banker's only doubt is whether you as an individual could realistically pay back the loan, the SBA might be a lifesaver in putting you over the top. Yet before we go any further, let me state a few unpleasant disclaimers, most important being that the SBA is bound neither by law, convention or tradition to do any of this.

If after investigating your credit history and your business plan the SBA decides that your plan is unsound, your character is unstable or the time is just not right for your kind of business, they can turn you down flat. You've got to sell your studio and yourself to

them just as hard as you would to any private lending institution. Even though their purpose is to dispense the basic benefit of the doubt, and to assist people who can't otherwise obtain financing, their function is not to toss millions of dollars into the street and hope some of it will spell profitable free enterprise. So while their standards are considerably more relaxed than a bank's loan department, they still have minimum qualifications that have to be met.

For many fledgling studio owners, the toughest SBA standard to swallow is the same as the one at the bank. That is, "What is your stake in this studio you're planning?" The SBA insists that whatever your business plan is, you as an individual must provide 30 to 50 percent of the total funds needed. If you're starting from scratch and the entire sum needed to get the ball rolling comes to \$100,000, then the SBA expects you to be putting up \$30,000 to \$50,000 of it yourself. Once again, part of the risk must be yours. Otherwise you can skip merrily off to Bankruptcy City if the studio craps out snake-eyes, and Uncle Sam and the bank is left holding a very large bag without you. You need more than desire; you need more than experience; you need more than expertise, ambition and special training. You need to be able to take the heat when the kitchen gets hot and that means carrying part of the load.

This rule is slightly relaxed for businesses owned by women, the handicapped and disadvantaged, but it is not completely tossed out the window. It only makes sense that if you believe in the future of your studio and you have been able to show why you think it will be a success, you will believe in the project enough to throw your own marbles into the bag to play with.

Any equipment you already own can be a part of your contribution. If you already own most of the studio hardware and your loan is for inventory and operating expenses, then the gods of fate will much more likely be smiling upon you. If Uncle Louie owns the building you're moving into and will write off the rent till you get cooking, so much the better. Whatever the circumstances, you will have to show your stake in the enterprise.

The good news is that once you are approved the SBA loan system can offer several advantages. Generally, direct SBA loans will carry lower interest rates than conventional bank loans. SBA can also offer longer term maturity loans. Where the longest term your banker might offer is repayment within five or six years, SBA regular business loans carry a maximum maturity of ten years. Working capital loans are limited to seven years and loans which include construction or acquisition of real estate have a 20 year maximum. A handicapped assistance loan carries a 15 year maturity and the interest rate is 3 percent (incredibly low!) for SBA's share of the loan.

SBA regularly sets a maximum allowable interest rate which banks can charge on guaranteed loans. This, above anything, will turn a banker off to a prospective SBA loan. Remember that just as the SBA is not obligated to guarantee your loan to the bank, the

bank is not obligated in any manner to give you a loan even if the SBA is behind you to guarantee it (another reason to have done your homework in the preparation of your business plan and personal report). Regardless of how shining the SBA recommendation is on you, if the bank doesn't trust you or thinks your studio concept stinks for your marketplace, you could be doomed.

Please keep all this in mind as you compile all the information that will be originally presented to your loan officer. If the bank rejects your loan application, then ask your loan officer if his bank is interested in an SBA follow-up for the purpose of trying to obtain an SBA-guaranteed loan. If there is one bank in your city that handles most of the SBA loans for your area, you will be referred there. Whichever bank you go through will do the contacting of the nearest SBA office to discuss your application. In most cases of direct or guaranteed loans, the SBA will deal directly with the bank. If no banker can be found who will even talk about an SBA loan, then call, write or visit your nearest SBA field office. There are 110 SBA field offices which often send loan officers to visit many smaller cities as the need is indicated. (All you need to do is indicate!) You can speed up matters by making your financial information available when you first write or visit the SBA field office.

How much can you score? Current figures indicate that loans made directly by the SBA have a maximum of \$150,000. Under the bank guaranteed loan program, the SBA is permitted to guarantee up to 90 percent of a loan, or a maximum of \$500,000, whichever is less. When neither private financing nor a loan guarantee is available, SBA may provide loan funds on an "immediate participation" basis with a bank. The bank disburses part of the loan, and the balance is disbursed directly by the SBA (at a lower interest rate). SBA's share of an immediate participation loan may not exceed \$150,000. Handicapped assistance guaranteed loans have a limit of \$350,000 with a direct handicapped assistance loan limited to \$100,000.

The best way of answering any further questions about the intricacies of the SBA financial assistance programs is to go right to the source. Your local field office will send complete information to you free, as well as details of all the programs they offer. Just because your banker will be doing the contacting of the SBA to hammer out the negotiation of your loan, there is still no reason to not have availed yourself of the no-cost SBA services from the word go. Remember that the SBA offers a lot more than just loan guarantees—they might be able to put you on the right track to obtaining a bank loan on your first visit to the loan department. And wouldn't that be okay by you too?

Next time, we'll finish up our look at the SBA by examining the other programs and aid that Uncle Sam is providing for you, most of which will not set you back a single peso. I just know that the next Studio Notebook episode will be the one that everyone is clamoring for!

See you next time.



NEWSIGALS

GUITARS AND BASSES

Ibanez has recently introduced a pair of celebrity guitar models designed in conjunction with guitarists Joe Pass and Lee Ritenour. The Joe Pass model, officially known as the Ibanez JP20, is a single cutaway, hollow body, semi-acoustic electric guitar. The JP20 is constructed with maple back and sides and a spruce top for responsiveness, and is finished in a brown sunburst with black and ivory edge bindings. The maple neck is fitted with an ebony fingerboard and small frets, and is an unusual scale length, 25-in. On the hardware side, the Joe Pass guitar is equipped with a single Ibanez Super 58 humbucking pickup and a solid ebony bridge and tailpiece. In designing the JP20, particular attention was paid to making the instrument sensitive and responsive in action and clear and balanced in sound.

CIRCLE 56 ON READER SERVICE CARD

Among bass players, the name Alembic has been associated with rather esoteric, technologically advanced, and admittedly expensive instruments. But with the introduction of the new Alembic Spoiler Bass, the company has moved into the realm of affordable instruments while retaining the distinctive quality and high performance it is known for. Following usual Alembic practice, the Spoiler has a through-the-body neck design and a solid koa wood body, although the asymmetrical double cutaway design is exclusive to the Spoiler. The neck itself is a three piece maple lamination with ebony fingerboard and oval inlays, and is available with 24 frets or fretless; a left-handed version is available on special order. The

Spoiler also follows Alembic's practice of using active electronics in all their instruments. In this case, the Spoiler has two low impedance pickups feeding a mono output. The electronics package includes a four-position pickup selector, a single volume control and a tone control with a two-position equalizer "Q" switch. On the hardware side, the Spoiler uses Schaller tuning machines, Alembic's standard brass bridge and tailpiece, and Alembic's latest innovation, an adjustable nut.

CIRCLE 57 ON READER SERVICE CARD

The latest addition to Ibanez' Roadster series is the model 721 bass. This new model is noteworthy for its medium, 32-in. scale length; this shorter scale and a compact body design make for an instrument that is lighter, easier to handle, and faster to play. The 721's maple neck is mated to a solid ash body for light weight without any sacrifice in sustain. Sustain is also aided by the Ibanez BI brass bridge/tailpiece assembly. The Ibanez 721 is fitted with Super P4 pickups for a clean, full, yet punchy sound.

CIRCLE 58 ON READER SERVICE CARD

News comes from the Original Musical Instrument Co. of a rather unique new bass instrument, the Dobro Portable Bass, an upright electro-acoustic instrument designed for portability. When assembled, the instrument is 58-in. long (plus an extendable endpin), but collapses to fit in a special hardshell case only 44-in. long; weighing in at less than 50 pounds, it is shippable via UPS. The Dobro Portable Bass is designed to be plucked or bowed and has a bridge which is adjustable for string style and action. The instrument is acoustically designed with a hardwood body, and utilizes a special FRAP pickup system allowing it to be used with gut, nylon, or metal strings. The FRAP piezoelectric pickup feeds an

onboard preamp/equalizer with bi-FET circuitry for low noise, high slew rate and excellent frequency response. The electronics feature a volume control and active bass and treble controls with ± 20 dB range, and is powered by a pair of 9-volt batteries.

CIRCLE 59 ON READER SERVICE CARD

The new HH-555 is the first semi-acoustic electric guitar model in the Daion line of handcrafted guitars. The majority of semi-acoustic electrics might be termed "ES-335" lookalikes, and the Daion HH-555 sets itself apart from those models with a "negative bottom" design which is also said to improve the instrument's balance. The guitar has maple top, back, and sides, and a slim mahogany neck with rosewood fingerboard. Other design features include through-the-body stringing, a side-lock bridge with individual brass saddles, a brass nut, and a spruce/maple/spruce sustain block. The HH-555 has two Daion Power Pulse



MODERN RECORDING & MUSIC

pickups, each with its own coil-splitting switch.

CIRCLE 60 ON READER SERVICE CARD

KEYBOARD INSTRUMENTS

New from Roland is the EP-6060 Combo Piano, a five octave keyboard instrument featuring two voice sources that can be individually created and then layered on top of each other for a thicker, richer sound. Each of the two voices has a voice selector for Piano 1, Piano 2, or Harpsichord, an octave selector and a decay control. Each voice also has an individual tuning control, allowing the voices to be intentionally detuned for a thicker sound or chorus effect. Other controls include a single slider-type balance control and a six-band graphic equalizer. The EP-6060 also has several unusual performance features including a transpose control to allow any tune to be played as if written in the key of C (or any other arbitrary key), an automatic arpeggiator with controls for Rate Number of Beats and Rhythm Variations, an Upper Harmony function for block

chords automatically from a single note, and split keyboard and hold modes for the arpeggiator.

CIRCLE 62 ON READER SERVICE CARD

Synergy is the name of a new digital keyboard instrument from Musical Technology, Inc. The Synergy is an all-digital unit with extensive programmability. Keyboard response, keyboard mode, and stereo output operation are all programmable. Voices are user-changeable via plug-in cartridges which are offered in logical combinations of voices, and which can be customized on an individual basis. The unit also uses an exclusive phase cancellation technique to simulate acoustical phenomena such as flute breath and violin bowing, and includes a four-track event recorder (sequencer) with overdub capabilities.

CIRCLE 63 ON READER SERVICE CARD

ELECTRONIC ACCESSORIES

Tom Scholz of the supergroup, Boston, is widely known as an

electronics wizard, but until recently the Scholz wizardry was available only to a kind of "inner circle" of his associates. Now, however, Scholz Research and Development is manufacturing and marketing a product called the Rockman. The Rockman is basically a guitar preamplifier and effects system in a compact. Sony Walkman-style package complete with lightweight folding stereo headphones. The battery-powered Rockman (it takes eight AA batteries) accepts an instrument input and/or an auxiliary stereo input allowing the musician to play along with records, tapes, or the radio; two stereo output jacks are provided to drive headphones or external amps or mixers. Controls on the unit are very straightforward. Volume is controlled in three 5 dB steps via a slide switch, while another slide switch selects the basic sound of the unit from two high-sustain clean sounds, an "edge" sound with subtle overdrive, and a "distortion" sound for maximum overdrive. A third switch is used to defeat either the solid-state stereo echo effect or the



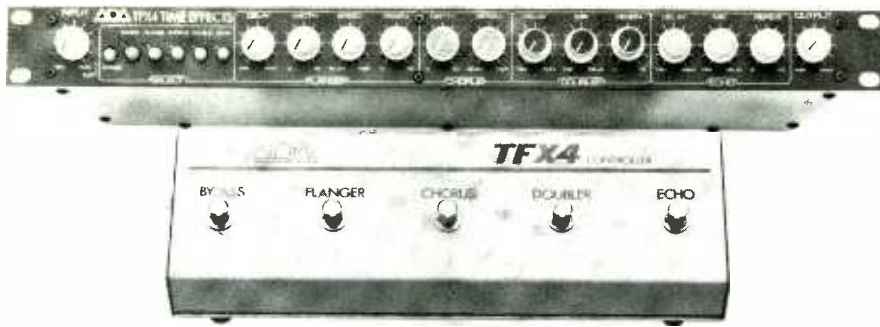
It proves its worth.

While others have introduced more expensive reverbs that don't sound like they're worth it, or lower-cost units that don't deliver quality, Orban's 111B Dual Spring Reverb continues to prove its worth.

Why? Because the Orban 111B offers good, clean sound that most studios and production rooms demand at a fair price. Our proprietary "floating threshold peak limiter" protects the springs from being overdriven on transients. So the 111B doesn't sound "twangy"—just bright and clean, with a sound that complements tracks instead of muddying them. And flexible EQ lets you contour the echo return for any application.

So check out the 111B Dual Spring Reverb: A proven performer with the right sound at a fair price.

Orban Orban Associates, Inc.
645 Bryant St. San Francisco, CA 94107
(415) 957-1067 TLX: 17-1480



stereo chorus effect; this chorus effect is a direct reproduction of Tom Scholz' custom doubler design which has been unavailable until now.

CIRCLE 64 ON READER SERVICE CARD

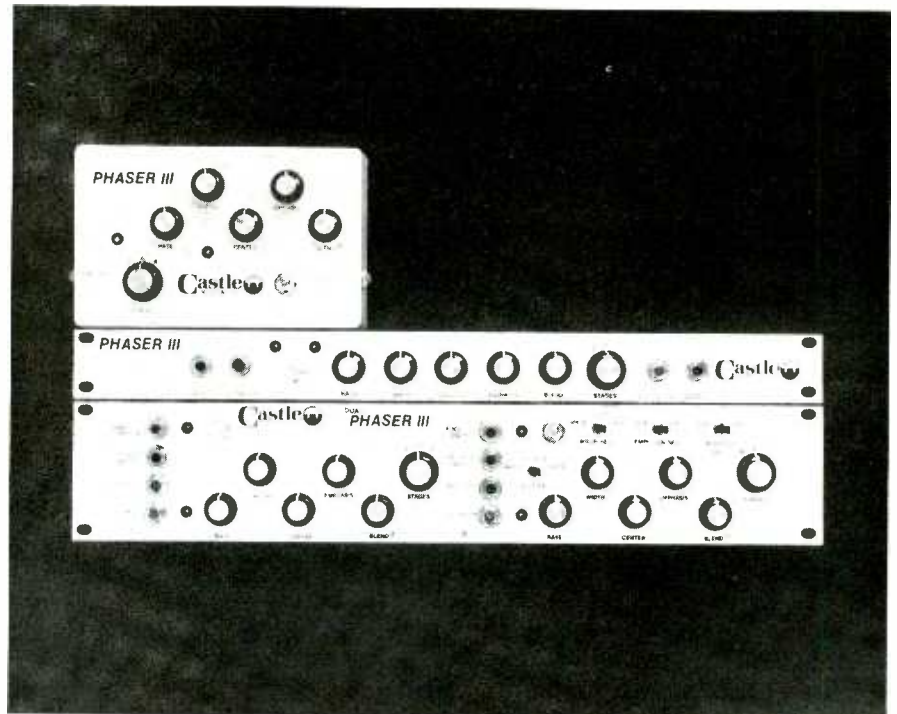
ADA Signal Processors have introduced a new rack mount delay effects device known as the TFX4, which was designed to combine studio quality effects and foot-pedal versatility and convenience. The TFX4 is designed to produce four different basic effects, and each of these four effects has a separate group of controls on the unit's panel allowing the user to preset each of the effects independently; the effects may be selected via front panel pushbuttons or a remote footswitch unit. The Flanger section improves on the performance of the popular ADA Flanger floorbox, and has controls for Delay, Width, Speed, and Regeneration; the Chorus effect is produced with delays in the range of



11.4 to 30 milliseconds, and controls are provided for Depth and Speed, delays between 30 and 70 ms produce doubling effects and the Doubler section has controls for Delay, Mix, and Regeneration; longer delays, in the 50 to 200 ms range, are used for Echo effects with controls for Delay, Mix, and Repeat. Other features include input and output level controls, a clip indicator LED, status indicator LEDs, and silent FET switching.

CIRCLE 65 ON READER SERVICE CARD

The latest addition to the Westbury product line from Unicord is "The Tube," an interesting new overdrive effect unit. While most manufacturers have tried to simulate the sound of a tube preamplifier with solid-state circuitry, The Tube takes the direct approach of using a 12AX7 tube to produce the *real* sound of a tube preamp. The unit has controls



for Gain and Level to allow a wide range of overdrive effects, and has an LED status indicator.

CIRCLE 66 ON READER SERVICE CARD

Castle Instruments is the manufacturer of the Phaser III, a versatile, high quality phaser which is available in floorbox and rackmount versions in a single channel format, or in a dual rackmount version as the Dual Phaser III. The Castle Phaser III produces a very high quality effect due to the use of a high frequency pre-emphasis/de-emphasis technique plus full-band compression/expansion to produce a dynamic range quoted as 110 dB. The unit is

available in both high impedance unbalanced and low impedance balanced versions for virtually any application. Five wide-range parametric controls are provided on the unit's panel. A Rate control varies the sweep speed from one sweep per 100 seconds to greater than 100 Hz; the sweep is controlled by a Width control and a SweepCenter control; an Emphasis control varies the amount of feedback or regeneration, and a Blend control varies the amount of phase-shifted signal to be combined with the unprocessed signal. Also provided is a switch to select 4, 6, or 8 stages of phase shift circuitry for a more or less pronounced effect, a footswitch jack, and a jack which accepts an external control voltage to control the effect. In addition, the Dual Phaser III has four switches to control the cross-linking of the two channels for over

30 useful combinations of control and signal routing.

CIRCLE 67 ON READER SERVICE CARD

Unicord recently announced that they had completed negotiations to become the exclusive US distributors for the Dynacord line of products—mostly electronic signal processors and effects devices and some amplifiers. One of the more unique products in the Dynacord line is the DRS 78 Digital Reverb/Echo unit. The unit is a fully digital device, using 12 bit architecture and a high speed microprocessor to perform the digital calculations which produce the echo and reverb effects. The unit

PHANTOM POWER

by *Pearl*[®]

With all the potential problems in performing why make power one of them!

Eliminate the power problem with Pearl's four new Phantom powered electret condenser microphones. They're designed to be used with an advanced power supply (PW-48) operated by an AC Adapter for trouble free power at all voltage levels. A battery operated power supply (PW-18) for 1 or 2 Phantom powered microphones is also available with a condenser coupling for leakage free operation.

A few of the many advantages of these new models are:

- an internal amplifier (no output transformer needed)
 - output voltage 3.5V at maximum SPL
 - current drain less than 3ma
 - 0.5% total harmonic distortion at high levels
 - internal attenuator switch increases maximum level allowing you to mike brass and percussion instruments cleanly
 - supply voltage is 12VDC to 48VDC (006P 9V battery with CR57-CR55)
 - CR45 with internal pop filter included
 - CR57 right angle unidirectional cardioid polar pattern
 - CR55 unidirectional cardioid polar pattern.
- Both CR55 - CR57 have a condenser element isolation system minimizing both stand and hand held noise.

The sound produced is both wide range and musical extending from 30 to 20,000 HZ, coupled with the quality and durability you have come to expect from Pearl. You will be making your best sound choice when you choose Pearl Phantom Powered Microphones.

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Sold in Canada exclusively by NUCO Musical Instruments, Ltd., Markham, Ontario.



A product of
Pearl International, Inc.
408 Harding Industrial Dr.
Nashville, Tennessee 37211

has two outputs which have phase shifted outputs for stereo effects when connected to a stereo amplification chain. The echo section of the unit has three delay controls to vary the delay times from 7 to 320 milliseconds with the actual delay time displayed on a 3-digit, 7-pigment LED display. The reverb section of the unit has a four-step delay control for Dead Time (initial delay), reverb duration, reverb return, and a switch for decay.

Also part of the Dynacord line from Unicord is the EQ 270, a 27-band, $\frac{1}{3}$ -octave graphic equalizer. This rack-mounted unit has its filters on the standard ISO center frequencies for compatibility with available real time analyzers. The EQ 270 has electronically balanced inputs and outputs via XLR-type connectors, and has an LED level display with overload indication.

CIRCLE 69 ON READER SERVICE CARD

MULTI-EFFECTS SYSTEMS

One of the more nagging problems faced by most performing musicians is that of hooking up the array of effects devices before each gig. In the last two or three years several manufacturers have attempted to stream-

line matters by offering either a self-contained multi-effects unit, or else a system to hold and/or inter-connect an array of separate effects devices.

The Boss division of Roland has introduced two companion products designed to take the hassle out of using effects. The first product is the BCB-6, a carrying case which accommodates up to six effects boxes (or five effects plus a power supply); by removing the lid, the carrying case is transformed into a pedal board complete with non-slip rubber feet. The BCB-6 comes complete with five short interconnect cables and one long loop cord, and the wiring is designed to fit into concealed wiring channels in the pedal board. The other Boss product is the PSM-5, a regulated 9 volt power supply capable of powering up to five effects devices by Boss or other manufacturers. The PSM-5 attaches to the AC adapter jack on each effects device via a power loop cable, and also has provision for master effects loop in/out switching for convenient bypassing of a pedal array.

CIRCLE 70 ON READER SERVICE CARD

The Ibanez EFB is a convertible road case/pedal board which can hold up to five effects units. The EFB

comes complete with AC adapter, a full set of patch cables, and a cut-to-size foam lining for truly custom fit. Once the cover with its handle and latches is removed, the EFB is a compact, rugged pedal board.

New from Pearl International, Inc. is the Spice Rack, a guitar effects pedal board which comes complete with five effects boxes plus AC adapter and voltage regulator. Effects included are Pearl's Flanger, Chorus, Phaser, Compressor, and Overdrive, although other Pearl effects devices could be substituted at a later date. Other options include footswitch units and clever rubber rings to fit around the control knobs for foot operation of the controls.

CIRCLE 71 ON READER SERVICE CARD

MUSICAL INSTRUMENT ACCESSORIES

It may not exactly be a better mousetrap, but Rockflex cable from Canford Audio does have a number of advantages over many other cable types used for guitar cables. The Rockflex cable is conductive thermoplastic with a drain wire for its shield; this results in almost perfect, 100% shielding and much easier construction and repair of cables as compared to conventional spiral or braid shield. It is also more durable than foil-shielded cable. The outer jacket of Rockflex is a durable, long-wearing, yet very flexible PVC material available in blue or black.

CIRCLE 72 ON READER SERVICE CARD

Calzone Case Company has announced a new line of road cases known as the Escort line. The Escort line uses Calzone's patented Double-Angle construction for greater strength. The cases are built of furniture-grade (no knots) plywood with a lamination of heavy grade formica. Other Calzone features include high density, non-deteriorating polyester foam linings, a custom-extruded, deep-groove valance, and genuine Sessions hardware.

CIRCLE 73 ON READER SERVICE CARD

Banana Musical Products has a new, low-priced guitar tuner with several unusual features. A built-in speaker actually plays the correct tones for the six strings of a guitar while the lighted meter displays the difference between the reference and the string being played. The unit has quartz-referenced frequencies with a pitch calibration control to allow tuning to non-standard pitch. An AC adapter is available.

CIRCLE 76 ON READER SERVICE CARD



Revox PR99.

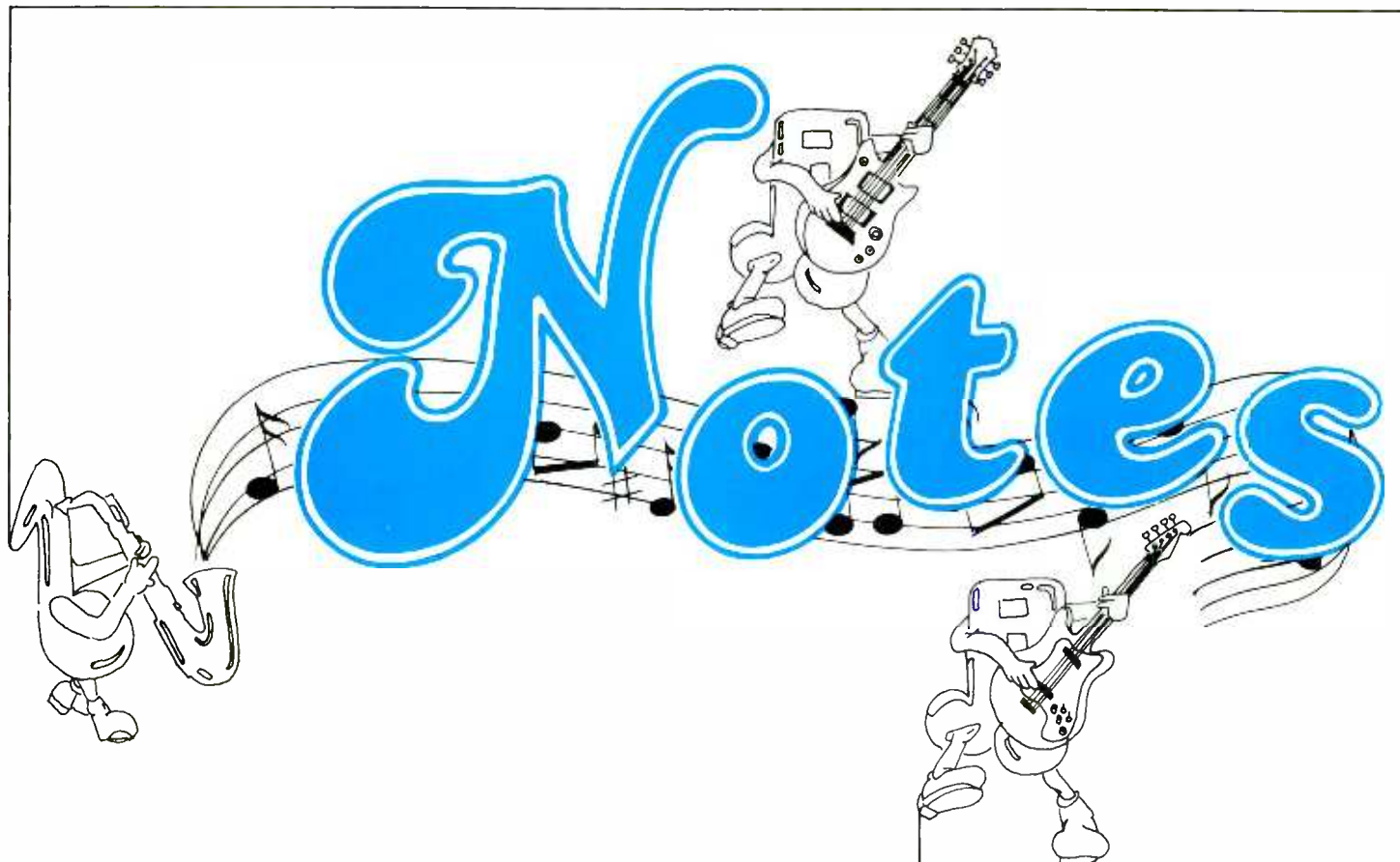
Not just another pretty faceplate.

Before you buy a compact audio recorder, be sure to compare what you're getting on the *inside*. Look at the chassis, the headblock, the motors, the switches, the PC boards, and the wiring. When you do, you'll notice a difference between the PR99 and everything else in its price range. The PR99 looks better because it must adhere to stricter standards of quality. Standards that have made Studer Revox the world's most respected name in audio recording.

PR99 features: • Balanced and floating line in and line out • Calibrate/uncalibrate switches • Servo controlled capstan motor • Edit mode switch • Tape dump • Self sync • Optional remote control and vari-speed • Cabinet, console, and rack mount versions

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Lexicon PCM-42 Delay Line

At the Fall 1981 AES show, I presented a paper entitled "Synchro-Sonic Recording Techniques," which talked about how to synchronize various signal processors and instruments to a master timing clock. Right after the talk, one of Lexicon's design engineers told me about a new delay he was working on, named

the PCM-42, which employed synchro-sonic techniques. I asked him to keep me posted on its progress, and when one of the first prototypes rolled off the line, *Modern Recording & Music* requested a unit for review.

The PCM-42 delivers all standard delay line



functions, and quite well at that. But what separates the PCM-42 from the myriad of other delay lines is a programmable clock output. This output provides timing references which are precisely synchronized to delay time, and which may be used to drive timing inputs on other pieces of equipment. What does that mean to you? Read on and find out...

WHAT IS IT? Except for the addition of the programmable clock output, the PCM-42 is otherwise a pretty straightforward digital delay line. It has a maximum delay of 1.2 seconds at full bandwidth (-3 dB at 16 kHz) and 2.4 seconds at reduced bandwidth (-3 dB at 6 kHz). It lists for \$1,395, but by spending another \$250 to expand the memory in the PCM-42, you may *double* the maximum delay times given above while retaining the same bandwidth. Although 4.8 seconds of delay may not sound too useful for echo-type applications, it is extremely useful when doing the "solid-state tape loop"-type of effects described in previous "Notes" columns on Imagineering Audio's Echo/Digital Recorder and MXR's Delay System II.

In order to make it easier to describe the various controls, we'll conceptually break the PCM-42 down into several different sections.

Input stage: There's an input jack on the rear panel which presents a 40 K input impedance, along with a gain switch which adds 20 dB of gain to the preamp stage for matching low level signals to the unit. Note that a 40 K input impedance will load down high-output impedance devices (such as most guitar pickups), so buffer or preamp a guitar before feeding it to the PCM-42. Synthesizers, tape recorder outputs and similar devices can feed the PCM-42 with no problems. The input jack accepts unbalanced and balanced signals, depending on whether you use a mono or stereo ¼-inch phone plug, respectively. There's another jack which provides a buffered "straight" output from the preamp stage.

On the front panel, there's a level control and associated five-step LED indicator which indicates how much headroom you have left. Above 0 dB a limiter comes into play which prevents clipping distortion with extremely high input levels. Although the manual says "extreme input levels produce only a soft distortion," that seems pretty optimistic to me. Hit a chord on a poly synthesizer, crank up the level and believe me, you'll hear a pretty dirty sound. Nonetheless, if you pay even a little attention to setting levels, you'll find that overloading is not a problem.

Delay setting section: A four digit LED display shows the delay time. Two push-button switches, a *manual delay control* that covers a 3:1 range and a *X2 push button* work together to let you select the exact delay time. (An additional slide switch, named *set-mode*, lets these same controls vary the clock output signal—more on that later.) One push-button switch has a tiny "up" arrow to indicate that pushing it gives more delay, while the other switch has a tiny "down" arrow to indicate that pushing it gives less delay. When you push either switch, the display increments or decrements in approximately 5 ms. steps. Holding the switch down changes the delay time at a relatively slow rate. You may then use the manual control for fine delay settings.

It's possible to fast forward or reverse through the delay time as well. If you're holding in the "up" push

button for more delay and then press the "down" switch, the delay time increases at a much faster rate (you can go from minimum to maximum delay in under 4 seconds). If you're holding in the "down" push button for less delay time and then press the "up" push button, the delay time decreases at a fast rate. The net result is it takes me about 10 seconds to find any given delay time, which is not bad at all...assuming that you remember which push button is which, because the little arrows are hard to read.

The X2 push button is just that: pushing it in multiplies the selected delay time by a factor of two. This reduces the bandwidth as mentioned earlier, so a small LED comes on to the right of the numeric display. This reminds you that you're in the extended delay time mode.

A control voltage jack on the rear panel lets you vary the delay time linearly over a 3:1 range with a standard 0 to +10 V control voltage.

Setting the clock involves the same controls, but we'll cover that aspect in more detail when we cover the uses of the clock output.

Regeneration section: There is a *feedback* (feedback level) control; a *hi cut* switch to restrict the bandwidth of the feedback signal; and a *feedback invert* switch to change the polarity of the feedback. The latter feature is most commonly used to change the tonality of flanging and chorusing effects. The hi cut switch helps to more closely approximate an acoustic space, since echoes in the "real" world tend to lose higher frequencies at a faster rate than lower frequencies. Since the filter is in the feedback path, each successive echo generated by a single sound will have a lower high-frequency response. This is also handy for making sure older echoes don't "step on" newer echoes, as the newer echoes will have wider bandwidth.

A stereo jack on the back brings the delay line output to the ring connection, while providing an input to the delay line at the tip connection. You may think of this as an "effects loop" connection in the regeneration path. By inserting an accessory foot pedal in this loop, you may control the amount of regeneration externally; note that this regeneration is in addition to any regeneration set by the front panel control. Therefore, if you have a highly resonant regeneration setting on the front panel, adding more regeneration via the loop might cause the unit to break into oscillation. The tip connection may also be used as an auxiliary line-level input if you wish to mix two signals together into the unit.

Output section: On the front panel, this section comprises an *output mix* control (center position, which has a detent, gives equal amounts of straight and dry sound; clockwise gives more delayed sound, counterclockwise more straight sound), and a *delay invert* switch. Pushing this switch in inverts the phase of the delayed signal.

On the rear panel, output jacks include a main output, which carries the delayed/straight mix; delay output, which carries the delayed sound only; and a stereo mix control jack. You may plug an accessory foot pedal into this stereo jack to control the delayed/straight mix externally. There's also an output level control. This attenuator lets you cut the maximum allowable output of +19 dBV (9 V RMS) down to something more suitable for studios designed for lower nominal signal levels.

Modulation section: This includes a *depth* control to vary the amount of modulation; a *waveform* control; and a *rate* control (with associated LED to provide a visual indication of the rate) which varies the speed of the modulation. At the waveform control's full counterclockwise position, the modulation signal is a triangle wave. Turning it towards center adds in envelope follower modulation, until at center (which is detented), the modulation comes exclusively from the envelope follower. Turning the control further clockwise adds in more square wave modulation (at the same frequency as the triangle wave) until there is only square wave modulation at the full clockwise position.

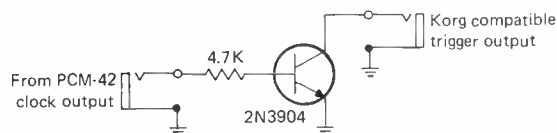
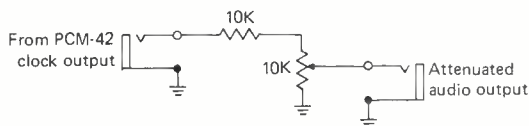
Other controls: There's a *repeat* push button, which captures the sound in the delay's memory at the moment you press the switch, and repeats this captured sound until the button is pressed a second time. An LED to the right of the four digit display lights up whenever you're in the repeat mode. There's also a *power* switch, and a bypass jack on the back which lets you bring the effect in or out remotely.

Well, that's quite a lot of controls...but now that the formal introduction is complete, let's see what the PCM-42 *sounds* like.

PRE-FLIGHT for the PCM-42: For best results, when evaluating the PCM-42 you should have a two-channel amp or mixing board. This allows you to listen to the programmable clock output as well as your audio signal. Like most signal processors, the first thing you'll want to do is plug your instrument into the jack labelled *input*, and run a cord from the jack labelled *mix output* to your amplifier or other monitoring system.

Since now is a good time to get a feel for how the clock output works, run a cord from the *clock output* jack to another channel of your mixer or amp. Note that this clock output signal is much stronger than a typical guitar signal, so you may need to pad the clock down a bit to prevent overloading your amp. *Figure 1* shows a suitable pad you can build using a trimpot.

There are many other possible interconnections, which are spelled out in the thorough, and generally quite readable, instruction manual. The PCM-42 is one device which requires a bit of study before you can expect to get the most out of it—it's a lot more complex than a fuzz, wa-wa or even simpler delay lines. So, you can plan to spend several hours before you will have covered most of the various possibilities presented by



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To quote engineers: ...the Telex wireless is the best we've tested, and we've checked them all...
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the unit, and you can expect to spend a *lot* more time learning how to apply these possibilities to maximum advantage.

It's probably best to leave the other jacks alone for now while you get acquainted with the standard delay controls.

DELAY LINE EVALUATION: As a delay line, the PCM-42 certainly holds its own. The noise levels are very low, and this low level of noise remains constant as the delay is varied from minimum to maximum. About the only time the noise will be audible at all is with low-frequency signals, which lack the highs to mask the small existing amount of noise.

Feeding the PCM-42 with synthesizer signals containing extreme high-frequency content didn't bother the unit at all, even with lots of regeneration. With less expensive delay lines, high frequencies tend to get quite "gritty" after multiple passes through the delay line.

The feedback options are well thought out and useful, as are the output mix options. It's easy to find the delay time of your choice, and it's great that the display doesn't have any settling time.

The modulation section is quite good, and I particularly appreciate the inclusion of the envelope follower option. With an instrument like guitar, this can be set to give pitch bends at the beginning of each note (or any time the volume level undergoes a radical change) for a very Duane Eddy type of effect. With an electronic keyboard that contains multiple beating oscillators, the envelope follower can give chorus effects which are more randomized than the effects you obtain from standard LFO modulation. (Note that following any instrument with a phaser or flanger will usually provide similar effects.)

Having discussed solid-state tape looping techniques in our recent reviews of the EDR-16 [July 1982 issue], MXR Delay System II [August 1982 issue] and DeltaLab Effectron [November 1982 issue], suffice it to say that having up to 4.8 seconds of clean-sounding loop time available is just what you want for looping. One technique I particularly like is simultaneously feeding a musical passage into the Delay System II and the PCM-42, but with the PCM-42 set for a delay 1.5 times longer than the delay of the Delay System II. The effect is amazing! Also, using two independent loops with slightly different loop times gave some highly textured effects. This multiple delay line technique shows real promise for those of you who are looking for new rhythmic and musical frontiers to check out.

Probably the best way to sum up the performance of the PCM-42's delay capabilities is to say that it didn't do anything that made me write anything negative on my comments sheet. The modulation covered the right amount of range, the knobs work logically and predictably and the sound quality is equal to, or in some cases better than, any other delay reviewed in this column.

PROGRAMMING the CLOCK OUTPUT: The clock output represents a distinct departure from other delay lines, so we'll devote most of the remainder of the column to discussing this novel feature.

The clock output simply provides timing pulses which are some fraction of the delay time. This

fraction may be programmed using the delay setting controls.

To program the clock, you need to follow a sort of initialization procedure as follows:

(1) With the delay/clock set-mode switch to *delay*, use the delay push buttons to select the maximum available delay time, as indicated by the readout.

(2) Change the set-mode switch to *clock*. What you are going to do next is program a fraction (such as $\frac{1}{64}$ which divides the delay time by that amount. A train of pulses will then appear at the clock output jack, whose rate depends upon the fraction you have programmed.

Programming the fraction is simple. The right-hand ("up") button gives you a denominator choice of 1, 2, 4, 8, 16, 32 or 64. Pushing the button once advances you to the next higher number, until after 64, it resets to 1. Holding the button down scrolls through these numbers continuously. The left-hand ("down") button gives you a numerator choice of 1, 3, 5, 7 or 9, and works in a manner similar to the "up" button. Generally, for $\frac{4}{4}$ music you'll have a numerator of one. A metronome LED lights up to the right of the display to give you a visual indication of the tempo you've programmed.

Thus, if the delay time is the same length as one measure of music, programming $\frac{1}{32}$ will give you a series of 32nd-note pulses at the clock output jack. Programming $\frac{1}{8}$ will give you 8th notes, and so on.

(3) The tempo may be varied *only by changing the manual delay control*. If you try to change the delay time setting with the delay push buttons instead of the manual delay control, the clock will stay at the original tempo you programmed and will not change with any changes caused by using the delay push buttons.

APPLYING the CLOCK OUTPUT: Now that the clock output has been programmed, what do you do with it? Well, in addition to serving as a metronome, you can drive sequencers, trigger synthesizers and perform other interesting synchronization tricks (especially when you capture a sound using the infinite repeat switch). For more information on synchronization, see my two-part article "Synthesis and Synchronization" in the January and February 1983 issues of *Keyboard* magazine.

The metronome feature is extremely useful when you have a long loop (say, a couple of seconds) set to repeat, and want to play in time with the loop. Let's suppose you've selected a loop time of 2 seconds. By programming the metronome to divide the loop time by $\frac{1}{2}$, you may have a metronome pulse occur every second. However, that still is a little too long to give a good implied rhythm, so you can try dividing the loop time by $\frac{1}{4}$, $\frac{1}{8}$ and so on until you find a metronome pulse that's comfortable to play with. Since the loop repeats on the beat, an added advantage is that any splicing sounds are pretty much masked...after all, the chances are excellent that some note or drum beat will hit on that downbeat, thus covering over any splicing glitch.

There's more to the clock output than metronome effects, though. One excellent use for the clock pulse is to drive synthesizer envelope generators for an automatic re-triggering effect (that *dugga-dugga-dugga-dugga* sound heard on "I Feel Love," "Heart of Glass" and much of the synthy-pop stuff happening in the UK right now). Many synthesizers can simply

accept the pulse output of the PCM-42 without problems; others require a simple interface. For example, the Korg Polysix doesn't want a ground-to-positive trigger as provided by the PCM-42, but rather, a high-impedance-to-ground (Moog standard) transition. I added the simple circuit shown in *Figure 2* to insure compatibility between the two units, and was off and flying. I set the PCM-42 for a long delay, turned the regeneration up to full, turned on the Polysix arpeggiator and hit two bass notes. Thanks to the regeneration, they came back to me at the beginning of every measure. I then changed to a string voice and added a couple of chord "stings" in the background. These started repeating as well. Next, I chose a highly percussive voice and added a type of melodic/percussive line above the bass and strings. Since by this time the bass signal had lost some level due to having made multiple passes through the regeneration loop, I hit the bass notes once more for a thicker sound. When this "rhythm track" was just the way I wanted it, I stored the whole mess by punching the repeat button to get an infinite repeat (loop) of the sound. So far so good. Note that with the PCM-42, you don't have to be careful about when you punch the repeat button, as the loop always starts at the beginning of the measure.

I then adjusted the balance control for less delayed (looped) sound, and started playing some melodic lines while the "rhythm track" droned on in the background. The effect of this kind of music can be quite haunting and hypnotic. Incidentally, you may also do things like transpose the pitch of the loop using the manual delay control, go out of the loop to add more parts, then get back into the loop again and use the various foot pedal options to make changes while your hands are occupied.

EVALUATING the CLOCK OUTPUT: This is where the tough part of writing a review begins, because while I think the addition of the clock output is a great idea, there are some really severe limitations. These are:

- The clock cannot be used in an overdub situation, since there is no way to dump timing information to, or receive timing information from, something like a tape recorded click track. All use of the clock output must then be in real time. While this is not a problem when doing solo "Frippertronics" type of music, in the studio this is quite a limitation.

- Only one clock pulse output is available. So, if you want to retrigger your sequencer every $\frac{1}{8}$ note and your synthesizer every $\frac{1}{4}$ note, forget it. You'll need to set the clock output fraction to something like $\frac{1}{64}$ or $\frac{1}{32}$, and build an outboard adapter to produce several simultaneous divided outputs.

- You cannot change the clock pulse to a different fraction while you're playing without losing sync with the loop. This means that if you set up a backing track where a synthesizer is triggered every $\frac{1}{4}$ note, store that sound in the loop using the repeat button, and then want to change the clock pulse fraction to $\frac{1}{8}$ for the line which you want to play over the loop, you can't do this "on the fly."

- You have to do some math with delay times shorter than 800 ms. Remember, you must use the push buttons to set the PCM-42 to maximum delay when using the clock pulse output. You may still vary the

delay with the manual control from 800 ms. to 2.4 seconds; however, what if you want echoes shorter than 800 ms. which are still synchronized to the metronome? In this case, you initialize the clock as described above for the tempo you want. You then switch the set-mode switch to delay and check the delay time. Suppose this delay time is 1200 ms. and you want an echo effect which is four times as fast. You do a little calculation (1200 divided by 4) and set the delay for precisely 300 ms. The clock will keep going at its previous rate. While this isn't too hard to deal with, the EDR-16 had much more "user-friendly" ways to program and synchronize delay and loop times.

- The clock pulse is quite wide. Thus, when used as a metronome, you often hear an afterbeat a tiny fraction of a second later than the main beat. An outboard differentiator circuit could solve this problem.

- The clock will not interface easily with commercially available devices which adhere to a 96, 48 or 24 pulses/quarter note standard. This includes the Linn and Oberheim drum machines, as well as the Roland TR-606 and TB-303. I checked with Lexicon about this, and they indicated that they might devise an accessory box in the future to provide compatibility with these devices. If you plan to use the PCM-42 with a device which follows one of the standards mentioned above, consult with the factory first as to feasibility.

Admittedly, I'm spoiled when it comes to synchronization, since I have a home-built system where all timed functions may be driven by a tape recorded or "live" sync track. Therefore, it was kind of frustrating that I could only use the PCM-42 in real time. Nonetheless, there is no other way that I know of to synchronize tempo and loops together, so in that respect, the PCM-42 solves a very definite problem. If you are into Frippertronic-type sounds, the PCM-42 represents a real advance in terms of convenience and ease of use with other devices.

OVERALL EVALUATION: Most people will buy the PCM-42 for the quality of the delay line sound, the large number of features and the medium-range price. If you fall into that category, then you can simply look upon the clock output as an interesting, and occasionally very useful, "freebie." If you're heavily into synchronized sounds in the studio, though, you'll find the PCM-42's clock output somewhat frustrating in practice. With any track using the PCM-42, the part using the PCM-42 must be laid down first, and subsequent looped overdubs cannot be easily synced to the unit. The only way I've figured out to get around this problem, albeit partially, is to record a high-speed metronome output from the PCM-42 onto an additional tape track, and then use external circuitry to let that track trigger other units when they're being overdubbed. Note, though, that the PCM-42 is out of the picture for looped overdubs since it has no clock input to let it synchronize to this timing information.

Overall, the PCM-42 is an excellent delay, and the clock output represents a serious attempt to do something new, useful and musically valid with a delay line. For all of the above, Lexicon deserves commendation. And if the clock output isn't everything you would ever want it to be... well, just wait until next year. Because the concept is so musically valid, I'm sure this isn't the last time we'll hear of a delay line with synchrononic capabilities.

Ambient Sound

By Len Feldman

International Tape Standardization

One of the “perks” of writing about audio in this and other publications is that occasionally I am invited to visit manufacturing facilities. While some of my colleagues tell me that they have become somewhat jaded by these trips (“seen one assembly line you’ve seen them all!”). I find that there’s usually something new to learn during each trip.

I feel particularly fortunate when I am asked to travel overseas, either to the Orient or to Europe, to learn what companies beyond our shores are doing. Such a trip was recently sponsored by the giant BASF Group of West Germany, a huge chemical concern that now is ranked among the largest in the world. Located in Ludwigshafen, a town adjacent to Mannheim and not very far from the French border, BASF (including 111 separate companies around the world) employs a total of more than 116,000 people. The company’s largest complex in Ludwigshafen consists of no less than 300 different plants covering more than 6½ square kilometers (about 1550 acres). At this facility alone, some 6000 different products are manufactured.

One of these product categories is blank magnetic recording tape, which is, of course, why I and several other audio types were invited over to look at the processes involved and to discuss the nature and standardization of blank tape.

Tape and Tape Deck Interrelationships

In working with tape recorders, many of us tend to forget the important interrelationship that exists between the tape deck itself and the tape used with it. Manufacturers of tape recorders, and particularly cassette tape decks, invariably use a specific tape with which to calibrate their machines during final testing. Unfortunately, they are reluctant to tell us the specific tape that they used for this purpose. Instead, we find long lists of acceptable tape in the owners’ manuals that come with the decks we use. The situation isn’t quite as bad in the case of reel-to-reel machines, since there is usually a good deal of headroom available on such decks. Furthermore, at the operating speeds at which reel-to-reel machines work, frequency response is usually not much of a problem; not even at the high end of the audio spectrum.

As anyone who has used a cassette deck—even a high-quality one—knows only too well, such is not the case when recording on compact cassettes at 1½ ips. Here, every available dB of headroom is important. Loss of high-frequency recording linearity because of misadjusted bias and loss of output because of variations in tape sensitivity can make quite an audible difference when comparing one recording with another during playback.

The Role of IEC In Tape Standardization

One of the most important things we learned during our visit to BASF concerned the important role that the IEC (International Electrotechnical Commission), through its technical committee TC-60, played in the whole question of tape standardization. Although I am familiar with the standardization work on audio hardware done by the IEC (I myself am a member of the U.S. National Committee involved in Audio Engineering Sub-Committee SC-29B, Audio Engineering), much of what had been going on in Technical Committee TC-60 (Recording) was unfamiliar to me. It took a trip to Germany for me to get the word on the most recent Standards activities in this field, and what I learned was that at last, the IEC had come up with a full set of blank reference tapes for compact cassettes. Blank reference tapes are nothing more than unrecorded tapes with specific known magnetic and electroacoustic properties. In the future, manufacturers of machines can be assured that if they set their recorders to these tapes, then tapes recorded on their machines will work properly, or within reasonable tolerances, worldwide.

From a marketing point of view, this new standardization approach frees the manufacturers from having to worry about whether or not he is offending one or more tape manufacturers by not listing them in his instruction manual. The manufacturer can now get around that little problem by simply stating that his machine has been adjusted to work with tolerance for the various IEC standardized tapes, without mentioning specific brands.

Generic Cassette Tape Types

In the world of compact cassettes there are now four generic types or formulations recognized by the IEC. These are specified by the letters IEC followed by Roman numerals I, II, III and IV.

IEC I tape is an iron-oxide formulation, which many recordists refer to as a “normal bias” tape. The reference tape chosen for this type of tape is known as tape batch R 723 DG, and its country of origin is West Germany. The manufacturer, as you may have already guessed, is BASF, and the decision to make this the “standard” reference tape was taken by an IEC conference in Palo Alto, California, in October of 1979.

IEC II tape, sometimes referred to as “high-bias” tape, corresponds to chromium dioxide tape. The blank reference tape chosen as a standard in this case comes from batch number S-4592A and again, the country of origin is West Germany and the manufacturer is BASF, based upon a decision taken by another IEC conference in Prague, Czechoslovakia, in March 1981. Of course, there are other high-bias tapes (such as cobalt-doped ferric oxide tapes) which behave

very much like chromium dioxide tapes insofar as their bias and equalization requirements are concerned. And so long as a manufacturer producing these tapes keeps its characteristics within the specified tolerances set forth in IEC documents for Type II tape, that manufacturer has a right to call the tape Type II, even though it contains no chromium dioxide particles.

IEC III tape is so-called twin-layered ferrochrome tape. With the advent of improved high-bias tapes such as chromium dioxide and cobalt-ferric varieties, ferrochrome tape is not nearly as popular as it once was and, in fact, many tape deck manufacturers no longer offer bias and equalization settings for that type of tape. Nevertheless, since a few manufacturers continue to offer this tape in their lines, the IEC decided upon a blank reference tape for this type of tape as well. It is taken from batch #CS 301, manufactured in Japan. (Did you think this was going to be a clean sweep for BASF?) The manufacturer is Sony Corporation, based upon a decision taken at that IEC conference which took place in Palo Alto, in 1979.

Finally, there is IEC Type IV tape which is, of course, metal particle tape. The blank reference tape chosen for metal tape is from batch number E 912 HB. Again, the country of origin is Japan, but the manufacturer this time is TDK, based upon a decision taken by the IEC conference which took place in London, in December 1981.

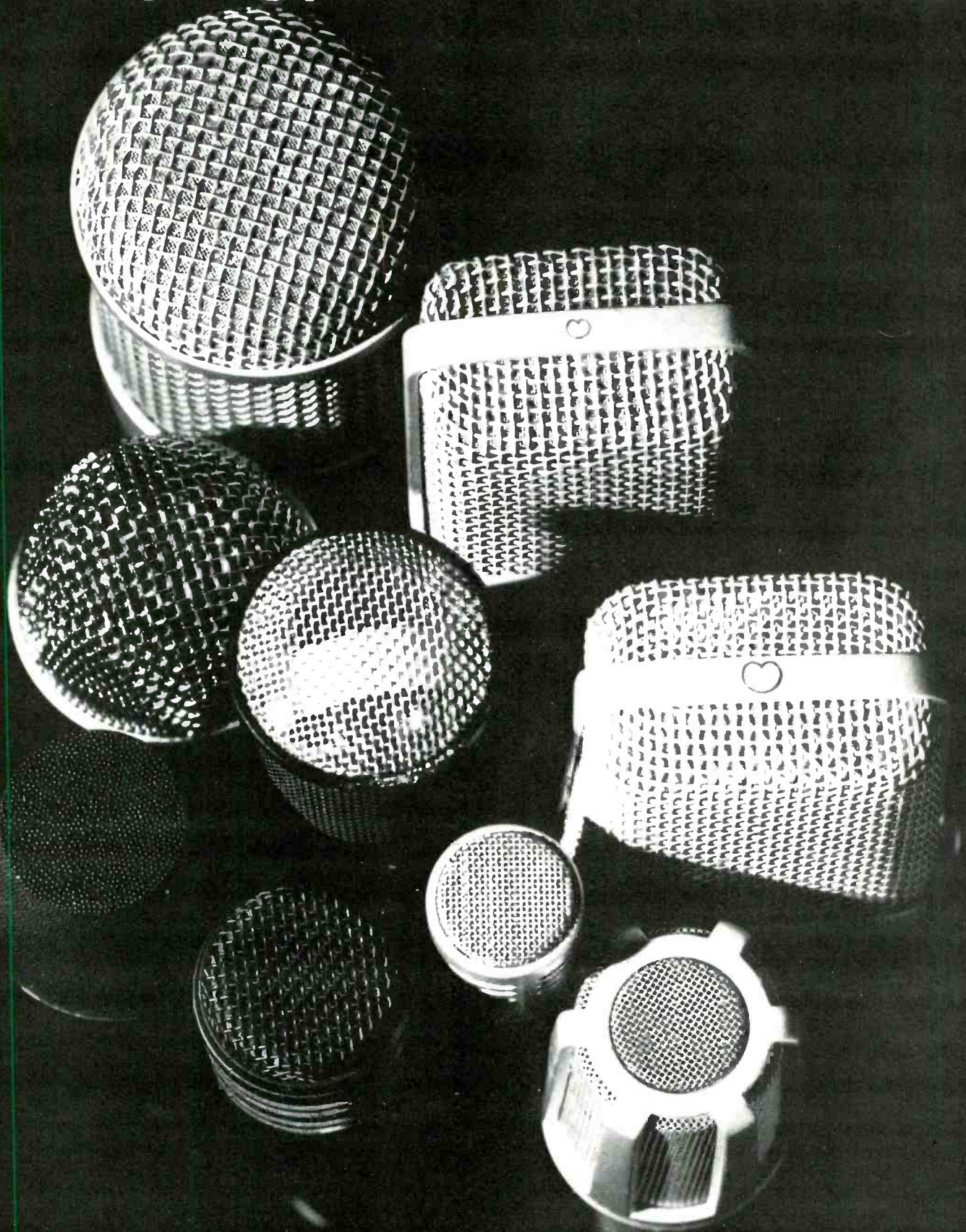
Batches Big Enough To Last

You may be wondering (as I did) about the significance of all these batch numbers which I have cited. The fact is that it is just about impossible to make one batch of magnetic recording tape that corresponds in every one of its electrical and magnetic properties with an earlier-made batch of tape. Accordingly, when a tape manufacturing company is appointed as the official source of an IEC reference tape, that company must have produced a very large amount of the single batch specified. We were assured by BASF, at least, that the batches which they produced for IEC I and IEC II standards were large enough so that the world (or at least interested tape deck and tape manufacturers as well as testing labs such as my own) would not run out of these standard tapes within the foreseeable future.

As a matter of fact, each of us visiting the BASF facilities was given an attractively packaged sample of “official” IEC I and IEC II tape samples, which I’ve now locked away with several other reference materials that I use during the course of testing products for this and other publications.

So now, next time I test a cassette deck or a new type of tape for *MR&M*, I won’t have to resort to telling you that it works well with a certain brand of tape that the manufacturer sends along for test purposes, or that a tape under test works well with a given tape deck. Instead, I’ll be able to specify that a given deck works properly with IEC standard tapes and, in the case of an unknown tape, that it comes close (or not so close) to the parameters of standard tapes recognized by the technical recording community around the world. It’ll be nice to be able to compare apples with apples for a change, instead of apples and oranges...or lemons!

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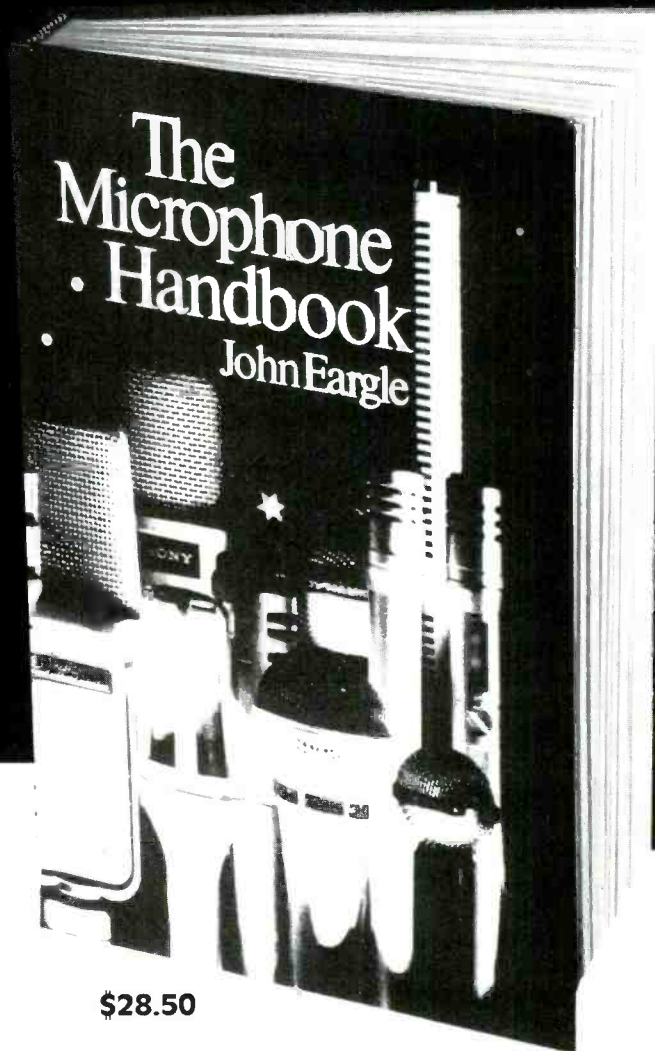
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Recording With

Dave Edmunds

Karen Schlosberg

Dave Edmunds follows a personal vision of rock and roll with an almost religious zeal. Whether acting the pop star, producer, engineer, recluse or fan, the 39-year-old Welshman has, through his music, assumed the responsibility of standard-bearer for traditional rock and roll—the man who will safely bring 1955 into the 1980s and beyond.

Edmunds is a man of many notes but not that many words, possessing a natural, polite reserve that borders, at times, on circumspection. He can be charmingly self-effacing, but underneath he seems stubbornly determined to do things his way, and he's probably right. He has called himself lazy, yet he meticulously taught himself how to use a studio by spending countless hours experimenting there; he doesn't rehearse, yet always

manages to find just the right notes. He has worried about not having a direction; he's felt guilty about putting out albums full of diverse styles; he's doubtful when told that he does have an inimitable sound that gives all his music a reference point; and he still worries about not being able to make a living playing music.

Modern Recording & Music first spoke to Edmunds while he was in New York on a brief promotional tour for both the *Concerts for the People of Kampuchea* and the then-forthcoming *Twangin...* LPS. The second meeting took place before the release of *DE7th*, in the London house where Edmunds, his wife, their baby son and an enterprising Yorkie were living at the time.

We next caught up with Edmunds on the road while he was touring the States in support of *DE7th*. Amid

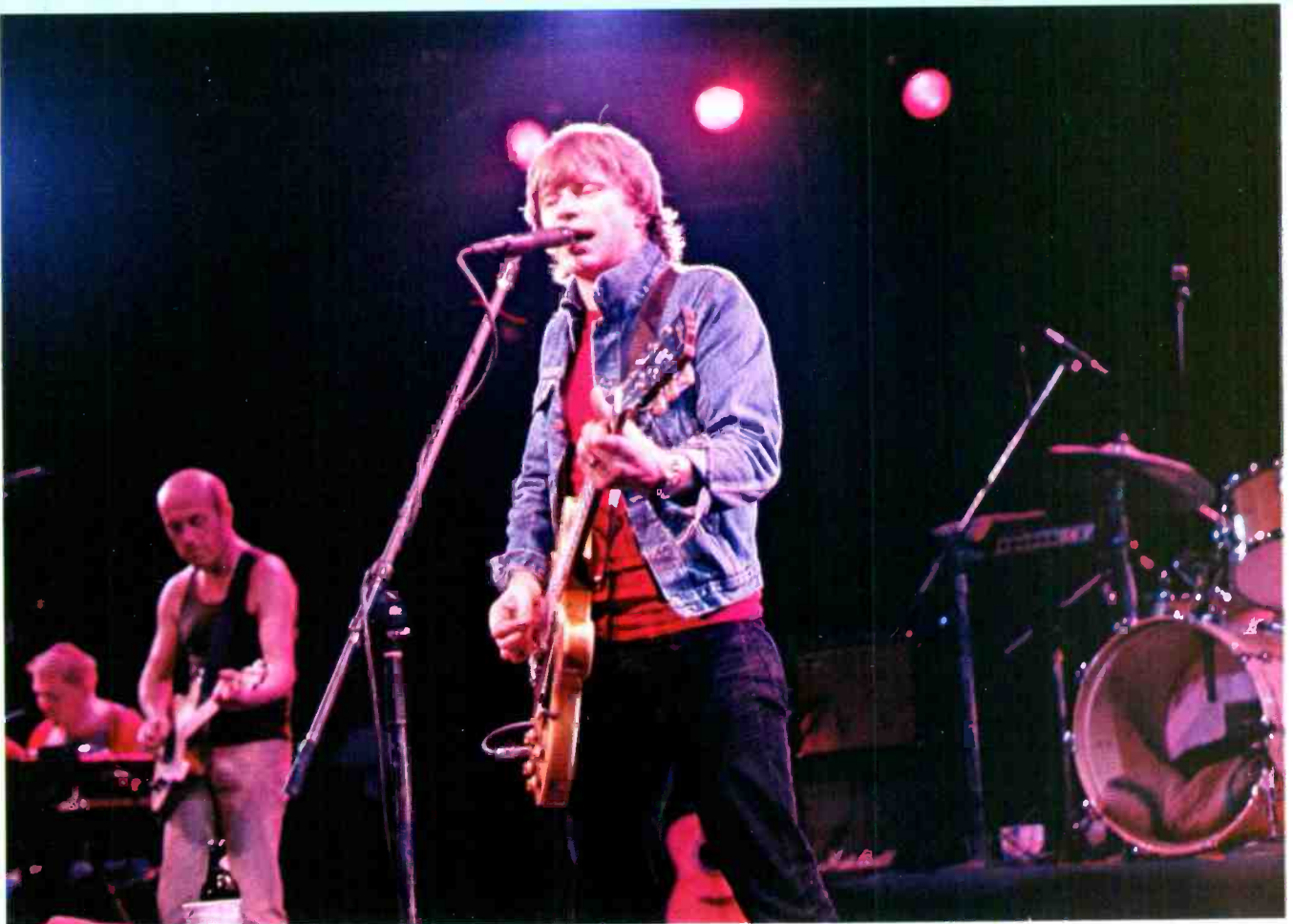
critical plaudits and packed houses Edmunds remained matter-of-fact, even faintly amused, as if he were still wondering who his fans are and why he's got them.

"I don't count myself among others who've had hit records, the so-called 'stars,' which I think is a good attitude to have. I feel all the time like I'm a fan who just happened to experience the other side of the fence as well."

Edmunds has had sporadic bouts of fame during the 15-odd years of his professional career, the first coming in 1968. After spending about nine years playing everything from skiffle to Stax in several bands based in his hometown of Cardiff, Edmunds and two friends formed

a psychedelic/blues band called Love Sculpture. Their fairly bizarre rock version of Khachaturian's "Sabre Dance," which featured Edmunds' searing, speedy and flashy fretwork, hit the U.K. Top Five. Edmunds' next round was in the fall of 1970, when, as his first solo single, he released a cover of Smiley Lewis's "I Hear You Knocking," which not only went to the top of the charts in the U.K., but also hit number 4 in the States.

Edmunds and bassist John Williams formed the nucleus of Love Sculpture, along with drummer Bob "Congo" Jones. Before Jones joined them, the trio with drummer Tommy Riley, was called the Human Beans, and as such released a single in 1967, "Morning Dew" (b/w "It's A Wonder").



“I remember going to see the film *The Girl Can't Help It* when I was 13 or 14... Little Richard came on and sang ‘The Girl Can't Help It,’ and that's the first time I ever had shivers up the back of my spine, and my hair sort of standing on end. I just couldn't believe it, that sound. I'll never forget that.”

Dave Edmunds: I don't know where the name Human Beans came from. We recorded at Kingsley Ward's studio in Rockfield [South Wales], and he had some kind of deal with EMI, which wasn't a particularly good one, as I recall. He just took that record up to them and someone at EMI put that name to it. I didn't care—I just had a record out. That was amazing!

Modern Recording & Music: After that, Riley left and you became Love Sculpture.

DE: That's right, Tommy left and we got “Congo” in. We were called the Image before that. But the name Love Sculpture, that's the *weirdest* name. Tommy thought it up, though he left before we recorded the first album [*Blues Helping*].

We had a vision of making Rockfield into something like Stax, so it would be a studio with a musical identity of its own. That was the idea. It was great fun in those days, recording at Rockfield, because it was just two mono machines up in

this potato loft, decked out as a studio. If you wanted some weird sound effects or anything, you had to use your imagination, whereas these days, with the gadgets you've got in the studio, you've got it all there.

MR&M: Do you remember any of the effects?

DE: Sure, singing through a metal funnel or something to try and get some weird vocal sound on “Morning Dew.” And I'll never forget when we tried to make our first stereo record. We'd do it somewhere with two microphones and bring one up and then the other to get some of the pan across. I mean, it's so simple now, you just turn a pan knob and it works, but there was nothing built like that then—or if it was, *we* didn't have it in the studio, so we just used to improvise. It's really hysterical, when I look back now. Great fun, though, it really was.

There were some clever effects on “River To Another Day” [Love Sculpture's first single]. The backwards guitar solo actually made sense, it

wasn't just mumbo-jumbo. When you reverse the tape to do a backwards solo, you don't know where you are. It starts from the end, and goes back to the beginning. And we really worked on it, so that when it was reversed back the other way it wouldn't be just hit and miss, like it was with the Beatles. And it worked, it was great. There was a very complicated end, too, a fade which was so over the top that the record company faded it before it got there.

MR&M: Was it a definite attempt to make a Beatles-type record?

DE: Yes, absolutely.

MR&M: Love Sculpture used to play several Beatles songs. Were any of them recorded?

DE: No, and I wish we had, actually, 'cause we used to do some quite adventurous stuff, things like “I Am The Walrus” and “A Day in the Life” with a three-piece band. It used to work; on a good night, it was great.

MR&M: Where did “Sabre Dance” come from?

DE: That's something we recorded right off the cuff. It was my idea. We used to support the Nice whenever they came down to Wales, and I loved them. Keith Emerson used to do that “Rondo” and things like that, and I just wanted to find a “Rondo,” really. I don't know why I chose “Sabre Dance.” It is the most unlikely hit record. The first question in the interviews I did was whether it was speeded up. It wasn't. I'd never heard of vari-speed then. We used to do it faster, as we got more used to playing it, faster and longer every night.

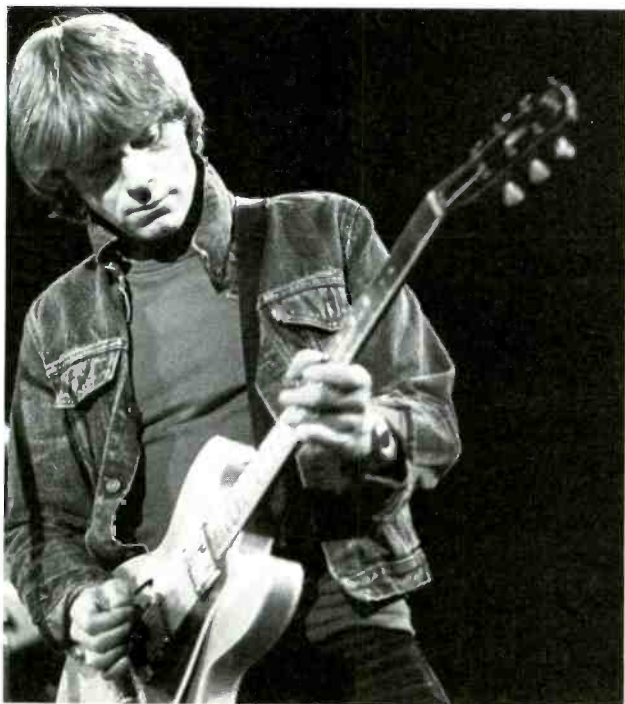
MR&M: After the success of “Sabre Dance,” did you feel your career was set?

DE: It was like it was happening to someone else. I just *knew* it was all so temporary; I could *not* take it seriously at all.

MR&M: So you expected to be back in a day job at any time?

DE: Yeah... I still do, actually.

MR&M: Come on,



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DE: I've still got a secret fear lurking behind that I'm suddenly going to find myself without anything. Loads of tax to pay and no money coming in. It's like a recurring nightmare. [Laughs]

MR&M: You must have seen some money after "Sabre Dance."

DE: No, it just kept us in wages. We had 40 pounds a week each, that was all, which kept us going for something like a year, then all the money was gone. But, see, the money we made from "Sabre Dance" went to pay for *Blues Helping*, which didn't sell that much. We didn't know that at the time. You find those things out afterwards. It seems so great, you've got this hit record...

MR&M: White blues bands were in vogue at the time, and Parlophone [the band's label, part of EMI] wanted to groom Love Sculpture in that mold, hence the LP *Blues Helping*. But that wasn't at all representative of the band's "live" sound, was it?

DE: Not at all. There was never much identity to the band, anyway. We just wanted to make an album—didn't matter what sort of album. If they wanted us to make a blues album, right! Blues album coming up. And that was it. I listened to a few blues records: I didn't even know what "blues" was. It has no overdubs to speak of, it's just the band playing. It was recorded in something like 12 hours.

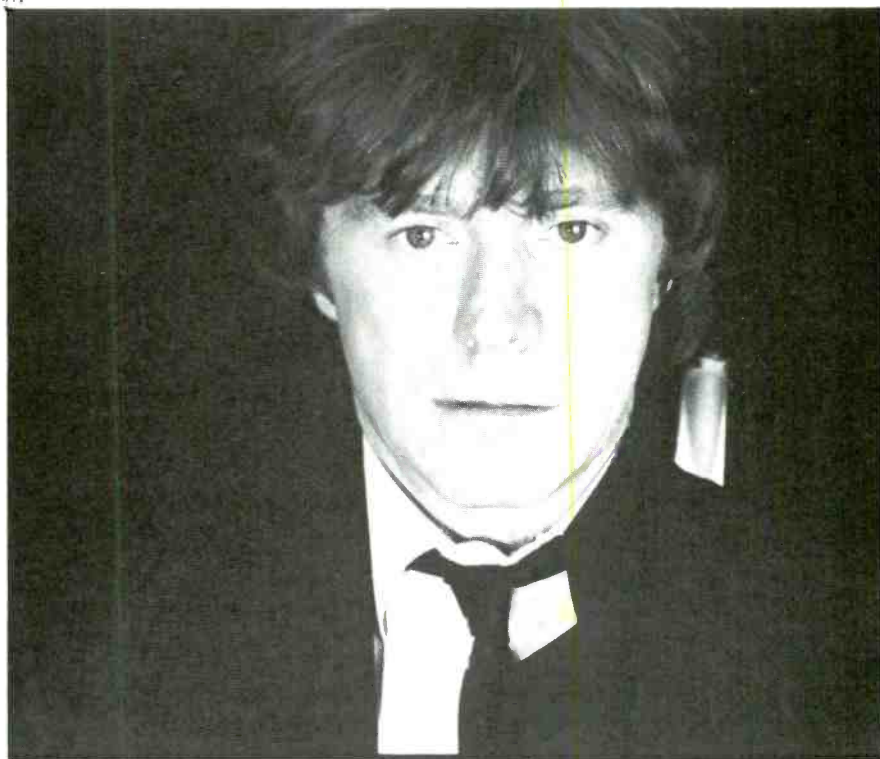
MR&M: What about the second album, *Forms and Feelings*?

DE: That second one was very weird. That's a good example, actually, of the fact that the band didn't know what to do. I mean, just doing rock and roll was *very* unfashionable, couldn't have done that. I suppose, if it had been left up to me, that's what I would've done.

MR&M: Love Sculpture broke up soon after that. The next record you released was "I Hear You Knocking." Where did that come from?

DE: I'd known the original when it was first released and then forgotten about it. United Artists re-released it as a single in about 1969 or 70, and it didn't do anything at all. It fitted into this format I had in mind for a Wilbert Harrison song, "Let's Work Together." I was going to do that but Canned Heat did it first, which really pissed me off. Then I was driving along in the car and heard the Smiley Lewis thing come on, and I thought, hang on, structurally that's exactly the same. So I used that instead.

"God, I hated school...It's like a big black cloud over my childhood...Nothing was making any sense until I heard my first rock 'n roll record, and it all just fit into place."



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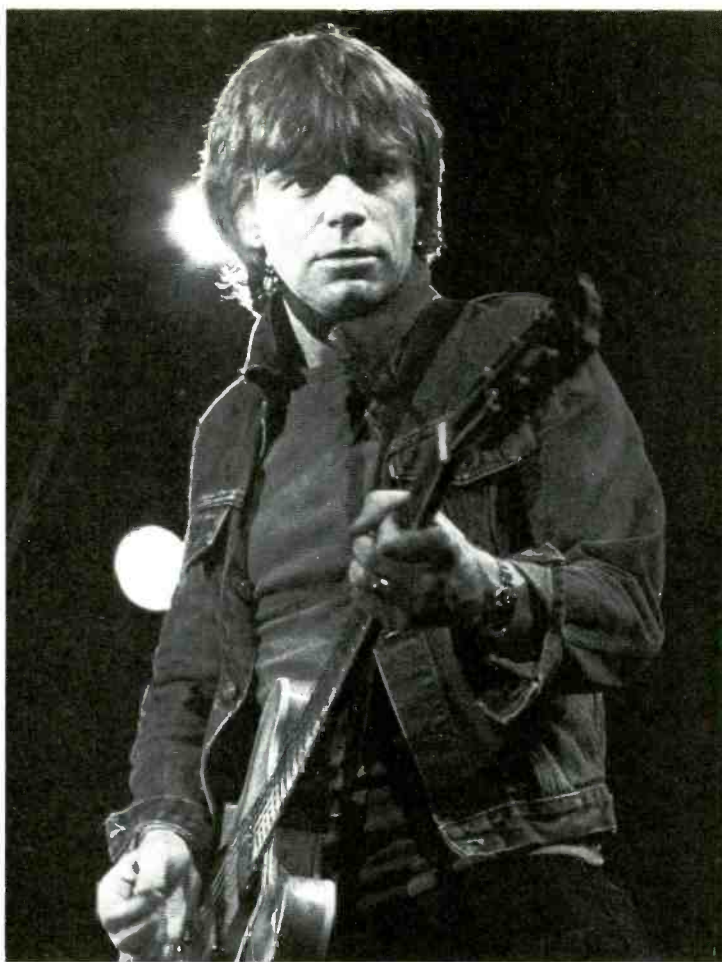
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EMI turned the song down. So then I played it to Gordon [Mills, head of Love Sculpture's agency] and he said, "Right. I'm starting a label, MAM, and we'll put it out as MAM 1." It didn't have *anything* going for it. There was one quarter-page ad in *Billboard* and *Cashbox* for one week, and the same in the English trades. And that was it. It just took off—everyone liked it and played it and bought it.

Edmunds didn't directly follow-up the success of "I Hear You Knocking" with an album or a tour; his first solo album, Rockpile, didn't appear until a little over a year later, though he spent most of that time inside Charles and Kingsley Ward's Rockfield Studios. As a matter of fact, that's how he spent most of the years between 1969 and 1976: in the studio, much of the time alone.

After the break-up of Love Sculpture, Edmunds "retired" to the Ward's studio and learned to use every inch of it. Since then he has produced and mixed all of his own work (as well as engineering his earlier LPs) and that of many others, including Foghat, Man, the Flamin' Groovies, Brinsley



Schwarz, Ducks Deluxe, Shakin' Stevens and, more recently, the Stray Cats and the Poolecats (not to mention the odd bit here and there, like producing one track on Squeeze's East Side Story, and engineering and playing guitar on Nick Lowe's song, "Without Love," which Lowe produced for his step-father-in-law, Johnny Cash).

1973 saw Edmunds releasing two singles, both of which went into the U.K. Top Ten, both remakes of older songs—the Ronettes' "Baby I Love You" and the Chordette's "Born to Be with You"—both produced with an epic, multi-layered Phil Spector-Wall-of-Sound approach, and both recorded all by himself.

That fascination with the Spector Sound culminated in 1975's Subtle as a Flying Mallet, a hybrid album that included not only a handful of Edmund's Spectroesque visions, but a couple of Chuck Berry songs, an Everly Brothers tune and one by Mel Tillis via John Fogerty. One song was written by someone who was to play an important part in Edmund's career for the next six years: Nick Lowe, whom Edmunds met while producing Brinsley Schwarz' seventh, and last, album, New Favourites. Lowe and the

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Brinslies also played on Subtle, and the two Berry tracks are "live" performances recorded during a '74 tour Edmunds did with the Brinslies playing as openers and as Edmunds's backing band.

Three of Subtle's tracks were taken from the 1974 film Stardust, of which Edmunds was the musical director and in which he had a small part, playing a member of the (fictitious) Stray Cats (another "member" was Keith Moon). Edmunds, singing and playing as one of the Stray Cats, contributed six songs to the soundtrack, and he was billed with "The Electricians" (Brinsley Schwarz) for a cover of "Da Doo Ron Ron" (though on the soundtrack it's a woman's vocal and for inclusion on Subtle Edmunds dubbed in his own).

MR&M: Though you released two singles in 1971, "I'm Comin' Home" and "Blue Monday," you didn't put out an album until the beginning of 1972. What happened? Did the success of "I Hear You Knocking" catch you off-guard?

DE: Oh, yes. Totally. I suppose if I had been really on the case I could've had a big album then. It was a matter of being lazy and complacent, and not quite knowing which way to go, anyway. But there you go.

MR&M: Did you start living out the typical pop-star fantasies?

DE: Not really. I bought a brand-new Jaguar from the garage I used to work in as a fitter. That was good—just went in, wrote out a check—but I really didn't start living out pop-star fantasies, no. I just bought a nice house by the studio, got married and settled down. Then I got divorced and started all over again.

MR&M: Did you find a direction with the album *Rockpile*?

DE: No, but it's not a bad album, though.

MR&M: For curiosity's sake, there's a little unfinished bit right before the song "It Ain't Easy"—what is that?

DE: Yeah, that was a track I'd done of Andy Fairweather-Low's, which I then decided not to use. It was on the 8-track tape, the master reel; it was the previous take. When I was doing the mix of "It Ain't Easy," I spooled back too far with "It Ain't Easy's" settings, the echoes and all that. So I just faded it by a bit, back down and slung it in there, for absolutely no reason whatsoever.

MR&M: Before we go any further, I'd like to know what first got you into rock and roll?

DE: I can quite honestly say that up until then nothing made any sense. I'd just been told to wash behind my ears, or eat all my vegetables, or been pushed off to school—God, I *hated* school. I just hated every minute of it. It's like a big black cloud over my childhood. Horrendous! Nothing was making any sense until I heard my first rock and roll record, and it all just fit into place then.

MR&M: Which record was that?

DE: "Whole Lotta Shakin' Goin' On" by Jerry Lee Lewis. It was like, *what is this sound!* Fantastic! I was just captured, straightaway, and it stuck with me. I remember going to see the film "The Girl Can't Help It" when I was 13 or 14. It started off with some guy talking, and then Little Richard came in and sang "The Girl Can't Help It," and that's the



first time I ever had shivers up the back of my spine, and my hair sort of standing on end. I just couldn't believe it, that sound. I'll *never* forget that.

MR&M: Is that about the time you picked up the guitar?

DE: Yes, there was one lying around the house. My older brother, who used to buy records, had a skiffle group. So the guitar was just there, you know, available, to pick up and learn a few chords.

MR&M: How would you define skiffle?

DE: I was just thinking about that. I suppose it was like British folk music. [People like] Johnny Donovan and Lonnie Donegan. There was some good stuff, actually. It was just before rock and roll took over.

MR&M: When did you leave school?

DE: I left school just before my 15th birthday. I had a succession of jobs and got fired from most of them for not being able to pay attention. I was just thinking about rock and roll songs all the time, having them running through my head and working out the chords. I thought I'd better get a job... I can't go on through life like this, listening to rock and roll records. So I went to a government training center and became a mechanic, to make some use of my life. And I was a good mechanic, actually. I really enjoyed it, working in the garage, on the cars. Perhaps I could fall back on that.

MR&M: did you ever have any vocal training at all?

DE: None.

MR&M: It's often said that the Welsh sing like birds.

DE: [Laughs] I don't know about that, although they have lots of choirs in Wales... I really love singing, actually. More than playing an instrument.

MR&M: How many instruments do you play?

DE: Roughly. How many instruments do you play roughly. Well, roughly I play... guitar is the main one, but I manage to get by doing a few things on my records with piano, and bass, if I have to, and I can get by on drums. That's how I used to make my records.

MR&M: By yourself.

DE: Yes. It's quite rewarding, actually, if it works out right, and you hear it back and it sounds like a band.

MR&M: Which brings us back to *Subtle as a Flying Mallet*, which, as anyone can tell from the picture on the back [Edmunds is sitting on the floor of a room filled with instruments and microphones, and strung with tape reels and tape like tinsel], was recorded primarily by yourself.

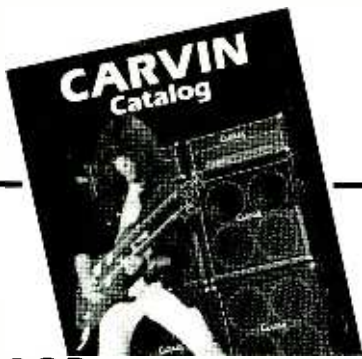
DE: It served a purpose, inasmuch as it taught me how to make records, but it did get a bit lonely. I wouldn't like to go back to doing that again.

MR&M: And the Phil Spector sound?

DE: That was a great challenge, you know. I had to do it by myself, that was the thing. I mean, you can get hundreds of people in and do it in one take, or you can get one person and do it in hundreds and hundreds of takes. And that's the way I did it [the latter method].

MR&M: Did you ever get bored, or lose track of where you were?

DE: No, no. You've got to be



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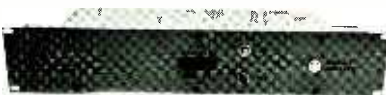
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careful, though, because you can end up in a hell of a mess. You still have to use some discipline...disciplined chaos.

MR&M: Was *Subtle*...yet another case of not having a direction for an album?

DE: I think that *is* my direction now. I've decided that I've finally got my direction, and it's just to do whatever the hell that you want to do. And it doesn't have to sound like anything you've done previously—not in my case. I don't think.

MR&M: But there'll always be something linking your work together.

DE: Maybe...I've given up now, trying to find a direction. I just do whatever I want to, and somehow it seems to work. I used to feel really guilty about having all different types of stuff on one album.

MR&M: What were you so worried about being different from—obviously you were comparing yourself to something.

DE: That's right. I was comparing myself to people who get in a particular niche, they get something which is their own—like the Police are doing now. They've gone into something that is all theirs, and you know just exactly who it is. That's what I've always been envious of...And it won't last, you know, it rarely lasts.

MR&M: But you, who worry, have.

DE: Yeah, that's why I don't feel guilty anymore. I've resolved it within myself. So I just do whatever the hell I want.

Meanwhile, back at Rockfield, Edmunds was putting down some tracks and waiting for Kingsley Ward to renegotiate a distribution deal with RCA ("Which took him forever to do," said Edmunds. "In fact, he's only just done it."), but since "nothing seemed to be happening," he looked around for another label, and found one in the person of Robert Plant, who signed Edmunds to Led Zeppelin's label, Swan Song.

Edmunds released four albums for Swan Song between 1977 and 1981 (not including last Christmas's Best Of collection): Get It, Tracks on Wax 4, Repeat When Necessary and Twangin'...(the LPs after Get It were recorded at London's Eden Studios). Nick Lowe's musical and songwriting contributions and collaborations with Edmunds on Subtle and even more on Get It turned, rather casually, into a

more solid partnership as co-leaders of the late, great group Rockpile (along with guitarist Billy Bremner and drummer Terry Williams). Rockpile alternately featured Edmunds or Lowe, depending on whose album was being recorded and which album was being supported on tour.

Working with Lowe, and Rockpile, gave Edmunds a direction, fresh material, and a much-needed impetus to get out into the world rather than stay alone at Rockfield. Lowe injected a refreshingly off-beat sense of pop humor into Edmunds's straightforward rock and roll, while Edmunds's musical and technical expertise not only helped clean up the rough edges in Lowe's songwriting and studio skills, but provided a solid traditional base for Lowe's often untraditional pop whimsicalities. Their professional relationship was almost symbiotic: at their best, they drew the best out of each other, and their strengths complemented each other's strengths as well as covered each other's flaws. Their "live" work, though sometimes sloppy, was always good-natured, enthusiastic and powerful. At their most joyously raucous they were in the definition of a true rock and roll band.

After playing together as a band for some four years, unofficially (Edmunds was signed to Swan Song, Lowe to Columbia), Rockpile finally released one Rockpile album in the fall of 1980, the disappointing Seconds of Pleasure, an album whose title seems ironically to reflect on the group's official life-span. Then three months and one tour later, they broke up. Confused? Well, so were they, apparently, as official statements concerning the split's cause ranged from lack of musical direction to a dispute between Edmunds and Jake Riviera, the legendarily mercurial manager of Elvis Costello, Nick Lowe and, at one point, three-fourths of Rockpile ("he never managed me," Edmunds said). [See also the profile of Lowe in MR&M July 1982.]

"Basically, I think it was that I fell out with Jake on a few points, but it was nothing that couldn't be resolved. It could've been sorted out," Edmunds had said a few months after the breakup. "But I just didn't feel we were moving in the right direction in the songs. I didn't feel quite at ease with some of the stuff. Though the album sold well and I like it, it seemed to have a bit of an identity problem. In every interview we did after Rockpile was formed we'd been asked, how do you

think a Rockpile album would sound once you get allowed to do it, contractually? And I always thought it would just take care of itself, and we'd find some sort of style. But we didn't, really. It was like half a Nick album and half a Dave album shored together. It didn't really happen as we had hoped. I didn't like some of the material we were doing; some of that pop stuff I didn't like at all.

"The idea was, we wanted to be a band that you could recognize by its style of music. You could switch on the radio—'Oh, that's Rockpile.' But it seemed to work better before, actually. At least we knew what we were doing. We were doing either a Nick Lowe album or a Dave Edmunds album. Once that went, and it was just Rockpile, we seemed to lose direction very rapidly. It's not that we were arguing about his thinking we should go one way and my thinking we should go another. We just didn't know. No one actually knew where it was ready to go. I think that's what it's all about. All the shit about business and Jake, as I say, could've been resolved."

While Edmunds didn't seem particularly reluctant to talk about his early career and his activities at present, questions about the Swan Song albums were met with a certain reticence. Whether that reticence concerned all talk about Lowe/Rockpile or whether it was just that Edmunds knew that most talk about Rockpile would almost inevitably lead to Riviera wasn't clear. It was clear that Riviera wasn't clear. For example, it seems that, in Edmunds's opinion, most of the major flaws on the Swan Song albums (with the exception of Get It), were due to Riviera's interference, from the covers of Tracks on Wax and Seconds of Pleasure to bothersome song choices on Tracks, Repeat When Necessary and Twangin'...

"Tracks on Wax was done very quickly. I can't remember much about it. It's the cover I don't like; it's put me off. I tend to forget that album because of it's cover. It was Jake's idea. He picked the photographer, he picked the photo... They were bulldozing tactics. He just said, 'All right! That's it! If you haven't got any better ideas, you'll just go with that one.' If I'd've got a better idea, I probably would've insisted on it being used. But I didn't."

Another cover that has Edmunds practically shuddering is Seconds of Pleasure's, which was, again "Jake's idea. I thought it was the most hideous

album cover I'd ever seen. It was done in such a rush, the recording and the printing, we didn't have any say in it at all."

Twangin'... was recorded well before Seconds, but was held up to avoid a simultaneous release with the Rockpile LP. In retrospect, Edmunds says of Twangin'..., "There're a few throw-away tracks on it, which I never would have recorded under normal circumstances, but Jake was sort of—'Come on, you've got to do it, put anything on it, release it, we want to get on with the Rockpile stuff.' He didn't give a shit about any of that solo stuff. That's why the cover was so horrendous on Tracks on Wax; he didn't really care. There were songs we used to do in soundchecks, just messing about, like "Three Time Loser," and he'd go, 'Come on, do that, put that one on.' Normally I never would have chosen that."

"Time has just flown since Rockpile broke up. It was undoubtedly for the better—you're no idea how happy I am, not just to be out of the band, but out of the whole thing."

Although the break-up was disappointing at the time, it's hard not to agree with Edmunds's judgment that it was all for the best, especially after hearing his first post-Rockpile effort, DE7th, and seeing the subsequent tour in which Edmunds seemed rejuvenated. Backed by an excellent band of old mates, mostly Welsh (Mickey Gee on guitar; Geraint Watkins ("Obviously Welsh, with a name like that") on keyboards and accordion; John David on bass; and honorary Welshman Dave Charles ("He lives in Wales, so that's something"; Charles engineered on Get It) on drums, Edmunds ripped through such new material as NRBQ's "Me and the Boys," Chuck Berry's "Dear Dad" and, of course, Bruce Springsteen's "From Small Things (Big Things One Day Come)" with supercharged energy and skill. The band also breathed new life into old standards like "Crawling From the Wreckage," "Girls Talk," "I Knew the Bride," "Let's Talk About Us," "Down Down Down" and "I Hear You Knocking."

MR&M: The Springsteen song—he did give it to you backstage after his show at Wembley [arena in North London], didn't he?

DE: Yeah, he sang it to me.

MR&M: Did he write it with you in mind or did he think you'd be good for it afterwards?

DE: I think he thought of me after.

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MR&M: Does your finished version sound much like the demo Springsteen eventually sent you?

DE: It was basically the same, except for the end bit, the key change and the horns. There are no horns on his version.

MR&M: Is working with horns something you've wanted to do for awhile?

DE: Yes, and I *think* if I'd've suggested it in Rockpile I would've got shouted down for it. I don't *know*, I never tried it, but I'm sure it wouldn't have come off. It's great having that freedom to get hold of things like a horn section, a good banjo player and Albert Lee to do a few things.

[*The first time Edmunds recruited guitarist Albert Lee was for a guitar solo in "Sweet Little Lisa" on Repeat When Necessary. On DE7th Lee plays guitar on "Paula Meet Jeanne" and "Warmed Over Kisses (Left Over Love)."*]

MR&M: You do "Warmed Over Kisses" as a bluegrass tune, which, I understand, differs tremendously from the original.

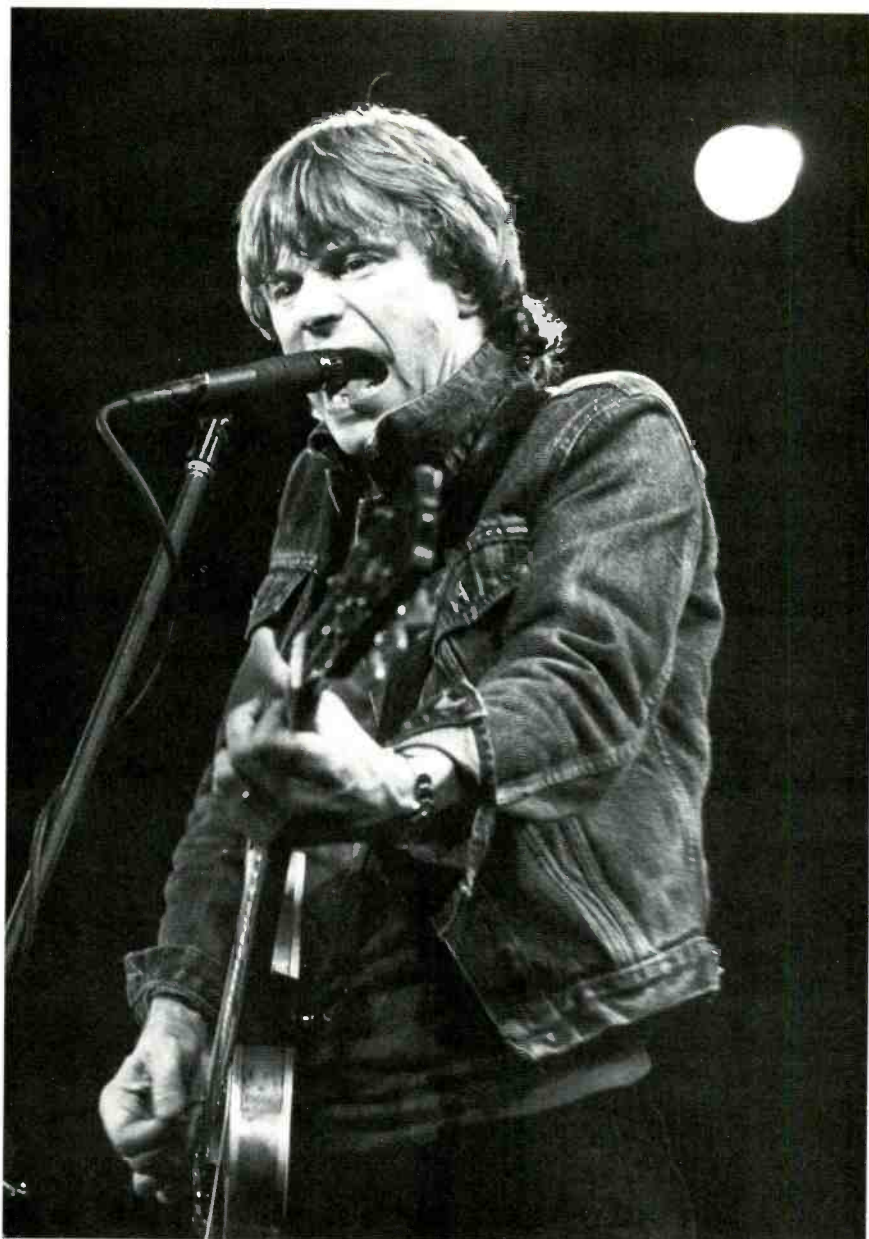
DE: "Warmed Over Kisses" was a hit. I think, in the early 60s for Brian Hyland. His version was slow, in $\frac{3}{4}$ time. I always liked the song, and for some reason I remembered all the words, 'cause I didn't have a copy of it. I just fancied doing a bluegrass thing, and I thought "Warmed Over Kisses" would be really good. And it's great, with banjo picking and Albert Lee wailing away.

MR&M: Bluegrass isn't the only different style on *DE7th*: "One More Night" is a ballad, quite different in style and in production (just piano and vocal with some echo) from anything else you've done. Where did you find that?

DE: I met this guy Liam Grundy in a pub in London where he was playing the piano, and I got to talking to him 'cause he was *really* good. I got on very well with him, and he played this song, "One More Night." He wasn't trying to push his songs or anything, he just started playing it, and I said, "That's great! Play it again!" He played it about six times for me. I was booked in the studio the next day, so we went in, he wrote the words down for me, played the piano and we got it in one take. It worked so well. It was the first time I'd ever sung it.

MR&M: How about the Chuck Berry song, "Dear Dad"?

DE: Someone in Seattle gave me a



tape on one of the Rockpile tours years ago. Some guy just came into the dressing room and said, "Here's a tape of stuff that you like: I know you'll like it." And it was all unreleased Phil Spector stuff, things like that, and Chuck Berry's "Dear Dad." I'd rather not still be doing Chuck Berry; I feel guilty doing it, 'cause I've been doing it for 20 years. But I just *had* to do that one, 'cause it's so obscure.

MR&M: The growth in popularity, over the past ten years or so, of the "singer-songwriter" took a lot of credibility out of being an interpreter, a song stylist. It's sort of like being a second-class citizen, but it wasn't always like that.

DE: Well it's nice if you can write your own songs, but I don't think it's [necessary]. Elvis Presley never wrote his own songs, but he was creative. I think as long as they're

good songs it doesn't matter who wrote them. But then I *would* say that, wouldn't I?

MR&M: What sort of pre-production work do you do—you don't have a home studio, do you?

DE: No, I wouldn't have one. For a start, I don't want a studio at home because when I get home that's what I want to get away from.

MR&M: Do you make demos of songs?

DE: No. Well... I do, but I release 'em. I never do demos because something always happens, and you get some kind of feel that you can never recapture in the studio. It *always* happens. Even if you play the same notes, and sing the same things—always something different.

MR&M: Do you try for as "live" a sound as possible?

DE: No, I go at it quite in a workmanlike way, really. Just get

something down that's correct, bass and drums, preferably—well, there's got to be the drums, hasn't there—and then just work from there, and build it up.

MR&M: But between the “workmanlike way” and the finish there has to be something else, otherwise the albums would just sound like workmanlike albums.

DE: When I said “workmanlike” I mean in getting the *first* thing down. Once the arrangement is sorted out, you know, where it's going to stop and start, and change key and all that, then when the bass and drums are down, after *that* I have a bit of *fun* with it. And because I haven't worked out *anything* of what I'm going to do...

MR&M: You mean the guitar part(s).

DE: Mmm. Never. Not until I'm actually plugged in, sitting down in the studio, plugged into the desk.

MR&M: With the tape rolling.

DE: Yeah. I just run the tape a few times until it starts shaping up. So I think *that's* where the fun comes in.

MR&M: Do you think about the arrangements at *all* before you go in?

DE: Sometimes, yes. It's much better if you have an idea of how you want the record to sound, then you can have a goal, something to strive for, a certain sound. Sometimes that's not always possible.

MR&M: Can you give an example?

DE: “Generation Rumble.” I didn't know where the hell that was going, or “Other Guys Girls.” I didn't know *what* was going on with that. There were loads of ideas I put into that which had to be really sorted out, 'cause there were too many little things. I had to take out a lot in the end, because it was getting a bit cluttered, which can happen if you don't know exactly what you're doing when you go into the studio and start recording.

MR&M: You don't rehearse these things, then?

DE: No, never.

MR&M: How much time do you usually spend in the studio?

DE: As little as possible. *DE7th* took five weeks, with weekends off. I always work Monday to Friday, and have the weekend off.

MR&M: Do you think you've changed your recording techniques? For example, if you were to re-record your first album *Rockpile*, would you use somewhat the same approach, being that you know more now?

DE: I'm not sure I *do* [know more], actually. I like that album because you had to use your own ingenuity for special effects. All you had was a desk—you know, a recording console—a tape machine and some microphones. *None* of the gadgets you get now. Harmonizers™ and all that. If you wanted any special effects you had to, as I say, use a bit of imagination. That was the fun of making records back in those days. Now it's just Harmonizers™ and *things* that'll do this and that, which I *rarely* use, if I can help it.

MR&M: What's Eden Studios like?

DE: It's a good studio...but they're all the same now; they've all got the same things. They've all got Harmonizers™, and DDLs, and Lexicon echo units. They have to, to compete. They've all got the same [equipment] so it just doesn't really matter. I use a different studio now called Maison Rouge: it's Jethro Tull's studio.

MR&M: What's your relationship with an engineer? Do you need to tell them exactly what to do, or what sound to get?

DE: Well, it's getting to know each other, really. Once you get to know each other really well you don't *have*

to tell them, “Listen. I want this sort of sound.” He probably already knows, if you get along well with him and if he's good. I like to sort of do my own engineering; when it comes to mixing, usually I mix myself. I used to do it *all*, plugging up the mics and everything, but that got a bit, you know...I can't be bothered.

MR&M: When did you stop all that?

DE: When I left Rockfield and went to Eden. It was great to do it to learn how how it all goes, but now it's just the mixing I want to do.

MR&M: You use a blonde Gibson 335 and a blonde 335 Dot “live.” Do you use different guitars when you're in the studio?

DE: I use a Gibson L6S for recording, 'cause it's got a bit more top on it. I plug straight into the desk—well, it's “board” they call it over here—straight into the board, I never use an amplifier. And I use a Gibson Everly acoustic, a Martin D-45 acoustic and a Gibson Switchmaster.

MR&M: And only the 335s go on the road...

DE: That's right. One of them's from 1958, which I bought second-hand in 1962, or something like that. And Gibson's just given me that

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second one. They've started making them again, identical to the one I've got.

MR&M: Was the '58 your first guitar?

DE: No, I think I had one before that, but that was my first *real* one.

MR&M: How many guitars do you have?

DE: Too many. About 15 or 16... 17, I think. I keep some at home and store the others.

MR&M: What are some of the others?

DE: Elvis Costello gave me a Gibson Everly for my birthday two years ago.

MR&M: The one you mentioned?

DE: No, actually I just bought a much better one. So I've got one not-so-good one and one fantastic one. Oh, I've just got an Ovation, as well, for on the road. And I've got a Gibson J200. [Edmunds also has a black 335 in addition to the two blonde ones.]

MR&M: Over the years the focus seems to have changed from you as a guitar player to you as a singer; also, your guitar sound has changed.

DE: Yeah, I think I enjoy singing a bit more [than I did]. As for the guitar sound, it's probably the difference in guitars that I use. I used to use just the one I'm using on stage. I used that all the time.

MR&M: You don't use that for recording now?

DE: Not very often.

MR&M: Have you ever thought of

using an outside producer?

DE: I have, actually. I can't see it working, because I'm very stuck in my ways about how to make records. I wouldn't mind trying it, one day.

MR&M: Have anyone in mind?

DE: Not really. I don't know... perhaps Martin Rushent.

MR&M: While producing others, have you ever had the urge to, instead of telling them what to do, do it yourself?

DE: Oh, yeah, I've done that. I've gone out and said, "Give me that guitar!" and started playing. I did that with the Flamin' Groovies. You've got to be very patient.

MR&M: Do you use any effects "live?"

DE: Only an echo on the vocal, nothing else.

MR&M: Do you have trouble taking a song like "Queen of Hearts," which is so delicate on vinyl, and playing it "live?"

DE: I try to get it a bit near [to the recorded version] by using that acoustic guitar on stage [Mickey Gee's Ovation]. I think that helps a bit. But, no, you can't do it delicately, really.

MR&M: How do you approach your "live" sound as opposed to your recorded sound?

DE: The idea on stage is to try and get it as close as possible to the record. But that's where the delicate ones suffer. I find it very hard to do any song ["live"] that's a bit...classy, or

delicate, or has some taste at all.

At present, Edmunds will have finished the Stray Cats's third album and his own eighth solo LP. He and his band, the "Welsh Mafia" as the English press dubbed it, are also featured on the soundtrack for the English film Party Party (interestingly enough, the Police's Sting borrowed Edmunds's Mafiosi for use as his backing band on his song in the soundtrack). Tour plans are scheduled for Europe and Scandinavia, as well as a return to the States early in 1983, around the time of the new album's release.

When it comes down to it, it's amazing that after so many years Edmunds can still make basic rock and roll sound like a new toy. His music may always be out of fashion but it will never be out of style.

MR&M: How do you think you've managed to keep a spirit of originality after all these years?

DE: I don't know, I really don't know. I just keep getting ideas to do songs, and I go into the studio and do them as best I can. Really, that's it.

MR&M: Do you see yourself doing this for a long time yet—of course, if someone had asked you ten years ago...

DE: Right, if someone had told me ten years ago that I'd be doing this, I'd've been very surprised, and pleased. But, there's nothing else I can do.

ADDITIONAL STAGE EQUIPMENT

Dave Charles—drums:	Ludwig kit 1 bass drum—22-in. 1 rack tom—13-in. 1 floor tom—16-in. 2 Zildjian crash cymbals-14 ins. 1 Zildjian ride cymbal—14 ins. 2 Zildjian cymbals-18 and 20 ins. 1 Zildjian Chinese cymbal—18 in. 1 Ludwig snare drum—6 in. Ludwig hi-hat Speed King bass drum pedals
John David—bass:	Black Fender Precision 2 Ampeg SVT 300 watt amps 1 Ampeg SVT speaker cabinet 1 Sunn speaker cabinet
Dave Edmunds—guitar:	Blonde Gibson 335 Blonde Gibson 335 Dot Mesa Boogie amp Marshall 4 x 12 speaker
Mickey Gee—guitar:	Blonde Fender Telecaster Ovation Legend Mesa Boogie amp Marshall 4 x 12 speaker
Geraint Watkins— keyboards:	Yamaha CP80 electronic piano Scandalli accordion 2 Roland JC 120s Yamaha PM 170 mixer Yamaha 4115 speaker
Contractual rider provides for a 32-channel mixing desk, minimum of 24, and 16-channel desk for monitors.	

Edmunds operates the echo on his voice from a foot switch onstage, through the whole P.A.—he's the only one that controls that, not the engineer. There are no other effects "what-soever."

At least 115 dB SPL: about 8000-watt system.

SELECTED DISCOGRAPHY

(albums only—U.S. release unless otherwise noted)

w/LOVE SCULPTURE

<i>Blues Helping</i>	Rare Earth RS 505	1968
<i>Forms and Feelings</i>	Parrot PAS 71035	1969

SOLO

<i>Rockpile</i>	MAM 3	1972
<i>Stardust</i> (soundtrack)	Arista 5000	1975
<i>Subtle as a Flying Mallet</i>	RCA 5003	1975
<i>Get It</i>	Swan Song SS 8418	1977
<i>Tracks on Wax 4</i>	Swan Song SS 8505	1978
<i>Repeat When Necessary</i>	Swan Song SS 8507	1979
<i>Twangin'...</i>	Swan Song SS 16034	1981
<i>DE7th</i>	Columbi FC 37930	1982

w/ROCKPILE

<i>Seconds of Pleasure</i>	Columbia JC 36886	1980
<i>Concerts for the People of Kampuchea</i> (2 tracks)	Atlantic SD 2-7005	1981

COLLECTIONS

<i>Dave Edmunds & Love Sculpture—The Classic Tracks—1968/1972</i>	EMI One Up 2047 (import)	1974
<i>The Dave Edmunds & Love Sculpture Singles</i>	EMI/Harvest SHSM 2032	
<i>A's & B's</i>	(UK)	1980
<i>The Best of Dave Edmunds</i>	Swan Song SS 8510	1981

Profile: Barry Mann & Cynthia Weil



PLAYED IN SEQUENCE, such songs as "On Broadway" by the Drifters (or George Benson), "Blame It On The Bossa Nova" (Eydie Gorme), "Kicks" (Paul Revere and the Raiders), "Sometimes When We Touch" (Dan Hill), "We Gotta Get Out Of This Place" (The Animals), "Only In America" (Jay and the Americans), "The Shape Of Things To Come" (Max Frost and the Troopers), and "Just Once" (Quincy Jones with James Ingram), would seem to have very little in common. But they do: all of them were hits and all were written by the husband and

wife songwriting team of Barry Mann and Cynthia Weil.

With over 20 years of musical and marital collaboration behind them, Mann and Weil are still penning one hit song after another. Once part of the infamous Brill Building stable of writers, where they worked alongside such notable writers as Carole King, Gerry Goffin, Neil Sedaka, and Leiber and Stoller, Mann and Weil were responsible for some of the most timeless rock and roll hits of the 1960s and '70s. The 1980s? So far, nothing but more successful hit songs.

According to their official bio, over 140 million of Mann and Weil's recorded songs have been sold to date—a staggering number, until one gazes at the list of hits to their credit. Along with those previously mentioned, the following songs, written either together or by Mann or Weil in collaboration with another writer, include: "He's Sure The Boy I Love," and "Uptown," both by the Crystals; "Patches," by Dickie Lee; "My Dad," by teen idol Paul Petersen; "Saturday Night At The Movies," by the Drifters; Gene Pitney's "Looking Through The Eyes Of Love," and "I'm Gonna Be Strong"; "Walkin' In The Rain," by the Ronettes; "You've Lost That Lovin' Feeling" and "Soul And Inspiration" for the Righteous Brothers; "Hungry," by Paul Revere; "Make Your Own Kind Of Music" (Mama Cass); "I Just Can't Help Believin'" (B. J. Thomas, Elvis Presley, others); "How Much Love" by Leo Sayer; "Here You Come Again" (Dolly Parton); "Sometimes When We Touch" (Dan Hill); "He's So Shy" by the Pointer Sisters, and plenty of others. Not bad considering the two writers had little formal musical training.

It all started in 1961 for Mann and Weil when they were signed to Don Kirshner's publishing company, Aldon Music. Mann had already written a hit for the Diamonds, "She Say (Oom Dooby Doom)" and "Footsteps" for Steve Lawrence.

In 1961, Mann added his own recording of "Who Put The Bomp" to his list of credits. (The novelty song was only one of many recordings Mann would make over the years, but remains his only hit under his own name.) 1961 also found Mann and new songwriting partner Weil tying the knot.

The hits just kept on comin'. When the British era struck, Mann and Weil adjusted, penning hits for the Animals and American counterpart acts such as Paul Revere and the Raiders.

The New York City-born and bred team was always versatile—able to write for rock and roll, R&B, even country and MOR. Their songs have crossed over into every genre, finding their way to artists as diverse as George Benson, Eric Carmen, Blue Oyster Cult, Hall and Oates, Elvis Presley, Barbra Streisand, Slade, Tina Turner, Ronnie Milsap, Teddy Pendergrass, Dotty West, Grand Funk Railroad, Aretha Franklin, the Fifth Dimension, Bette Midler, the Drifters, Tony Orlando and the Ronettes. They've also written for soundtracks, and there's no telling what lies ahead for this talented pair that is still bubbling with creativity.

During a recent stop in New York to accept an award from the Songwriter's Hall Of Fame, Mann and Weil spoke with Jeff Tamarkin about their long and rewarding career.



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Modern Recording & Music: Did you begin as performers or have you always been primarily songwriters?

Barry Mann: I began writing as a kid, when I was 13 or 14. But I never really attempted to get into the music business at that time. I used to work as a busboy at the resorts in the Catskill Mountains [upstate New York] because I was going to go to college to become an architect. While I was up there I'd sing my songs at talent shows. I'd always run into these guys, typical music biz people with the big cigars, saying, "If you ever decide to go into this business, look me up." For some reason, I took down their names. Then I went to school for about a year, but I couldn't see myself as an architect. So I looked up the names and went to one of them with four of my songs.

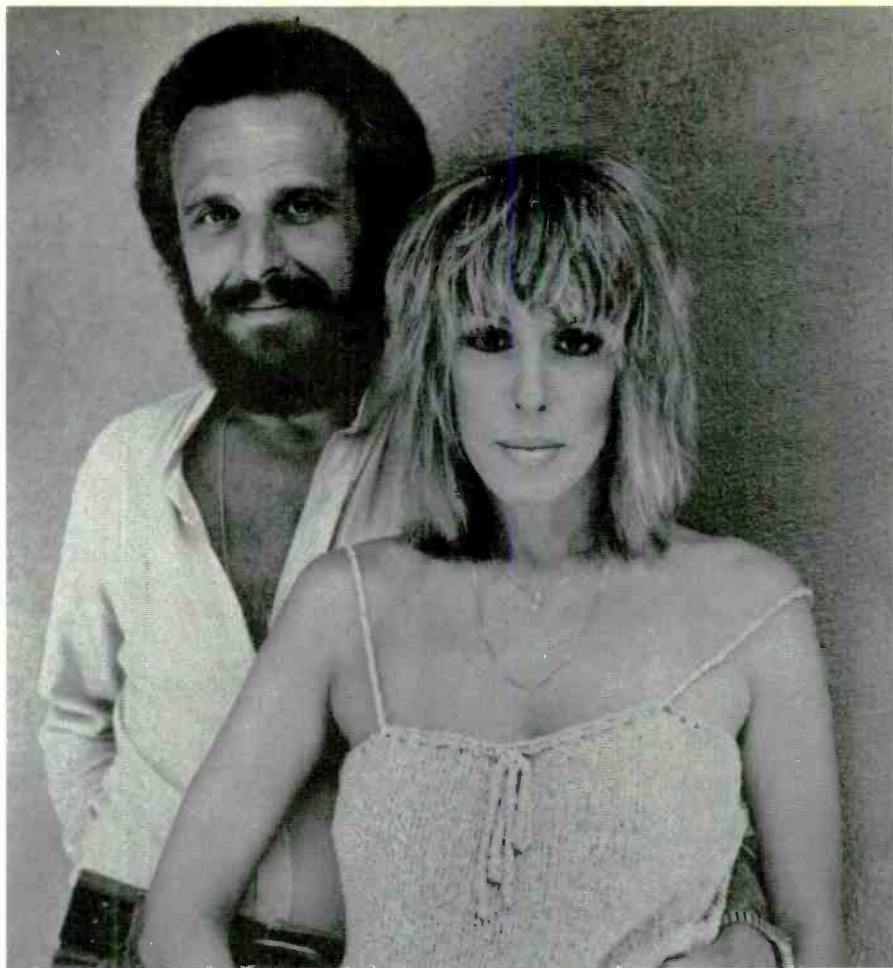
That's how I got started. From there I went into playing piano on demos.

MR&M: You were both lucky in that you didn't get screwed around by people in the business. In those days there were more people *not* seeing the money they earned than seeing it.

Cynthia Weil: It was horrendous. You'd hear about people selling songs

BM: I remember my mother copy-righting my songs by sending them to

"ON Broadway"
 "We Gotta Get Outta
 This Place"
 "Only In America"
 "You've Lost That
 Lovin' Feelin'"
 "He's Sure The Boy
 I Love"
 "Make You're Own
 Kind Of Music"
 "He's So Shy"
 etc. etc. etc.



herself in the mail. She was aware of that angle.

MR&M: What was the first song you sold?

BM: The first one we wrote together, but it didn't sell, was "Painting The Town With Teardrops," by a guy named Vinnie Monte. The first hit we had, in 1961, was by Tony Orlando, a song called "Bless You." That was the first hit we had together. I had one by myself for the Diamonds in 1959, "She Say (Oom Dooby Doom)." I also had a Steve Lawrence record called "Footsteps." Then I met Cynthia.

MR&M: Did you have any formal training?

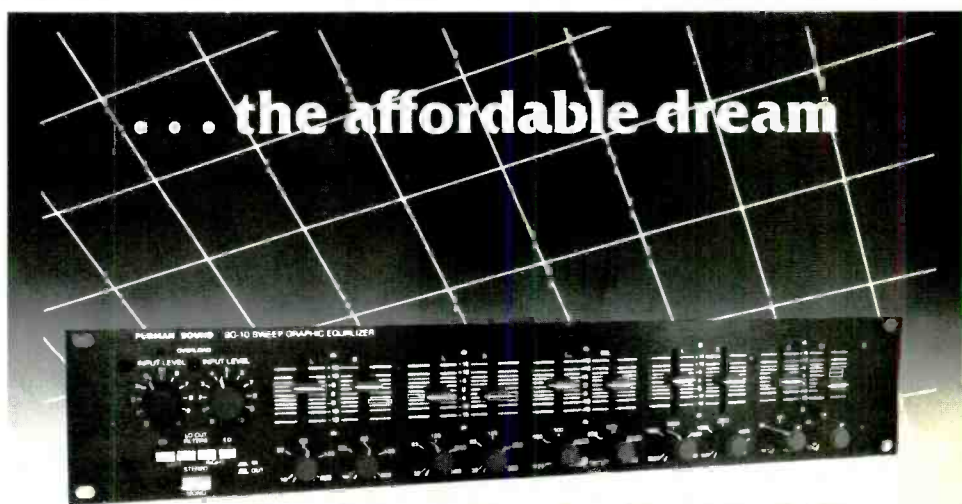
BM: I play by ear but I took about a year to learn the basics. I learned chords on a ukelele. Later on I took some courses to try to further my musical education. I can barely read and write music.

MR&M: How did you put your musical thoughts on paper?

BM: I could barely write out my ideas on lead sheets.

CW: Most of the singers didn't read; they took the songs from demos, so you just taught it to them.

MR&M: How did you go about selling songs in those days—by

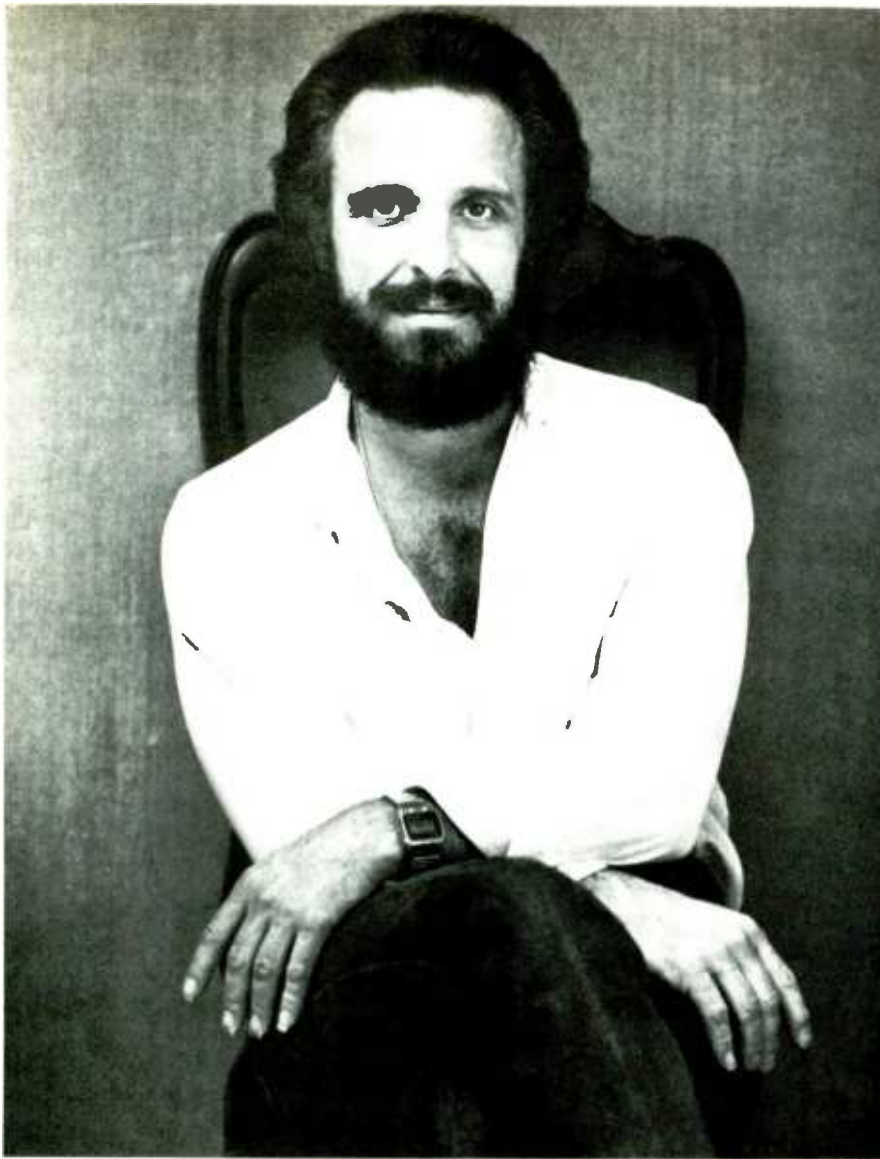


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nothing to do with it.

CW: It was the challenge of getting the record. We never even thought about anyone outside the office getting it. If Goffin-King didn't get it, or we didn't, it didn't matter who did. It was a sibling rivalry, with Kirshner as our father figure, and we all wanted to please him. If Don called and said someone was recording, you went to the piano and tried to write for them, whether it was country, R&B, rock.

MR&M: How did you know about writing country music, having grown up in New York City?

BM: We had a pretty big country song, "If A Woman Answers," by Leroy VanDyke. It was straight country.

CW: It was so country that it almost sounds funny now.

BM: There were a lot of country hits back then: Bobby Bare's "Detroit City," Johnny Horton's records.

MR&M: It seemed as if the whole music business was centered in that one [Brill] building.

CW: There were actually two buildings, the Brill Building and 1650 Broadway, which we were in. But Leiber and Stoller were in the Brill Building. So if we were writing a Drifters song and they were working with them, we'd grab our lead sheets and go over there.

MR&M: How much did your experiences growing up in New York contribute to your writing? If you were from the Midwest, I doubt you could've written "On Broadway" or "Uptown."

CW: Oh, definitely. We were city kids. I was from Manhattan and he was Brooklyn.

BM: It's two different countries.

CW: We wrote a song that's never seen the light of day called "Up From The Streets," which was the history of that time. The subways and all that was part of you. It had to show up in your music because it was your life.

MR&M: Even in your early days, your songs had messages in them. Besides the Drifters songs, there were "Only In America," "Kicks" and "We Gotta Get Out Of This Place."

CW: We wrote one, again that was never recorded, called "I'm A Man"; it was the story of the whole racial situation at the time. "Uptown" was probably one of the first sociological songs in that sense.

MR&M: What was the inspiration behind that song?

CW: It was purely a matter of wanting to say what we did. What's

knocking on doors until they'd listen?

BM: The first time I did but then I began to meet a lot of people, one of whom was Don Kirshner, who was starting a publishing company. I forgot about it for about a year and then a friend of mine suggested I go see him. I did and he heard my songs and said, "Great. I'll sign you." I thought he was kidding. I said, "Well, for how much?" He said, "I'll pay you \$150 a week," against royalties. I said great!

MR&M: The Brill Building is such a legend today, something that goes far beyond just being a building that housed many music business people. A large percentage of the early rock and roll hits came out of that place. Was it really like a hit-making factory, as we're led to believe, with people like yourselves, Carole King, Jerry Leiber and Mike Stoller, Doc Pomus and Mort Shuman and Neil Sedaka, just cranking out hit after hit?

BM: The word factory is kind of

derogatory. We always think of it more as a school. That was the most positive aspect of that period, because there's nothing like it around today. There were cubicles with pianos in them, and there was always a lot of activity, but we weren't forced to write—we wrote because we wanted to write. Basically we'd write at home and then come in there and play it. It was an electrified, competitive atmosphere.

MR&M: Did that competition help or hinder the creative process?

BM: I really don't know. We were so competitive, and so were Carole King and Gerry Goffin. We were always trying to beat each other out on a record, but we also helped each other. So we got out a lot of records because of it but I do wonder if all that competition wasn't in the way. Yet I tend to think it helped. But we didn't have any lives—our lives were writing, cutting demos; never going on vacations, because we just wanted to get those records. The money had

interesting was that at that time Kirshner was into romantic songs; they all had to have positive endings. I remember playing it for him and feeling horrible because it didn't get a reaction. If he loved a song, it made your day. But after it was a hit he took me aside and said, "Write more of those ones I don't understand."

MR&M: Was it possible to calculate a hit, to write a hit to order?

BM: Not all of the time, but it seems that way. It was easy in those days to write a follow-up. But I have to say that I was never very good at writing a follow-up. In some cases, we just wrote a song. We just wrote "Uptown" and then the Crystals had the hit. "On Broadway" was originally written for the Cookies (who had a hit with "Chains," later covered by the Beatles). It originally had a female lyric. When Leiber and Stoller said they wanted to do it with the Drifters, we had to change the lyrics. "You've Lost That Lovin' Feeling" was sort of tailored for the Righteous Brothers.

CW: Phil Spector told us he'd signed them [the Righteous Brothers] and we heard some earlier records they'd made, heard the high and low voices, and the song was just right for them.

MR&M: Did you always receive your due royalties?

BM: We were naive and never questioned it.

CW: I've never felt ripped off, although I'm sure that some money disappeared. If there was any discrepancy, it was with what the record companies paid Don, not what he paid us.

BM: The artists are the ones that really got ripped off.

MR&M: Did you ever involve yourselves with the recording sessions after you'd written a song?

BM: We were involved with all aspects. I played piano on "Blame It On The Bossa Nova" (Eydie Gorme). On "On Broadway," I played piano and Phil Spector played the guitar solo.

MR&M: Did the songs always turn out the way you envisioned them?

CW: The Drifters things did. Some of the ones that Spector worked on turned out even better than we'd hoped.

BM: Phil Spector was incredible then. So were Leiber and Stoller. They were the best there was so you didn't have to worry about your songs being done badly.

MR&M: What was Spector like to

work with? Was he as much of a madman as people say?

BM: No. You could say he was eccentric but not a madman.

CW: You always hear wild Spector stories. I don't know if he was on good behavior with us or we brought out the best in him, but he was always good to work with; he called when he said he'd call.

BM: He was never the way people say he was, around us anyway. Maybe later on he got more out of hand.

CW: His eccentricity may have come out when we weren't around. We'd hear about him making people sing things for hours and hours.

BM: He knew what he wanted to get at in a session.

MR&M: What was Carole King like?

BM: She was one of the most talented people I'd ever met. She could have had hit records earlier than she did, or have been an arranger. She's a naturally gifted human being.

CW: We've stayed in touch with her through the years and I co-wrote "One To One," the title track on her newest album.

MR&M: Who else?

CW: There were other people who weren't necessarily writers. Dick Asher worked there and now he's the president of Columbia. Allen Klein was there and he's had an exciting and nefarious existence; Lou Adler ran the West Coast.

BM: A lot of artists came up there. I remember the Everly Brothers coming up; Brian Wilson came up in 1962 and played some tunes.

MR&M: I'd imagine there was also a large amount of nuts coming around, trying to peddle something or other.

CW: There were always a lot of strange people drifting through. Now I would be paranoid to walk those halls at night, but we never even thought of that. It was really a hotbed of creative craziness. I remember we used to wait around for Kirshner to see if he needed a song for someone. We used to wait for him in front of the men's room because we knew that sooner or later he'd have to go. But then the men would grab him and talk inside. Once I grabbed him and said, "Look, I've been waiting here for three days," and he finally said, "OK, come with me," and we started to walk into the men's room together. Then we both looked at each other and said "No!" But that's where

our consciousness was, totally into the music.

MR&M: Did you ever feel isolated from the real world?

CW: We were; there was nothing in our lives except those people and our work. We had absolutely no friends outside the business because no one understood our hours.

MR&M: How did it all change for you with the coming of the British invasion?

CW: We wondered what was going to happen to us because everything English was being played on the air.

BM: If you listen to that stuff now, some of it was great and some was really terrible. But it was fresh and different then.

CW: Somehow we just stayed, and had more hits: "Lovin' Feeling," "Kicks," "Hungry," "We Gotta Get Out Of This Place," "Soul And Inspiration." We'd actually written "We Gotta Get Out Of This Place" for the Righteous Brothers and it got sent off to the Animals.

MR&M: What about "The Shape Of Things To Come," that great garage band song from the *Wild In The Streets* film? That song and film became a real cult phenomenon.

CW: I know. (Laughs) I remember going to see the film and then going to dinner with someone and starting to cry at the dinner table. That's how crazed I was. And everyone was saying "Why are you crying? This is going to be very successful."

MR&M: You wrote the whole soundtrack, right?

BM: Yeah, but I thought the songs were terrible. Except for "Shape Of Things To Come." Some of it, like "14 Or Fight," was pretty bad. The album was produced by Mike Curb, who's now the Lt. Governor of California, and it ended up a hit, which was pretty amazing.

MR&M: Which of your own songs do you think have held up as classics?

BM: "Uptown" and "On Broadway," and some of the other Crystals things, like "He's Sure The Boy I Love." I wasn't too hot on "Walking In The Rain." I felt that it was a cop of Ellie Greenwich and Jeff Barry. It was a great pop art record, though. "Lovin' Feeling" was good. I can tell you one I don't like: "Blame It On The Bossa Nova." I kind of liked "My Dad," which Paul Petersen did. I like "Kicks." "Patches" doesn't stand out to me; that was part of the learning experience.

MR&M: What about your own hit,

Barry, "Who Put The Bomp?"

BM: I liked "Who Put The Bomp." I thought it was a hit song. I think a lot of people didn't get it, but they bought it because they dug the groove.

MR&M: Why did you decide to do that one yourself?

BM: I just thought it was a hit, and I liked the put-on. It was a piece of the times, a put-on of all the doo-wop records.

MR&M: Were you frustrated that you didn't have a follow-up hit?

BM: Yeah, but I became more frustrated later on trying to make it as an artist. I still think of myself as a songwriter who had an off-the-wall hit. I was just pissed off that they had to go record an album. I knew it would never sell.

MR&M: You're familiar, I'd imagine, with the magazine that came out in the '70s called *Who Put The Bomp?*

BM: Yes, I met the publisher, Greg Shaw, and now he has Bomp Records.

MR&M: As you get older, do you think you could still write the kind of songs you did when you were starting out?

BM: We could, but it would be bullshit.

CW: I don't think we could write the way the Go-Go's do. But I wouldn't want to because they've done it fine.

BM: I could probably write an angry, new wave kind of song if I feel the anger. I can still relate to some of that.

MR&M: Do you keep up with the current music?

BM: We listen to top 40 and albums.

MR&M: Do you feel positive about the changes in music and the business?

CW: Those are really two separate questions. The changes in the business are frustrating because it's so much more limiting now and everyone's so careful, because of the economy. They're cutting artists [from record company rosters] and nobody wants to take chances anymore. I don't know if there's as much room for innovation as in the old days. There was instant gratification then; people seemed more excited about the music. It was a singles market and instead of waiting eight months for the album to be completed, they'd go in, cut four songs, pick a single and you'd be on the air in two weeks, and on the charts in another week. It generated the creative process be-

cause you'd hear something of yours on the air and it'd trigger you. Now it's all business oriented; attorneys running record companies. You hear more things like "That sounds like a hit," rather than "I love that song."

BM: Now you write a song and then the producer has to hear it. If he likes it then the artist has to hear it. If the artist likes it he cuts that song plus 15 other songs for an album that will contain 11 songs. He cuts the album and then you have to hope that the song will be picked as a single.

CW: If it isn't the single, you hope that he has another hit on the album so the album will sell.

BM: Then you hope that the record company is behind the album and is promoting it.

CW: The work you have out now is something that you did a year ago; that's how long it takes.

MR&M: Another difference is that in the old days, if a DJ liked a record, he just put it on. Now you have to fit into a specific station

format before they'll even listen to it, then you have to convince a program director to add the record, then if you're lucky they'll even play it.

CW: If you think about how hard it is you'd never write another song.

MR&M: What is the division of writing duties between the two of you? Who does what?

BM: Cynthia writes all of the lyrics and I do the music. I do write by myself, though, and we both work with other people.

MR&M: You've written a few soundtracks. How does that kind of writing differ?

BM: It's not that much different than writing for someone. But you have to deal with movie people who say change this and change that. More people to try to please.

MR&M: How has your writing process changed over the years?

CW: There was less to live up to in the beginning. The process was easier then, although it was never really easy. Now you know that



everybody's listening; then there was nobody listening but us kids. We're far more selective and critical now; we throw out far more stuff.

MR&M: Some of your songs have been recorded by over 100 different artists. Of all the versions of your songs, which are your favorites?

BM: I think the George Benson version of "On Broadway" is incredible. I also like the original by the Drifters a lot and I thought "Lovin' Feeling" was groundbreaking for that time. As far as MOR, I think Dan Hill's version of "Sometimes When We Touch" was great. "Just Once" by Quincy Jones with James Ingram is another. You can't really compare, though. I mean, how can you compare "Just Once" to "We Gotta Get Out Of This Place?"

MR&M: I'd like to run through a bunch of your songs and if you can, tell me the circumstances behind them: "Blame It On The Bossa Nova?"

BM: We were writing that for Bobby Rydell.

CW: I remember thinking that in all of his songs, he used the word "sway" for some reason. So I wrote the line "Swaying to and fro." I thought he'd know it was for him. But he turned it down.

MR&M: "On Broadway?"

BM: That was originally written from the perspective of a small-town girl coming to Broadway.

CW: It was recorded first by the Cookies but it didn't turn out so well so we had the song and were wondering what to do with it when we heard the Drifters were recording. We thought that melodically it could fit the Drifters but the lyrics were wrong because it was for a girl. We played it for Leiber and Stoller and they said they wanted to cut it the next day, so we could either go home and re-write it or work with them. The thought of working with them was pretty incredible so we sat down and worked on it together.

MR&M: "Uptown?"

BM: We just sat down and wrote a song, with nothing in mind, and that was it.

MR&M: "Lovin' Feeling?"

BM: When we went out to California, Phil Spector said he wanted to write with us. He played us this record by a group he had from Orange County: "Little Latin Lupe Lu," by the Righteous Brothers. He said he wanted to cut a ballad with them. We were influenced by "Baby, I Need Your Loving," by the Four

Tops. So, by osmosis, we turned out "Lovin' Feeling." I wanted to change the title but Phil liked it.

MR&M: "Only In America?"

BM: We were working with Leiber and Stoller again. That started out as something completely different, with lyrics like "Only in America/Land of opportunity/Can they save a seat in the back of the bus just for me/Only in America/Where they preach the golden rule/Will they start to march when my kids want to go to school." It was originally written that way for the Drifters. They said it would never get played, so we changed it to fit a WASP, and for them it rings true: "Only in America/Land of opportunity." If the Drifters had cut it that way no one would have played that either, because it wasn't true! So Jay and the Americans cut it.

MR&M: Moving into the '70s and '80s, how about "Here You Come Again," for Dolly Parton?

CW: Again we just wrote a song. I first showed it to B. J. Thomas, who'd recorded "I Just Can't Help Believin'" and had a million seller. 15-20 people turned it down; then it found its way to Dolly Parton, who had a number one hit with it.

MR&M: "He's So Shy" by the Pointer Sisters?

CW: I wrote that with Tom Snow, originally as "She's So Shy." He was going to record it but then he said he didn't think he could spend the rest of his life singing it. We also thought it was right for Leo Sayer. Tom was involved at the time with Richard Perry, who was walking through the hall when he heard it on a demo and ran in saying he had to have it for the Pointer Sisters.

MR&M: "Just Once?"

BM: Another one we just wrote. That's mostly what we do now, just write songs and then place them. I wanted an R&B singer to do the demo and I asked around. Someone said there was a guy named James Ingram doing demos and he sounded pretty good. I went into the studio and heard that voice and I almost fainted. I couldn't believe it; he was the best singer I'd heard in 15 years.

CW: He always considered himself a background singer. He said he didn't even think he was a real singer. We sent the song over to Quincy Jones, who called back and said "Barry's really singing his ass off on that one." We told him who it was and he said "That guy is great; I want him on my album." Quincy called James at home and when he told him who it

was James almost fainted.

MR&M: When you look at the state of the business now, do you think there could ever be another Brill Building scene?

CW: I think those days are behind us now. The young writers are too smart now and too business oriented. Everyone is too isolated; they're all at their own cubicles at home not hearing anyone else, doing their own thing.

MR&M: If you could sum up 20 years in one word, what would it be?

BM: (Laughing) Grueling. Actually, it would take two words: grueling and rewarding at the same time.

MR&M: Is it as much fun as it was in the beginning?

BM: To tell the truth, there were only pockets of fun. I never found the music business fun.

CW: I found the writing fun. Working with someone like Jerry Leiber was fun; watching his mind work was so incredible. The process is frustrating and anxiety-producing and fun at the same time. The business part has never been fun. It never will be because it's giving up control of your baby, turning it over to someone else, hoping they'll be good to it. Probably the most fun is working with talented people and watching the process.

MR&M: What would you like to see happen with your careers?

BM: I'd like to get to the point where I can write without fear: fear of whether it will be good or not.

MR&M: Is there ever a fear of failure, that a song won't catch on?

BM: It's more of a fear of knowing I wrote a good song but other people will think it's a piece of shit.

MR&M: What about if everything goes right—good song, good recording and production—but it ends up on a record company that won't promote it and it dies.

BM: That recently happened to us with an artist named Bill La Bounty on Warner Brothers. He's a good singer, the album is produced well and it's not doing anything. Warners gave up on it. That also happened with a song that Gary Wright did. I feel sorry for the artist when that happens; they spend all that time in the studio and nothing happens for them.

MR&M: Is writing and seeing your songs become hits still rewarding or is that thrill gone?

BM: It's still rewarding. When you get a hit that you really like—that's it.



NORMAN EISENBERG AND LEN FELDMAN

Vector Research VCX-800 Cassette Recorder



General Description: The VCX-800 cassette recorder from Vector Research is a three-head model with off-the-tape monitoring while recording. The transport uses a closed-loop dual-capstan system with two motors, one being a phase locked loop type for capstan drive and the other a DC motor for the reels. Noise-reduction features include Dolby B, Dolby C, Dolby HX and Dolby FM. The tape selector has three positions: One is for ferric or "normal" bias; a second labeled "CO" handles high-bias tapes; the third is for metal tapes. In addition, the deck has a front-panel fine-bias adjustment.

A special feature of the VCX-800 is its "computer," which is a microprocessor-based timing and control system. It provides real-time information about remaining tape in a given cassette that is displayed digitally in minutes and seconds. The system may also be used for memory and recall functions to automatically play, rewind or fast-forward a tape to and from selected spots. For instance, it is possible to set up a continuous playback/rewind loop between any two positions of a recorded tape so that a given portion of the program may be repeated while the machine is unattended.

The cassette compartment is covered by a hinged see-through door. To the left are the eject button—a timer switch for use with an external timer for unattended recording or playback, the deck's AC power switch and the headphone jack. The computer display panel is to the right, followed by switches and controls for calibrating the recording levels and adjusting the bias. The recorder's signal meters are at the right. These are twin "bar graphs" showing peak levels, with switches at the left for choosing automatic or manual peak hold.

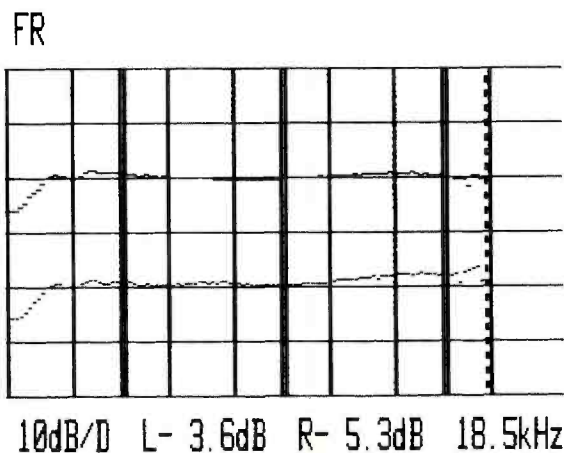
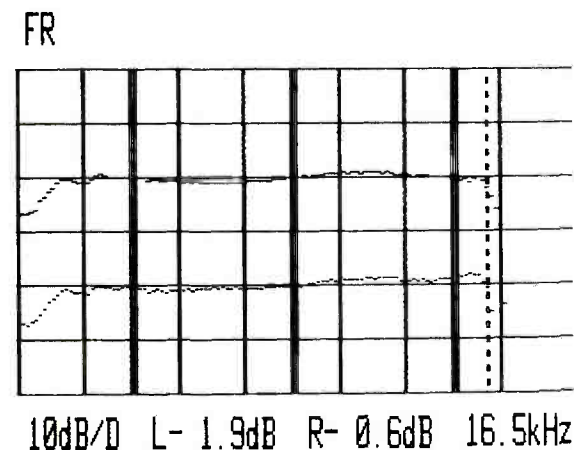
Ten keys, numbered 0 through 9, are used to enter the time or position on a tape into the microprocessor. Above them are four more buttons marked lock, C-45, C-60 and C-90. The last three relate to the type cassette used; when the correct one is pressed the remaining time is displayed on the digital panel. If the wrong button is pressed, the correct one will come on automatically after several seconds. If the tape length is not known, you can press the "lock" and C-90 buttons in which case the display will show tape position, but not the remaining time.

Line input and output pin-jacks are at the rear as are a pair of screwdriver adjustments for calibrating

Dolby levels on Dolby-FM broadcasts, a special jack for connecting to a Vector Research receiver which has a built-in timer, a connector for use with an optional remote-control accessory, a fuse-holder, and the recorder's AC power cord.

Test Results: Vector Research supplied us with three samples of tape, all of them from TDK. They were TDK-AD (ferric-oxide); TDK-SA (a high-bias or chrome-equivalent type), and TDK-MA (metal). Assuming that the deck had been factory calibrated for these tapes, we used them for our usual tests, and kept bias and calibration controls at their mid-points, which are detented. In spot-checks of calibration, following the procedure in the owner's manual, these adjustment positions also were reached via the deck's meters.

The record/playback response is shown in *Figures 1A, B and C*. In each figure, both curves represent plots taken at a -20 dB record level ("0 dB" on this machine corresponds to 200 nWb/m or Dolby calibration level). In each of these three displays the upper curve was plotted with Dolby off. The lower curve, in each instance, although plotted at the same recording level, was made with Dolby-C and HX activated. Note that in all three cases there was a small amount of mistracking at the high-frequency end of the spectrum when this noise reduction and headroom extension circuitry was used. While we do not regard the mistracking as severe, we believe that this kind of information is of greater interest to readers than the 0-dB record/play response curves we formerly supplied.



This is particularly true now that we are able to show MOL (maximum output level) plots at high frequencies (see *Figs. 4 A, B and C*). The "Vital Statistics" table for this report spells out the actual frequency end-points for all these response curves and for the other parameters measured. In general, frequency response came close to the ranges claimed by Vector Research.

Third-order harmonic distortion versus recording level for each of the tested tapes is shown in *Fig. 2 (A, B and C)*. Here too, we compare distortion without Dolby against distortion when Dolby C and HX are activated. Even at this mid-frequency there is a significant improvement when the Dolby system is used. For example, in the case of the ferric-oxide tape sample,

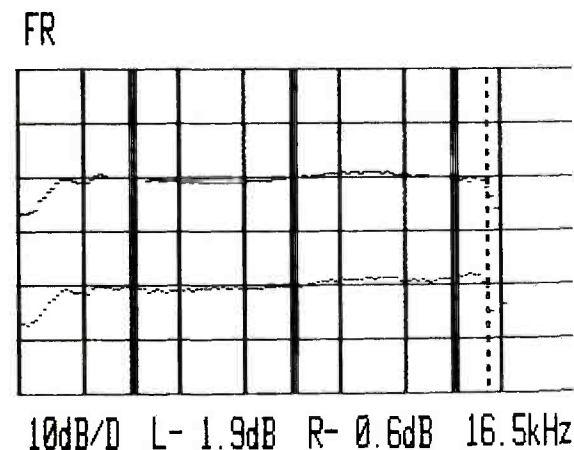


Fig. 1: VCX-800: Frequency response (record/play) without (upper curve) and with Dolby C and HX (lower curve) at -20 dB record level for TDK-AD (A), TDK-SA (B) and TDK-MA (C) tapes.

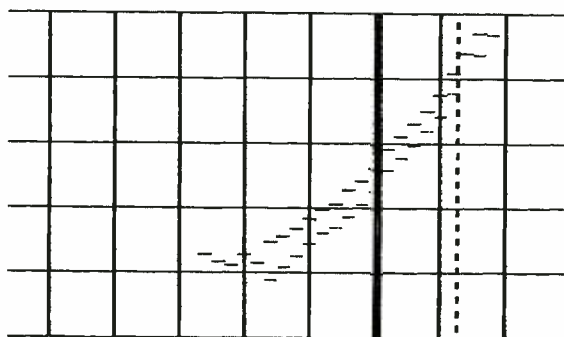
D3 L 3.8% R 2.5%



10dB/D L-28.2dB R-32.0dB + 7dB

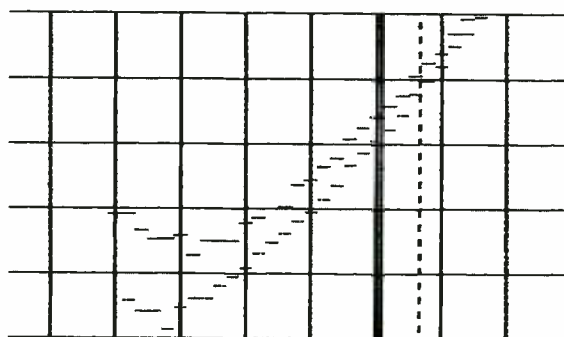
Fig. 2: VCX-800: 3rd order distortion vs record level, with (upper curves) and without Dolby C and HX (lower curves) for TDK-AD (A), TDK-SA (B) and TDK-MA (C) tape.

D3 L 3.5% R 2.4%



10dB/D L-29.0dB R-32.1dB + 6dB

D3 L 3.4% R 2.5%

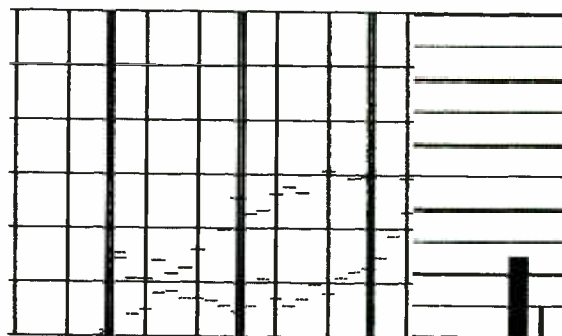


10dB/D L-29.2dB R-32.0dB + 3dB

3rd-order distortion at 0 dB measured 0.41 percent without Dolby, and dropped to 0.27 percent with Dolby C and HX. The record level for 3 percent 3rd-order distortion also improved by 1 dB for each of the tapes.

Signal-to-noise ratios, again with and without Dolby C and HX, are compared in Fig. 3 (A, B and C). The "L" notations at the top of each graph are S/N without Dolby; the higher "R" notations show the S/N with Dolby C and HX. The numbers below each graph correspond to the noise levels at the specific third-octave frequencies whose center values are also shown below each graph at the lower right of the display. For example, in the case of the high-bias sample (Fig. 3 B), S/N for the third octave centered at 8 kHz was -70.3 dB below the 3-percent distortion point without any Dolby. It improved to -90.5 dB with Dolby C and HX activated. The difference, at this relatively high frequency, is almost exactly the 20 dB claimed by Dolby for its "C" system.

NS WD L-61.1dB R-74.4dB 10dB/D



10dB/D L-69.1dB R-91.8dB 5.00kHz

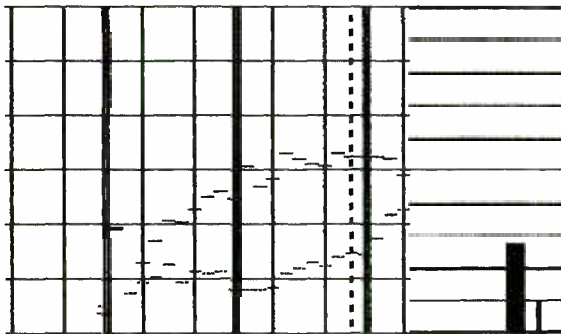
Fig. 3: VCX-800: S/N analysis, with (lower curves) and without (upper curves) Dolby C and HX, using TDK-AD (A), TDK-SA (B) and TDK-MA (C) tape.

NS WD L-61.9dB R-75.7dB 10dB/D



10dB/D L-70.3dB R-90.5dB 8.00kHz

NS WD L-57.8dB R-72.3dB 10dB/D



10dB/D

8.00kHz

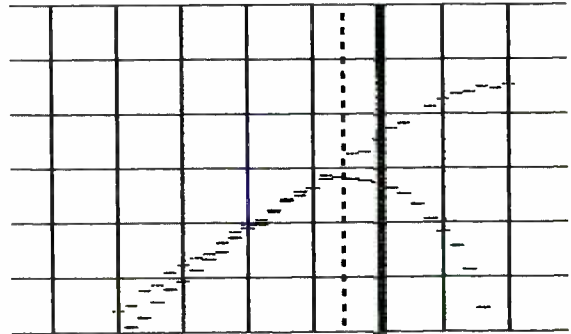
In Fig. 4 (A, B and C) we have plotted output linearity versus input for a 10-kHz test signal, in order to find the MOL for this high frequency with and without Dolby C and HX for the three tested tapes. As might be expected, the more linear curve in each display is the one taken when Dolby HX is on. The difference in high-frequency headroom when Dolby HX is used is particularly dramatic with the ferric-oxide and high-bias tape samples (Figs. 4 A and B); less so with the metal tape (Fig. 4C) which already exhibits excellent high-frequency MOL even without the benefit of Dolby C and HX.

Having recently acquired standard blank reference tape corresponding to IEC Type I and II designations (IEC is the international organization which tries to set voluntary standards to encourage compatibility among recorders made anywhere in the world), we decided to check out how closely the record/play response of the VCX-800 would come to flat response if we used the new reference tapes and left the calibration and bias controls set to their detented mid-points. As shown in Fig. 5 (A and B), they came very close indeed, indicating that Vector Research must be aware of the new standard tapes and is taking them into account when factory-calibrating its recorders and setting up record EQ.

Our plot of wow-and-flutter (Fig. 6) came up with an unusually high wow component at 5 Hz (with harmonics at 10 Hz and at 20 Hz) which contributed almost the entire wow-and-flutter reading we obtained of 0.038 percent. While this is not really too far off the 0.030 percent spec'd by the manufacturer, that 5 Hz component stands out so obviously in Fig. 6 that we feel that any tape deck designer would not have signed off his design if aware of it. In our view, other samples of this machine probably will do better; we suspect that something may have happened to our lab sample in shipment, such as an unintentional drop or other physical shock.

General Info: Dimensions are 17⁵/₁₆ inches wide; 5⁵/₈ inches high; 14⁵/₈ inches deep. Weight is 21.6 pounds. Price: \$1,000.

ML L10.0kHz R10.0kHz C2.00kHz



5dB/D

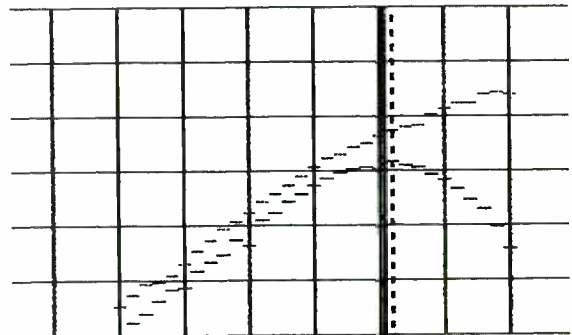
L- 5.8dB

R- 4.9dB

- 3dB

Fig. 4: VCX-800: Maximum output level plots, at 10 kHz, with (upper curves) and without (lower curves) Dolby C and HX, using TDK-AD (A), TDK-SA (B) and TDK-MA tape.

ML L10.0kHz R10.0kHz C5.00kHz



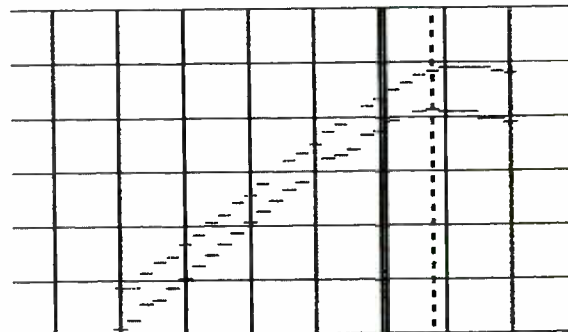
5dB/D

L- 4.1dB

R- 1.3dB

+ 1dB

ML L10.0kHz R10.0kHz C10.0kHz



5dB/D

L+ 0.8dB

R+ 4.3dB

+ 4dB

Individual Comment by L.F.: Some readers of *MR&M* have suggested that test reports on stereo cassette decks intended for use in some high fidelity systems do not rightly belong in a publication such as this one. By and large, I agree—if we are talking about common ordinary cassette decks that offer the usual features and performance found in other common ordinary cassette decks. But every now and again we do come across cassette decks that offer features and performance that are relevant to professional or semi-professional recordists and those involved in the business of music and its reproduction. In my view, such a cassette deck is the Vector Research VCX-800.

Among the features which I think would appeal to the more-than-casual recordist is one which Vector Research calls its Compucounter. In addition to telling the time remaining on a tape, this system enables you to set up to “memorized” points on a tape which may be used in a variety of ways. One that suggests itself for professional use at concerts would be the setting up of a continuous playback/rewind loop between two positions on a tape in which pre-concert background music could be fed to a sound reinforcement system without a mixing engineer having to worry about tending the player while he or she is busy setting up mics, speakers, and the like.

Insofar as circuit refinements are concerned, the VCX-800 is one of only a few decks I know of that incorporates both Dolby C and Dolby HX, a dynamic bias-altering and EQ adjusting system that provides improved headroom at high frequencies even on ferric-oxide and high-bias (chrome or chrome-equivalent) tapes. Dolby B, of course, is provided as well so that tapes made previously on other machines can be played back compatibly on this one. While the VCX-800 does not have automatic adjustment of bias and sensitivity for different tapes, such adjustment is easily accomplished with the unique calibration system which is incorporated in the deck. After adjusting one one calibration control on the front panel until the left-channel LED metering system reads “0 dB,” a nearby fine-bias adjustment control is simply rotated until the right-channel LED indicator reads the same 0-dB level.

All told, I feel that the Vector Research VCX-800 ranks high among the more sophisticated cassette decks that I have tested in the past few years, and that it deserves consideration by professionals and home audio fans alike who seek the convenience of cassette recording yet want a machine that is definitely a cut above the ordinary.

Individual Comment by N.E.: With this deck, Vector Research adds yet another chapter to the ongoing saga of “The Microprocessor and the Tape Recorder.” This time it’s not a matter of automatically adjusting the circuitry for a given tape type but more a matter of concern about timing. The system is ingenious, and it works as claimed, although I for one do not envision the “wide variety of convenience operations” claimed for it. I can see one worthwhile

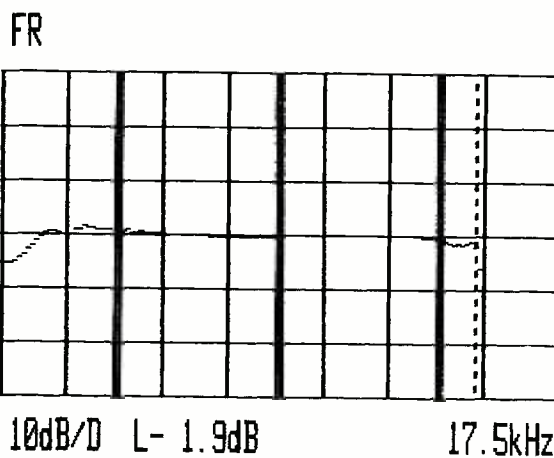
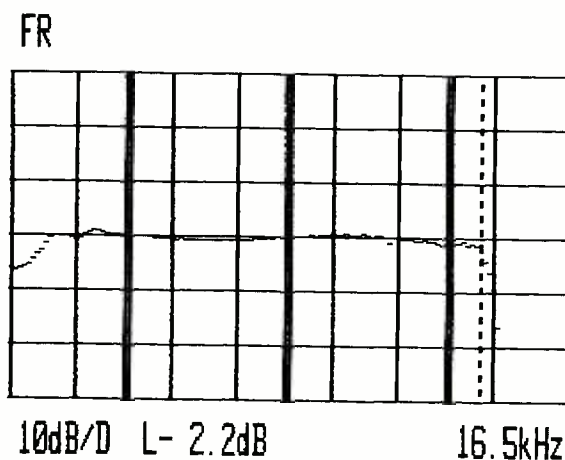


Fig. 5: VCX-800: Record/play frequency response at -20 dB level, using IEC reference tapes for type I (ferric) tape (A), and type II (B), chromium dioxide samples.

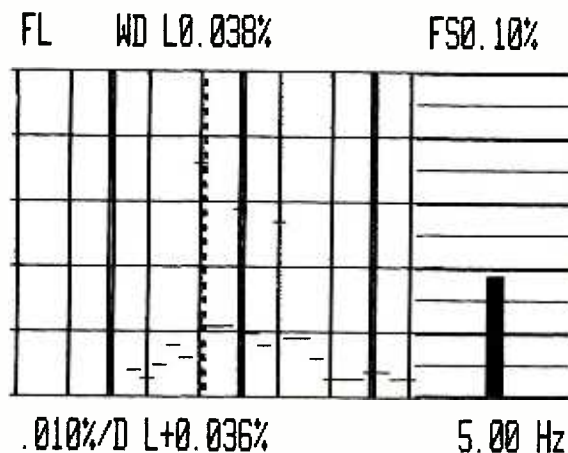


Fig. 6: VCX-800: Wow-and-flutter analysis.

VECTOR RESEARCH VCX-800 CASSETTE RECORDER: Vital Statistics

PERFORMANCE CHARACTERISTIC	MANUFACTURER'S SPEC	LAB MEASUREMENT
Frequency response		
ferric	±3 dB, 25 Hz to 17 kHz	±3 dB, 30 Hz to 17 kHz
high-bias	±3 dB, 25 Hz to 19 kHz	±3 dB, 28 Hz to 18.5 kHz
metal	±3 dB, 25 Hz to 21 kHz	±3 dB, 29 Hz to 21 kHz
Signal-to-noise ratio w/o Dolby		
re 3% 3rd order HD		
ferric	NA	61.1 dB
high-bias	NA	61.9 dB
metal	56 dB	57.8 dB
Signal-to-noise ratio with Dolby B; Dolby C		
re 3% 3rd order HD		
ferric	NA; NA	68.6; 74.4 dB
high-bias	NA; NA	69.5; 75.7 dB
metal	NA; NA	65.2; 72.3 dB
Record level for 3% 3rd order HD		
(0 dB = 200 nWb/m)		
ferric	NA	+6.6 dB (+7.5 w/Dolby C + HX)
high-bias	NA	+6.0 dB (+7.0 w/Dolby C + HX)
metal	NA	+3.0 (+34.0 w/Dolby C + HX)
THD at 0 dB record level		
ferric	NA	0.41% (0.27% w/Dolby C + HX)
high-bias	NA	0.65% (0.42% w/Dolby C + HX)
metal	NA	1.6% (1.1% w/Dolby C + HX)
Wow-and-flutter, WRMS	0.03%	0.038%
Line output at 0 dB	700 mV	700 mV
Headphone output at 0 dB	150 mV (8 ohms)	100 mV (8 ohms)
Mic input sensitivity for 0 dB	0.25 mV	0.25 mV
Line input sensitivity for 0 dB	60 mV	60 mV
Speed accuracy	NA	-0.07%
Fast-wind time, C-60	120 seconds	102 seconds
Bias frequency	105 kHz	105 kHz
Power consumption	55 watts	51 watts

use—as an aid in learning or memorizing a piece of music by having it repeat automatically. Admittedly this is easier than rewinding and starting the section yourself, or than requeuing a disc recording.

In short, the VCX-800 shapes up as a very good cassette recorder, thanks in the main to the Dolby C and HX it incorporates. Apparently the really low distortion, the ample signal headroom, and the fine signal-to-noise characteristics contributed by the Dolby Complex here are as germane (maybe more so) to good sounding cassettes as extended frequency response itself. Apropos of this, astute readers will note that the actual frequency spans we report are not quite as wide as VR claims, nor as wide as on some other high-end decks. I think that with 90 percent or more of what would be taped on this machine you would not hear any difference, all other things being equal.

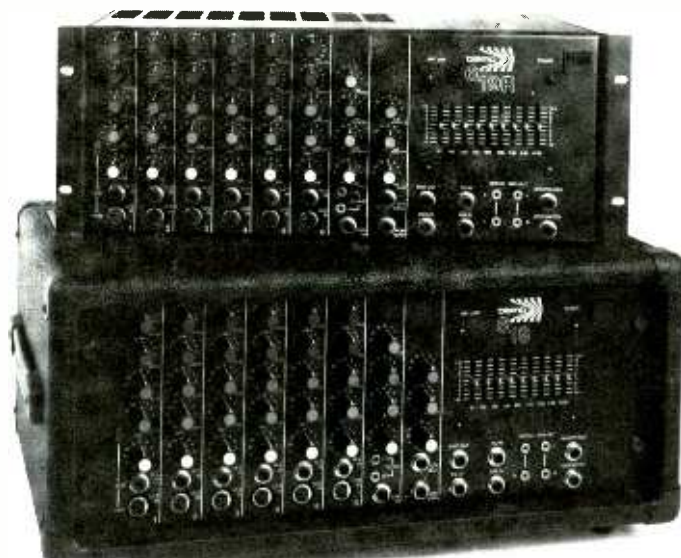
Using metal tape with this deck, by the way, seems like a mixed blessing. It does produce the widest response but not the best S/N, record level, or the lowest distortion (see the Vital Statistics table). Of the three tape types we tested, I like the ferric with that tiny 0.27 percent distortion when Dolby C and HX are used, and a signal-to-noise ratio of better than 74 dB

under the same conditions. And that's the lowest-priced of the three tapes, which could be important these days. You want a little more at the high end, a little better S/N, but with some more (still not a lot) distortion? Use the high-bias tape. You want still more at the high end but with lower S/N and more distortion? Go for metal. It's your money you're spending.

The "fast-buttoning" on this deck is the oddest I have yet seen. If you engage the record mode from other modes the pause button comes on automatically. You then have to let go of the other buttons and hit the pause button again. So "fast-buttoning" here becomes a matter of how fast-fingered you are. Another thing I found questionable about this deck is its relatively low headphone volume. I noted this point about a previous VR deck we tested (the model VCX-600, *MRE&M*, March 1981). The new one lacks a feature the older one had—the facility for shuttling the tape at high speed with partial head contact to give you audible clues about the recorded signal. Other than these items, the new deck is a much better performer in audio terms. And for those who fancy the latest in microprocessor ingenuity, there is The Compucounter.

CIRCLE 37 ON READER SERVICE CARD

Biamp Systems 119 Equalizer/Amplifier



General Description: The model 119 from Biamp Systems, Inc. of Beaverton, Oregon combines a monaural power amplifier with a built-in graphic equalizer. It is available in two versions—the 119R for rack-mount and the 119 in leatherette carrying case. The unit is rated for power outputs of 150, 250 and 350 watts into loads of 8, 4 and 2 ohms, respectively. The equalizer section is a nine-band system with frequency centers of 50, 100, 200, 400, 800, 1.6 K, 3.2 K, 6.3 K and 12.5 K ohms. Each band is handled by a front-panel slider with an indicated boost and cut range of ± 12 dB. There are detents at the zero-dB markings.

In addition to the EQ sliders, the unit's front panel contains an input level control and four 2-conductor jacks for headphone output; direct input to the power amp (bypassing the EQ section); output from the equalizer; input to the equalizer. The EQ-OUT jack may be used to access the equalized signal for feeding it to additional amplifiers or other processing equipment. Plugging into this jack does not affect the signal fed to the power amp section, and the signal level here is not affected by the input level control. Other front-panel features are the power switch and the LEDs which show power-on and amplifier limiting.

Speaker systems may be connected via two phone jacks at the rear. As a convenience, the amplifier's power ratings for 2-, 4- and 8-ohm loads are printed next to the jacks. The rear also contains the amp's circuit-breaker reset and the AC power cord which is fitted with a three-prong (grounding) plug.

Test Results: Both the power amp and the equalizer sections of the model 119 were tested. Data on the amp are listed in the "Vital Statistics" table; action of the equalizer is shown in the accompanying graphs. With a few minor exceptions, all published specifications

were met or on some counts, exceeded in our tests. For instance, measured output power into an 8-ohm load was a jot higher than spec'd; a bit lower into a 4-ohm load than spec'd. (Apropos of this, we note that the published spec lists 250 watts as the maximum power before clipping into a 4-ohm load, while for THD with a 4-ohm load the power listed is 200 watts. In keeping with our normal practice, we used the 250-watt figure for our THD measurement which probably accounts for the difference in THD figures here.) The amp obviously employs a rather "stiff" and well-regulated power supply which accounts for its exhibiting very little dynamic headroom (0.2 dB above its continuous power rating). Nevertheless, with an amplifier capable of delivering as much as 350 watts of power into a 2-ohm load, we doubt that the question of dynamic or music power versus continuous power rating would ever come up in actual use situations.

The design philosophy of this amp, which is intended for pro or commercial applications, is not the kind that comes up with the "super specs" common to some domestic or "hi-fi" amplifiers. Biamp uses enough negative feedback to insure inaudible distortion levels, but not so much as to get down into the "decimal-point-followed-by-several zeroes" class of distortion ratings (that often are accompanied by instability with difficult speaker loads, and by dynamic forms of distortion). The amp was tested for twin-tone IM distortion, using a 9-kHz and a 10-kHz twin-tone test signal. The distortion components that did show up were near the top of the audio spectrum, and their equivalent rms values were calculated to be about 0.22 percent, which still is really quite low.

The boost and cut characteristics of one of the nine equalizer bands (the one centered at 1.6 kHz), as shown in *Fig. 2*, came very close to the specified 12 dB in each direction. Successive superimposed plots of the total

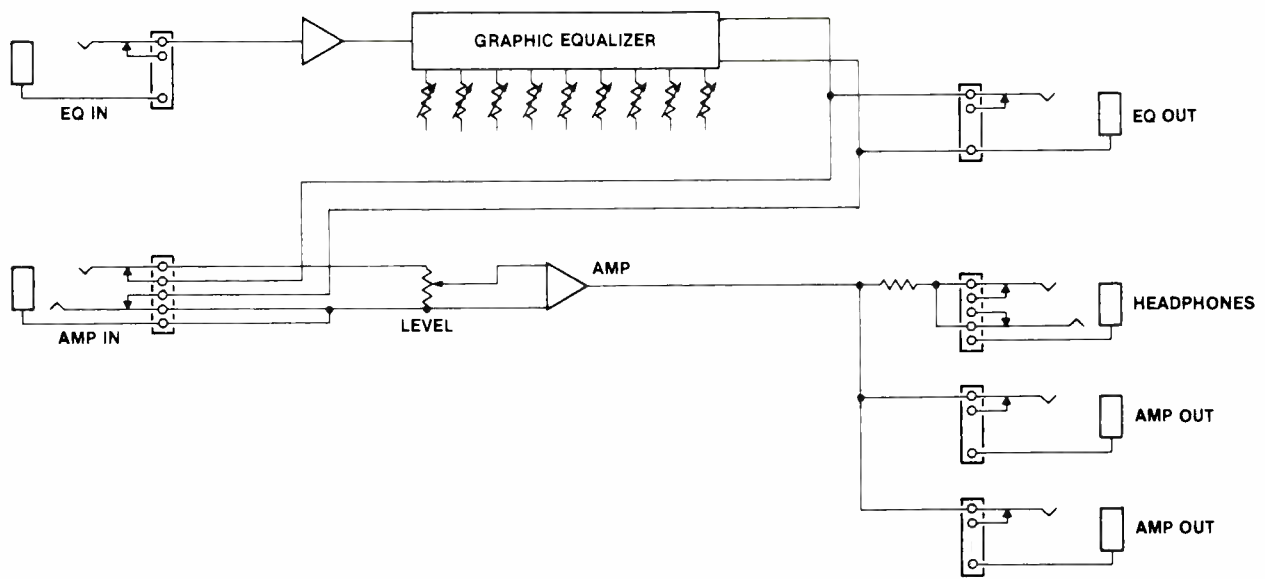


Fig. 1: Biamp 119: Block diagram of the unit.

boost and cut characteristics of all nine bands, plotted with our spectrum analyzer, are shown in the 'scope photo of Fig. 3. The uniform pattern on both sides of the zero-dB line speaks well for the design and effectiveness of the EQ section.

General Info: Dimensions of the model 119 are 20¾ inches wide; 7 inches high; 12¼ inches deep. Weight is 31 lbs., 3 oz. Dimensions of the model 119R are 17 inches wide; 5¼ inches high; 9¾ inches deep. Its weight is 25 lbs., ½ oz. Price: \$545.00.

Individual Comment by L.F.: At first I thought it a bit odd for a company to have combined a graphic equalizer with a power amplifier. Upon reflection, however, and after working with the unit for a few days I concluded "Why not?" The combination of amp and equalizer began to make sense, since these days almost every sound-reinforcement system used in

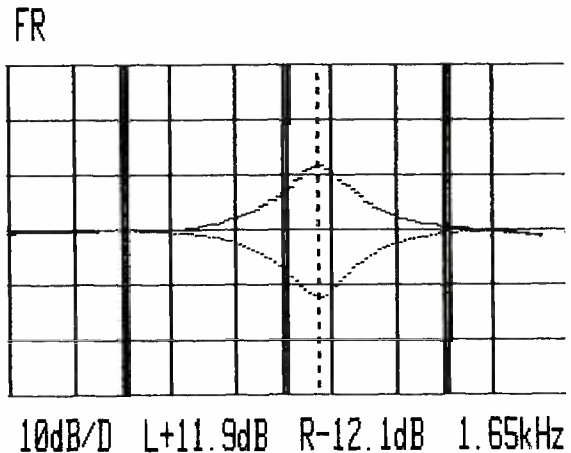


Fig. 3: Biamp 119: Overall boost and cut characteristics of nine-band equalizer section.

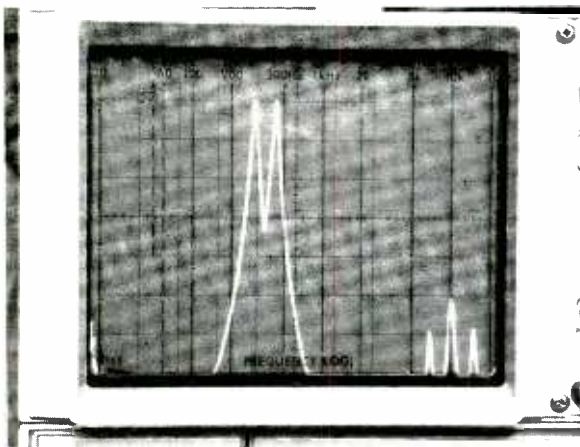


Fig. 2: Biamp 119: Boost and characteristics of the 1.6 kHz control, EQ section of the model 119.

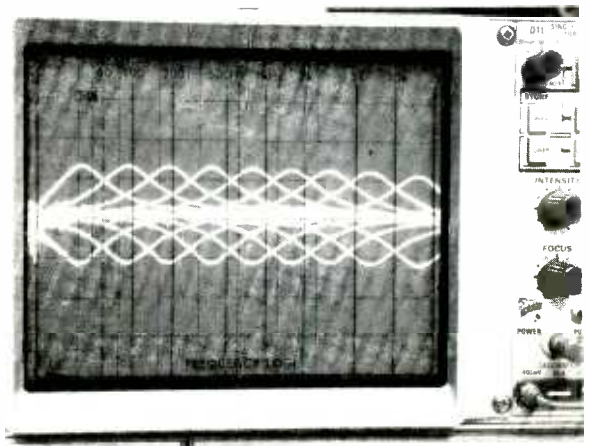


Fig. 4: Biamp 119: Twin-tone (9 kHz & 10 kHz) test signal (at center of screen) produced IM components at right, which amounted to a net percentage of 0.22%.

BIAMP SYSTEMS 119 EQUALIZER/AMPLIFIER: Vital Statistics

PERFORMANCE CHARACTERISTIC	MANUFACTURER'S SPEC	LAB MEASUREMENT
Continuous power for rated THD		
8 ohms, 1 kHz	150 watts	154 watts
4 ohms, 1 kHz	250 watts	243 watts
FTC rated power (20 Hz to 20 kHz)	NA	145 watts
THD at rated output		
1 kHz, 8 ohms	0.15%	0.12%
1 kHz, 4 ohms	0.2% (at 200 watts)	1.0% (at 250 watts)
20 Hz, 8 ohms	0.15%	0.6%
20 kHz, 8 ohms	0.15%	0.35%
IM distortion, rated output		
SMPTE	0.3	0.47%
CCIF	0.15%	0.04%
IHF	NA	0.22%
Frequency response @ 1 watt for -1 dB	10 Hz to 40 kHz	3.5 Hz to 54 kHz
Signal-to-noise ratio re 1 watt,		
"A" wtd, IHF	NA	96 dB
Signal-to-noise ratio re rated output,		
"A" wtd	100 dB	110 dB
Dynamic headroom, IHF	NA	0.2 dB
Damping factor @ 50 Hz	NA	35
Input sensitivity,		
IHF	NA	0.16 V
re rated output	NA	1.95 V
Slew rate (volts/microseconds)	30	confirmed
Power consumption, idling; max	NA; 1200 watts	97; 600 watts (@ 4 ohms)

"live" P.A. work does end up needing some degree of corrective equalization if for no other purpose than to achieve maximum amplification levels without acoustic feedback.

Of course, configured as it is just ahead of the power amplifier section of the 119, the equalizer circuitry can serve only as an overall system tone modifying device. If you have multiple microphone inputs on a console, or even going to a simple mixer, you need varying amounts of EQ for those individual input channels that would still have to be provided by controls on the mixer or by individual EQ devices. Still, I found the idea of an overall equalization system coupled to an amp to be worthwhile, especially as executed in the Biamp 119. As shown in the block diagram, you can feed the output of a separate mixing console into the EQ-IN jack of the 119, which sends the signal through the equalizer and then to the power amp. Or, you can feed your signal directly to the AMP-IN jack, thereby completely bypassing the equalizer. If you do use the equalizer you also can extract the equalized signal from the EQ-OUT jack for monitoring purposes or for feeding to other power amps. Since the master gain control of the system comes after the EQ section, you do not have to turn up gain on the amp (and feed the house speakers) while adjusting EQ settings if you don't want to.

Individual Comment by N.E.: The functional design and control layout of the Biamp 119 are very aptly suited for the product's use in a high-powered monitor system in which the user wants not only clean output wattage but a handy facility for listening to the sound and making corrections as needed via the built-

in equalizer. The headphone jack, which is wired in parallel with the speaker jacks, lets the operator hear what the audience hears simultaneously. And the added flexibility provided by the EQ-OUT and the direct AMP-IN jacks allows the user to bypass the built-in equalizer while retaining the option of feeding an equalized signal to other amplifiers and/or signal processing units.

This multi-purpose functionalism would be less than exciting, of course, in a combination unit that compromised—as a consequence of the combination—the performance of either the amp or EQ sections. Happy to report, both sections in the model 119 are up to expectations in terms of the anticipated uses of the device for pro or commercial situations, many of which could well use the facilities of both a good amplifier and a competent equalizer but might balk at the need to buy and install two separate units for these functions.

It should be pointed out that Biamp's model 619 has the same amplifier and equalizer sections as in the 119, but in addition the 619 offers a built-in six-channel mixer, a self-contained reverb system, inputs for tape and phono signals, line-level output for effects units and outputs for tape-recording. Both the 619 and the 119 arrived at *MR&M*, but we measured only the 119. We did, however, inspect both units and can offer the comment that both have well-constructed innards using high-quality components. The excellent layout of the circuit boards and the modular construction of the amplifier sections should make servicing easy if it ever is needed. And from the way these units look, that should be most unlikely for a long time to come.

CIRCLE 38 ON READER SERVICE CARD



GROOVE VIEWS

Reviewed By:
ROBERT HENSCHEN
ELLEN ZOE GOLDEN
NORMAN WEINSTEIN
JOE KLEE

POPULAR

MARVIN GAYE: *Midnight Love*. [Marvin Gaye, producer; Mike Butcher, engineer; John Kovorak, remix engineer; recorded and mixed at Studio Katy, Ohaine, Belgium.] Columbia FC 38197.

Performance: **Sweet and sexy**

Recording: **State-of-the-art R&B mix**

Marvin Gaye's 20-year career could be viewed as a history of soul music in microcosm. His '60s output with Motown typified the swinging happy-go-lucky approach of R&B singers of the day. Gaye was alternately tough/gritty and sweet/sensual, able to rock 'em or swoon 'em. In the '70s, Gaye defied Motown's *laissez faire* attitude by recording some of the most potent black message music ever put down on vinyl, and scoring some of his biggest hits in the process. As the "me decade" rolled along, Gaye returned to providing music for making love by, maintaining both his performance quality and the level of public adoration he's always enjoyed. Then the bomb fell.

In the late '70s, Gaye declared bankruptcy, underwent a painful divorce, and chronicled it all in his last Motown album, *In Our Lifetime*. Although a hit, it was hardly his biggest, which, perhaps, is why we now find Marvin Gaye on a new label, Columbia, singing those sexy love songs that he does best. *Midnight Love* is Marvin Gaye putting his still-exceptional vocal cords to the test once more and passing with flying colors. And Gaye, as always, is right on top of the art of recording—this is as contemporary an album as one will find in the R&B market.

From the first notes of "Midnight Lady," the opening track, it is apparent that Gaye hasn't fallen out

of step with studio breakthroughs. The sound is crisp and driving, the rhythms danceable. Gaye is in control on the LP, not only writing and producing all of it, but providing most of the percussion and synthesizer that dominates the mix.

Gaye isn't saying all that much on *Midnight Love*—there's no "What's Going On" to compete with today's equivalent, say, Grandmaster Flash's "The Message"—but Gaye works hard at lending his familiar emotional edge to the "let's get down" lyrics he's written. And anyway, will his audience mind if Gaye just rocks 'em without getting heavy about it? Wouldn't they rather hear that his heart is theirs than that the cities are burning? "Sexual healing is good for me," sings Gaye in the album's first hit single, and you can bet his legion thinks it's good for them, too.

Gaye appears to be balancing his roles as producer and artist gently, allowing neither his songs or the backup he gives them, to take over from his voice itself. But then, if you're listening to Marvin Gaye for his drumming and not his seductive singing, maybe you're a little weird, anyway.

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62 CIRCLE 31 ON READER SERVICE CARD

**JAZZ AS SHEER EXHILARATION:
 CLIFFORD BROWN
 AND JACK WALRATH**

By Nat Hentoff

Clifford Brown was as incapable of making a bad recording as he was of being mean-spirited to anyone. Some of his sessions are indispensable to any jazz collection. But now, Elektra/Musician has released the very best album by Brownie—ever. And it's being issued for the first time, from the private collection of Mrs. Clifford.

It's a private recording made in 1956, the year Brownie was killed in a car crash at the age of thirty-six. He was co-leading, with Max Roach, a quintet that also included Sonny Rollins, pianist Richard Powell, and bassist George Morrow. I remember Max telling me once that he had some private tapes of this combo that would astonish people, and it's now clear that Max was understating the case.

In *Pure Genius, Volume 1*, everyone in the group is cooking, as used to be said of deep collective swinging. But Brownie in particular is a source of constant wonder and great pleasure. The long, lyrical, continually fresh lines; the crisp, crackling rhythmic assurance; the fullness of tone along with the swift play of color-nuances; and the sheer exhilaration with which Brownie made music. It was more than energy, of which he had an abundance. There was a lyrical ardor, a ceaseless joy in the act of music.

Since this was a private collection, it's not full-fledged state-of-the-art fidelity; but Max Roach, along with engineer Art Shifrin, has so restored the sound that once you start listening to Brownie, you won't care about anything but Brownie.

A current illustration of jazz as exhilaration, alternatively explosive and tender, is *Revenge of the Fat People* (Stash Records). The leader is trumpeter Jack Walrath, who served a key period

of his apprenticeship with Charles Mingus, one of the toweringly passionate expanders of the jazz idiom.

To begin with, I have never heard Walrath play—live or on record—with as much soaring, compelling authority as he does on these tracks. His sound and his ideas seem to have both broadened and deepened, and so this set should be a valuable breakthrough for him in terms of alerting the jazz audience to the coming-of-age of a significant jazz voice.

In selecting his sidemen for this set, Walrath clearly knew which players were most likely to stretch him while also challenging each other. Ricky Ford, another Mingus alumnus, is on tenor; Mike Clark, whose credits include Woody Shaw and Joe Henderson, is on drums; Michael Cochrane, a lucid and consistently imaginative pianist, had worked with Sonny Fortune and Hannibal Marvin Peterson, among others; and bassist Cameron Brown's experience encompasses stays with Dannie Richmond and Art Blakey.

They all take fire, collectively as well as in solo flights, and the result—on every single track—is marvelously exciting, body-shaking jazz. And the quality of sound is just as high-spirited and *alive!* All in all, one of those very rare dates when everything worked—together.

CLIFFORD BROWN AND MAX ROACH: *Pure Genius Volume One*. [Max Roach, producer; Restoration Engineers, Art Shifrin, Bruce Leek.] Elektra Musician/Jazz Masters Edition EI-60026.

JACK WALRATH: *Revenge of the Fat People*. [Jack Walrath, producer; Jimmy Madison, (engineer). STASH RECORDS INC., P.O. Box 390, Brooklyn, N.Y. 11215.

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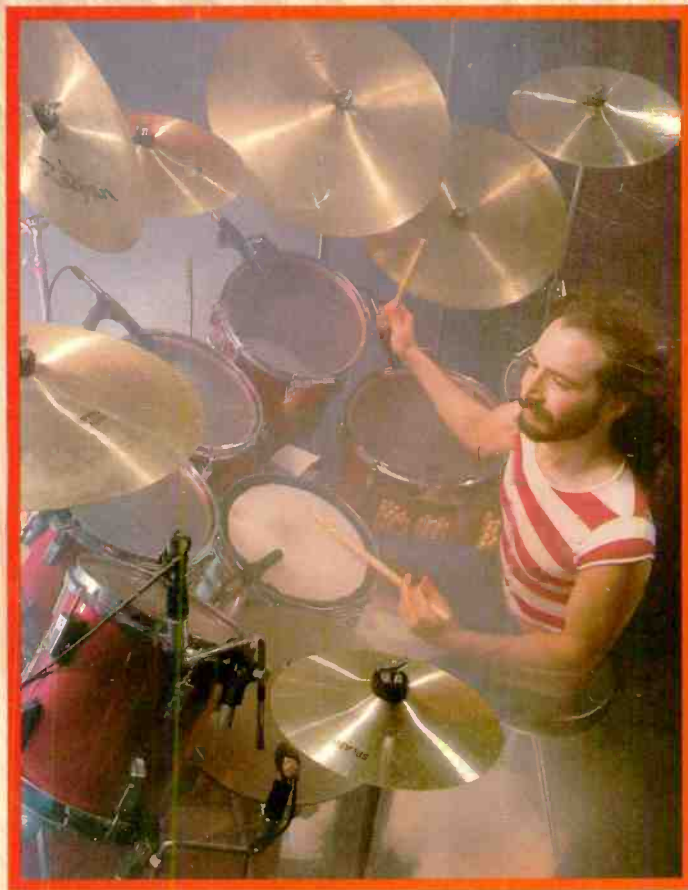
On Starting Out.

"I started out playing in the fourth grade when I was nine years old and had a really good teacher. When I was in high school I got serious about playing and I got a job as a paper boy to save money to buy cymbals. My teacher used to bring me to the Zildjian factory so I could go in and pick out my own set of cymbals."

On Rock and Roll. "After college I had a lot of experience playing jazz and fusion and I had virtually no experience playing rock and roll professionally except for some high school rock things. I really wanted to follow that direction, because

nowadays a drummer has to play rock and roll as well as jazz in order to be well-rounded as a musician."

On Zildjians. "The kind of music we play with Journey demands a lot of power. I've found that the cymbals in the Zildjian rock line are the only ones that can



Flying high with the success of Journey, Steve Smith is one of the most versatile and talented drummers in music today.

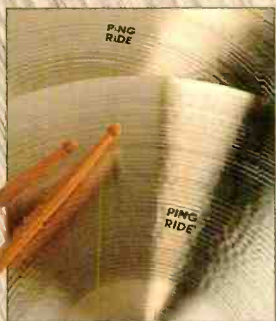
really do the job for me — that can carry the big halls and not sound thin. Zildjian cymbals have extraordinary projection but at the same time they have this wonderful, full musical tone. I also particularly like the Ping Ride — I got my first one back in the eighth grade and I've been playing one ever since."

On Career. "You know if you should get into music. It's something you can just feel. If you have to ask yourself the question, then don't bother. Being a musician isn't just a career it's a way of life."

"I find that most successful musicians don't think about success as much as they think about being a good player or songwriter."

To try to focus on success is a little too contrived and usually just doesn't work."

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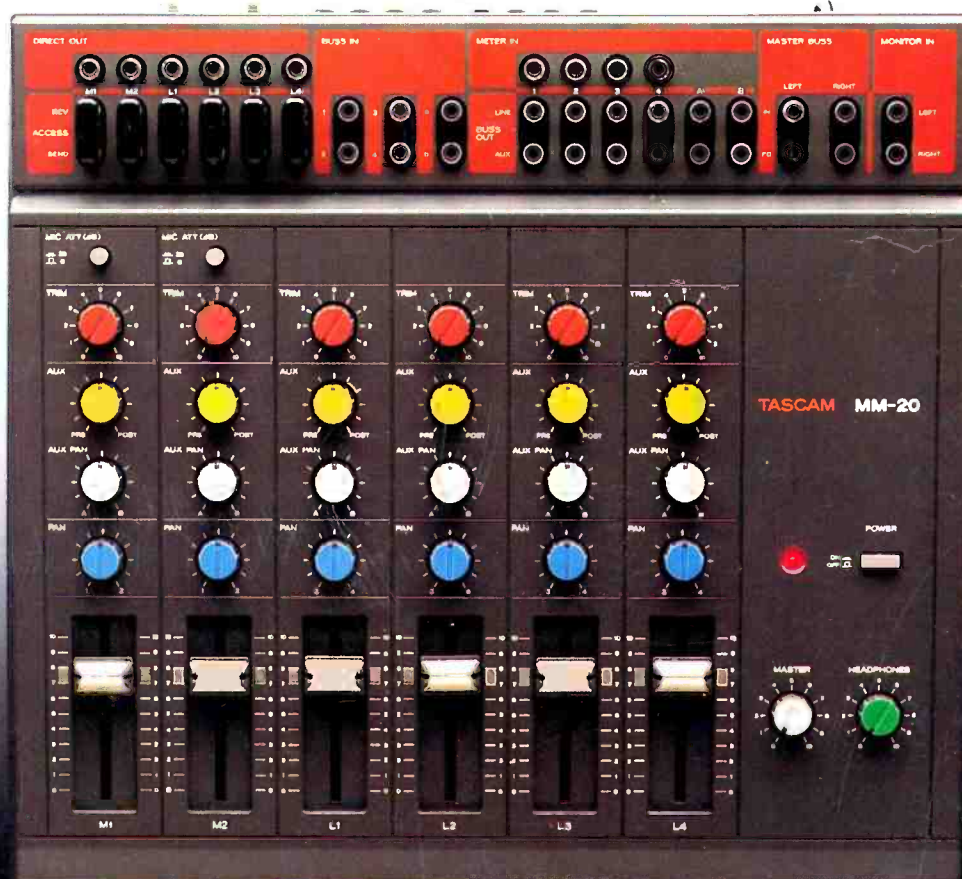


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