

Profile:
**Steve
Winwood**

MODERN RECORDING & MUSIC

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VOL. 6 NO. 7
APRIL 1981

a session with

The Dregs

**PRACTICAL
ELECTRICAL Part II**
LINE REPORTS:
Roland SED-30
Graphic Equalizer
Sunn SA-2
Power Amplifier
Tandberg TCD-3004
Cassette Deck

HANDS ON REPORT:
dbx 900 Series Modular
Signal Processing System

NOTES:
Maintenance for the Road:
Tips for the Musician



**NEW PRODUCTS
RECORD REVIEWS**

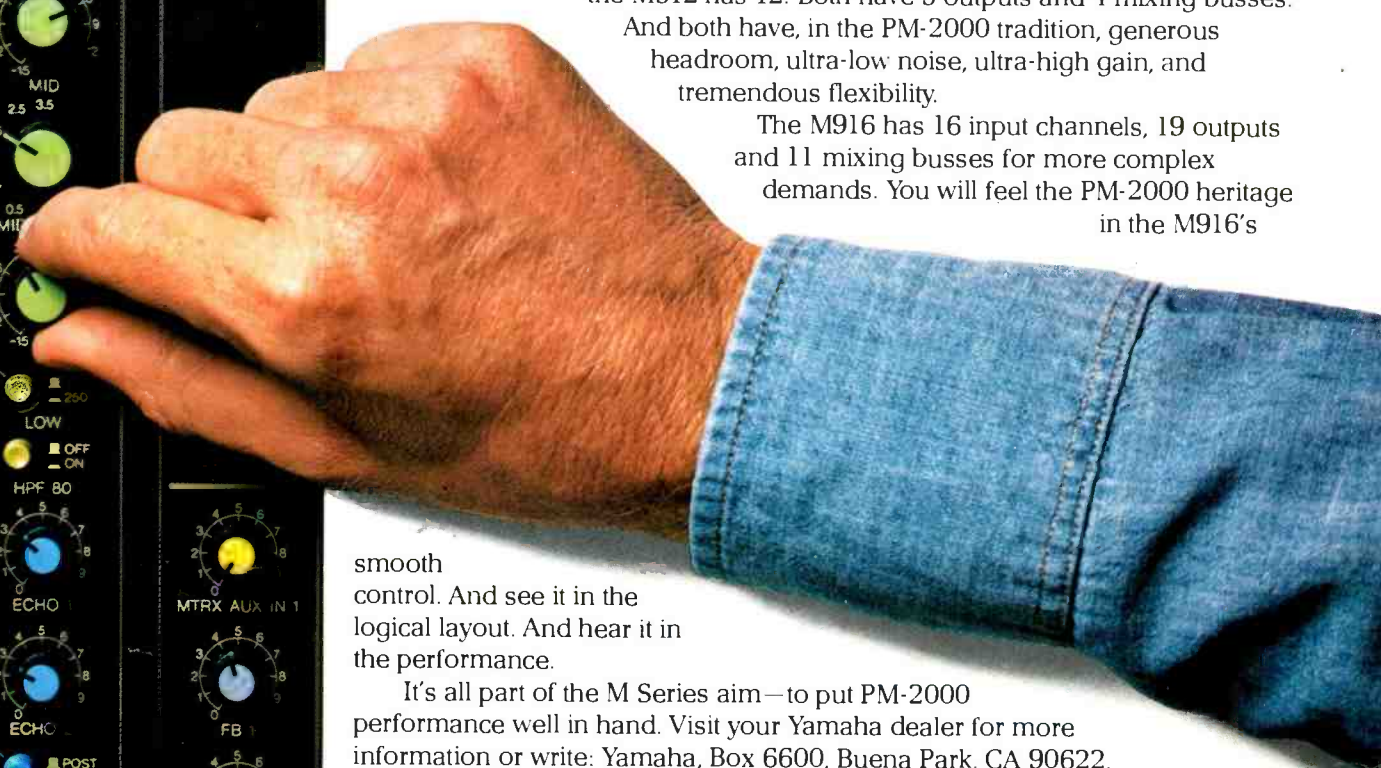
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Before now, an expandable mixer meant adding input channels on to it. Most of the time, these input channel expansions were clumsy attempts, resulting in bolt-on input channel sections, bulky external cables, or even hand wiring. And the consideration of output expansion? *Perish the thought*. But the **STUDIOMIXER** *Totally Modular* concept is a *milestone* in mixing console design.

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For the name of your closest Studiomixer dealer, or for descriptive literature and specifications on our products, please write to Craig Bullington, National Sales Manager, Amerimex Co., Inc., PO Box 55, Atwood, California. 92601.

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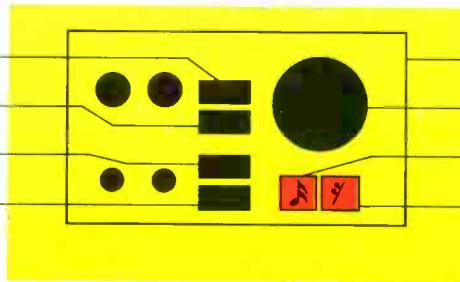


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CIRCLE 71 ON READER SERVICE CARD

MODERN RECORDING & MUSIC

APRIL 1981
VOL. 6 NO. 7

THE FEATURES

PRACTICAL ELECTRICAL, PART II

By *Brian Roth*

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We all know it's there, we all know what functions it serves, it's time we learned a little bit more about the entity itself. In this installment, Brian discusses the key element of any AC power circuit: wire.

A SESSION WITH THE DREGS

By *Bill King*

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Eerie violin strains emanating from a nondescript building in an Atlanta industrial park on a dreary January night? The start of a gothic novel, right? Nope, it's The Dregs recording their unique blend of country-rock-jazz-classic music for a second Arista album. *MR&M* brings you the details.

PROFILE: STEVE WINWOOD

By *Mike Derevlany*

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No clarifiers are needed before this rock legend's name. A resume including Traffic, Blind Faith, Go and the Fania All-Stars among others has seen to that. Winwood has just recently released his second solo album, *Arc of a Diver*, to much critical acclaim and Winwood—engineer, producer, performer—tells us about the fifteen year odyssey that led to this work and his very own studio.

COMING NEXT ISSUE!

*Leon Russell on the Road
and in the Studio—Mobile of course!
Practical Electrical, Part III*

Cover Photo: Tom Hill
The Dregs Photos: Tom Hill
Steve Winwood Photos: Courtesy of Island Records

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LETTERS TO THE EDITOR

John R. Saul, President and founder of MICMIX Audio Products, Inc. passed away on January 2, 1981 at the age of 49. He is survived by his wife, Babs Saul, and his daughter, Teresa. Mr. Saul was a member of the Audio Engineering Society, National Association of Broadcasters, Society of Broadcast Engineers, Society of Motion Picture and Television Engineers, and was a mechanical engineering graduate of the University of Notre Dame.

Mr. Saul worked as a senior project engineer for LTV Corporation and resigned in 1972 after 20 years of service. In 1972, MICMIX Audio Products was incorporated, and Mr. Saul assumed the position of President.

The late John Saul was widely known for his outstanding business ethics, warm personality, and inventive mind. He will be deeply missed by the entire audio industry.

John R. Saul 1931-1981.

Five Possible Pieces

I am responding to your request for comments on your review of the Fender Twin Reverb amplifier in the October 1980 issue. In a word, excellent! As a free-lance musician in the Chicago area, I would also like to mention some of my own pet peeves regarding musical equipment design which many of your readers may share.

1) Line Voltage Behavior: At an outdoor concert last summer, we were required to power our amplifiers from a gasoline generator. Although our solid state equipment worked reasonably well, the gain of our tube amplifiers (including a Fender Twin Reverb) changed wildly as the generator line voltage varied during the concert.

2) Radio Frequency Interference Susceptibility: On a recent engagement in the banquet rooms at the top of the Hancock building in Chicago, which has a number of broadcast transmitters on the roof, one name brand (Music Man, Inc.) amplifier was unusable due to radio pickup. Our other equipment had no problems.

3) Resistance of painted surfaces and panel markings to duct tape: We have learned through experience to be very careful in applying duct tape to certain makes of microphones and amplifiers.

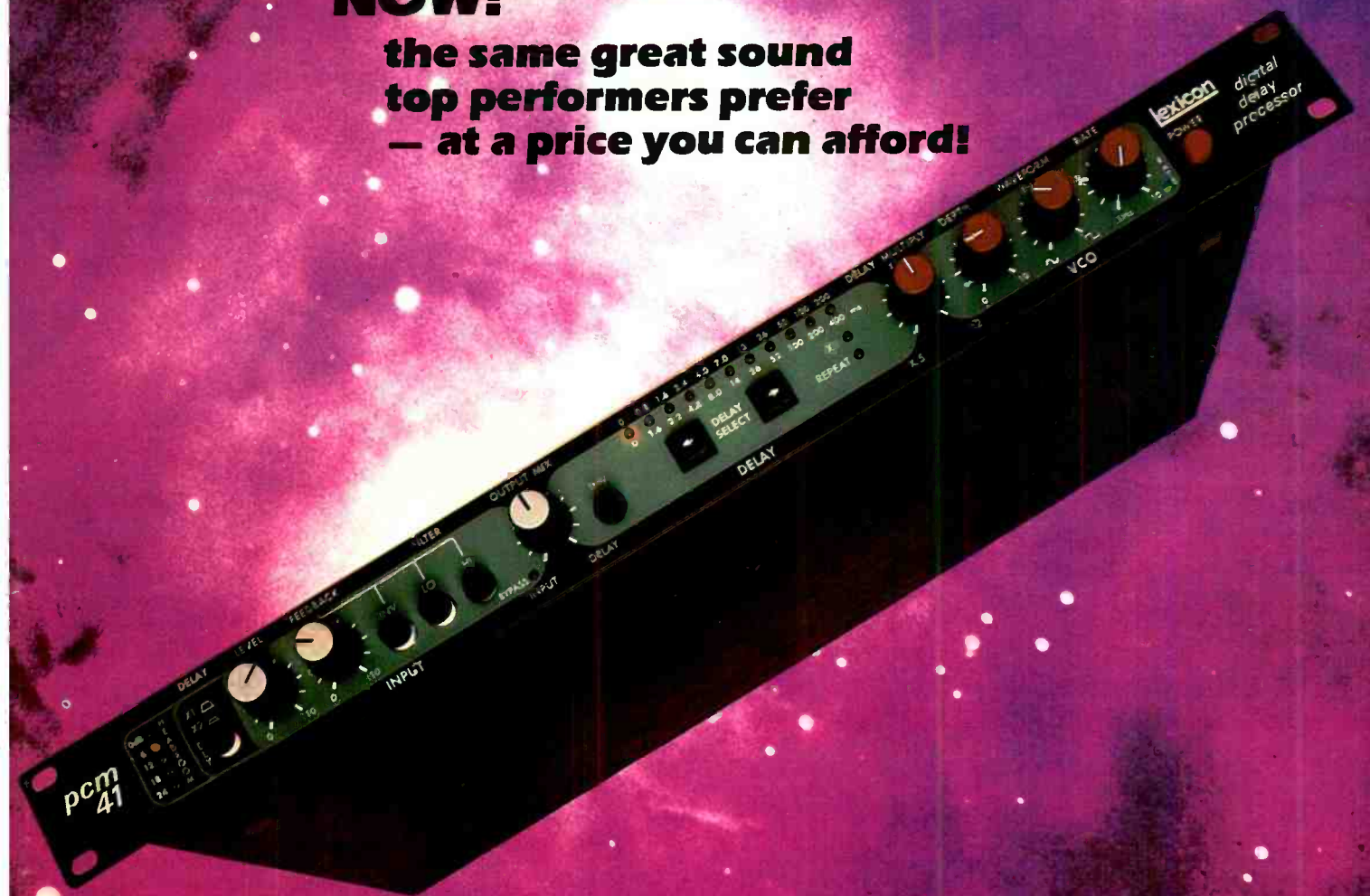
4) Control Linearity: Most musical equipment is more difficult to use than it has to be because of uneven rotational response of controls.

5) Control Interaction: My favorite pet peeve was fully covered in the article on the Fender Twin Reverb. Believe it or not, some manufacturers (Yamaha for one) actually cite control interaction as a sales feature in their brochures.

These are all tests which I believe would be valuable to your

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readers and difficult for them to perform themselves before buying a piece of equipment. Looking forward to more "Notes" features, I remain,

—Mark S. Williamsen
Evanston, IL

We received this reply from Brian Roth:

First of all, thank you for your comments on the Fender piece. They were much appreciated. Let me go through your suggestions, one by one.

1) This is a good idea. But let me remind you that it is difficult to create repeatable conditions for this kind of test. But the idea should be pursued.

2) This, too, is a good idea. But again, there are too many variables. This is the type of test, too, that requires a repeatable method of measurement. The lack of standards in the area of Radio Frequency Interference Susceptibility makes it difficult to repeat techniques that would be fair to all the different equipment under review.

3) This idea has merit, but when equipment is on loan from a manufacturer,

as it usually is when we test and review a piece, we must be very careful about the condition we leave the equipment in. If the duck tape were to have the effect we were testing for, and damage were incurred to the equipment, we'd have quite a time explaining that to the manufacturers we'd borrowed from.

4) I hate to sound repetitious, but the problem here, too, is in developing a repeatable method. Everyone has a different interpretation of what would be a good control response. A characteristic that would be good for one musician might be unacceptable to another.

5) Glad we hit on that topic.

Of all the tests you suggested, line voltage seems to be the only test that could be done in any semblance of a repeatable fashion. But thank you for your ideas, and see what the future brings in terms of "Notes" columns and test reports.

—Brian Roth
Technical Editor

Modern Recording & Music

In Appreciation

Hey! Let's hear it for equal time! This letter is in reply to the insult letter to James Rupert in *MR&M's* January 1981 issue.

I don't know where the guys from Florida get off but Rupert has been my humor life line to this biz!

I've been unemployed for one and half years and when each issue arrives I can't wait to read Rupert's addition to get out of the daily doldrums. His "10 Commandments of Tape Recording" is a classic! (October 1980). I intend to frame and hang it where and whenever I work! Even if he's not in the issue, there are always things for me to learn and hope to accomplish. My hat's off to you, James Rupert. Now one question; can you help a lady engineer get a studio job?

—Romayne Carlin
Peekskill, N.Y.

Jim Rupert replies:

I'm glad the editor forwarded your letter to me Romayne, so that I could assure myself that it wasn't really something my Mother sent in. I thank you sincerely for your defense and ap-



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preciation. I was beginning to get a little neurotic every time I opened the mail. (The thing I hate most about neurotics is the way they spy on you!) Once again my thanks. As far as helping you end these unemployment blues, please send your address to me in care of Modern Recording and Music. They will forward it to me, and I'll help you in any way I can if you are really sincere about trying. If this is really my Mother, this is a pretty sneaky way to get me to call home!

Profile Encouraged

Has anyone ever suggested getting all the talkback articles and publishing them in one volume? Or maybe compiling a "best of" series of talkback letters. They could be divided into different sections, such as tape deck care, equipment modifications, do-it-yourself, etc. I'm sure this would be a big seller, because it gets kind of tiresome looking through a few year's worth of magazines for a possible solution to a problem.

Also, how about doing a "profile" article with Craig Anderton? He's done so many articles and interviews, it would be interesting to get him on the other side of a tape recorder for once.

One last thing. While looking through the October issue, I saw a picture of an issue featuring the Tubes on the cover. You wouldn't happen to have a copy of that issue lying around somewhere, would you? I'd be happy to send you a few bucks for one if you do. Thanks for an excellent magazine.

—Doug Llewellyn
Kinston, N.C.

In response to your first suggestion, yes, we have thought of putting together former talkback articles. In our annual Buyer's Guide we do print previously run Talkback letters. Though this is not along the same scale as what you were talking about, I thought I'd mention it. (There are a lot of other good reasons to read Buyer's Guide, actually, too.) We will consider a compilation of Talkbacks along the lines of what you mentioned. Let the idea filter through the proper channels, and who knows what we will come up with.

Craig Anderton, would we agree, be an interesting "profile" candidate. But would he agree? That is the question. maybe we could even get him to appear on the cover. Then we could all see the man behind the "Notes."

Finally, we are sending you a photocopy of the article entitled, "Multi-Media Madness with the Tubes," which appeared in the April/May 1976 issue of Modern Recording. (Yes, then it was still called Modern Recording, not Modern Recording and Music, and was published six times a year.) The reason we are sending a photocopy, and not the issue itself, is that that issue is out of print, and we have only a file copy left for ourselves. Take note of the author of that article, by the way. Enjoy the Tubes.

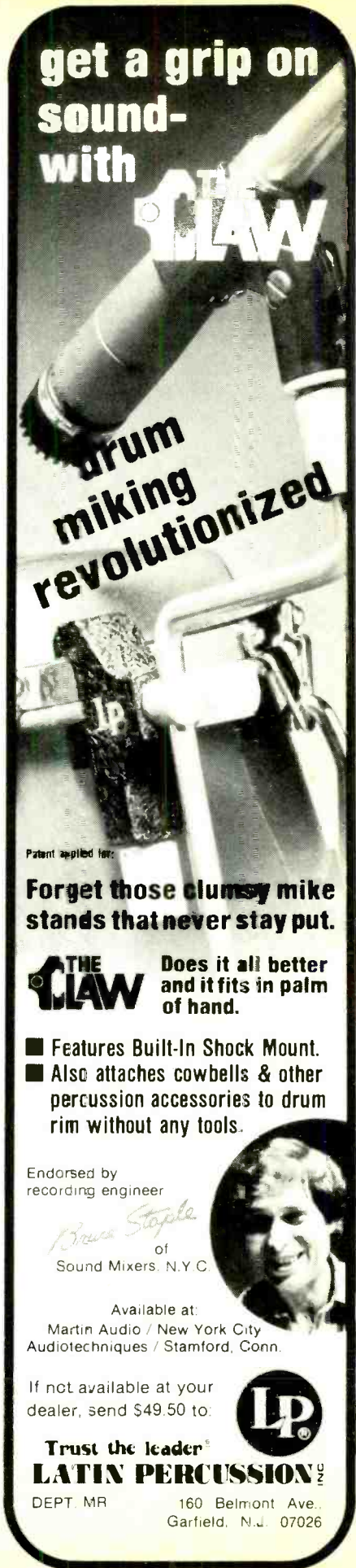
It's Not How Loud You Make It . . .

I am a professional musician. I am writing in the hopes of bringing what I feel to be an important message to the many musicians and sound engineers who are among your readership.

Over the past several years, as the technology of sound reinforcement has so dramatically advanced, we, the artists, have somehow lost sight of an important basic principle: Dynamic, powerful music does not have to be performed at decibel levels harmful to the human ear, and is in fact, more enjoyable, more effective, and more dynamic when presented within the margins of safety and comfort.

This is not to say that we shouldn't take advantage of the wonderful state to which the art has developed; on the contrary! What I am saying is that we must simply learn how to employ this technology correctly. If he wants to get a good sound, he must first get control of the sound. In order to do this, he must overcome the stage sound with the P.A. mains. The greater the stage volume, the louder the mains must be to overcome it.

The old argument that a musician must play loudly in order to get the right sound has certainly by now become obsolete. Anyone who still holds to that belief should please investigate further. The past few years have seen great strides, particularly in guitar equipment. The only real obstacle here is with regard to the natural volume of drums. Certainly a strong attack is appropriate and even necessary for certain modes of music. However, with proper miking and monitoring, the stage volume of the band as a unit can be kept to a comfortable and effective level. An important point: Do not overlook the non-singing drummer



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when it comes to monitors. A small extension cabinet from the bassist is especially helpful here.

With the proper set up, and a short sound check, a capable sound man can afford you optimum fidelity at volumes which will not drive your audience away, or worse yet, cause them hearing loss.

I believe that by following these guidelines, many artists will find their sound to be better than ever.

I hope that this has been of some

assistance. Let's strive to keep up with our own technology. It is after all, not only our joy, but our obligation; not only our pleasure, but our responsibility.

—Anonymous

For a Song

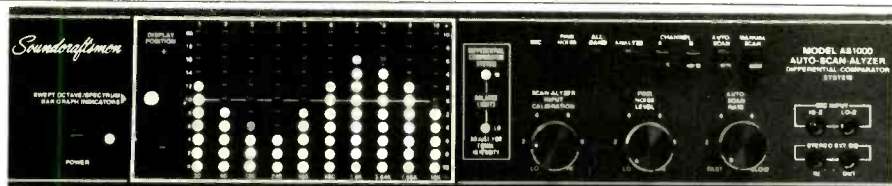
I have been writing songs and poetry for about ten years. I have heard that there are forums for the selling of lyrics/poems and I am very interested.

I wrote *Playboy* about it and they kindly referred me to you.

My home is in Kenmore, New York, just outside the city limits of Buffalo. Would there be places I could deal with locally? Can you give me an idea of how the business transacts? Will I need to protect myself from theft/plagiarism and if so, how? Would this company also be interested in compositions and harmonies?

I have quite a collection already, and my mind seems to function a mile a minute. Any help and advice you can give me will be greatly appreciated. I thank you for providing me with this opportunity.

—Joseph J. Moran
Kenmore, NY



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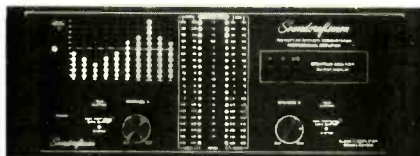
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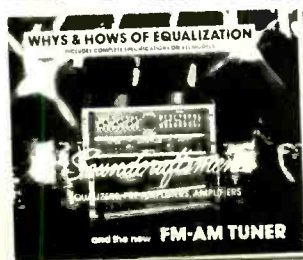
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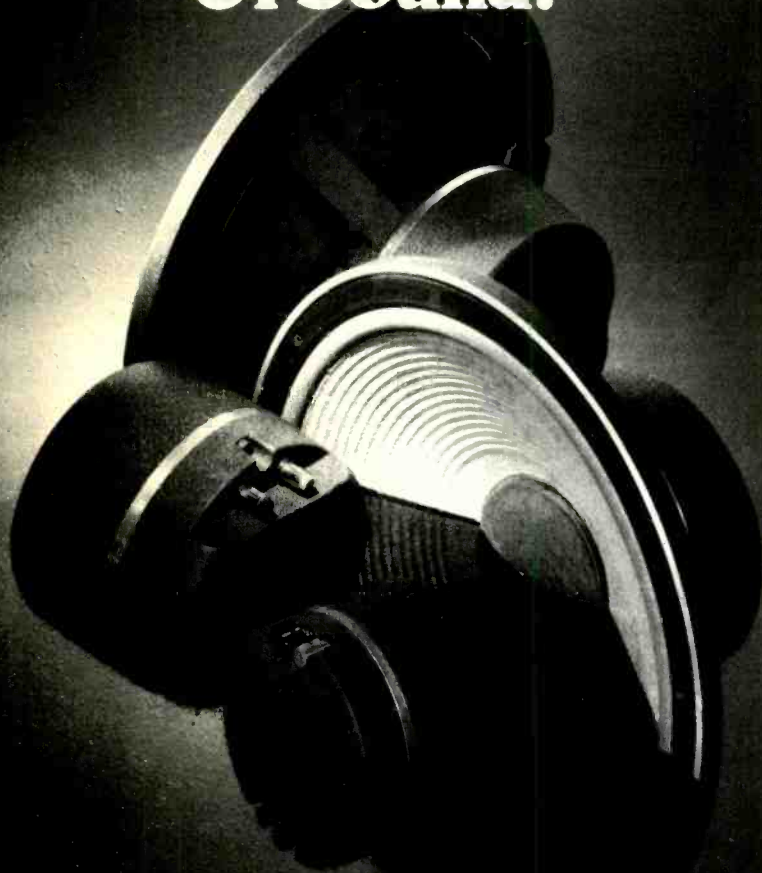
Country, Please!

First of all let me say that your magazine has been (and still is) one of the most helpful and informative magazines in the music business. Your features include not only articles which interest studio musicians and technicians, but also includes articles for "live" bands and soundmen.

I, myself, have personally improved my own sound reinforcement system (notice I didn't say P.A.) thanks to your help. But (here it comes) why do you consistently ignore country music? Is your opinion of this large part of the music industry biased or am I correct in assuming that there "ain't no good country music"?

How about a review of a country album once in a while? I think guys

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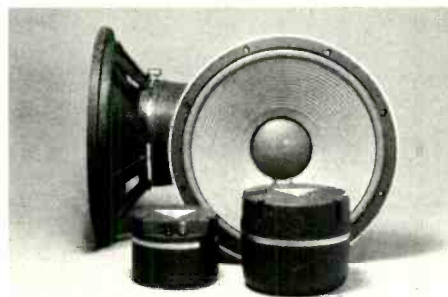
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like Nat Hentoff, Joe Klee, or Steve Row would appreciate efforts like Merle Haggard—*Back to the Barrooms*; Gail Davies—*The Game*; or Asleep at the Wheel—*Framed*.

And as far as studio musicians are concerned, how about something on Buddy Emmons or Reggie Young?

Please do not be offended by this letter as it is not a complaint. This is merely a suggestion as to what I think would make a great magazine greater!

Like it or not, country music is hot and here to stay!

—Dave Freeman
Fletcher, OK

Thank you for the compliments. And we will be printing some country music reviews, maybe sooner than you think.

Patronization and Head Bumps

I'd like to add some comments to the "Pro vs. Semi-Pro" discussion between Fargo N.D. and Drew Daniels of Teac (*MR&M*, January, 1981, pg. 16).

"Right on" to Drew's opinion that the difference between pro and semi-pro is in the people, not the equipment.

I recently had to take all kinds of flak while on a direct-to-disk recording job for inserting a piece of consumer hi-fi (horrors!) gear in the signal path. I knew it was making a perceptible improvement in the product.

I want to disagree with Drew's statement "...if large-scale documentation and user-adjustable controls were to be included in mass market, consumer-oriented products, technological chaos of cosmic proportions would be unleashed upon those of us who people the telephones and typewriters toward aiding the novice-in-distress, not to mention the poor stereo-store salespeople."

I believe almost all users of reel to reel tape recorders would benefit from the presence of front-panel controls for bias, recording level calibration, and recording equalization, and the information on how to use them. What would result would not be chaos; it would be a knowledgeable and responsible using public, able to get much better performance from their expensive machines. The audio industry has talked down to the "consumer" for too long. Look at photography, for example. There is simply no audio

equivalent of an artistic tool such as a low- or medium-priced 35 mm camera. Would you buy a \$700 camera with no automation and only a switch labelled "film speed: fast/slow"?

Regarding head bumps, those low-frequency boosts and dips that plague almost all (even *very* expensive) tape decks, these have been giving me a hard time for several years, as I do a lot of 4-track album and theatre tape production. dbx makes these narrow-gauge machines usable for "pro" results, but unfortunately it also *doubles* the effect of the bumps. A Teac 40-4, for example, has a bump of +3.5 dB around 90 Hz, and with dbx this becomes +7 dB. That's not pro, not semi-pro, that's AWFUL. You can hear it in one generation, and may the god of sound help you if you try to ping-pong several generations.

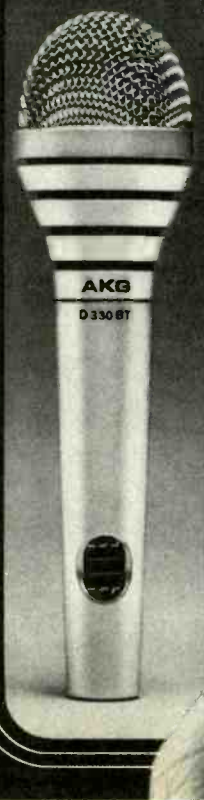
I've been using outboard equalizers to fix this for several years, and I'm just now building a "pilot run" of 25 units of a product called "FX-8" that will meet my needs and perhaps those of others also. It's an 8-channel parametric equalizer, three frequencies for each channel. It has no front panel controls except power and a bypass switch

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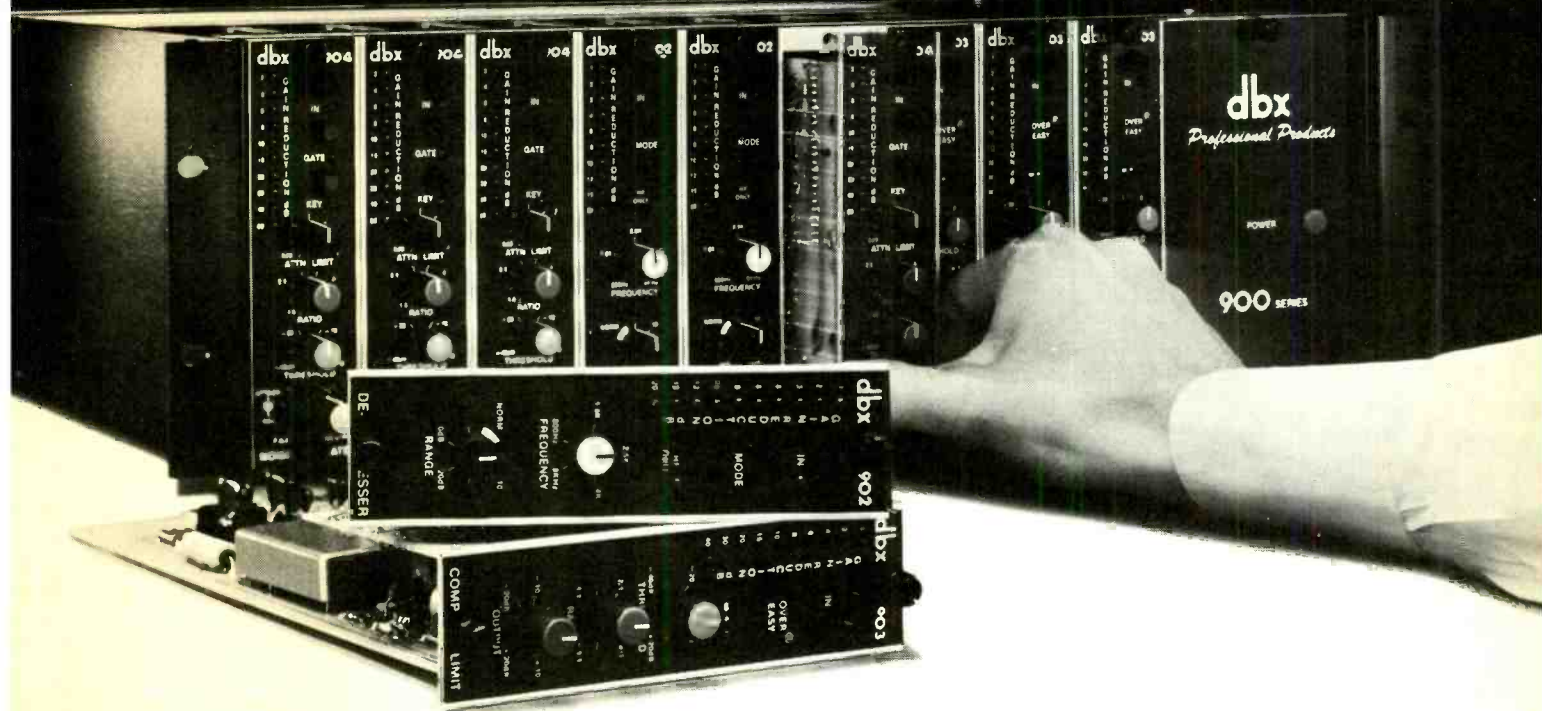


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for demonstrating, so it fits in a slim 1 1/4" rack space. You put it on the bench with the deck when aligning and calibrating, and after the deck is as flat as its own internal adjustments will allow, you tweak out the rest with the FX-8 and put the lid back on. I can get a +/-1 dB or better response from a Teac with dbx. Marketing has not been arranged yet, but I think the pro-net price will be around \$800. Sorry, no orders now, but if people want to send cards, please indicate whether you want to be on a mailing list for information or waiting list for purchase of the first production batch.

Hey, I didn't mean to get commercial on ya, but since you brought up the problem, I couldn't resist tickling your fancy. Thanking you for your attention, I remain,

—Dan Dugan
San Francisco, CA

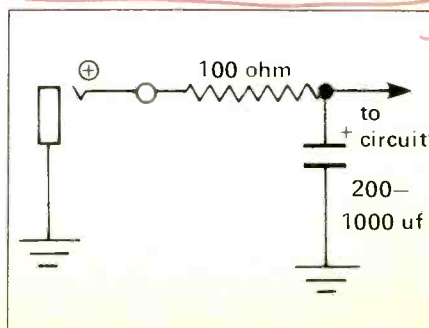
Orman Re: Volts

In regard to a question in the December 1980 "Talkback" column concerning the use of AC adapters with foot pedal accessories I would like to add the following.

First, the typical 9 volt battery supplies between 10 and 15 milliamperes of current. Thus an adapter that can produce 100 MA will safely run 6 or 7 devices that previously took batteries.

Secondly, Mr. Roth was right in that 9 volt batteries usually provide somewhat less than 9 volts. In addition, the typical 9 volt AC adapter often produces in excess of its rating. I have found that the adapters sold for use with many of the electronic games, rated at 7.5 volts and 100 to 200 MA, are excellent for powering effects boxes.

Thirdly, the hum and noise problem can be eliminated by the addition of two parts inside the effects box. A 100 ohm resistor is added in line with the adapter input. A capacitor (200-1000



UF, exact value not critical) is soldered from the end of the resistor to ground with the positive lead of the capacitor oriented to the positive side of the adapter as shown in my sketch below.

A 200 UF capacitor will give an 18 dB reduction at 60 Hz and 24 dB at 120 Hz. Using a larger value will provide greater reduction—double the capacitance. Add 6 dB of reduction.

—Jack Orman
Memphis, TN

Finding a Beigel to Love

I really enjoyed the "Notes" column in your February 1981 issue, on the Beigel Envelope Controlled Filter. My only problem now, is, where can I get it? I've looked, but seem to have no luck. Thank you.

—Larry Burns
Riverdale, NY

The three places we suggest are:

1) Alex Musical Instruments, Inc.
164 West 48th Street
New York, New York 10036
Phone: (212) 765-7738

2) Martin Audio-Video Corporation
423 West 55th Street
New York, New York 10019
Phone: (212) 541-5900

3) Beigel Sound Lab
24 Main Street
Warwick, New York
Phone: (914) 986-1699

Good Luck!

The Magnetic Appeal of Carver

I would like more information about an article in your November issue of MR&M. The article reviewed Carver's new M-400 Magnetic Field Power Amplifier, but didn't give the address of Carver. Could you please give me their address and telephone number?

—Kenny Mohr
Hollywood, CA

You can reach Carver at P.O. Box 664, Woodinville, Washington 98072. Their phone number is: (206) 487-3483. Any additional questions you have about the article, please send to us, and we will either answer them ourselves, or we'll request information for you from the authors themselves, Len Feldman and Norman Eisenberg.



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Slew rate: 40 volts/micro second.

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laminate, cross-grain hardwood. It's simply the most rugged material available for the job.

Naturally, the only way you'll know if the Cabaret Series systems are really for you is to hear them for yourself. So ask your JBL dealer for a demonstration. He'll help you design the sound system that's perfect for every stage in your career.

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TALK BACK

"Talkback" questions are answered by professional engineers, many of whose names you have probably seen listed on the credits of major pop albums. Their techniques are their own and might very well differ from another's. Thus, an answer in "Talkback" is certainly not necessarily the last word.

We welcome all questions on the subject of recording, although the large volume of questions received precludes our being able to answer them all. If you feel that we are skirting any issues, fire a letter off to the editor right away. "Talkback" is the Modern Recording & Music reader's technical forum.

Building Blocks

I'm writing this letter on behalf of all the bands all over this country that can't afford good pieces—specifically speaker enclosures—because of their budgets. Many sound people out there have good wood-working capabilities, and with a good set of blueprints they could build their cabinets themselves and save a lot of money along the way.

What I'm looking for is a set of blueprints for a set of bass bins, similar to the Fraser back-loaded dual-15's. I used this model last summer at an outdoor gig and was very impressed with their performance all around. All that kept me from purchasing a pair was their price: at \$900. a piece, unloaded, they are quite a bit above our price range.

We are now using our own version of the JBL 4560 cabinet, with some porting changes for the mid-range. We have four to a side and would like to put all four to work on the mid-range. We have a stereo tri-amped system. What we would like to have eventually, per side, is one bass bin, four mid-range (in the 4560 style), and the four JBL 2470's plus tweeters that we are currently using for the high end.

If you could also come up with a com-

pany that offers blueprints for on-stage vocal monitors, we would be very appreciative.

Thanks for having such a super magazine. You have saved me a lot of time and gas getting parts and information.

—John Foster
Sound Engineer
F.B.C. Band
Ft. Wayne, Ind.

[Blueprints, blueprints, who's got the blueprints? Actually, we found out that a firm in Pittsburgh markets exactly the information you've requested. The following is the letter from RD Professional Sound Reinforcement that we received after informing them of your interest. RD, for those of you who might wish additional information on other kits available, is located at P.O. Box 5090, Pittsburgh, Pennsylvania 15206, or you can telephone them at 412-441-3389.]

Currently we are marketing four speaker enclosure blueprint kits. They are the Concert Monitor 161B, Club Monitor 102A, Guitar Enclosure 200A, Guitar Enclosure 200B (for bass and keyboards). Each kit sells for \$5.00/kit, except the CM-161B which is \$7.50/kit.

With one of our blueprint kits, a musician can build a quality enclosure with a minimum investment. RD offers the musician on a budget a worthwhile alternative to higher priced ready-built enclosures. Customers have written, telling us how they could afford better speaker components by building the enclosures themselves.

To use our blueprint kits, the customer needs only three things: fundamental woodworking skills, time—12 hours per enclosure according to a recent customer survey, and a few basic tools. Incidentally, if the required tools are not available they can be rented for a minimal charge in most metropolitan areas.

Briefly each kit includes one or more of the following items: easy-to-read blueprints, exploded view and detailed three view projections, port area templates for the GE-200 series, saw angle templates for the Monitor series, a plywood panel, layout drawings, materials and tools, required lists, and a specifications sheet for the completed enclosure.

Regarding the questions in the letter you sent us, at the present time we can't help you in your search for P.A. enclosure blueprint kits, although in the not too distant future we do hope to design and market one. However, our Concert Monitor 161B should be just what you're looking for. Along with the already mentioned features, the new port area chart, baffleboard layout sheet, and three enclosure sizes allows the musician (in this case sound engineer) to choose the correct size and style stage monitor for practically any application.

—Ronnie Frey
Co-owner
RD Professional Sound
Reinforcement
Pittsburgh, Penn.

[A brief personal note to John, Mr. Frey was kind enough to forward a complimentary kit for the CM-161B for you which, due to an incomplete (nonexistent!) mailing address we haven't been able to send to you. Please write. All is forgiven.]

—Ed.]

The Mixdown Lowdown

I am considering the purchase of a PCM Digital Recording Processor to hook up to my VCR. I own a Tascam 80-8 and I would like to use the digital equipment exclusively for mixdown. No "live" stereo recording is planned.

My question is whether it makes sense to use a PCM system as a mastering deck, when I'd be starting with an analog signal already limited

somewhat in dynamic range, etc.? Or would a less expensive analog half-track deck give me all the signal my 8-track is able to capture?

Currently, I'm mixing onto my old Teac 3340. It's been professionally calibrated, it's got new heads, but I'm still losing a lot when I listen to the 3340 copy vs. the original 80-8 source signal, although it sounds ten times better than anything I can do on my cassette deck. But if I want the stereo master tape to sound *exactly*, or as close as it can come to my 80-8 original, isn't digital the answer?

—Jeff Holman
Minneapolis, Minn.

Clearly, to my mind, with the equipment you are currently using there would be no real advantage to be gained in using digital technology in your mixdown process. A good, professional, analog 2-track deck, such as the Ampex ATR-100 or a machine of comparative quality would give you approximately the same signal as the one you're getting off your 80-8. If, however, and it's a big "if," you were recording digitally, then it would make sense to mix digitally.

You should note at this point that the PCM converters have not been proven in the semi-pro field for a sufficient period of time in regard to serviceability and reliability. They are extremely sensitive and complex pieces of machinery, and you would need a vast storehouse of technical knowledge at your disposal to keep it properly aligned and to get everything from it that it can offer.

—George Klabin
Sound Ideas Studios
New York, N.Y.

Teac/Tascam Numerology

I'm working with a Teac/Tascam 80-8 and a Model 5B board, and I have two questions that I'd like answered.

First of all, the alignment procedures in the owner's manual are very straightforward, but Teac uses a reference level of 0.316 Volts for "0 VU" (-10 dB). This does give you plenty of headroom, but it puts you down close to the noise level. I'd like to know if it's possible to use a reference level of 0.775 Volt (+4 dBm) for this machine.

My second question involves bias trap adjustment. My electronics cards do not have the test point between C32 and L3-C34. Since this test point does

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CIRCLE 86 ON READER SERVICE CARD

not exist, I tried to pick up the bias reading coming off the record head. No such luck. Where, then, can I read the bias trap adjustment?

—Mark Oent
Charlottesville, Va.

Given the fact that you understand "0 VU" and "0 dB" don't necessarily mean the same thing, let me say I think you may need some review. When using "0 VU," keep in mind that the meters on your tape deck are only

showing you a reference to some pre-determined input level. One of a number of industry standards—chosen by the manufacturer to represent zero—will be used to set "0 VU." It may be 60 millivolts, 100 millivolts, 316 millivolts, 775 millivolts, 1 Volt, 1.23 Volts, or whatever.

Teac uses the IEC standard for Tascam calibration reference. The IEC standard fixes "0 dB" at 1 Volt, and calls this reference "0 dBV"—dB's referenced to 1 Volt.

When you divide a voltage by the square-root of 10, you get a number 10 dB lower, hence 0.316 Volts is -10 dBV. 0.316 Volts is intended by design to be nominal for driving the inputs of Tascam recorders and equipment, and so the meters of the recorders are factory set to read "0 VU" when the deck is calibrated with a 0.316 Volt input in a recording system.

The noise level you refer to will be at or near a voltage represented by the minus dB number given in the specifications. The owner's manual for the 80-8 lists the unweighted signal to noise ratio as -60 dB, therefore the noise level will be a voltage deemed 60 dB below the maximum usable recording level. As a point of reference, "0 VU" on the meters of the recorder is the level at which the total harmonic distortion reaches 1%. Multiplied by the square root of 10, the number used to represent "0 VU" will now represent +10 VU and, coincidentally, 3% THD (1 Volt). This is the reference level used to indicate the maximum usable recording level, where the distortion becomes plainly audible, and from where the amount of distance in dB down to the noise floor is measured according to a National Association of Broadcasters (NAB) standard—the nature of which is beyond the scope of this particular reply. This roughly means that if the maximum input level should be 1 Volt, that the noise floor will be around 0.001 Volt.

The reference level 0.775 Volt is derived from a standard adopted by the radio industry in 1939. It declares that 0.775 Volt driving into a 600 Ohm load should be considered "0 dB." In point of fact 0.775 Volt into 600 Ohms develops 0.001 Watt, so the standard is a definition of a power level, not just a voltage reference.

In the years before 1939, the phone company used different standards, i.e., 6, 10, and 12.5 milliwatts with a 500 Ohm load—very confusing. The term "dBm" is used to denote 1 milliwatt of power into a 600 Ohm load, therefore 1.23 Volts will be +4 dBm.

The IEC standard seems to make good sense in view of the fact that much of today's modern audio circuitry is tending toward FET's and higher impedances for which calculating load at audio frequencies is somewhat tacit, at least with short cable runs.

Regarding your "second question," you must use an oscilloscope probe

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tape. Or solo one or several monitor channels. You can listen to a performer's headphone cue, hear the echo buss, add external signal processing to the monitor or tape. You'll easily satisfy your musicians, your producer and yourself, with an amazing amount of flexibility and control.



The model 15SL is the perfect studio mate for the world's most popular 8-track recorder: the Tascam 80-8. Put both to the test at your Tascam dealer today.

And the Model 15SL does all this very quietly. The mic preamps are all discrete FETs (not chips) for lower noise and distortion. The power supply is housed separately for remote mounting to keep heat and hum away from the amplifiers. Mic input S/N is greater than 76dB (1 channel, WTD). And overall distortion (Mic In to Line Out) is 0.03% THD @ 1,000Hz.

So listen to the Model 15SL. Examine its extraordinary flexibility. You'll find everything you need to start work at 8. And go to 16. At your Tascam dealer right now.

TASCAM STUDIO SERIES
TEAC Production Products

with a clip type tip or tip attachment to hook onto the lead of C32. If you don't have an oscilloscope, I suggest you don't go any further into the machine—it gets pretty technical in there.

—Drew Daniels
Technical Specialist
Professional Products Group
Teac Corp. of America
Montebello, Ca.

Working With Wakeman at the Workshoppe

Can you supply me with information on the studio equipment (mics, amps, monitors) that Rick Wakeman requires to achieve his marvelous, distinctive sound? In particular, I'd really like to know how he mics his Leslie amplifier and his grand piano.

—Ken Williams
Albuquerque, N.M.

I just had the unique pleasure of recording and mixing the music track, and soundtrack album, for *The Burning*, a soon-to-be released horror film. The majority of the music was written, performed and produced by Rick

Wakeman (with extensive assistance from music director, Alan Brawer).

Rick is not a studio owner nor an engineer per se, nor does he want to be. In spite of his vast technical background, he is a great believer in letting everyone do his or her own job. There is a very open atmosphere; suggestions are made freely from anyone to anyone, about anything. However, miking and other recording techniques are left to the engineer as long as the results prove successful.

The studio piano, a Yamaha C-7, was miked with a stereo pair of AKG 451's placed a foot or so above the strings just behind the hammers. A Neumann U-67 over the bass bridge was added for certain bass oriented overdubs, with great results.

Accurately reproducing the spatial effect of a Leslie speaker on a stereo recording is a hard one to pull off. My favorite technique is a pair of matched cardioid, condenser microphones placed three to five feet on either side of the cabinet just below the top rotor. The mics must be close enough to create stereo imaging, but far enough away to avoid excessive dropout when the rotor points away from either mic. In addi-

tion to the pair on top, a tighter mic on the bottom rotor will round out the sound, and can usually be placed in the center of the stereo pair on the multitrack. (This is obviously an ideal situation, without leakage and track restrictions.) Recording synthesizers and even organ and piano, Rick makes good use of many time based digital effects, half speed and even backwards recording. So good luck trying to figure out which keyboard was done how!

Due to an infatuation with the city of New York (and hopefully a good feeling about the sessions here at the Workshoppe) Rick has made arrangements to record part of his next album with us later this month. The only extra equipment ordered for these dates will be a pair of Tannoy monitors, that Rick is very familiar with, and a high quality auto-panner.

Working with Rick was a widening experience and a great time; I hope you feel that same spirit listening to his records.

—Kevin Kelly
Engineer, Co-owner
The Workshoppe Recording Studios
Douglaston, N.Y.



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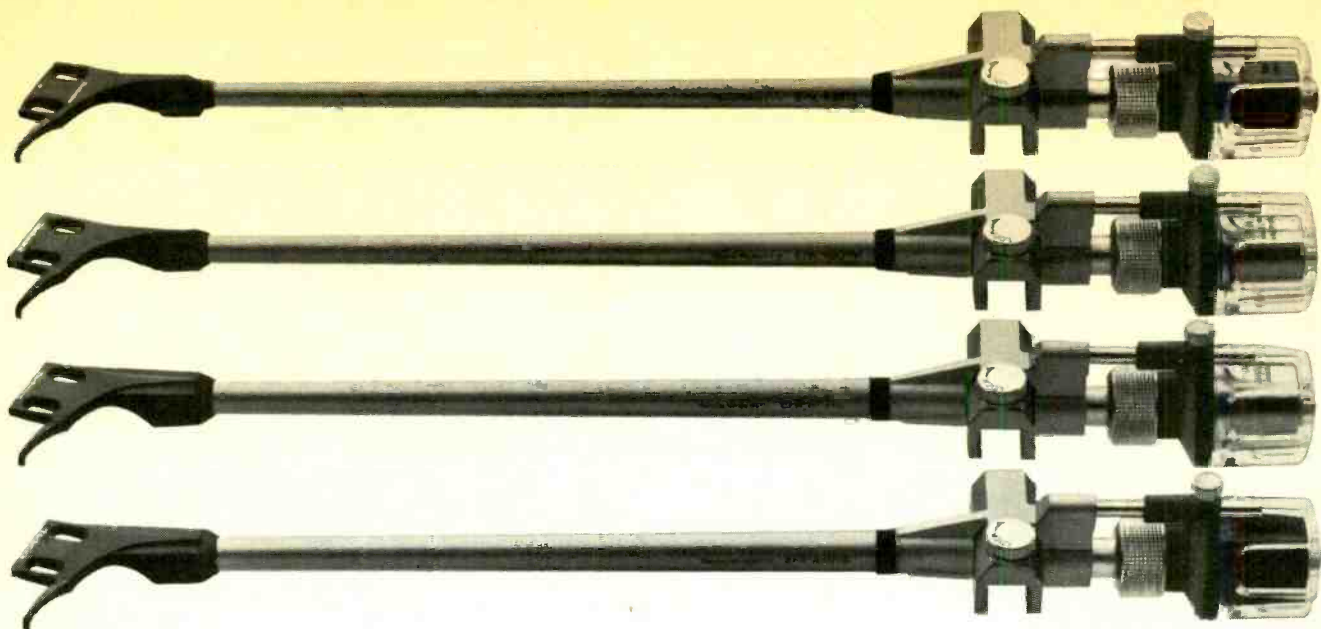
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CIRCLE 52 ON READER SERVICE CARD



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In a professional quality turntable, you want musical vibrations, not mechanical ones. That's why our Professional Audio Division presents the Technics R&B Series SL-1015 turntable and EPA-500 interchangeable tonearms. They put vibration and resonance where they belong—out of the audible level.

The SL-1015 turntable system has a visco-elastic base that absorbs external and mechanical vibrations instead of transmitting them. The extra-heavy platter is damped 3 ways to help cancel platter resonance and acoustic feedback. A high-torque motor provides instant starts. And quartz-synthesized pitch lock with digital display precisely controls speed.

The EPA-500 tonearm system is a series of 5 independent, instantly interchangeable titanium nitride tonearms that let you match the correct tonearm mass to the correct cartridge compliance. The result is music in focus, with inaudible resonance.

The SL-1015 turntable and EPA-500 tonearms are available at select locations. For one near you, call 800-447-4700 (in Illinois, 300-322-4400). We challenge you to hear anything but the music.

Technics
R&B series

THE **PRODUCT** SCENE

By Norman Eisenberg

NEW MICROPHONES

Several new microphones have been announced by Audio-Technica. For use in recording, broadcast and sound reinforcement, there are two new remote powered electret-condenser mics, and a battery power supply. The mics are the AT803R (\$200), and the AT813 (\$150). The recommended battery supply is the AT8501 (\$90). The mics also will operate from any other source of 9-52 volts D.C. The AT813R is a unidirectional mic best suited to vocal and instrumental applications. The AT803R lavalier mic is offered for miking speaking voices and musical instruments. Its belt module is detachable for adding the supplied extension cable, and a music/voice switch is provided on the module.

A-T also has announced four new remote Artist Series microphones which also may be powered by the AT8501 battery supply. These mics include the ATM10R (\$135); the ATM11R (\$150); the ATM 31R (\$150); and the ATM91R (\$170). All are fixed-charge permanently polarized condenser-electret microphones. The ATM10R is an omnidirectional mic for instruments. The ATM11R is a unidirectional mic for instruments. The other two are unidirectional, with the ATM31R intended for instruments and vocals, and the ATM91R specifically designed for vocals.



CIRCLE 1 ON READER SERVICE CARD

TEAC SHOWS NEW METERING



A unique spectrograph metering system is featured on Teac's new model V-9 cassette deck. Each channel has a series of six color-coded peak-reading incandescent lamps which "quickly and dramatically" indicate recording or playback levels. Teac points out that this metering system provides immediate and positive readout for monitoring levels. "Whenever the first red lamp is triggered, you know instantly that a +3 over the zero reference has been reached."

The V-9's drive mechanism operates directly via the IC logic transport controls, without the need for solenoids. The V-9—a three-motor, two-head deck—has a metal tape capability, and other usual features. Price is \$399.

CIRCLE 2 ON READER SERVICE CARD

STRIPS TO THE RESCUE

In keeping up-to-date information, a possible aid to the small studio or related small business in the sound and recording field are the Dataflex Visible Reference Systems to which has been added a new insert sheet containing removable strips. Data may be entered on the strips which peel off and then may be added to a frame along with previous data. Frames themselves are contained in a desk stand, or rotary stand, or wall bracket.

CIRCLE 3 ON READER SERVICE CARD

COMPUTERIZED CASSETTE DECK

Joining the ranks of computerized cassette recorders is the new Akai GX-F95 whose built-in microprocessor automatically determines bias, equalization and recording sensitivity for a cassette with any tape formulation in a matter of seconds. The deck's twin-field Super GX Combo head provides for tape/source monitoring, and the transport uses full-logic solenoid controls. Metering is handled by two 14-section/two-color fluorescent bar indicators with a peak-hold feature. The deck also boasts a real-time tape counter, a built-in timer for use in both record and play, as well as more usual features. Remote control is optional. In metal tape position, the deck is rated for frequency response from 25 Hz to 21 kHz, with a weighted S/N better than 62 dB without Dolby, and 10 dB better than that above 5 kHz with Dolby. Wow-and-flutter spec is 0.025 percent. Price is \$1195.

CIRCLE 8 ON READER SERVICE CARD

CABLE MARKING SYSTEM

A new cable marking system is available from Wireworks Corp. Known as "Bandits," the markers are flexible plastic tubes hot-stamped with the buyer's imprint and heat-shrunk six inches from the male connector of a Wireworks microphone cable. Colors indicate different cable lengths. Wireworks offers "Bandits" as a way of publicizing the owner's name and to end the guesswork over who owns what cable.

CIRCLE 9 ON READER SERVICE CARD

RENKUS-HEINZ PRODUCTS

New additions to the Renkus-Heinz line of professional audio products are high-frequency enclosures and a 2-inch throat horn. The carpeted enclosures are produced in two forms: one form comes complete with horn, driver, hi-pass network, continuous attenuator and provisions for bi-amping; the other version is supplied only with the horn and connector plate. The new 2-inch throat horn has a cut-off frequency of 800 Hz and will accept 2-inch drivers with the standard four-hole flange mount.

CIRCLE 10 ON READER SERVICE CARD

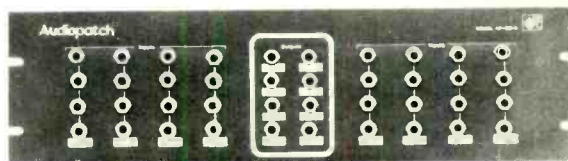
NEW FROM MAXELL

Maxell's model 231X is a hand-held degausser that operates on standard 117 volts, 60-Hz AC, and is offered for use on all types of tape decks. The probe is covered with plastic. When power is applied, a built-in light comes on to illuminate the work area. Price of the 231X is \$16.95.

CIRCLE 11 ON READER SERVICE CARD

STEREO PATCH PANEL

Patching combinations for up to thirty-two stereo signals involving up to eight stereo components is handled by the Audiopatch Model 455 announced by Stereo Sentry Manufacturing Co. of Downers Grove, Illinois. Of standard rack-mount width, the



model 455 consists of front and rear panels. Equipment is connected to the rear panel, and signal routing is handled by patch cords on the front panel. The unit may be rack-mounted or fitted into an optional wood cabinet. Either 1/4-inch stereo jacks or panel.

CIRCLE 12 ON READER SERVICE CARD

NUMARK EQUALIZER

Described by the company as "an equalizer without an equal" is the Numark EQ2500, a 10-band stereo graphic equalizer with true octave spacing. Each of its 20 sliders has a range of ± 15 dB, and each stereo channel has a unity gain control with a range of ± 15 dB, making for a total range of ± 30 dB overall. The Numark device also features on each channel a five-level, three-color LED meter, including an amber signal light set at 0 dB. Controls include tape monitor and EQ defeat plus two master gains. Both wood side panels and rack mounts with handles are available. Price is \$249.

CIRCLE 13 ON READER SERVICE CARD

WIRELESS INTERCOM

Two-way voice communication (up to 150 yards depending on terrain) without wires is provided by the TR-50 wireless intercom system from R-Columbia Products of Highland Park, Illinois. No license is required for the set's five channels. Each TR-50 has a built-in crystal-controlled FM transmitter, superheterodyne receiver, standard 9-volt battery supply and 7-inch receiving antenna. Suggested applications include two-way voice communication between personnel in radio, TV, recording and video.

CIRCLE 4 ON READER SERVICE CARD

NEW ITEMS FROM DBX

To its 900 Series Modular Signal Processing System, dbx has added the model 906 flanger. The device features a control voltage input for special effects; doubling effects; selectable sweep waveform; internal random noise generator; manual delay, sweep rate, sweep range, feedback and mix controls; active balanced input; single-ended output.

Also designed to fit into the Series 900 system is the model 905 3-band parametric equalizer module. All bands are switchable for either constant Q or reciprocal filter operation, and they feature cut/boost, frequency and Q controls. The high band is switchable from peaking to high-pass shelving; the low band is switchable from peaking to low-pass shelving. The three bands are designated as low (20 Hz to 500 Hz); mid (200 Hz to 5 kHz); and high (800 Hz to 20 kHz).



CIRCLE 5 ON READER SERVICE CARD

TEST SIGNAL GENERATOR

Aimed at sound system installers, recording studio engineers, audio dealers and serious audiophiles is the model ATG-301 audio test signal generator from Hall Engineering. Applications include adjusting equalizers, optimizing speaker placement and making various acoustic tests and measurements. The ATG-301 is a source of white noise, pink noise and finite octave bandwidth pink noise. Hall states that the device can be used with any sound-level meter or



microphone to provide the same accuracy in measuring frequency response as a $\frac{1}{3}$ - or $\frac{1}{6}$ -octave spectrum analyzer at a fraction of the cost. Since it provides exactly the frequency and bandwidth desired for as long as is needed, it is more convenient and accurate than a test record. In its bandwidth mode, center frequency is variable from 20 Hz to 20 kHz, and bandwidths of 1, $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{5}$, $\frac{1}{10}$ and $\frac{1}{20}$ octave are available. Correction for sound-level meter or microphone frequency response can be read off the front dial. The unit comes with a detail instruction manual. Price is \$299.

CIRCLE 6 ON READER SERVICE CARD

VARIABLE ELECTRONIC CROSSOVER

Designed to facilitate adding a second amplifier and subwoofer to a stereo playback system is a new variable electronic crossover from Heath. The AD-1702 has six selectable crossover frequencies at 40, 60, 80, 100, 125 and 150 Hz to suit various subwoofers. Crossover slopes are switchable at 6 dB/octave and 18 dB/octave, and a built-in switchable infrasonic filter may be used to block frequencies below 15 Hz to the subwoofer. Selectable frequencies can be scaled up to 6 kHz in this application. Two AD-1702s may be used for a tri-amp setup. Offered as a kit, the AD-1702 may be mounted in a standard EIA rack. Mail order price is \$179.95.

CIRCLE 7 ON READER SERVICE CARD

TDK DEGAUSSERS

TDK's model HD-11 is a hand-held battery-operated tape head degausser offered for use on cassette and open-reel decks. Access to tape heads is facilitated by the device's plastic-covered pivoting pole-pieces. Rated magnetic field strength is 640 gauss. Price of the HD-11 is \$34.99.

CIRCLE 14 ON READER SERVICE CARD

SAE POWER AMP

New from SAE is the model P-10 power amp, rated at 100 watts per channel and said to be capable of driving loads of 8, 4 and 2 ohms. S/N ratio for 100 watts is given as 105 dB. Slew factor is 3. Featured are individual peak output indicators for each channel, A-B speaker switching and two headphone jacks. Priced tentatively at \$350, the P-10 is 17.5 inches wide, 10 inches deep, and 5 1/4 inches high. It weighs 28 pounds.

CIRCLE 15 ON READER SERVICE CARD

VIDEO ON...

Any working audio person, aware of the ferment now going on in the video field, probably has reached two basic conclusions: 1) Things are going to get even more confused than they are now before some kind of clear pattern emerges; and 2) In this transitional period the "modern recordist" is by definition more concerned with video tape than with the video disc. So while laser beams and floppy software are not to be ignored, it is what's happening in the area devoted to "rolling your own" that is of primary interest.

For openers, there's word that the International Electrotechnical Commission—a body in Geneva that represents 43 countries—has issued a new world Standard (IEC Publication 602) covering uniform recording conditions for the three broadcasting systems, PAL, SECAM and NTSC. Suitable for reel-to-reel and cassette video recorders, the Standard defines in detail the electrical and mechanical parameters for the professional recordist.

CIRCLE 16 ON READER SERVICE CARD

Competition among tape manufacturers grows as evidenced by new video tape offerings, including accessories.

RKO Tape Corp. is marketing its new "Color-Chrome" video cassettes in both the VHS and Beta formats, and in three lengths—L-250 (up to 1 1/2 hours); L-500 (up to 3 hours); L-750 (up to 4 1/2 hours).

CIRCLE 17 ON READER SERVICE CARD

TDK is offering its Super Avilyn in both the VHS and Beta formats, and in various lengths. TDK also is producing video head cleaning cassettes.

CIRCLE 18 ON READER SERVICE CARD



Fuji brand video cassettes have been announced for VHS and Beta decks; Fuji too has both kinds of head-cleaning cassettes.

CIRCLE 19 ON READER SERVICE CARD

Maxell tapes and cleaning cassettes for both formats have been announced.

CIRCLE 20 ON READER SERVICE CARD

Sony is making a major sales effort for its Beta format tapes which now include the 830 length (5 hours).

CIRCLE 21 ON READER SERVICE CARD

A miniature video tape system using quarter-inch tape has been announced by Technicolor Audio-Visual. Cassettes have 30-minute running time, and the VCR itself may be battery-operated. It is still too early to gauge what impact this development will have on the overall VCR scene. First reaction from insiders has it that the Technicolor system may become a portable supplement for on-the-spot "live" taping, but that it will not dislodge the "mainstream" formats.

CIRCLE 22 ON READER SERVICE CARD

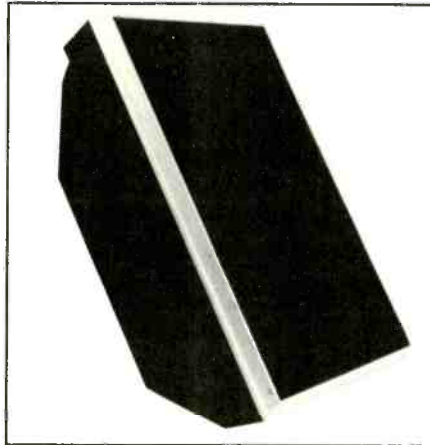


MUSICAL

NEWSICALS

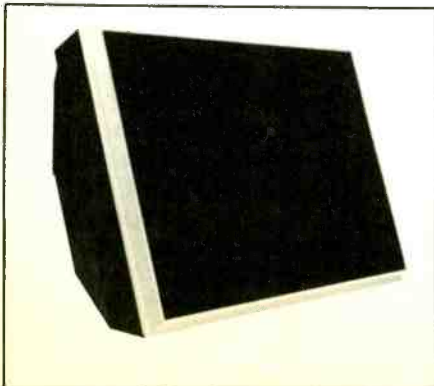
SOUND REINFORCEMENT & INSTRUMENT SPEAKERS

The Pro Spot is an interestingly designed speaker from Galaxy Audio which was designed for P.A. or high-powered monitor system applications. The Pro Spot is a 3-way system rated at 200 watts RMS power handling. Low frequencies are handled by a special design 15-inch driver in a bass-reflex enclosure, while the midrange is covered by two 5-inch cone drivers of the same design used in Galaxy's renowned "Hot Spot" personal monitor speaker. The use of the cone-type Hot Spot drivers results in a midrange free from the "honkiness" often associated with compression driver/horn combinations. The top end of the frequency range is handled by a line array of three modified piezoelectric drivers for high efficiency and reliability. The enclosure of the Pro Spot is particularly noteworthy for both its design and its construction from "road proof" plastic rather than wood for a significant weight savings—the entire system weighs less than 44 pounds. For permanent installations the Pro Spot features threaded inserts in the cabinet for attachment of hanging hardware. The Pro Spot is 19 inches high by 27 inches wide and may be placed either vertical-



ly or horizontally to cover a variety of performing environments; when oriented vertically the system covers an area 60° wide to help reduce unwanted reflections in long, narrow halls, while a horizontal orientation covers 120° to handle wide, shallow performing spaces. Additionally, the back corners of the cabinet are angled to allow the Pro Spot to be tilted conveniently for use as a floor monitor or to cover a balcony in a P.A. application. The impedance of the Pro Spot speaker is nominally 8 ohms and parallel input jacks make for convenient hook-up of multiple systems.

CIRCLE 24 ON READER SERVICE CARD



James B. Lansing Sound, Inc. recently announced the latest addition to its E Series of musical instrument loudspeakers, the E155, an 18-inch speaker designed specifically for bass guitar amplification. The E155 incorporates a massive Symmetrical Field Geometry (SFG), flux-stabilized, ferrite magnet assembly, new high-temperature adhesives and a composite voice coil former in a design that provides very high power handling, minimum distortion and unusually high sensitivity for a bass loudspeaker. Numerically, the E155 is rated at 300

watts continuous sine wave or 600 watts continuous program power handling and a sensitivity of 98 dB at 1 meter from a 1 watt input. The E155 rounds out the E Series which includes 10-inch, 12-inch, and 15-inch speakers for guitar, keyboards and vocals (Models E110, E120 and E130, respectively) and two fifteen inchers for electric bass and organ (E140 and E145).

CIRCLE 25 ON READER SERVICE CARD

GUITARS, STRINGS & PICKS

An interesting product from the Kaman Musical String Corporation is its line of Adamas Strings, which are the first strings specifically designed for amplified acoustic guitars. The technological breakthrough behind these strings is known as "composite gauging" and refers to the relative gauges of the core and winding wires of the four wound strings in the set, which were all newly designed. Additionally, Kaman uses computer-controlled winding machinery to produce strings that are more consistent, play easier, sound better and last longer.

CIRCLE 26 ON READER SERVICE CARD

Johnny Esquire Music Ltd. is committed to the idea that guitarists are paying too much for guitar strings and that high-quality strings at inexpensive prices are far from impossible to provide. Esquire Strings are designed for rock guitarists who desire an extra-bright tone. Esquire sets are balanced for uniformity of tension and volume, and feature highly accurate diameters for perfect intonation. Premium nickel steel is used for brilliance and long life, and the string surface is smoother for less fingering noise. Three gauges are available with .008, .009 or .010 top strings.

CIRCLE 27 ON READER SERVICE CARD

Phased Systems has announced that it is now the source for the Sharkfin Pick™ from Sweden. This nylon pick is a unique shape with the two most popular pick shapes on two of its corners and a unique ripple-toothed edge for interesting 12-string-like effects. The Sharkfin Pick is available in thin, medium and heavy thicknesses. Also available from Phased Systems is the Hyper-Phased cord, a premium guitar cord using Belden hypalon-jacketed cable and Switchcraft connectors with an automatic shorting switch at the guitar-end connector.

CIRCLE 28 ON READER SERVICE CARD

STANDS

The Music People, Inc. recently introduced the TriStand, which may be the first true innovation in guitar stands in many years. The TriStand was designed with the touring professional in mind, and is designed to accommodate 1, 2 or 3 acoustic, electric, or bass guitars in full safety. The TriStand supports the instruments with neoprene-covered upper and lower yokes. The lower yokes are free-floating to accommodate odd-shaped instruments. The upper yokes are individually adjustable for length to accept anything from a banjo to a long-scale electric bass. A unique feature of the upper yokes is a locking, neoprene-covered crossbar which prevents the instruments from tipping out of the stand on stage or while being carried to the stage. Carrying is facilitated by a T-handle and balancing ring on the upright.

CIRCLE 29 ON READER SERVICE CARD

KEYBOARDS

New from Unicord is the latest addition to the Korg keyboard line, the BX-3 dual manual combo organ. The new model is basically a dual-manual version

of the company's exciting Korg CX-3 organ which is probably the most successful attempt yet at duplicating the sound of a tone wheel organ in an all-electronic instrument. In a 44-pound package the Korg BX-3 offers two independently-voiced, 5-octave manuals, each with a full nine-drawbar complement, electronic presets and full percussion. An additional feature of the BX-3 is a new electronic Rotary Speaker effect which electronically simulates the different speeds and speed-change characteristics of the upper and lower baffles of a traditional rotary speaker system for added realism. Each manual of the BX-3 has two electronically switched percussion voices with variable decay and volume, an overdrive control to recreate the distorted sound favored by many rock and jazz players, bass and treble controls and a separate tune control so that the two manuals may be slightly detuned for effect.

CIRCLE 30 ON READER SERVICE CARD

PERCUSSION INSTRUMENTS

On the electronic side of percussion, Electro-Harmonix recently announced the Drum Sequencer, a new concept in electronic percussion. The Sequencer has eight tones which are time related by digital circuitry and triggered either automatically or by impact. Each of the tones is adjustable over a seven octave range via front panel sliders, and sliders are also provided to control the rate of the sequence and the decay of the envelope. Switches are provided to select clock or pad triggering and repeat or single mode for four distinctly different effects. The Electro-Harmonix Drum Sequencer comes with hardware to allow mounting to cymbal or Roto-Tom stands. The unit features a genuine leather striking pad and is AC powered.

CIRCLE 31 ON READER SERVICE CARD

After a long search, which eventually took them to central Europe, Drums Unlimited, Inc. recently announced the availability of a line of professional quality, truly musical tambourines. The Studio 200 LF series of tambourines is produced by the master craftsman found by Drums Unlimited based on the traditional principles of tambourine construction but with a particular emphasis on quality and consistency. Six different models of tambourines are now available in the Studio 200 LF series; both open and closed style shells are used, and four different styles of brass or nickel-silver jingles are used in various multiples to produce balanced proportions of timbre and power when combined with carefully-selected calf heads of various thicknesses.

CIRCLE 32 ON READER SERVICE CARD

MUSICAL INSTRUMENT AMPLIFIERS

Peavey recently introduced two new amplifier products at rather opposite ends of its line; one of the products is a 100-watt "utility" amplifier head while the other is the smallest amplifier Peavey has ever built. The new smallest Peavey is the Decade and would be classified as a mini-amp. The Decade is a solid-state, 10-watt RMS combo amp complete with 3-band equalization, pre and post gain controls and a preamp out jack. Another feature of the circuitry is Peavey's new Saturation effect which is designed to produce the warm, singing sustain common to tube amplifiers. The Decade is AC powered but comes complete with a 12-volt adapter jack to allow operation from an automotive cigarette lighter or a battery pack. Styling of the unit is identical to the rest of the current Peavey line except scaled down, and the case is constructed of 3/4-inch plywood for ruggedness. The Decade's features make it an ideal practice/recording amp for the professional while its under \$100 price tag makes it ideal for beginners. The other new Peavey amp is called the Century which, as the name implies, is a 100-watt RMS (4-ohm rating) amplifier. The Century was designed as a "utility" amplifier in the sense that its very wide input dynamic range allows it to be used as a clean amp with virtually any instrument from keyboards to bass guitar while the built-in Saturation effect makes it an





exceptional guitar amp. The Century includes Peavey's latest thinking in active equalization circuitry with active, shelving-type bass and treble controls and Peavey's Paramid™ circuitry for midrange EQ with sweepable frequency. The Century has pre and post gain controls and preamp out and power amp input jacks for connection of effects devices or additional power amplifiers.

CIRCLE 33 ON READER SERVICE CARD

Microtronics Corp. recently announced three additions to the TUSC amplifier line. Two of the new offerings are the 45 Series of 45-watt RMS, two-channel combo amps—the JT 45 for guitar and the JB 45 for bass and keyboards. The JB 45 has volume controls for the two input channels (each with high and low gain jacks) and for bass and treble EQ controls, and features a 15-inch speaker in a ported reflex enclosure. The JT 45 adds master volume and reverb controls to the two input gain controls and bass and treble EQ and boasts a 12-inch heavy-duty speaker. Both 45 Series amps are optionally available with Fane loudspeakers. The third addition to the TUSC line is the JT 300-22 high-power piggy-back guitar and keyboard amp. The amp features 130 watts RMS and two channels, one with volume, bass, midrange, treble, distortion and reverb controls, and the other with only volume, bass, midrange and treble. The speaker cabinet contains two 12-inch Fane speakers and rides on heavy-duty ball-type casters.

CIRCLE 34 ON READER SERVICE CARD

The Series 100 range of compact, solid-state combo amps with the rich sound of tube amplifiers were recently introduced by Road Electronics. All models in the Road 100 Series include such features as three-band active equalization with Road's exclusive Parascan midrange, accessory send

and return jacks for insertion of effects devices, connection to recording or mixing consoles, or connection of additional power amps, a stereo headphone jack for private listening, an extension speaker jack and 75-watts RMS power output from a fully protected output stage. Four models currently comprise the 100 Series, two for guitar and two for bass. The L-120 is the basic guitar model with high and low sensitivity inputs to the single input channel, controls for input gain, input volume, master volume and reverb in addition to the 3-band EQ, and a 12-inch heavy-duty speaker. The SL-120 is identical to the L-120 with the addition of a second input channel which may be used simultaneously with the first channel or preset and switched with the external footswitch for two different sounds. The B-120 and SB-150 bass amps have somewhat simplified controls with input gain and volume plus 3-band EQ; the B-120 is the single-channel version and has a 12-inch heavy-duty speaker in a tuned bass reflex cabinet, while the SB-150 is the switchable two-channel version which also features a 15-inch premium bass speaker for extended low-frequency response.

CIRCLE 35 ON READER SERVICE CARD

MUSICAL INSTRUMENT ACCESSORIES

Castle Instruments has just announced the introduction of a unit called the Phaser III, which must be one of the most versatile phase shifter devices around thanks to its intelligent control design. One unusual aspect of the Castle Phaser III is the degree of control it provides over the parameters of the sweep. In addition to the usual Sweep Rate control which was a range of .07 Hz to 10 Hz, and which has a pulsing LED rate indicator which functions whether the effect is engaged or not, the Phaser III has controls for both Sweep Center and Sweep Width. The Sweep Center control allows the user to set the center point of the phaser's sweep over

a five-octave range to effectively tune the effect to the instrument being used, while the width control varies the sweep from no motion to a maximum width of eight octaves around the selected center. Overall, the Phaser III has a sweep range of nine octaves, from 30 Hz to 15 kHz. Other controls on the Phaser III include a Blend control to vary the proportion of direct to phase shifted signal at the device's output, and an Emphasis control which varies the amount of feedback or resonance; the Blend control allows variations of the basic effect from very subtle effects in the counter-clockwise settings to the conventional phaser effect at the center position to pronounced vibrato effects in the clockwise positions. The unit has eight stages of phase shift for a rich sounding effect with four cancellation nodes in its response curve, but for less pronounced effects the unit has a switch which allows selection of four or six-stage phasing rather than using all eight stages. Besides inherently quiet circuit design, the Castle Phaser III uses high frequency pre-emphasis/de-emphasis and compression/expansion techniques to further improve both the signal-to-noise ratio and the headroom. Bypass switching is accomplished with FET switching circuits for totally silent operation. The unit is AC powered, has an input impedance of 1 Megohm, output impedance of 600 ohms and a signal handling capability of 6 volts peak-to-peak.

CIRCLE 36 ON READER SERVICE CARD

One of the most popular signal processing devices in the recording studios of the world has been the Eventide Harmonizer. With the recent introduction of their HM80 Harmonizer, Eventide has made this popular effect available to the performing musician in a version that better fits his needs and budget than the studio model Harmonizers. The HM80 Harmonizer produces pitch changing of up to one octave up or down from normal, digital delay variable from 0 to 270 milliseconds and repeat and reverse effects. Controls on the sloping front panel of the compact unit include Delay, Pitch Change, Output Mix (controls dry/effect balance), Feedback and Level, plus toggle switches to enable Repeat and Reverse modes. Bandwidth of the HM80 is 10 kHz and the unit has a signal-to-noise ratio of 80 dB.

CIRCLE 37 ON READER SERVICE CARD



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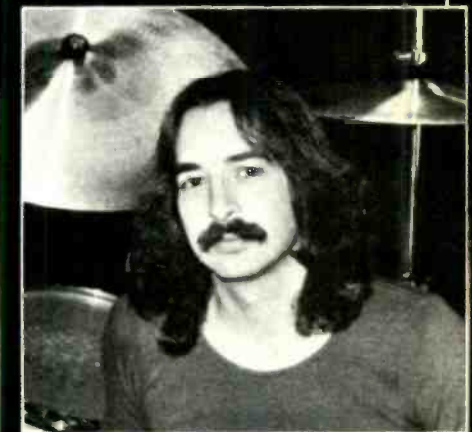
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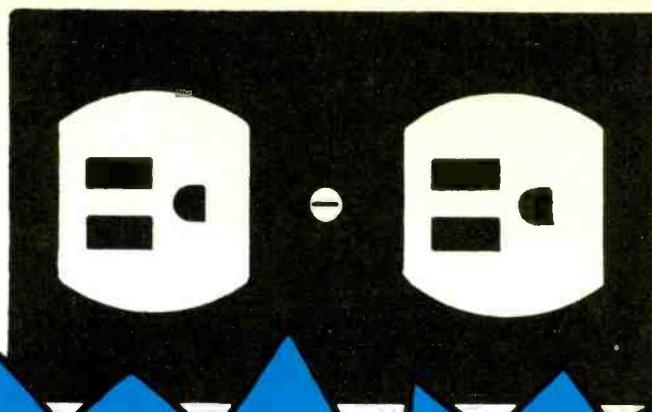
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PRACTICAL



NEW ELECTRICAL

PART 2

By Brian Roth

In last month's article, constant reference was made to the wires that perform the interconnections in an electrical system. Nothing specific was said about the characteristics of the wire other than the fact that it was usually insulated with plastic. Now would be a good time to discuss this key element in AC power circuits: the wire itself.

The metal most commonly used in electrical wire applications is copper. It offers low resistance to the flow of current and is much less expensive than some other good conductors such as silver or gold.

Aluminum is a less popular material used for AC distribution systems. Although it is lighter in weight and less expensive, aluminum wire tends to oxidize at terminal connections. This oxidation causes increased resistance at the connection point, which in turn creates heat as current flows through the junction. Fires in the walls of structures have been caused by faulty connections between aluminum wiring and outlets or switches. Consequently, numerous changes have been made in the UL (Underwriter's Laboratory) and

National Electric Code terminal specifications to prevent this dangerous situation.

Most wall receptacles, switches and other electrical terminals were redesigned a number of years ago to be compatible with both copper and aluminum wire. To distinguish it from the original styles, the improved equipment will have CU/AL stamped or printed in an easily visible location. Further improvements in the designs of wall outlets and switches led to the CO/ALR imprint, which is preferred over the CU/AL types.

Another disadvantage of the aluminum conductor is that it must be somewhat larger than a copper conductor in order for it to have an equal current handling capacity.

Aluminum wiring is commonly used by the electric companies for their overhead or buried distribution systems. The high current flowing through these "main circuits" makes aluminum a much more economical (and lighter) choice than copper due to the large diameters required in this application. Copper, however, is generally the preferred conductor for "inside"

wiring of switches, outlets, etc., because of its tolerance of less-than-perfect connections at terminals.

Physical Size of Electrical Wire

Any wire at normal ambient temperatures exhibits some resistance to the flow of electrical current. The larger the diameter of the wire, the lower this resistance becomes.

When current passes through a wire, heat is generated in the wire in direct proportion to its resistance. Consequently, the maximum safe current flow (in amperes) through a wire is determined by its physical size. Wire sizing has its own system.

Rather than utilizing something like "¼-inch diameter," a numbering system utilizing "gauges" was developed; the smaller the gauge, the larger the wire. Legitimate wire for AC power applications will have the gauge imprinted in the insulation to eliminate guesswork of the wire's size.

The electrical and UL codes specify (by gauge) the maximum allowable current flow through a copper wire. The codes also account for the heat resistance of the wire's insulation, and

whether the wires are packed together in a cable or conduit pipe, or suspended freely in air.

The current capacity, or ampacity, of a particular gauge copper wire is given in the charts in *Figures 1* and *2*. When aluminum wire is utilized, use the next size larger (i.e., if #6 copper has sufficient ampacity for an application, 4 gauge aluminum would be required).

The letter codes (such as TW or THW) are imprinted into the wire's insulation and describe the characteristics of the insulator material. We will discuss this information later in the article.

You will notice that 14 is the smallest gauge listed. Generally, this is the minimum size allowable in regular wiring systems. Exceptions to this rule include cords on small appliances or lamps, where 18 gauge is the smallest size used. Wiring to outlets, switches and permanent equipment in a building cannot be smaller than 14 gauge, and some areas of the country require 12 gauge in their building codes.

For those really big systems, gauges larger than 3/0 are available. (Incidentally, when you go to buy "2/0" or "3/0" wire, ask for "2-ought" or "3-ought" rather than "oh-oh" or "oh-oh-oh;" otherwise, the salesman may

start chuckling.) After 4/0 the system goes to a "MCM" coding system. Ampacity charts for these large sizes are available from wire manufacturers and distributors.

Voltage Drop of Wire

The ampacity tables are intended for one basic purpose: listing the maximum safe current allowable for a particular size of wire. However, there also is another factor to consider.

Remember that all wires have some amount of resistance to the flow of current. This will cause a certain amount of power to be turned into heat, hence the need for ampacity limits. In addition, this same resistance will also create a voltage drop down the length of the wire. This was briefly mentioned last month in the discussion of the neutral and ground conductors. The voltage drop also causes other difficulties in an electrical system. Since the voltage is lower at the end of a wire run than at the beginning, there will be less voltage available to energize the equipment at the far end.

Two factors determine the amount of the voltage drop: 1) Resistance of the wire; 2) Current flow through the wire. As the size of a conductor decreases, the resistance increases. This means greater voltage drop. As the current flowing through a wire in-

creases, so will the drop. Ohm's Law says it all: $E = I \times R$, where E is voltage drop, I is current and R is resistance.

All this leads us to the fact that a wire may have sufficient ampacity, but still insufficient size if it has to go a long distance. For example, an alarm clock at the end of a 500 foot run of wire will have a greater voltage applied to it than a multi-track recorder at 50 feet (for a given size of wire).

How much voltage drop is acceptable? In some applications, 5% can be tolerated. Just remember, though, that the little wheel in the electric meter spins whether power is being consumed usefully by equipment, or going up in heat in the wiring. For this reason, it is better to design a system for a 2% voltage drop as a maximum. Plus, there will be less fluctuation of voltage as equipment goes "on" or "off" the circuit; lights won't be dimming or flickering, and audio equipment will behave better.

The chart in *Figure 3* shows the length of wiring runs possible in single phase circuits while still maintaining a voltage drop of 2%. Various wire gauges up to 1/0 are listed. For larger sizes, or 3-phase ratings, consult the charts available from electrical supply houses and wire manufacturers. Also note that the lengths account for the fact that two wires are necessary for a complete circuit. Thus, the lengths shown are for the distance that the pair of wires must travel from the origin to the final terminal point.

If the wires are being used in 220-volt applications, the distances can be doubled because 2% of 240 volts is twice that of 120 volts.

These listed distances are conservative, so don't worry about going a few feet longer than the chart indicates. Observe that as the current flow decreases by one half, the length can be doubled while still maintaining a 2% voltage drop.

Wire Insulation

In the past, wire was insulated with cotton-covered rubber to prevent two adjacent conductors from "shorting" together. However, the insulation had a bad habit of rotting away, thus allowing bare copper to be exposed. Modern wire is usually insulated with plastic, although neoprene rubber is often used for insulation on the power cords attached to various types of equipment.

Along with the gauge number,

Gauge	Regular Plastic Insulation (T,TW)	Heat Resistant Plastic Insulation (THW)
000 (3/0)	165 amperes	200 amperes
00 (2/0)	145	175
0 (1/0)	125	150
2	95	115
4	70	85
6	55	65
8	40	45
10	30	30
12	20	20
14	15	15

Ampacity of wire in cables or conduit pipes

Fig. 1

Gauge	Regular Plastic Insulation (T,TW)	Heat Resistant Plastic and Rubber Insulation (THW, RHW)
000 (3/0)	260 amperes	310 amperes
00 (2/0)	225	265
0 (1/0)	195	230
2	140	170
4	105	125
6	80	95
8	55	65
10	40	40
12	25	25
14	20	20

Ampacity of single wire hanging in free air

Fig. 2

		Wire Size						
Amperes	14	12	10	8	6	4	2	1/0
10	45 ft.	70	110	175	275	240	700	1000
20		35 ft.	50	90	140	220	350	575
30			35 ft.	55	95	150	235	375
40				45 ft.	70	110	175	290
50					55 ft.	90	140	225
60	Too small for type					70 ft.	120	180
80	TW wire in conduit						90 ft.	140
100	cable.						70 ft.	120

Wire run lengths allowable for a 2% voltage drop (120 volt circuits)

Fig. 3

legitimate wire for AC power applications will also have an imprinted code to describe the type of insulation. The designation uses a letter system, thus giving imprints such as "12 TW." This indicates 12-gauge wire, and type TW insulation.

The first letter of the code describes the basic insulation material. "T" stands for thermoplastic, "R" stands for rubber, while "S" (meaning *Service*) is often found on the power cords of portable electrical equipment. "X" is a fairly new entry and indicates that the insulation is polyethylene.

Additional letters in the code give further information. "W" means the wire is weatherproof and can be used indoors or out, but not buried in the ground. (Insulation designed to be used underground generally begins with a "U" code letter.) "H" indicates heat resistance, while "O" (usually found only on "S"-type power cord designations) means the insulation is oil resistant.

There are dozens of other popular insulation types, and each has its own designation. Since information concerning these is available from electrical supply jobbers and manufacturers, interested readers should contact them for additional material.

The Building Service Entrance

No, this section isn't going to talk about the back door where deliveries are made. "Service Entrance" is the term used for the main equipment in a building that interconnects "inside" circuits to the electric company's system.

An electric utility distributes its power around town at a much higher voltage than 120 volts; it is often many thousands of volts—in order to reduce the voltage drops caused by the distribution wiring. Before it can be used to power audio gear, lights and similar 120- (or 240-) volt equipment, the voltage must be stepped down with

a large transformer.

For overhead distribution, the transformers are those big round cans affixed to the power line pole. The transformer can also be contained in a large metal box that sits on the ground if the distribution wiring is buried.

A particular house or building may have its own private transformer, but it is more common for several adjacent structures to be supplied with power from one common transformer.

After the kilovolts have been stepped down to single (or 3 phase) 120/140 volts, heavy wires carry the power from the transformer to the electric meter. 120/140-volt single-phase systems require three wires: two hots and one neutral. Three-phase systems generally utilize four wires: the three hot phase legs, and a common neutral.

These main lines must have sufficient ampacity to handle the entire electrical requirements of the building. However, the neutral conductor in a single phase application doesn't need to be any larger than the "hots."

This standard practice is allowable because the "worst case" current flowing through the neutral will not be greater than through either hot. Some towns even allow the main neutral to be one or two sizes smaller than the hots if a certain percentage of the building's electrical equipment requires 240 volts.

Remember, single-phase, 240-volt equipment doesn't cause any current to flow through the neutral; it all goes through the hots. (Further information on this characteristic can be found in Part 1 [March 1981 issue] of this series.)

Older overhead service wiring utilized the appropriate number of separate wires strung from the pole to the building. This has been gradually replaced by "Triplex" in single-phase installations (or "Quadruplex" for 3 phase). These are actually cables consisting of insulated hot wires wrapped

around a bare neutral. Triplex is physically attached at the pole and building by the neutral wire.

Although triplex is obviously easier to install mechanically, it is limited in size to about 4/0 gauges. Separate overhead lines are still necessary for hefty power requirements.

The main service lines can also be buried but this is an area best left to professional electricians.

The electrical company likes to know how much electricity is used in a building so it can get paid for its services. So, they install watt meters at some point on or in the structure. The main service lines connect to the meter, and the dials spin as you draw power. The output of the meter is then routed to the main disconnect box or panel which acts as the master on-off for the building.

Fuses and Circuit Breakers

This main disconnect switch must be able to carry the maximum power requirements of the building without being overloaded. Plus, the main service wires must not be overloaded, either. This requires some sort of over-current protection.

Important!

There is potential danger inherent in all residential, commercial or industrial AC power distribution systems. Fires and fatal electric shocks can be caused by improper equipment installations and usage.

This series of articles is intended strictly as tutorial information. It is hoped that valuable information concerning AC power systems will be given to the users of audio equipment.

Every effort has been made to ensure accuracy of the information present. However, neither the author nor the editors and publishers of *Modern Recording & Music* magazine will accept any liability for damage or injury caused by electrical equipment installed utilizing data or techniques described in this series of articles.

It is strongly suggested that a licensed electrician be consulted whenever installation, modification, or repair of an electrical power system is necessary. In many areas of the country, this is required by law.

"Last summer my band, *Gathering Forces*, performed at the Summerpier Festival in New York City. To my initial despair, the sound system they supplied looked like four eccentrically designed hi-fi speakers on poles. This was supposed to handle a highly electrified fusion band with horns and vocals for an outdoor crowd of 2,500!

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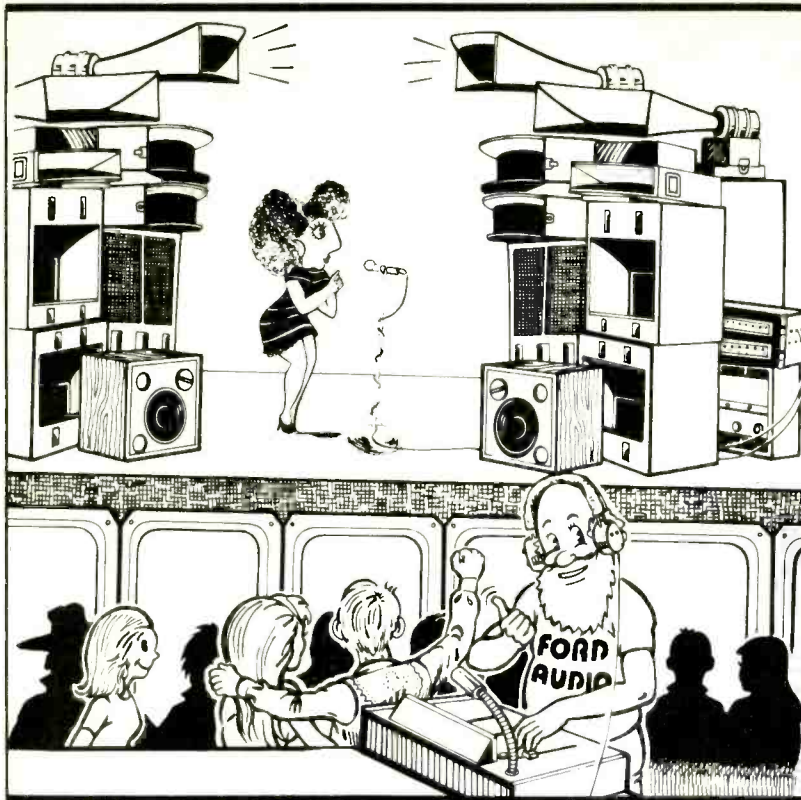
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CIRCLE 148 ON READER SERVICE CARD

Enter the fuse, and its younger relative, the circuit breaker. The design of these devices will allow current to flow through them unimpeded until the current exceeds a particular amount. Then, the fuse will "blow" or the breaker will trip. This interrupts the flow of the excessive current.

To accommodate the wide variety of necessary current ratings, fuses and breakers are available from under 1 amp to many hundreds (or thousands) of amps. Typical residential or small commercial installations utilize ratings from 15 to a few hundred amperes.

The fuse and the breaker each have individual advantages. Fuses and "fuse boxes" tend to be less expensive, but breakers are much more convenient since they don't have to be replaced if an overcurrent situation arises.

Fuses are generally installed at the pole to protect the overhead service wires against overcurrent. So, if you plan to turn your garage into a machine shop with big power requirements, you may find that the fuse or the pole will pop when you turn the machines on. It is important that the power requirements of the building be within the capacity of the wiring, and fuses or breakers are the watchdogs. Don't arbitrarily increase the value of these protectors unless you are absolutely certain that the wiring is big enough.

In most buildings, the fuses and breakers for each of the "inside" circuits (wall outlets, lighting, etc.) are congregated in a main breaker or fuse box. However, it is also possible for auxiliary panels to be located at various points in the structure.

Just as the pole fuse protects the service wires, the individual circuit breakers or fuses in the panel protect the wiring in the walls. So it is important that the wire's ampacity be the same or greater than the current rating of the breakers. If #12 wiring is utilized, the fuse shouldn't be larger than 20 amperes, the limit for this size wire.

Generally, each time the size of the wire steps down, an overcurrent protector needs to be wired at the junction point. Fuses or breakers of the proper rating will protect the wires and terminals "downstream."

Next month, we will examine the breaker/fuse panel in more detail. In the meantime, don't get zapped; a little knowledge can be dangerous!





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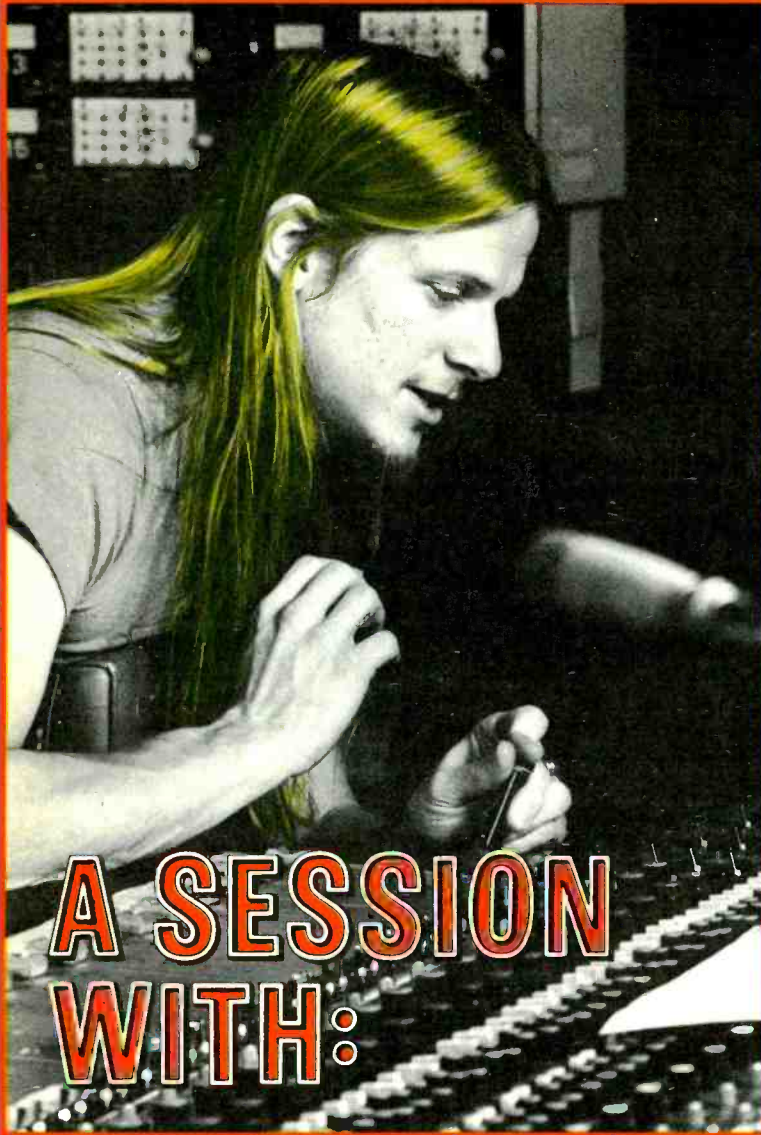
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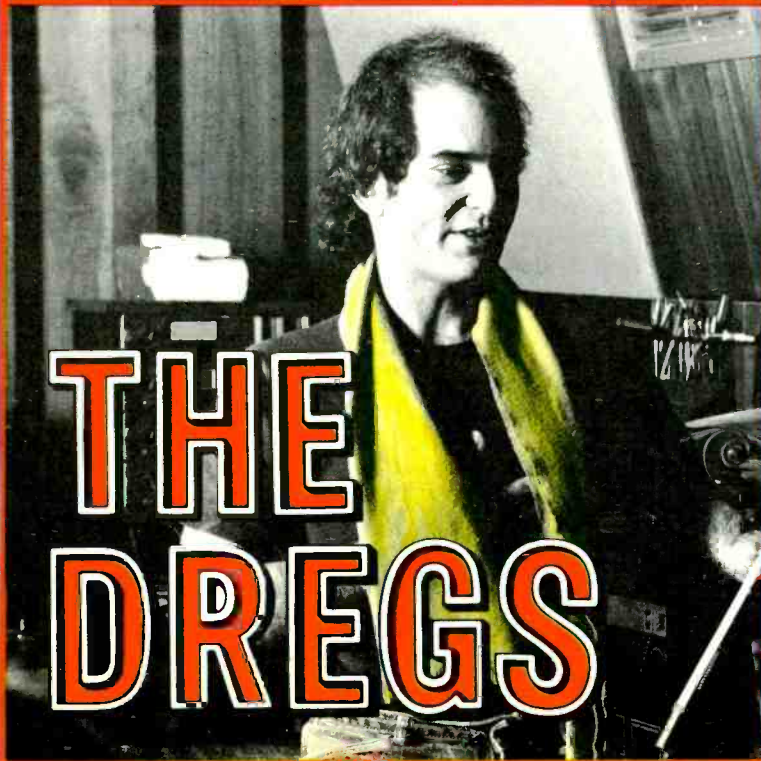
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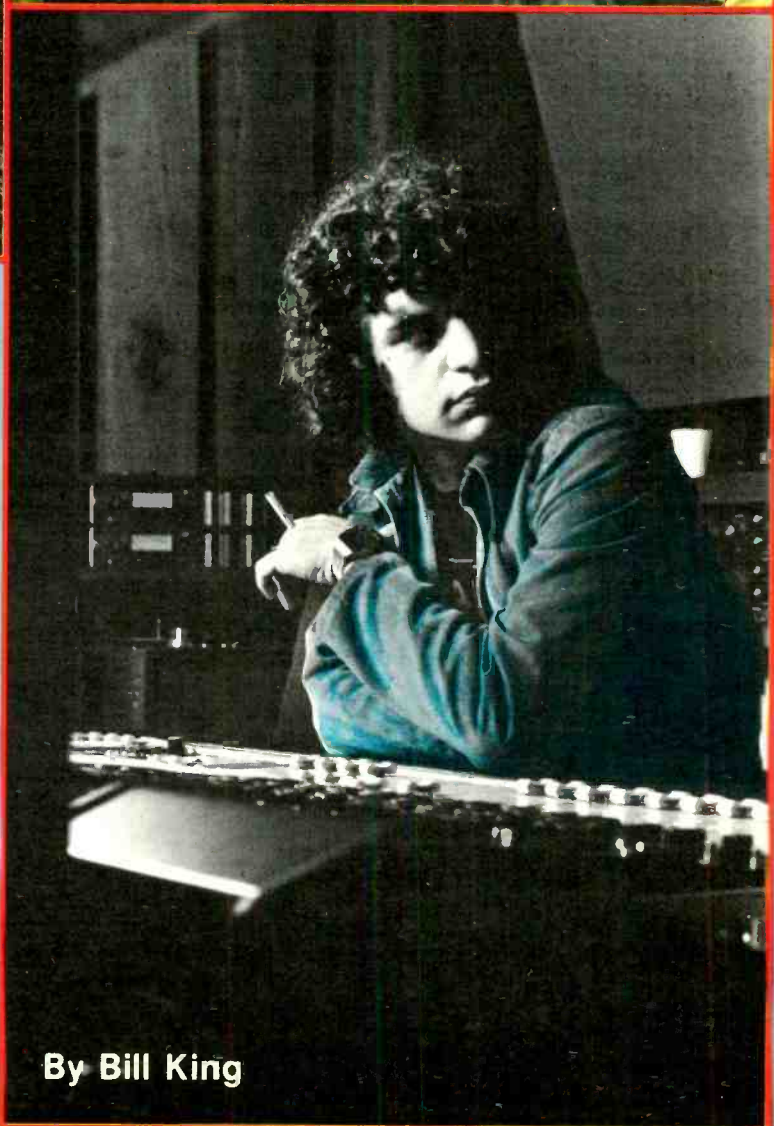
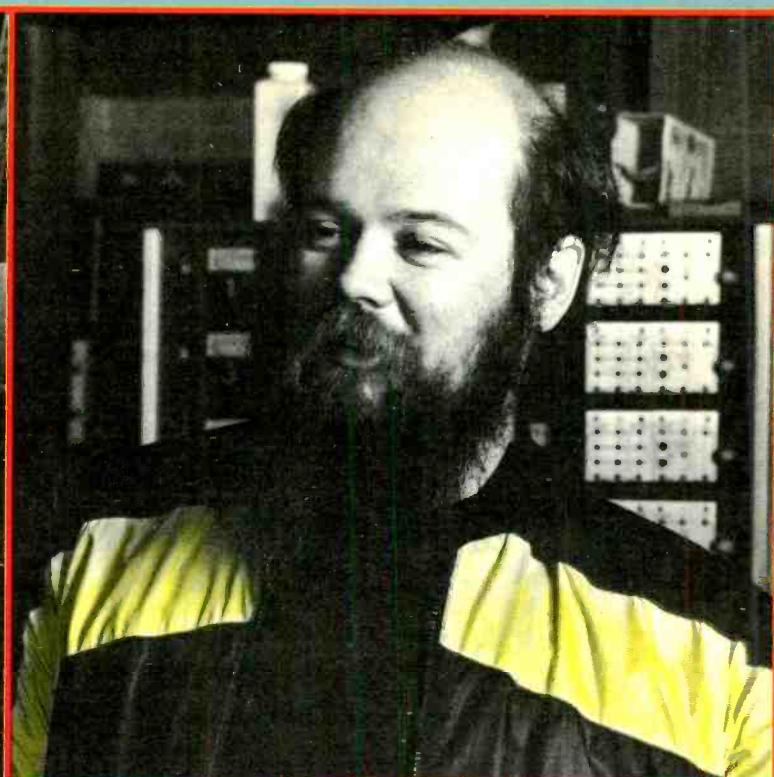
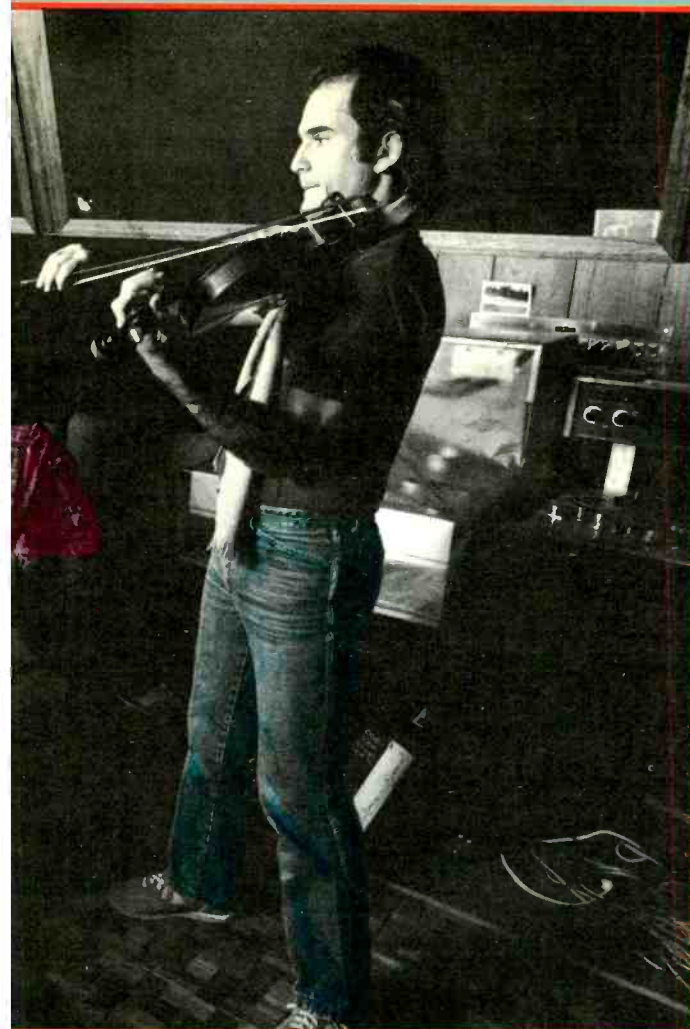
THE
DREGS

A relaxed tension." That's how bass player Andy West describes the atmosphere inside the rather large studio at Axis Sound on this chilly January night as the Dregs work on their fifth album of uniquely-styled instrumental music.

Dusk is falling outside, emphasizing the natural grayness of this industrialized section of the northwest Atlanta. The surroundings seem strangely at odds with the soaring violin music emanating from the control room speakers inside the unmarked, dingy-looking building as producer/guitarist Steve Morse coaxes perfection from the flying fingers of fellow band member Allen Sloan.

The pressure is on, the Dregs know. The band's practically unclassifiable brand of classical-country-jazz-rock music isn't that easy to sell, and they have to try and walk the thin line between commercial demands and artistic standards as they labor eight to 12 hours a day to finish up their second release for Arista Records.

So far, sales have gone up—at least a little—on each succeeding release since the Atlanta-based group made its first album for Capricorn Records in 1977. That LP, *Free Fall*, was followed by *What If* a year later and the critically acclaimed *Night of the Living Dregs* in 1979 before Capricorn folded.



Capricorn never seemed to know quite what to do with the talented group of former University of Miami music students and so it was with great expectations that they put out their first LP for Arista last year, *Dregs of the Earth*. Its sales were better than the previous three albums, but still left much room for improvement.

Sales aren't everything, but they do make artistic freedom possible. The Dregs recognize that fact of life in the recording industry and it's with that in mind that they entered the studio in mid-December.

Still, the tension at the Dregs sessions is of the understated variety, tempered by the easy laugh of sophomore producer Steve Morse.

Taking a brief break from putting down violin overdubs as a visitor enters the control room, Morse speaks into the mic to Sloan, who stands in the center of a studio cluttered with trunks bearing the insignia of Mother's Finest, another Atlanta group recording at Axis.

"Al, there's somebody here to serve some papers on you."

Sloan looks up toward the control room window, slightly puzzled.

Morse laughs. "They found out we've really been selling gold albums and not reporting the income!"

By Bill King

Time for another take. Sloan's voice comes over the speaker. "What song is this?...Oh yeah." Clad in sweatshirt and jeans, he looks rather the gypsy with his relatively short, dark hair and gold earring.

Up in the booth, the lean, pony-tailed Morse sits next to engineer George Pappas at the console. He nods his head as he listens to a brief playback, his sharp, angular features impassive.

Sloan begins playing again, only to be interrupted almost immediately by Morse, who stops the tape. "You held the F," he says.

"Oh yeah, sorry," Morse replies, beginning again.

Morse stops him again. "Late on the C."

Then again. "That C's sharp."

Sloan continues with the complex, arduous passage, then stops himself, shaking his head at something intruding on his concentration from one of the other previously recorded tracks.

"Is this a sanity test?" he asks. "Can you get that stuff off?"

Morse adjusts a couple of dials on the Neve console. "Just don't add anything," Sloan says. "Suddenly the whole world was invading the space."

"This is an insanity test," Morse answers with a grin, "and we all passed."

And they begin again, stopping often. "Pick it up," Morse commands at one point. Then, "that G is getting flat."

"That is so nutso to play," Sloan says, taking a breather.

"Flat," Morse barks.

"Huh?"

"You're getting flat on those top ones. I mean *real* flat."

Morse knows, because he has written the passage—as he does all the Dregs' material—and taught it to Sloan by picking it out on his guitar. Sitting in the control room at another point in the session, he shows Sloan another line, while accompanying a partial playback.

"Did you have that little piece when we were learning the song or did you formulate it since then?" Sloan asks, a mixture of admiration and amazement in his voice.

Morse shrugs. "Oh, I just added it on."

The problem passage conquered for the moment, Pappas plays back the results: a typically Dreggian romp across musical barriers called "Divided We Stand."

Sloan nods his head to the violin parts while listening. Morse, slouching on a couch, stares straight ahead, his hands folded across his waist.

Suddenly Sloan laughs as he hears one of Morse's musical tricks for the first time. "Oh, wow, I hadn't noticed that before."

The playback finished, he turns to a visitor. "I can't believe that. You work on all the little bits and you just can't appreciate the totality." He looks up at Morse. "It's worth all the pain, Steve."

A sardonic grin parts Morse's lips. "It is?"



"We joke around a lot when we record," Morse says, "but we're also very tense. We're intent on concentrating."

He's taking a break in a lounge down the hall from the studio while Sloan

and Pappas work on a punch-in that he matter-of-factly says "they're never gonna get."

With him in the room is bassist West. Drummer Rod Morgenstein and keyboard player T Lavitz have the night off.

"There's a subtle dynamic mood that pervades all our sessions," the bearded, balding West says. "You know why you're there and that you've got to do it and that natural nervousness can take over and ruin your attempts if you're not careful."

Despite the studio humor, he says, "the people around here say our sessions are more serious than most."

"I think that means no drugs and keeping the breaks to a minimum," Morse adds.

The Dregs can't afford to waste time. The album will take about 30-40 working days to complete. At this



Producer/guitarist Steve Morse at the board with George Pappas.

point they have about 10 days' work left to do, but that will have to be spread over three weeks because they spend weekends playing gigs to make sure there's food on the table.

Unlike some groups, this band is completely prepared when it enters the studio. "I spend the entire year writing," Morse says, "and we learn pieces constantly. Then there's a mad flurry of rehearsals about a month before we go into the studio."

All of the songs have been learned and the arrangements pretty well worked out before the Dregs begin recording. "I take home a tape every day and do my experimenting with the music there," Morse says.

Of course, not all the creativity takes place outside the studio. "We do a lot of experimenting with sound in the studio," he says, "working with the arrangement of the mics, the selection of amplifiers, the miking techniques on the drums and things like that."

"Sometimes," West says, "we'll add or delete lines in the studio. Or change them around. On one song there was this line where I was going to use a fretless bass. But it didn't sound good, so I changed to playing more of the

keyboard line and Steve took over on guitar what I was going to play on bass."

The hardest part—and the part that can't be worked out in advance—is recording the solos, Morse says. "That's because you don't know what you're gonna play. It's off the top of your head."

While all the band members compose music, West says, only Morse's tunes are recorded by the Dregs. "The stuff Steve writes is perfectly suited to the type of playing we do. There's no point in throwing in another song just because someone else wrote it."

That's not to say that every note of every Dregs tune is Morse's. "The solos have to come from the people playing them," he says. "We depend a lot on the uniqueness of the solos. They're like little songs in themselves."

Morse is the unquestioned musical leader. "Steve is a good friend," West says, "and we all deal with each other on an equal basis. But when it comes to production, we all defer to him. It feels good; it's real comfortable."

But, Morse says, "a lot of the time somebody will have an idea or concept in mind and we try to work together. If

someone is dissatisfied, we go out of our way to get it right.

"The bottom line is that everyone has got to be happy with what they do, 'cause this is what we do for a living, this and gigs."

This is the second Dregs LP Morse has produced, *Dregs of the Earth* a year ago having been the first. That initial production assignment came about, he says, because a "combination of circumstances, logistics and also a desire to do it, although not an overwhelming desire."

The first LP was produced in Macon by Stewart Levine and the next two were done in Los Angeles with Ken Scott at the controls. Still, Morse says, "on every album we've done I've been there every day and tried to do a lot of the things we do now. The main difference is, I didn't have any control then. We didn't control the budget, the selection of tunes or the schedule."

Despite that, Morse says the band considers the time they worked under other producers well-spent and he praises their former producers, especially Scott.

"Stewart Levine taught us a lot of things, mainly using the energy of the moment and getting off on the excitement of the music. Working with Ken Scott was the most valuable time we spent. By osmosis you pick up a kind of critical sense of what will or won't work and that's real helpful."

"Steve," West adds, "is a lot like Ken in his approach to recording."

The band chose to work in Atlanta because "we're all here," Morse says, and Axis Sound was chosen out of three Atlanta studios the band considered for the *Dregs of the Earth* LP because "of the equipment, the computerized Neve console and the Studer A-80 tape machines."

"We've been indoctrinated by Ken to believe Studer is the best," West adds.

Another factor, Morse says, "was the fact that the studio management put us at ease and in no way felt uncomfortable about letting me run the machine." The band was so pleased with the results the first time, they felt they ought to return to Axis.

The recording sessions began, Morse says, by bringing the entire band into the studio at once. "We were going for the drum tracks, so we put them in the other room. Everyone



Morse, T Lavitz, Allen Sloan, Rod Morgenstein and Andy West flank engineer Pappas.

played "live" just like at a gig to give the drummer the impression we were playing and it helps when we're putting down the other parts one-by-one to have a reference we can go back to."

Morse also utilizes a constant reference tone on one of the 24 tracks "and a strobe tuner is always on in the studio. At any given moment we can tune an instrument or just check the accuracy of the machine at that time. It's a necessity for us." On the other hand, he says, "we only used a click track on one tune because our music has too many tempo changes and is too complex."

What role does Pappas, the chief engineer and studio manager at Axis Sound, play in the process? "George knows the studio inside and out," Morse says. "He knows what works and what can be done. As far as miking sounds, he's a lot more experienced at that than me. He can right off the bat come up with a mic placement that will work. That's important because we don't have a lot of luck using a lot of EQ."

As far as Morse is concerned, though, "one of the best things George does is not interfere at all. He gets the best sound he can, works with it a few minutes and then just waits. He never says anything about the music arrangements, which is perfect by me."

"We don't do anything without thinking about it," West adds. "We've thought about every aspect of every note we put down and don't need anyone telling Steve about it."

"I just get the sounds Steve wants," Pappas agrees. "Steve can hear a lot of things I can't hear as far as tuning, etc. He's one of the most incredible musicians I've ever worked with."

Pappas, who also engineered the Dregs' last LP, says the main technical ingredient in the group's session work is the Necam computerized automation system. That, he says, is why he came to Axis in 1978 (when it was changed over from LeFevre Sound, run by the gospel music family of the same name) after working as a freelance engineer in Los Angeles.

With the drums, Morse says, "we've worked out all the suggestions beforehand, but Rod is a very natural musician. You can just about let him go and he'll always play something good." It's a matter of "personal preference" in selecting the tracks to use.

Pappas' mic setup includes "two Shure 57s on the snare, Sennheiser 421s on the toms, AKG D-12s on the kick drums and a Neumann U-87 as the overhead. Usually I pick up enough cymbal and highhat without miking them, but sometimes I use the Studer S-Cam 54."

With West, Morse says, "we've used some of his "live" bass tracks, but a lot of his parts are a lot more complex than any other bass parts you'll find, so to get the right sound we go back and redo parts. He practices beforehand."

Pappas says West uses a wide variety of basses, though he relies a lot on Fender. "I usually go direct, but I do use an amp on him at times and use a lot of coincidence stereo mics."

Keyboards are the next to go down on tape, Morse says, and "we have more keyboard textures, so it takes a little longer. T is new (he joined around two years ago) and possibly because of that, he's very willing to accept suggestions without any complaining. He's the clown of the band, really easygoing and so we get a lot done quickly, especially solo-wise."

"On the keyboards," Pappas says, "mainly I use direct signal but I also pipe him out into the room and remic it because it's such a big room."

Morse admits that producing himself on guitar "is difficult," but he maintains he plays his parts "exactly like I would with a producer. The only thing I miss is someone else to tell me something I haven't thought of. I rely on what I thought would work before I came in, and I try to put it down the best I can."

"I make changes if it's not working. It's a matter of using your ears and flying by the seat of your pants. We spend a lot of time worrying about the sound of the guitars."

Morse mainly uses Fender guitars and Ampeg amps, Pappas says. "Sometimes I use six mics on his guitar rig. Lately I've been using two Sennheiser 441s and a lot of the new PZM microphones. I use the PZMs for room sound on the drums and the acoustic guitars, and also use Studers on the acoustic."

When it comes to the violin, Morse says, "we get good sound right off the bat. The problem is picking the take that's most in tune. Every part will be slightly not in tune technically—that's

the nature of the instrument. It requires a lot of decisions per minute about which take is better and the concentration is pretty tiring to your ears and your mind." Pappas mics the violin with an old Neumann U-48 and PZMs.

One problem the Dregs don't have is choosing which tracks to include on the album and which to leave off. They don't record any extra tunes, Morse says.

"We're doing eight cuts for the album and that's all. In the past, when we didn't have control, we recorded some extra. But I don't see any point in putting down something you're not sure is going to work."

"Our stuff is so technically oriented at times," West says, "that to do a song just to see if it would work would be a big waste of time."

"A lot of our long tunes are real symphonic," Morse adds. "Recording a cut you don't use is sort of like building a house to see how it looks on the hill."

It's an involved process, with a lot of punching-in of parts and bouncing of tracks, Morse says. "When we bounce tracks, we mute all the tracks that are not playing at that moment. It's a lot of trouble, but one of the advantages of me producing is that I know every note of the music and I can sit there and do it without having to rehearse it."

The music on the new album continues in much the same vein as past Dregs outings. But, Morse says, "we're arranging at least two of the tunes in such a way as to appeal to a broader audience. We're trying to be more commercial than in the past without changing the music. We're trimming down the time and trimming out spots that come down too much. We're trying to keep the energy and a constant beat in a certain time frame."

Basically, West says, "we're choosing to emphasize the elements of our music that are currently more popular. But you don't want to do it so consciously that you cheapen your music."

"We'd love to have a hit single," Morse says, "but if it doesn't happen, f--- it."

Increasing the commercial aspects of the Dregs' music is not just a matter of money, though, West adds. "Commercial success means more. It means people are listening to your stuff. And communication is what music is all about."



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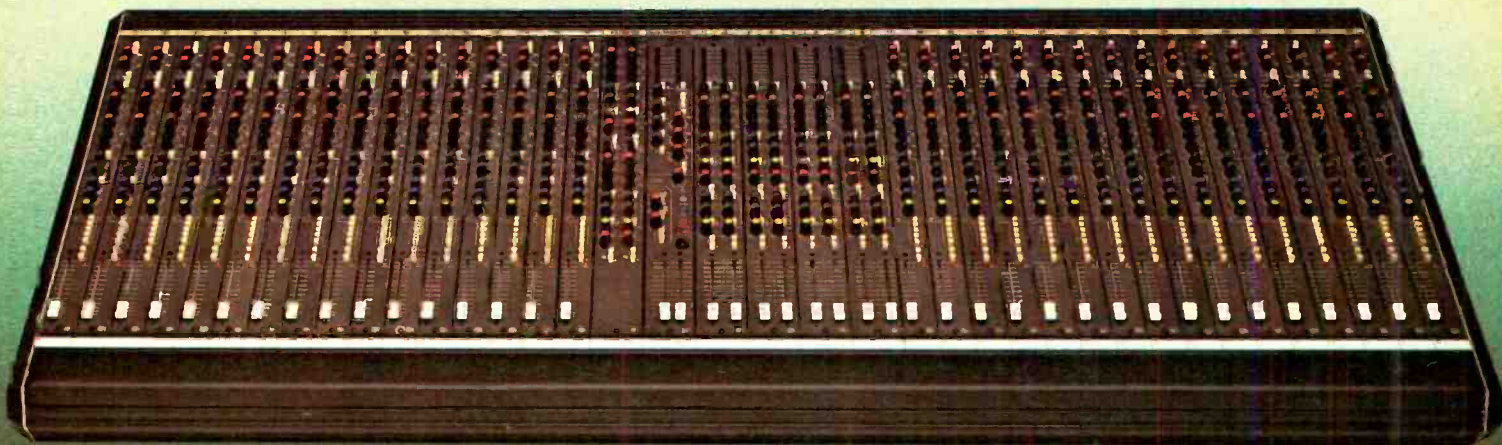
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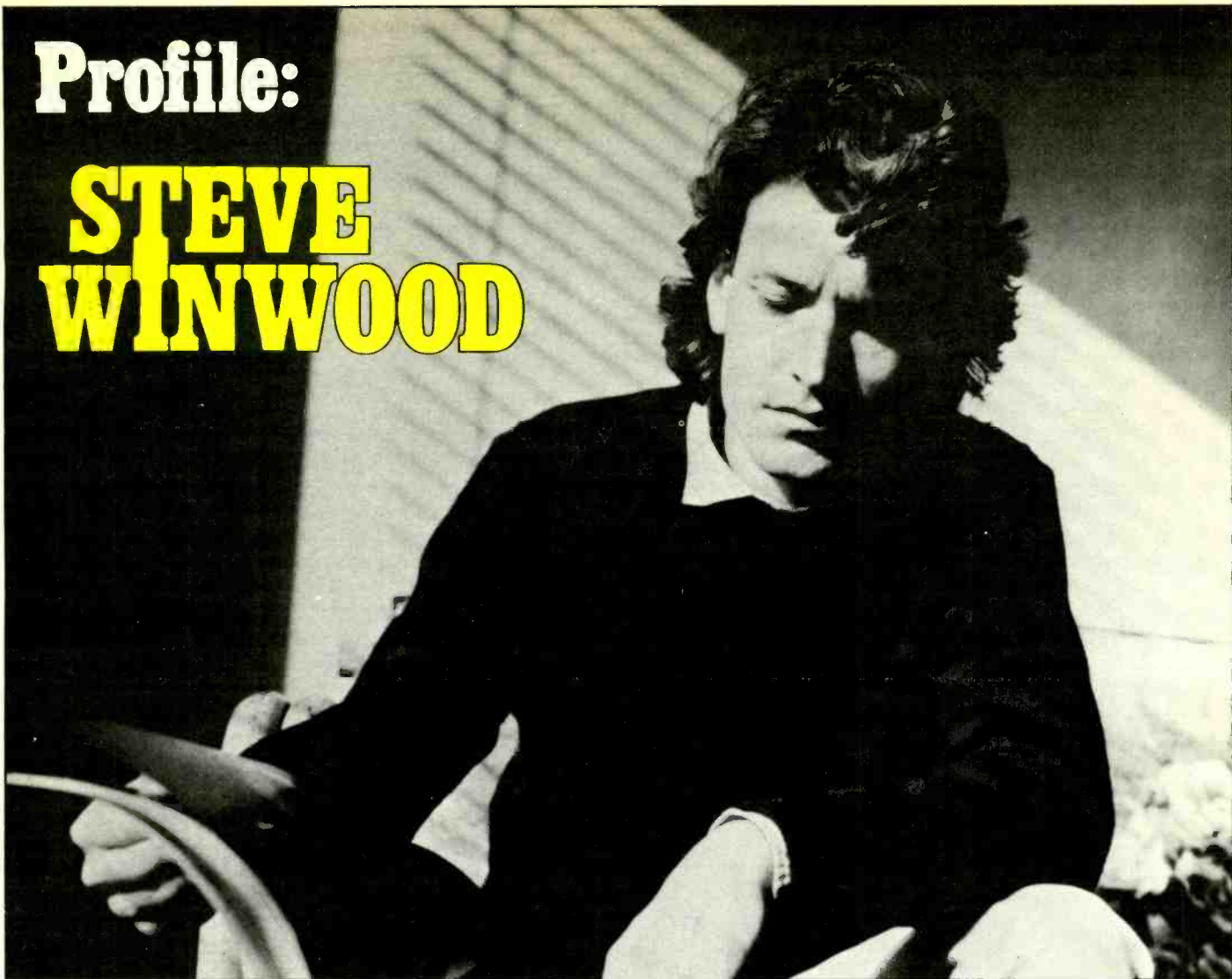
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Profile:

STEVE WINWOOD



By Mike Derevlany

Spencer Davis must have had a premonition that night he heard the then 15-year-old Steve Winwood singing with the Muff Woody Jazz Band. Davis wanted those “spine tingling” vocals to be a part of his Spencer Davis Group, and that legendary collaboration (with Peter York and Steve’s brother Muff) resulted in such hits as “I’m A Man” and “Gimme Some Lovin’.” From there, Steve formed a short-lived (three month) band with Eric Clapton. Powerhouse did record a few tracks in that span, but to date they are unavailable. This union might, however, have been a precursor of the things to come. Existing roughly from its original formation in 1967 of Winwood, Jim Capaldi and Chris Wood, Traffic variously encompassed Dave Mason, Roger Hawkins, David Hood, Barry Beckett and African percussionist Rebop Kwaku Baah, until its final demise in 1975. In between the incarnations of Traffic, Winwood formed Blind Faith in 1969 with Clapton, Rick Grech and Ginger Baker. The high-power group faced high-pressure and dissolved within the year.

Since 1976, Winwood has teamed with such diverse groups as Stomu Yamashta’s Go and the Fania All-Stars. He also remained busy doing session work with a myriad of acts. In 1977 he released his first solo LP, *Steve Winwood*. The haunting vocals, impeccable keyboards and fluid guitar work were all there.

At this point, Winwood took a hiatus of sorts from the rigors of the last 13 years, and proceeded with a project that he had thought about for many years. He constructed his own sixteen-track studio and set about teaching himself the art of recording.

The result of this “self-teaching” could be an inspiration to everyone. Arc of a Diver, on *Island*, was not only written and performed by Winwood, but he also produced, engineered and mixed the project himself.

Winwood spoke with MR&M’s Mike Derevlany about the pleasures—and pressures—of such a literally solo effort.

Modern Recording & Music: How does it feel to be back in the limelight after three years out of the public eye?

Steve Winwood: Well, I’m fairly surprised at the kind of reception I appear

to be getting so far. I obviously haven’t been doing very much, producing as much as I definitely ought to have been, for really a number of reasons. But I haven’t really retired.

For the last three years, I’ve been building a studio at home, for one thing. I’ve also been writing and forming writing relationships with different people.

MR&M: That shows up on the new album, where you have several people listed as co-writers.

SW: Yeah. And also I've been working and really learning about recording. That's about the best way I can put it. In 1975 I'd been on the road for twelve years or something and I felt that I wanted to learn a bit more about new aspects of music and rock and roll. I wanted to take time for it. Now I really feel that I'm ready to get back with a band and start doing dates and "live" work again.

MR&M: So, basically, you just wanted some time to be yourself in your studio, particularly after being on the road for so long.

SW: Yes. I think also I needed a break. I did some session work as well, during that time, to kind of pay the bills and I worked on different types of projects with different people. Basically, I suppose it was a retirement in a way, although I was working on one thing or another during the entire time.

MR&M: You say you've been working with various people during the past few years. Specifically, have you been working with any of your old cohorts or people with whom you've collaborated only recently?

SW: Most of them date back from the past couple of years. Like a year ago I stopped doing session work.

MR&M: So now you think you may be ready to do some more roadwork?

SW: Yes. When I go back to England, I should be putting a band together. And recording another album, which I hope will be finished and out around September. At the same time, I should be doing some "live" work with the band.

MR&M: Are you looking forward to doing a large tour, or just some scattered dates?

SW: I think for kind of obvious reasons—it's been a long time since I've done "live" work—I should start with some scattered dates, probably in some fairly small places. And then, of course, it depends on how many people come and see you. I hope to build up to some kind of tour.

MR&M: You seem to have a lot of fans, particularly from the days of Traffic. Many people tend to equate you with Traffic in the sense that they saw you as the major force behind that group.

SW: Well, there's that, and then there's the challenge of a new audience

as well, which I'm really quite looking forward to.

MR&M: *Arc of a Diver* certainly has the potential to draw in a large new audience for you, since it does cover quite a range of music. It seems to have what most people would probably consider a strong jazz influence.

SW: Yeah... Well, in fact, you know, I've got various ideas on that. It probably has a bit more than other albums. I still like to try and keep a balance as much as I can. I'm sure that there are probably other areas or classifications of music that I should probably apply to it, shall we say, in the future.

MR&M: You're a very diverse musician—vocals, keyboards, guitar—how did the album come about with all that diversity intact? What was its inspiration?

SW: The main inspiration, I think, was the desire. I wanted to make an album, a kind of multi-tracked album that I did everything on, mainly for the reason that I'd toyed with that idea for some time. When I was a kid I used to mess around with tape machines and overdubbing, and that kind of thing. But it's been something that I've always wanted to do. When I finished building the studio—it's actually a very amateurish studio, really....

MR&M: You have an eight-track?

SW: No, sixteen track, but I've got a very antique mixing deck. It's very basic. After I finished the studio, it seemed like an opportunity for me to actually set about doing things. Doing an album like this can be impossible because it can be a bit costly doing an album with all that multitracking in a commercial studio. It's a lot of time and expense. Although I have the time, the expense was much less than it would have been otherwise.

MR&M: It also gave you a lot more freedom to do what you wanted.

SW: That's right. In fact, I was slightly worried about it at one point when I was writing because I could have used another studio and so on to see if something worked. But really I found that it's the most fantastic thing to actually have a studio.

MR&M: Beyond all that freedom, do you see any disadvantages to it?

SW: Yes, there are obviously disadvantages. But really I don't think I'll continue to work that way; I'll probably work with a band. I think that with this album, it really didn't become

a problem. I mean there are times when I got bogged down on certain sections or certain parts. But the amount of work was so huge that I could easily move onto another aspect and work on that for a week and come back completely fresh to what I had been doing, if you know what I mean. There are obvious disadvantages working like that but I did do it and I'm really glad I did, because if I hadn't done it, I'd always want to.

MR&M: You say you've been interested in recording since you were a kid; that seems like a long time to maintain an interest.

SW: Yeah, I suppose. Things kind of come and go, fashions come and go, and different things come and go, but basically music remains music, you know. Good music is always good music. From that respect—in terms of years and all that—I'm kind of looked upon as a bit of a veteran these days, which is quite good in a way.

MR&M: How do you feel you've changed through all that time?

SW: That's a very tough question. In fact, I would like to say that I haven't, but obviously I have. I've been influenced by various styles, etcetera, but I would like to think that basically I'm still doing what I've always been doing, which is good rock and roll.

MR&M: What would you say were your influences through the years?

SW: In the early days, influences on the Spencer Davis Group very much came from American blues records, which at that particular time were very hard to get hold of and not very well known. That was a very obvious kind of influence. After that, during the early days of Traffic, I think we had decided what we wanted to do was to take from various kinds of music, to take as much or to be as influenced as much by rock and roll as jazz and by classical music and folk music and also all kinds of ethnic traditional folk forms and still make some kind of urban sound, which probably sounds like a very complicated thing, but I think that's what we were really trying to do. And although we went through various stages, I think we continued to really try to achieve that in various ways. Which kind of brings me right up to the end of Traffic. I think we continued to be influenced and to try to do that kind of thing, to try and make that kind of music. For the last five or ten

years I think that although I've been influenced by and heard many different kinds of music, it's more *identifying with* than actually being *influenced by* various new groups, young new bands. I've found I've kind of identified with what they do. And also continued to listen to what I considered to be the kind of all-time great music—rock and roll, blues, country music, and everything. I think that music now more than ever is either good or bad.

MR&M: What do you listen to? What kind of music do you like to hear when you're not involved with your own music?

MR&M: I keep an ear very close to the radio, and I try to catch the more established acts that come to town when I'm at home, and also I keep an eye out for and listen to new records. I like Talking Heads, and there's a group called Adam and the Ants in England which certainly has something. I like to try and listen from a musical point of view because I think that's what I know most about. Lots of groups put emphasis on theatrics and visuals, which I think is a great thing, but it shouldn't make up for defects in the group's sound.

MR&M: You've avoided theatrics yourself, yet quite a bit of your music has a dramatic quality in that it consists of little vignettes; you seem to be telling a story with some of your tunes. Is that intentional, or did it just work out that way?

SW: Well, yes, I think it is intentional. I feel *Arc of a Diver* is an album specifically of songs that work that way. A song is both melody and lyric, and it either tells a story or it gives a



feeling. I think on this particular album that's the main thing.

MR&M: That's reminiscent of Traffic, particularly *John Barleycorn* which has a conceptual feel to it. Was that planned or just the way the music fell together?

SW: I think that most often tracks on an album tend to relate to one another, even when it isn't a concept album, which *John Barleycorn* wasn't really, but I think that all of the tracks did kind of relate very strongly to one another, and I think in a way it's the same on this album. It has the same feel; the songs on it all relate or complement in some way.

MR&M: How did the title song come about? It's very impressive.

SW: Basically, it's just a kind of love song. I called the album *Arc of a Diver* because I felt that it—the image of a diver—conjured up a frozen image in time, because the arc of the diver is something that happens but you don't see. It just freezes a moment in time, and I think a record does that very much so. Especially as this album wasn't actually a group of people playing together. A record is that very much for me, and this record is very much a frozen moment in time.

MR&M: It's interesting that you consider the record a collection of frozen moments, since a lot of planning went into those moments.

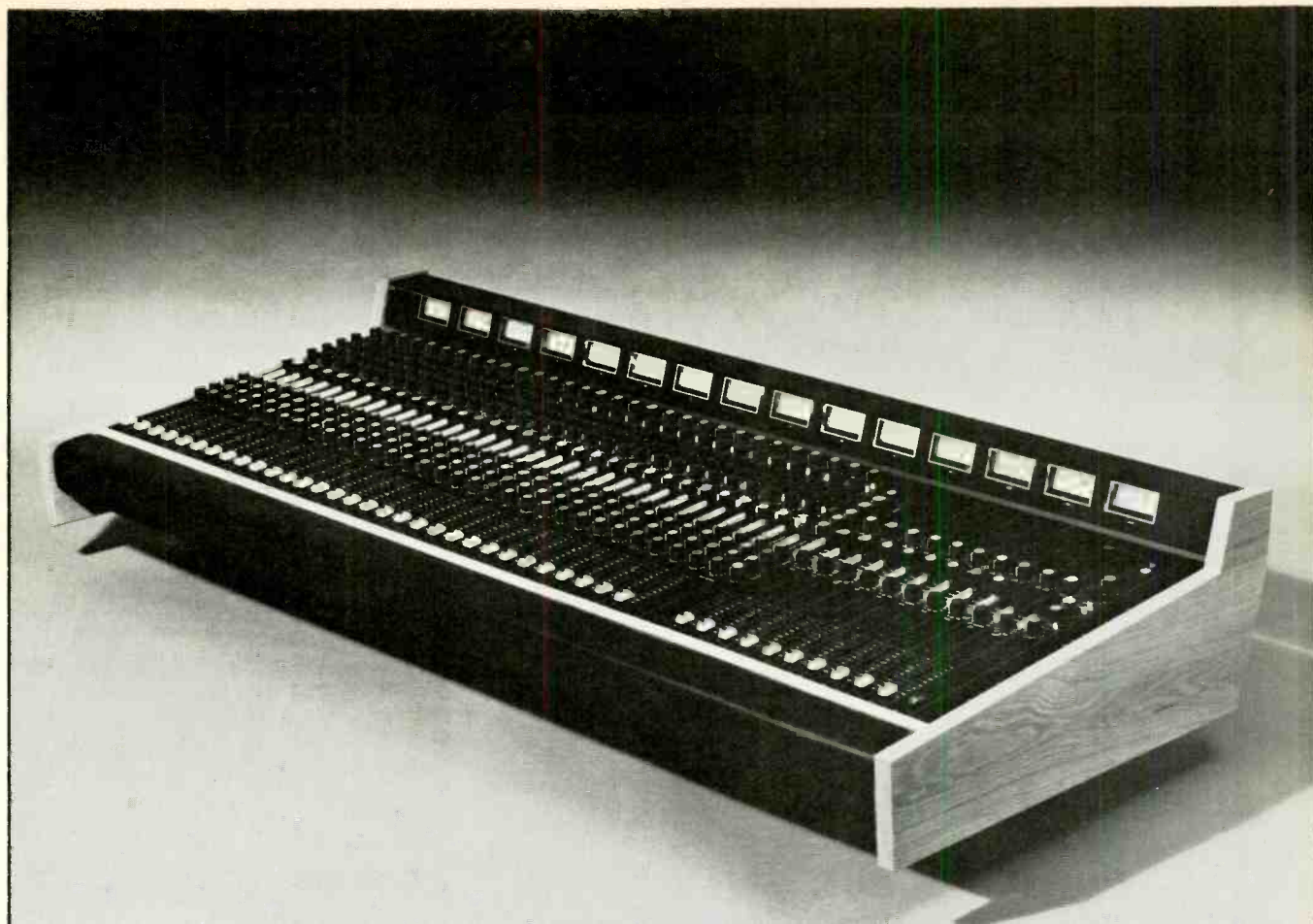
SW: Yes, I know. It is in a way; that's the kind of thing that comes out. Basically each thing that went on was just a particular moment in time. It's a very complex moment; all the parts were very different and were all done at different times. But that in a way is exactly what got me to call it *Arc of a Diver*.

MR&M: Where do you see yourself headed at this point?

SW: Actually, certain things will depend on the group I put together, which I haven't begun to do yet. It won't be so much of a collaborative group, it will be my band. I should continue to go where I would be going, wherever that is. I don't quite know where that is. If I can give people pleasure, then I'll continue to do it, in whatever way.

SELECTED DISCOGRAPHY

<i>I Can't Stand It</i> , Spencer Davis Group	(1964)	Island
<i>Mr. Fantasy</i> , Traffic	(1967)	United Artists
<i>Traffic</i> , Traffic	(1968)	United Artists
<i>Last Exit</i> , Traffic	(1968)	United Artists
<i>Blind Faith</i> , Blind Faith	(1969)	Atco
<i>John Barleycorn Must Die</i> , Traffic	(1970)	Island
<i>Welcome To The Canteen</i> , Traffic	(1971)	Island
<i>Low Spark of High Heeled Boys</i> , Traffic	(1972)	Island
<i>Shoot Out at the Fantasy Factory</i> , Traffic	(1973)	Island
<i>On the Road</i> , Traffic	(1974)	Island
<i>When the Eagle Flies</i> , Traffic	(1975)	Island
<i>Delicate and Jumpy</i> , Fania All-Stars	(1975)	Columbia
<i>Aiye-Keta</i> , Abdul Lasisi Amao and Remi Kabaka	(1976)	Antilles
<i>Go</i> , Stomu Yamashita and Go	(1976)	Island
<i>Steve Winwood</i> , Steve Winwood	(1977)	Island
<i>Arc of a Diver</i> , Steve Winwood	(1980)	Island



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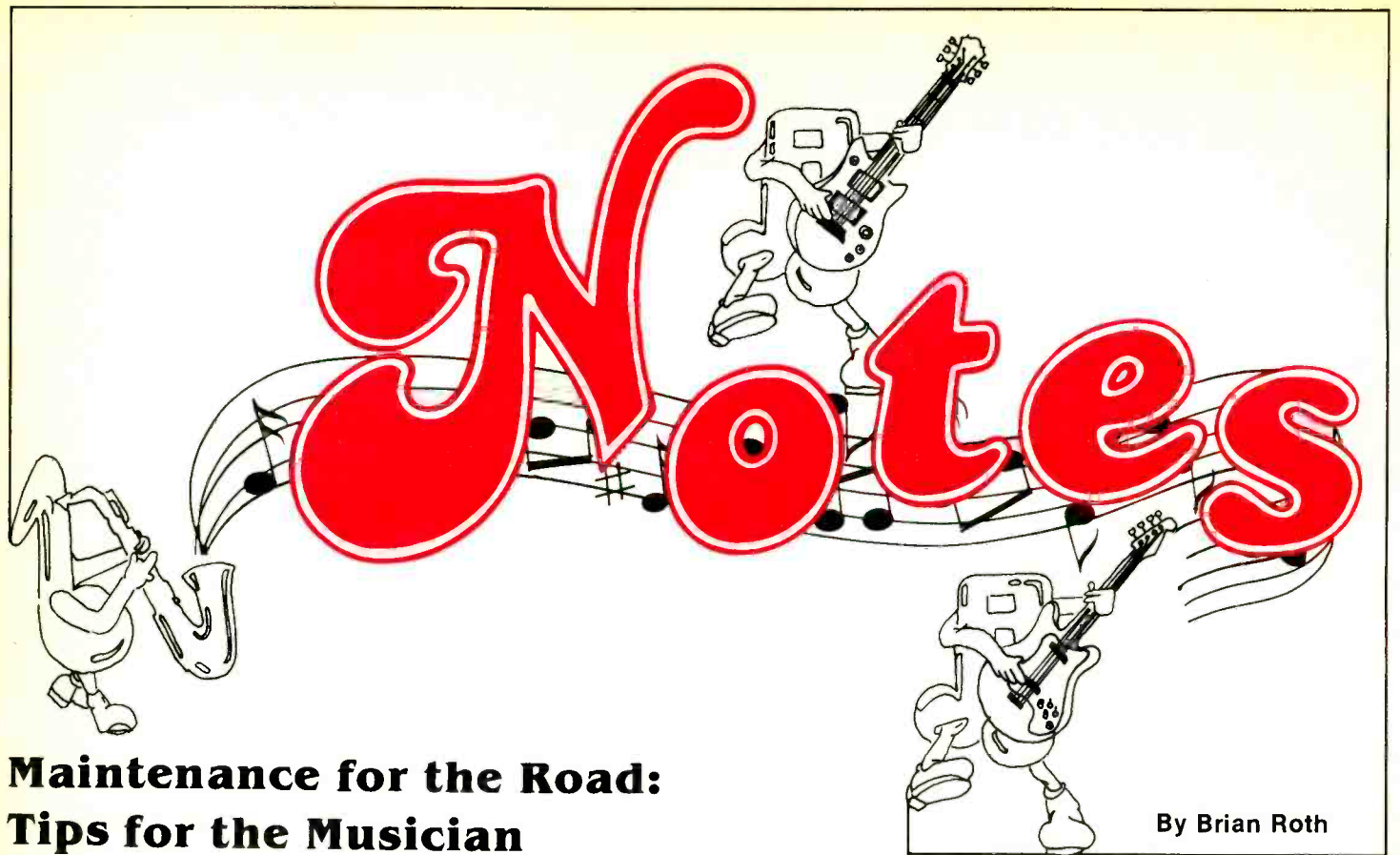
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Maintenance for the Road: Tips for the Musician

Beginning with this issue the "Notes" column will be dividing its coverage of the electronic musical field by introducing a "Service Notes" column. The new feature will appear on a bi-monthly schedule. One month, as in the past, there will be an in-depth review on musical equipment and the next month will contain information dedicated to the care and *repair* of your musical instrument (M.I.) equipment. In the months ahead, the discussions will include servicing of electric instruments, amplifiers and accessories. I will assume that the reader has minimal technical training for the most part; however, I do plan to include some "advanced data" that can be passed on to your soundmixer or service technician. This should be helpful to the serviceman with a background in electronics but who has not had extensive experience with the frequently bizarre circuits found in M.I. equipment.

[Since this is a new format, we hope to hear some comments from out there in the field. Let us know what you want to see in both sections of this column and we will try to accommodate.]

This month, I am presenting some very general procedures that should be useful to the touring and studio musician. Also, I will be suggesting a complement of tools that are often required to service M.I. equipment.

Step One: Isolate the Problem: Not too many years ago, there wasn't very much that could go wrong with a musician's equipment. If the neck fell off the ukelele, the problem was obvious (although the solution may have gotten complex). Nowadays, however, a guitarist, keyboardist and even a drummer relies extensively on little electrons

zipping about through myriads of space age circuitry. Any problem along the line can cause a complete breakdown of the desired sound.

This situation is often encountered within a guitarist's rigging. It is very common for a multitude of effects processing devices to be inserted in the path between the guitar and amplifier. If one of those doodads should quit, your guitar's signal will quit too.

So what should you do if no signal (or a funny sounding signal) emanates from the instrument amplifier? I would suggest that you unplug the guitar cord from the first effects unit and plug directly into the amp. Now, twang away and see if the signal can make it through this shortcut path. If it does, then the problem lies with the effects units and not the guitar or amp.

On the other hand, if there is still a problem, check these possibilities. Maybe the guitar cord has croaked, so try another one. Cables and connections are a common source of failure. Also check the cable that connects the amp "head" to the speaker cabinet; substitution is the best way.

Maybe someone changed your normal control settings. Check your instrument and amp's knobs and make sure everything is kosher.

Perhaps your guitar's wiring has been damaged. Try plugging another guitar or a microphone into the amp and see if that works.

Still nothing? Hmm...perhaps the amplifier or speaker is sick. Plug into another amp and see if your axe (and cord!) are O.K. Murphy's Law indicates that there will be *two* bad guitar cords in your footlocker, so check it with a *separate* rig.

If your instrument functions with another amp, then the problem most likely is with your amp/speaker set-up. If the speaker is a separate unit, try swapping the cabinet with another. If that doesn't help, try another amp head. It's got to be one or the other.

There's not much you can do if the problem is due to the loudspeaker. You can take out those 856 screws that hold the back of the cabinet in place and see if any of the wiring has become disconnected. Otherwise, it looks like you will have to dig up another speaker for the gig.

If the problem appears to be with the amplifier section, check to see if you have power. The pilot light is a good indication (assuming that it has not burned out). You might also check the fuse (be sure to unplug the amplifier's power cord first so you won't get zapped). Fuses often fail for no apparent reason; that's why it's good to carry spares of the proper ampere rating. *Don't* run out to your car and get a 20-amp fuse from the cigarette lighter circuit. *Don't* roll a gum wrapper around the dead fuse to make a Wrigley's 100-amp "no-blo" fuse. Either of these "fixes" can cause your amplifier to go up in smoke if the original fuse was blown by an internal problem. Oh yes, did you check the stand-by switch (commonly found on tube-type equipment)?

Now let's back up a little. Assume that your axe functioned correctly when plugged directly into the amp. Then the problem lies within one of those marvelous foot pedal units. Disconnect them all, and patch through one processor at a time. If they all seem O.K., then try replacing the box-to-box cables one by one (remember, those patch cords are highly suspect at this junction).

Should you discover that one of the effects boxes is the culprit, the fastest solution is to not use the device. However, if it is important, then open it up and replace the dead battery with a fresh one. Also inspect the workings to see if any of the wiring is broken. A particularly weak area in many devices is the frail leads attached to the battery connector. They will often break *inside* of the clip and can be checked by gently tugging on each wire.

The input and output jacks also should be examined for corrosion on the contact surfaces. Any dirt or corrosion will prevent the plugs from making a secure connection.

If it is possible to gain access to the back side of the printed circuit board, look for poor solder connections. Also, look for any build-up of dirt or old beer which can cause partial short circuiting.

Should the box still be ailing after all these checks, then it's time for the unit to visit the doctor—there's not much more that can be done without suitable testing equipment.

Let's assume that the guitar itself is at fault (make darn sure it's not the guitar cord before you start tearing into the axe itself). Fortunately, most guitars have very simple circuitry so there's not much to go awry.

Access to the workings is gained by removing the cover plate on the rear of the instrument, or the pick guard. Be careful not to lose those tiny screws—a cup or cocktail glass is a convenient storage means.

The inspection procedure is the same as with the processing devices. Look for broken or gummed up parts, and always be careful to pay close attention to the integrity of the output jack since these are often of the less-than-top-quality variety. We can put a man on the moon, but we can't put a decent jack on a guitar?

**“ Nowadays, however,
a guitarist, keyboardist and
even a drummer relies
extensively on little electrons
zipping about through myriads
of space age circuitry. ”**

Step Two: Never Assume Anything: I remember seeing that phrase on a tag supplied with a power amplifier, and it has really stuck with me over the years. Things are not always as they seem!

Recently, a guitarist walked into the control room of a studio where I was working and informed me his amp had quit. "I can't get a peep out of it—the little light won't even come on," he stated.

I went into the studio and checked over the amp. I took a whiff, and didn't detect the odor of any crispy parts. A peek into the back revealed that the tubes were lit, although the pilot lamp was not.

"What happens when you plug your guitar in?" I questioned.

The guitarist looked at me blankly. "Well, I dunno. The light was out, so I figured that the whole thing was dead."

I mentally rolled my eyes toward the heavens and suggested he plug in his guitar. Sure enough, everything was fine. The whole problem was a fizzled filament in the bulb!

The moral: Don't jump to conclusions. What seems obvious is often not.

As the equipment becomes more complex, a systematic approach to troubleshooting is needed. You must logically follow the signal path until the difficulty is uncovered. Each piece must be carefully checked to determine whether or not it is functional. If you take it one step at a time, the bugs can easily be found.

The First Aid Kit

Most of the procedures discussed earlier required removing screws, repairing broken wires and cleaning out the fungus. Obviously, these procedures require a selection of tools to implement.

Every musician should have a small assortment of tools in his possession at all times. You wouldn't show up at a gig without a guitar strap, and you shouldn't be without tools either.

A suggested complement is as follows:

- #0 Phillips head screwdriver
- #1 Phillips
- #2 Phillips
- Small ($\frac{1}{16}$ " wide) blade screwdriver
- Medium ($\frac{1}{4}$ " wide) blade screwdriver
- Miniature blade screwdriver for setscrews
- Needle-nose pliers
- Diagonal wire cutters ("dikes")
- Wire strippers
- 30- to 40-watt soldering iron
- Sponge for cleaning iron tip

“ Every musician should have a small assortment of tools . . . You wouldn't show up at a gig without a guitar strap, and you shouldn't be without tools either. ”

60/40 rosin core solder
Allen wrenches (if required by the equipment)
½" nutdriver (for tightening nuts on jacks)
Plastic electrician's tape
Spray can of contact cleaner

The entire complement will probably cost between \$50 and \$75 if you buy first class tools. Budget brands are a poor investment, so plan to spend a little extra. You'll be glad you did when something fizzles out five minutes before showtime.

I've had good luck with Sears tools. They're widely available, and the Craftsman types have a lifetime guarantee. Watch for sales since some real bargains can be uncovered.

I use Utica and Diamond brand pliers and wire cutters. They are available from an industrial supply company in most areas, and are of very high quality. I recommend buying the smaller size pliers and cutters because they can be used in tight areas.

The Weller W-60 soldering with a ¼"-wide screwdriver shaped tip is my favorite. It features a control element that keeps the tip at a reasonably constant temperature. The tips determine this and are available in 600, 700, and 800 degree ratings. I suggest the 700° version for general purposes.

Weller makes less expensive models as does Ungar for those on tight budgets. In any case, it's a good idea to purchase the proper holder for the iron to avoid burning holes in things.

Soldering is an art, but is not much harder to master than Roy Clark's *Big Note* guitar book. There are several things to remember that will ensure sound (sic) connections.

First, keep the tip clean. The elevated temperature causes rapid oxidation to occur. This acts as a heat insulator. Wipe the tip frequently on a damp sponge to remove the gunk.

Apply a *little* dab of solder to the tip prior to heating the connection. This will aid heat transfer. Also, coat the tip with solder when a hot iron is left idling since this will prolong tip life.

When soldering, it is important to heat the wire so that the solder melts onto the connection. Don't try to load the tip with solder and wipe it onto the connection. On the other hand, don't heat the wire any longer than necessary since the insulation can be cremated.

It goes without saying that care should be exercised with an iron. Don't burn your pinkies!

If you have not soldered before, try to get your friendly service technician to show you the method. Hopefully he knows the proper techniques. The soldering iron manufac-

turers also offer helpful booklets that should be read.

Practice with your new iron on some scrap wires. You can learn the techniques at your leisure so you will be prepared when the need arises.

In the wire stripper department, the small manual models made by GC or Miller (available at electronic supply stores) seem to work well. Many feature a disc that selects the proper action for a given wire size. I tend to ignore this feature since I have developed a feel for how deep the strippers are biting into the insulation. Again, practice on some scrap wires.

There are some good automatic strippers on the market (for a price) that generally won't nick the wire. My favorite is sold by AMP and Paladin. They have the disadvantage of not being usable in tight spaces because of their larger size. Large gauge wire or that with slick insulation is also a problem for these styles.

Allen wrenches are often required to disassemble equipment. Check to see if yours features these little jewels. Run, don't walk, from the bargain bin allen wrench sets at your corner variety store. Buy a good set from an industrial supply store. My current set is made by Hunter, but other brands are suitable.

While on this same subject, be sure that your screws are not metric in size. This can be a real problem if you buy an American-sized set. Equipment made overseas usually has metric hardware.

**“ The Moral:
Don't jump to conclusions.
What seems obvious
is often not. ”**

I have been using Scotch brand electricians' tape and recommend it over the others. It usually costs about the same, and seems to stick well.

There are a number of contact cleaners on the shelves at the electronic supply companies. I use Jif made by GC which contains a silicon lubricant. There are a number of other brands similar in chemistry. WD-40 is *not* recommended for contact cleaning. When using contact cleaner, don't try to flood the neighborhood—a little dab will do ya'!

The preceding list should cover 95% of your requirements. Once again, don't be caught with your pants down; save your spare change and invest in a good tool set.

Future Plans

This article has been a general overview of basic troubleshooting, and required tools. Next time, I will begin tackling specific equipment.

The first stop will be tube-type instrument amplifiers, with initial examinations of Fender equipment. A number of other brands are similar and I will point this out as the service details progress.

You might want to clip or photocopy this and future articles to have handy when things go wrong. Eventually, you'll have compiled your own M.I. service manual.



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Ambient Sound

BY LEN FELDMAN

Blaming Technology When All Else Fails

Mr. Hans Fantel, who writes a column on sound for readers of the prestigious *New York Times*, prompted me to think about the subject of this month's "Ambient Sound" column. In a recent column, Mr. Fantel, discussing the new "digital" discs (which he correctly goes on to explain are not really "digital" but only digitally mastered), goes on to say, "Yet as such (digitally mastered) recordings proliferated in the latter part of the year, it became evident that nearly all of them shared a subtle flaw: in the louder passages, the sound of high pitched instruments—notably the violins—was tinged with a certain metallic hardness."

A bit later on in his column, Mr. Fantel goes on to say, "...nothing the listener can do seems to smooth out or warm up the stone-cold sound of strings on digital discs. The mordant timbre seems caused by still unfathomed factors that have so far eluded conventional modes of analysis." To all of which I politely but firmly say "hog-wash" (substitute your own stronger language if you are so inclined).

To my way of thinking, digitally mastered recordings, and, ultimately, the totally digital recordings of the future (whether they will be traced by laser or capacitance pickups or by some as yet to be discovered alternate system) are and will be so much better than the analog or partly-analog discs of today that listeners in years to come will compare future discs with the discs we know today in the same way that we compare LPs with old 78s.

So, what is it that's bothering listeners who are subjected to digitally mastered discs for the first time? Why do they find the treble tones to be overly bright? And, most importantly, why are they so quick to blame the new technology of digital mastering? In all probability, the fault lies with the record producer and/or the recording engineer. Given the new freedom of wider dynamic range, lower distortion and better signal-to-noise ratios, there seems to be a tendency to over-equalize in the final mix to the point where highs become strident and unnatural. They're doing so much "sweetening" that the results are a bit sour. In a

technical sense, however, this has nothing to do with the fact that the master tapes are digitally recorded. The very same thing could have been done to conventionally recorded analog tapes if engineers had not been afraid of bumping into headroom limitations and tape saturation. With those limitations gone, the engineer suddenly experiences a new freedom at the console and, whether it is aesthetically justified or not, has been pushing up the high-end response to make the recordings sound "spectacular." After all, when you are asking the public to spend between two and three times the price of a conventional record you had better make sure that when that costlier record is played it sounds "different," right?

**"... flat response is flat response,
no matter whether it is achieved
by analog means or by
complex digital technology."**

As I may have mentioned in a column a year or so ago, some extensive tests were done at an AES show in London to determine whether or not the sharp cut-off filters that are required in all digital audio systems (with cut-off frequencies of 20 kHz) would in any way "color" the sound of music being recorded digitally. The answer, to no one's great surprise, was that such filtering could not be detected even by experienced critical listeners. The only conclusion we can draw from all of this is that flat response is flat response, no matter whether it is achieved by analog means or by complex digital technology. And from this it follows that it is just as easy to mess up the sound quality of a recording back at the console whether the final master tape is digital or analog. To blame the new technology of digital recording for any sound aberrations introduced

at the mixing console is ridiculous. Rather, what we should be doing is learning to live with the new technology in a reasonable fashion. Historically, there are many parallels to this situation and perhaps a recitation of a couple of them will help to reinforce the point I am trying to make.

Remember quadraphonic sound? It started out as a way of recreating hall ambience in "live" recordings. By placing a pair of mics at the rear of the hall to pick up reverberant sounds and recording those sounds on an extra pair of channels, it was felt that a greater sense of realism would be experienced by the listener at home—providing that listener was willing to invest in the necessary additional hardware needed to produce

“ To blame the new technology of digital recording for any sound aberrations introduced at the mixing console is ridiculous. ”

the hall illusion. A reasonable and simple idea! But before you could say "pan pot," record producers were putting primary musical sounds in all corners of the room. The exaggerated ping-pong effect of earlier stereo recordings simply became the ping-pong-ping-pong of the new quad era, much to the disenchantment of those adventurous souls who had invested in the new hardware. By the time the industry realized that this was not what the public actually wanted, it was too late, and 4-channel sound on discs all but disappeared. For all the opportunities for gimmickry that quad afforded, it turned out that the bulk of the listening public still wanted realism and not gimmicks. Then, too, there were those who blamed the technology of quadrasonics for its failure and not the recording content of the records themselves. Then, too, that was putting the blame where it did not belong!

On a purely technical level, all of us can remember the great debates of the late 1960s and early 1970s in which one faction maintained that "transistor sound" was and always would be "harsher" than "tube sound." There were those who were firmly convinced that there was some inherent quality about transistors that would never allow them to amplify audio signals with the same "warmth" of sonic quality that had been associated with tube sound. It was only many years later that some of the circuit differences which really accounted for the sonic differences between tube and solid-state sound began to be identified. And once they were identified, steps could be taken to narrow the differences in sound between the two types of amplifiers. Today, few would argue that solid-state amplifiers can-

“ Listeners in years to come will compare future discs with the discs we know today in the same way that we compare LPs with old 78s. ”

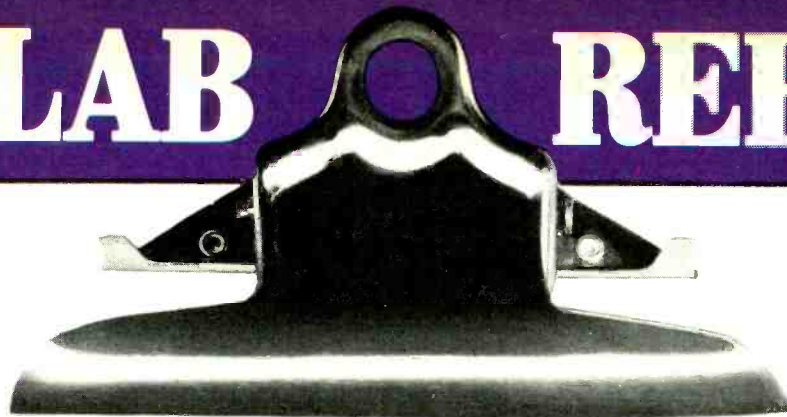
not faithfully reproduce audio signals, but it took recognition of such diverse factors as excessive feedback, switching distortion, notch distortion, slewing distortion and more to stop many of the self-appointed experts from laying the blame on technology as opposed to finding out what it was that we were doing wrong in our use of the new technology.

On an even more elementary level, some of us can remember when stereo first burst upon the scene and, given the new ability to position different instruments and vocalists at different positions across the sound stage, many record producers overdid the effect even then, giving rise to a good deal of disenchantment with early stereo records. After a while, saner heads prevailed and the stereo imaging we enjoy in today's stereo recordings are no longer the gross exaggerations of sound placement that they once were.

I still run into people who insist that when their noise reduction systems are activated they detect a loss (or an undue emphasis) of high frequencies. Now, if you understand how Dolby B noise reduction works (or how any frequency selective companding noise reduction system works, for that matter) you know that such a two-part system, if properly calibrated, cannot have any effect on overall frequency response. The answer, of course, is that the person with the complaint has not correctly calibrated his or her noise reduction system and so the decode circuitry is not properly tracking with respect to the encode circuitry. I suspect that with the newer companding systems being unveiled (such as Dolby C which we discussed last month and the new CBS noise reduction system which should be appearing shortly) the importance of proper encode/decode calibration will become even greater. Still, I am certain that many users will still blame the technology of the system rather than their own use of it.

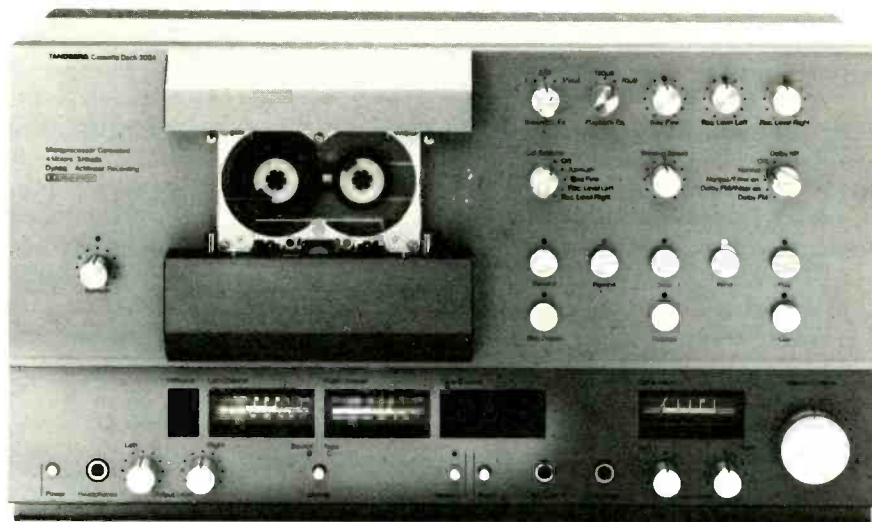
I am sure that many of you out there could cite other examples of cases in which the blame for poor sound reproduction is placed on a technological system rather than on our use of the system. I'd like to hear about some of them and perhaps a few months from now we can do another column on this subject. Meanwhile, let's all try to keep an open mind regarding digitally mastered audio discs. They are very much a part of our future, so we'd better learn to love them and live with them.





NORMAN EISENBERG AND LEN FELDMAN

Tandberg TCD 3004 Cassette Recorder



General Description: The model TCD 3004 is Tandberg's new top-of-the-line stereo cassette recorder. It uses three separate heads for erase, record and play; a means of aligning the azimuth of the record head is built into the machine. The transport is a dual-capstan drive system. The machine has four motors. One motor is for capstan drive; two handle the fast-wind modes; the fourth moves the head assembly and pinch rollers up to the tape.

Recorder functions are monitored by a built-in microprocessor associated with a digital readout that indicates normal operation (a zero is displayed) or various possible incorrect procedures (numbers 1 through 6 are displayed). The microprocessor is also tied into the logic control system of the transport buttons. Fast-button operations are possible, including flying-start recording. These options are available too via remote control with an accessory unit, the RC 20, an infrared cordless device.

The deck includes a cueing function whereby the fast-wind speed (in either direction) is reduced and the tape remains in contact with the play head. The built-in Dolby-B noise-reduction system includes a multiplex-filter option, and it may be used for copying a Dolbyized FM broadcast with or without the 25-microsecond pre-emphasis. Mic/line mixing is possible via front-panel controls.

Circuitry in the TCD 3004 includes Tandberg's "Dyneq" and "Actilinear" systems. The former term stands for "dynamic equalization" and means that the recording amplification is automatically adjusted for high frequencies as a means of optimizing the tape's response to various input sources. The latter term refers to the biasing circuitry we first encountered in Tandberg's TD 20A open-reel tape deck (*MR&M*, October 1978). Briefly, the Actilinear technique is designed to improve transient response, reduce the intermodulation interference effects of the bias oscillator and provide significantly higher signal-handling capability as compared with conventional recording circuitry. It is credited with being especially suited for realizing optimum performance with high-coercivity tapes including, of course, metal-particle tapes.

Front panel layout is functional and business-like. To the left of the cassette compartment is the azimuth adjustment knob. This is used in conjunction with a calibration selector elsewhere on the panel and a special meter that responds to the control settings for the built-in test signal.

The tape heads and associated parts in the tape path are fairly accessible for cleaning and degaussing, the instructions for which are included in the owner's manual.

Bias and EQ for recording are handled by a three-

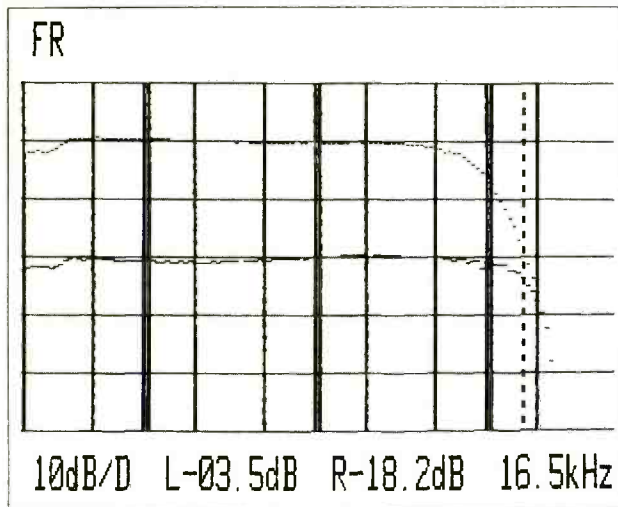


Fig. 1: Tandberg TCD 3004: Record/play response, at 0 dB and -20 dB, Maxell UD-XL-I tape.

position control. A separate switch for playback EQ may be set to either 120 or 70 microseconds. In addition there is a bias fine-tune adjustment, a left-channel recording adjustment and a right-channel recording adjustment. These last three controls are to be used in conjunction with the calibration selector and the special calibration meter mentioned earlier.

The calibration selector itself is located in a row of controls under these. The next control in this row is a winding-speed adjustment that enables you to change the wind/rewind time for a C-60 cassette from 45 seconds to 2 minutes. The third control here is the Dolby NR selector switch.

Below these controls are the transport controls for record, rewind, stop, wind (fast-forward) and play. In addition there are controls for record preset; release; and cue. The record-preset button enables you to make adjustments prior to recording. The release button serves to free the cassette for removal from its compartment. The cue button allows the tape to move, in contact with the heads, during either fast-wind mode at a slower speed.

Metering and signal-control functions are grouped along the lower third of the panel. There are the "error indicator" mentioned earlier, the left- and the right-channel signal meters, the digital tape counter and the calibration meter. The signal meters are peak-reading, and have separate scales for metal tape.

At the far left is the deck's AC power off/on switch. Next to it is a headphone output jack, followed by left- and right-channel output level controls. Centered below the two signal meters is the tape/source monitor switch. Below the tape counter are a memory-rewind

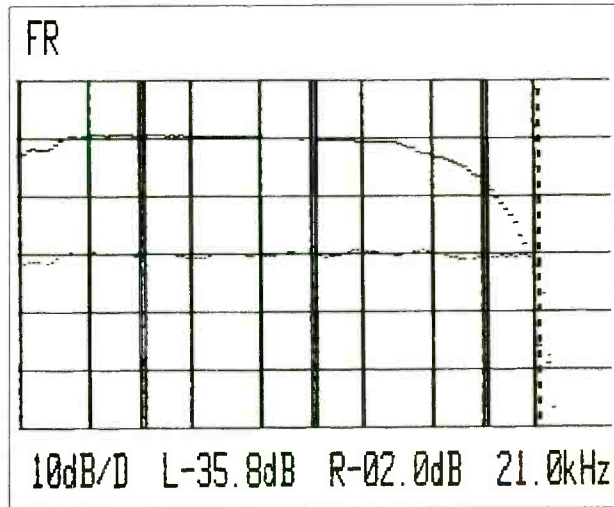


Fig. 2: Tandberg TCD 3004: Record/play response, at 0 dB and -20 dB, Maxell UD-XL-II tape.

switch and a counter-reset button. The memory function, which may be activated whether the tape is moving or not, will bring the tape—in rewind mode—back to whatever number showed on the counter at the start of a recording.

Farther to the right are the microphone input jacks, left- and right-channel input level controls and a master level control.

At the rear of the deck are the usual line input and output jacks; a fuse holder; the socket for the remote control receiver half of the infrared remote-control system; a recessed adjustment for changing operating

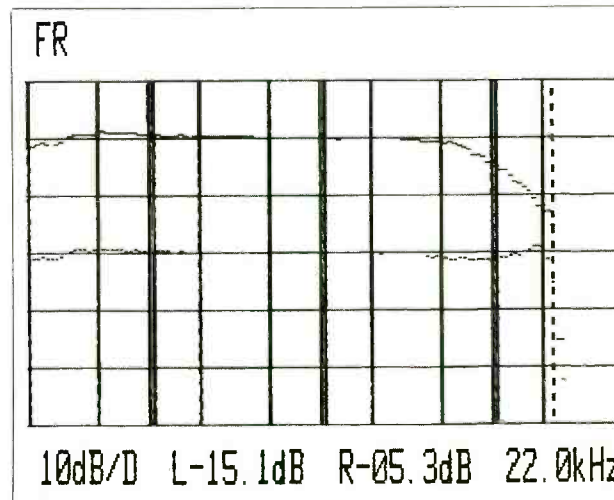


Fig. 3: Tandberg TCD 3004: Record/play response, at 0 dB and -20 dB, Maxell MX tape.

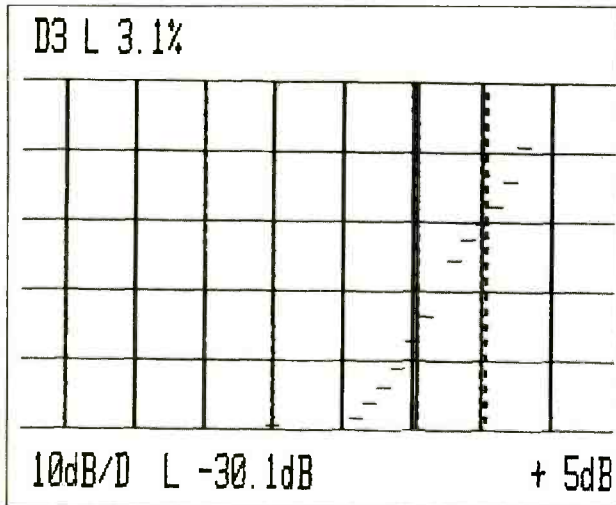


Fig. 4: Tandberg TCD 3004: Third-order distortion versus record level, UD-XL-I tape.

line voltage between 230 V, 50 Hz and 115 volts, 60 Hz; and the AC power cord.

The TCD 3004 may be fitted into 19-inch rack-mounts with an optional kit.

Test Results: In our lab tests, the published specifications for the Tandberg TCD 3004 were confirmed or exceeded. The deck offers generally excellent performance, and the results indicate that it has been optimized in all performance areas for metal tape, while still offering above average results with normal bias and high bias tapes.

To interpret our test data—as shown in the “Vital Statistics” table and in *Figures 1* through *10*—please note that we have set our “0 dB” reference for all measurements at a value of 200 nWb/meter. Actually, on the Tandberg’s meters, the “0 dB” point corresponds to 250 nWb/meter. This level is about 2 dB higher than the standard Dolby level of 200 nWb/meter, and is also 2 to 3 dB higher than the “0 dB” point on the meters of most other competitive cassette decks. Thus, to enable the reader to make a more meaningful comparison among decks, we decided to set “0 dB” reference at the 200 nWb/meter level.

Accordingly then, the two curves for R/P response shown in *Fig. 1* (for Type I Maxell UD-XL-I tape); in *Fig. 2* (Type II Maxell UD-XL-II tape); and in *Fig. 3* (Type IV Maxell MX metal tape) are taken at -2dB and at -22 dB with respect to the “0 dB” mark on the TCD 3004’s own meters. The figures at the lower right of these graphs (16.5 kHz for *Fig. 1*; 21 kHz for *Fig. 2*; and 22 kHz for *Fig. 3*) are the frequencies at which the R/P response is down approximately 3 dB as compared with an arbitrary 0-db reference level that is established at 1 kHz.

Figs. 4, 5 and *6* are plots of 3rd-order distortion versus recording level for the three types of tape used in our tests. The double vertical line in each display

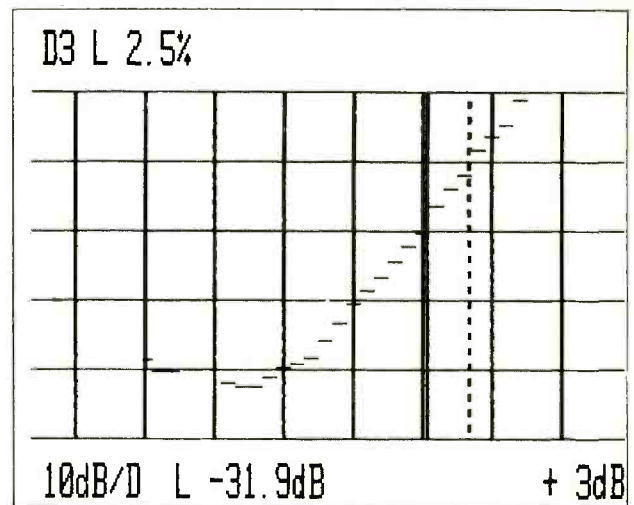


Fig. 5: Tandberg TCD 3004: Third-order distortion versus record level, UD-XL-II tape.

represents the “0 dB” reference level (200 nWb/meter), while the dotted-line cursor bar has been moved over to display the signal level at which 3rd-order distortion reaches approximately 3 percent. These levels were +5 dB for the UD-XL-I sample; +3 dB for UD-XL-II; and +8 dB for the metal tape.

Fig. 7 represents the playback-only response of the left and right channels. For this test, the deck was set for 120-microsecond equalization, using a special test tape containing spot frequencies from 20 Hz to beyond 20 kHz. It is noteworthy that at 21 kHz, the deck’s response is still within 2 dB of “flat” for both channels.

Tandberg claims a separation figure between tracks of 37 dB at 1 kHz. In fact we measured separation better than that: 48.7 dB (R to L), and 48.8 dB (L to R), as shown in *Fig. 8*. To read channel separation figures at other frequencies in this display, note that the vertical sensitivity here is 10 dB per division. Frequencies are indicated by the vertical lines—double vertical lines are at 100 Hz, 1 kHz and 10 kHz. Single vertical lines are—starting at the left—20 Hz, 50 Hz, 200 Hz, 500 Hz, 2 kHz, 5 kHz and 20 kHz.

Fig. 9 shows an expanded pair of R/P response curves. In this display, the vertical sensitivity is only 2 dB per division. The upper curve shows response with Dolby on; the lower curve, with Dolby off. Note that the difference between the two curves is never more than 1 dB at any audio frequency, which of course shows excellent Dolby tracking and calibration.

A plot of speed accuracy versus time is shown in *Fig. 10*. Accuracy never varied by more than 0.2 percent over the 10-minute period during which it was plotted. The vertical dotted-line cursor here shows accuracy after 330 seconds of testing: 0.202%.

General Info: Dimensions are 17 $\frac{1}{8}$ inches wide; 9 $\frac{1}{2}$ inches high; 6 $\frac{1}{8}$ inches deep. Weight is 22.3 lbs. Price: \$2800.

Individual Comment by L.F.: While I was not terribly impressed with the styling of this expensive deck from Tandberg, everything else about the TCD 3004 (and I mean everything relating to its performance and its functions) struck me as absolutely superb. As far as I know, this is the first cassette deck to employ a total of four separate motors. The adjustment method for record-head azimuth alignment works beautifully, in that the meter indications associated with it are so sensitive that one has a feeling of assurance each time the adjustment is made that it cannot be improved upon. The fine-bias adjustments are also designed so that the user has a simple but positive indication that they have been made precisely and accurately. The same applies to the record level adjustments.

To be sure, there are decks which perform many of these calibration functions automatically. With the TCD 3004 the user must make the adjustments while watching a meter to determine proper settings, but I suspect there are many among us who would rather have it that way, since we are given the options, for example, of underbiasing for a bit more high-end response, or of overbiasing for a bit lower distortion, if we so choose.

The test results we obtained speak for themselves. The Tandberg TCD 3004 is an outstanding product if one is not concerned with cost. How many recordists are willing to spend nearly \$3000 is another question, but I suspect some will be able to put performance ahead of price. In any event, the Tandberg TCD 3004 is a deck that literally can bring out the best there is in any cassette tape.

Individual Comment by N.E.: There is much to admire in the new TCD from Tandberg, and even in the necessarily brief period that I was able to get my "hands-on" encounter with this deck it became ap-

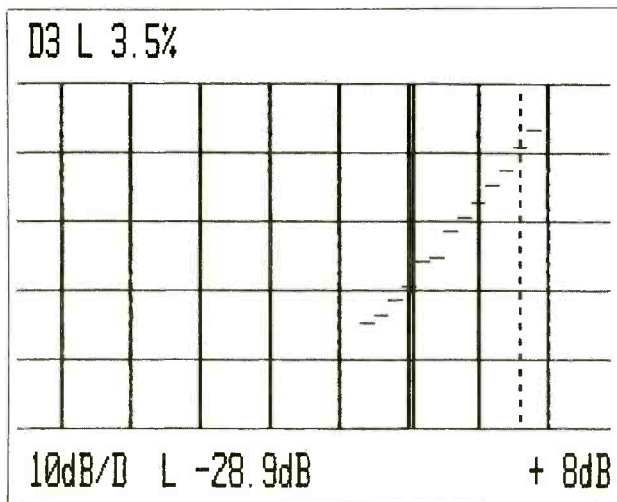


Fig. 6: Tandberg TCD 3004: Third-order distortion versus record level, metal (MX) tape.

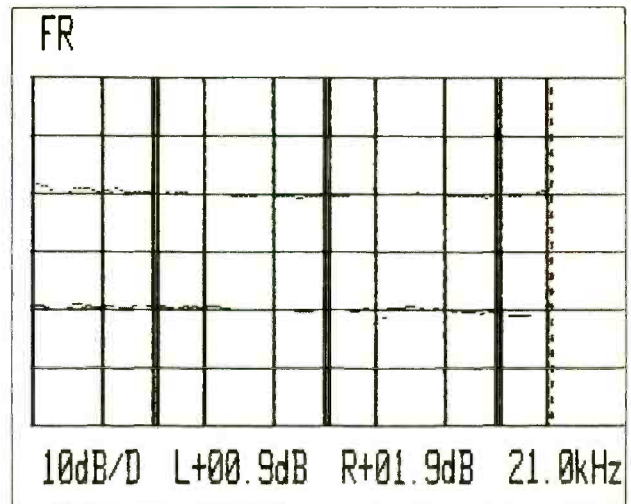


Fig. 7: Tandberg TCD 3004: Playback-only frequency response, at 120 usec EQ.

parent that the internal circuit theory of the unit does translate into external operational virtues of ease, reliability and professionalism in handling. The adjustments for azimuth, bias and so on are so carefully worked out that you just "know" things will go well. Interestingly, Tandberg uses its microprocessor setup here not so much as an automatic servant but as more of a "big brother" who will alert you if you do something wrong. I have what I feel is a healthy reluctance about much of microprocessor applications in the sense that they really do not improve the basic performance of many audio devices, but rather they make them easier to use if you're willing to pay the higher prices for such units vis-a-vis other equally good devices without microprocessors. I suppose something of the same idea could be said of the TCD 3004, except that in this unit the microprocessor can be credited

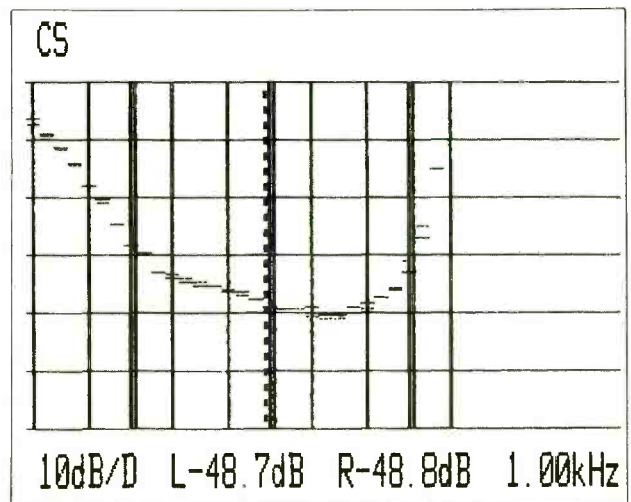


Fig. 8: Tandberg TCD 3004: Channel separation versus frequency.

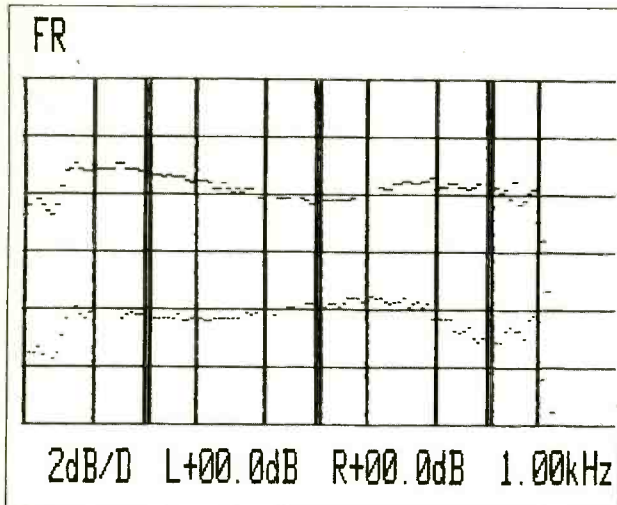


Fig. 9: Tandberg TCD 3004: Dolby vs. non-Dolby (lower trace) frequency response tracking, at -20 dB record level using Maxell UD-XL-II tape.

with helping to eliminate some mechanical parts in the transport and, to that extent, it may be responsible for a reasonably anticipated stability and reduction of long-term wear and tear.

What this leads one to conclude, to make it brief, is that this "deluxe" deck has a lot more going for it than cosmetics or the feeling that in order to use it you must first take a quick course in computer operation. It has a real internal construction and unimpeachable performance. While hardly slighting normal-bias and high-bias tapes, the TCD 3004 very obviously demonstrates

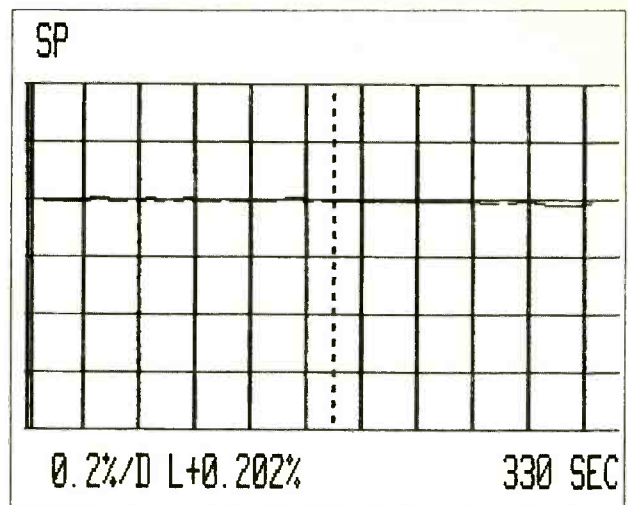


Fig. 10: Tape speed accuracy (10-minute run).

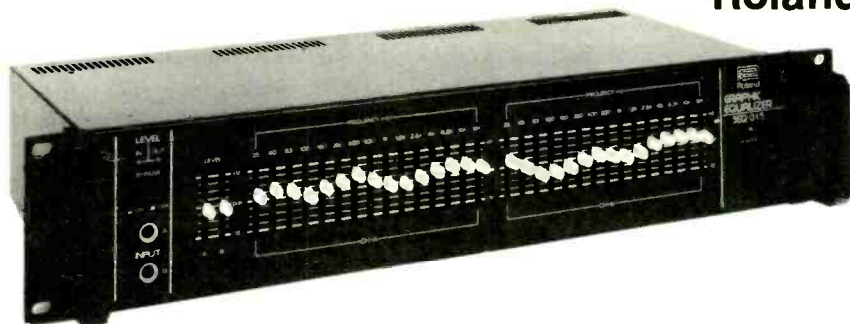
that a deck can be optimized in all performance areas for metal tape. It thus joins the very elite and (still) limited number of cassette recorders that do offer improved performance with metal tape in all tested areas, and not just a few at the expense of others. What does puzzle me, though, is the lack of specifications for tapes other than metal. Is Tandberg so enthusiastic about metal tape that it is ignoring all the others (which still make up the great majority of tapes actually being sold and used)? Whatever the reason, it does seem odd that a deck as highly-priced as this one does not come supplied with as complete a list of specs as is possible.

TANDBERG TCD 3004 CASSETTE RECORDER: Vital Statistics

PERFORMANCE CHARACTERISTIC	MANUFACTURER'S SPEC	LAB MEASUREMENT
Frequency response, normal tape	NA	± 3 dB, 20 Hz to 16 kHz
high-bias tape	NA	+ 3 dB, 20 Hz to 21 kHz
metal tape	± 3 dB, 19 Hz to 21 Hz	± 3 dB, 20 Hz to 21.5 kHz
S/N ratio, Dolby off (re: 3% THD record level) normal; high-bias; metal tape	NA	53.5 dB; 55.5 dB; 59.6 dB
S/N ratio, Dolby on (re: 3% THD record level) normal; high-bias; metal tape	NA; NA; 70 dB	62 dB; 66 dB; 69.5 dB
THD at 0 dB record level normal; high-bias; metal tape	< 1%; < 1%; < 3%	0.43%; 0.99%; 0.45%
Record level for 3% THD (0 dB = 200 nWB/m) normal; high-bias; metal tape	NA	+ 5 dB; + 3.5 dB; + 7 dB
Line output at 0 dB	1.5 V	1.63 V
Headphone output at 0 dB	5 mW/8 ohms	225 mW/8 ohms
Mic input sensitivity for 0 dB	0.15 mV	0.15 mV
Line input sensitivity for 90 dB	80 mV	87 mV
Wow-and-flutter, WRMS	0.09%	0.055%
Speed accuracy	± 0.5%	+ 0.2%
Fast-wind time (C 60)	NA	37 seconds (variable)
Power consumption	40 watts	53 watts

CIRCLE 39 ON READER SERVICE CARD

Roland SEQ-315 Equalizer



General Description: A stereo graphic equalizer, the Roland SEQ-315 offers 15 bands (2/3 octave) of boost and cut on each of two channels. Center frequencies are 25, 40, 63, 100, 160, 250, 400, 630, 1 K, 1.6 K, 2.5 K, 4 K, 6.3 K, 10 K, and 16 K Hz. Nominal range of each slider is ± 12 dB.

The device contains balanced and unbalanced input and output connections. The balanced connections (XLR) are recommended for recording and P.A. applications; the unbalanced connectors (1/4-inch phone jacks) are recommended for conventional amplification and mixing setups. These connections may be used separately or simultaneously. Associated with the unbalanced inputs and outputs is an option, via rear-panel switches, to set the equalizer for either 0 dB or -20 dB reference levels, thus providing a means for optimum matching with other equipment and prevailing signal-to-noise conditions.

The unit's front panel contains additional unbalanced inputs (1/4-inch phone jacks) as a convenience; these jacks take priority over the rear-panel unbalanced inputs. Above the front-panel jacks is a by-pass switch, and above that, a pair of overload LED indicators for input and output. Master level slider controls for each channel are provided, and the thirty EQ band sliders—15 per channel. The unit's power off/on switch and a power-on indicator are at the far right.

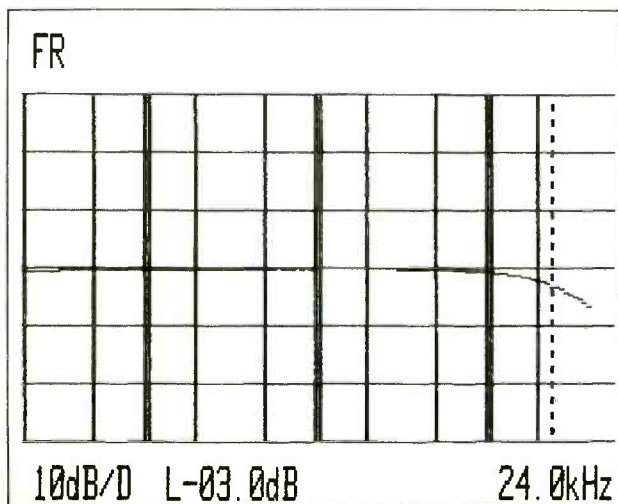


Fig. 1: Roland SEQ-315: Frequency response with controls set "flat."

The rear contains the various inputs and outputs, the level switches mentioned, a chassis-ground terminal and the AC line cord.

Test Results: In MR&M's lab tests of the Roland SEQ-315, published specs generally were confirmed. However, distortion at the extreme high end of the audio band, for some unexplained reason, rose to 0.3 percent at 20 kHz. From a practical standpoint this THD reading is academic (even the second harmonic of 20 kHz is at an inaudible 40 kHz). At 10 kHz the THD had dropped to a reasonable 0.1 percent—still not as low as the 0.03 percent claimed, but certainly low enough so as not to contribute audible coloration to the reproduced program material.

Fig. 1 is a plot of frequency response for the Roland equalizer with all controls set to their mid or flat positions. Response was virtually flat down to 20 Hz, and was down 3 dB at 24 kHz, as indicated by the display's print-out. Again, these results do not confirm the claimed response, but they are quite adequate from a practical standpoint.

Fig. 2 is a 'scope photo of the spectrum analyzer display taken after having plotted the range (boost and cut) of all the slider controls for one channel of the equalizer. To establish the precise available amount of boost and cut from one of these controls, we repeated the measurements (Fig. 3) for a single slider using our

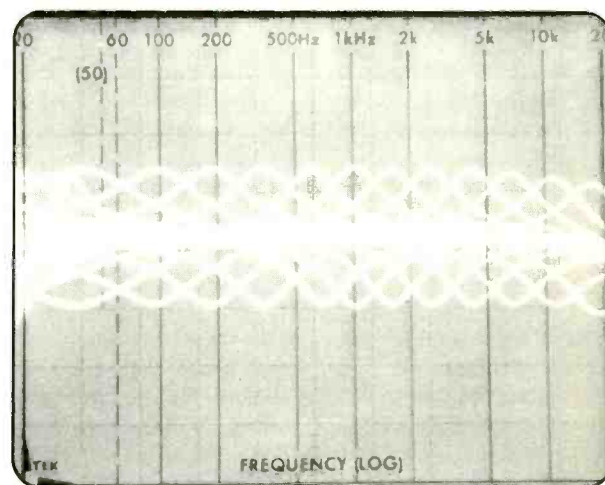


Fig. 2: Roland SEQ-315: Boost and cut range of individual slider controls.

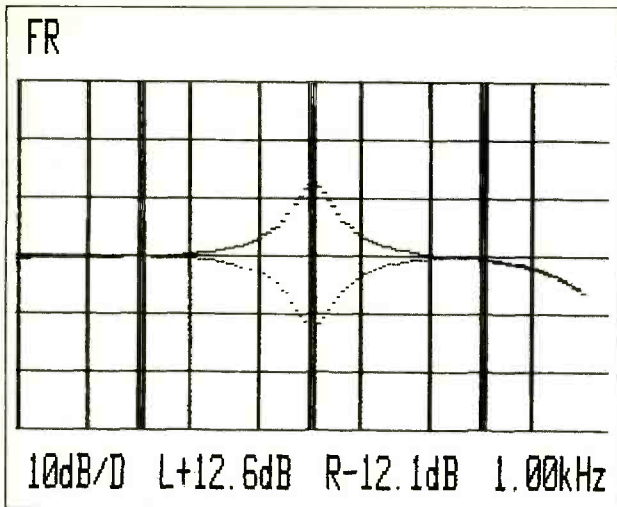


Fig. 3: Roland SEQ-315: Boost and cut range of typical (1 kHz) control on the unit.

Sound Technology 1500A tape recorder tester (which, we have been finding, lends itself to a lot more than tape recorder testing). As the printout shows, maximum boost for the 1-kHz slider control was 12.6 dB (as against the 12 dB claimed), while maximum cut measured 12.1 dB.

Finally (Fig. 4), we plotted the overall response of the equalizer with all controls set to maximum boost (upper trace), and then with all controls set to maximum cut (lower trace). Under these conditions, overall boost and cut came to approximately 15 dB in either direction, because of the additive effect of adjacent controls.

General Info: Dimensions are 19 inches wide; 3⁵/₈ inches high; 9¹/₄ inches deep. Weight is 9¹/₄ pounds. Price \$550.

Joint Comment by N.E. and L.F.: For those applications when an octave-by-octave equalizer does not provide the kind of refined EQ that is needed, but a one-third octave device is a bit much, a unit such as the Roland SEQ-315 may just be the answer. One of the really nice things it has (actually, it's a feature that belongs on any really professional equalizer, and prob-

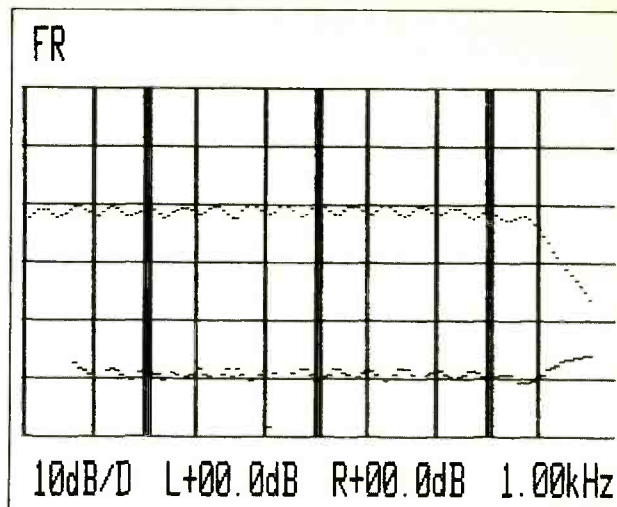


Fig. 4: Roland SEQ-315: Response of equalizer with all controls set to maximum boost (upper trace) and maximum cut (lower trace).

ably should also be included even on non-pro home units) is the dual-channel level control arrangement coupled to the overload indicator lights. Too often, users of equalizers forget that pushing up a few mid-band controls does add 10 to 12 dB to the general signal level and can easily overload the system's input stage.

Another welcome addition here are the balanced and unbalanced inputs and outputs. Ditto for the two position input level switches and output switches—these add versatility to the equalizer and increase the range of signal levels over which it can operate by a significant 20 dB. We should point out, however, that these switches function only if the unbalanced inputs are used.

The discrepancies in our lab test results vis-a-vis published specs (for high frequency distortion and frequency response) we regard as really minor. Distortion in the Roland is low, and response is linear across the audio band. All things considered—including its number of filters, very good signal-to-noise characteristics, and control features—the product seems well worth its price.

ROLAND SEQ-315 EQUALIZER: Vital Statistics

PERFORMANCE CHARACTERISTIC	MANUFACTURER'S SPEC	LAB MEASUREMENT
Frequency centers	$\frac{2}{3}$ octave ISO	Confirmed
Frequency response (controls flat)	5 Hz to 33 kHz, -1.5 dB	20 Hz to 24 kHz, -3 dB
Total harmonic distortion	0.03%, 20 Hz to 20 kHz	
1 kHz		0.0075%
20 kHz		0.008%
20 Hz		0.3%
IM distortion	NA	0.012%
S/N ratio ("A" wtd)	80 dB	84 dB
Input level, balanced; unbalanced	+ 24 dBm max; + 20 dBm max	Confirmed
Output level, balanced; unbalanced	+ 24 dBm max; + 20 dBm max	Confirmed
Level switch ranges	0 dB; -20 dB	Confirmed
Power requirement	8 watts	Confirmed

CIRCLE 40 ON READER SERVICE CARD

Sunn SA21 Amplifier



General Description: The Sunn SA21 is a power amplifier for use in stereo (dual mode) or in mono (bridge mode). In stereo service, it is rated for use with 8-ohm or 4-ohm loads; in the bridge mode, any load less than 8 ohms is not recommended.

The amplifier uses balanced inputs of both the 3-pin Cannon type and quarter inch phone jacks. The inputs accept either balanced or unbalanced lines, and either input may be used to patch the input signal to a second power amp or other audio device. Outputs to speakers are quarter-inch phone jacks. In the stereo (dual) mode, signals from two output jacks per channel may be fed to two separate speaker systems. For the bridge mono mode, a separate pair of output jacks are used, and a switch at the rear is moved to "bridge" position.

The front panel contains separate slider controls for each channel's output. In the mono mode, the channel A control handles the bridged output level. Each slider is calibrated from "0," in gradations of -3 dB, down to -27 dB, with the final position being "-infinity." To the right of each slider are two LED indicators—a green LED showing power on and normal operation; red showing clipping level or incorrect loading.

Also on the panel is an output signal meter. This is a fluorescent segment indicator showing each channel's output against dB scales from -20 to +5. Below this meter is the amplifier's power off/on switch, a rocker that lights up in the "on" position. At either end of the panel are handles, and beyond them are the requisite holes for standard (EIA) 19-inch rack mounting.

The rear panel of the Sunn amplifier contains the various inputs and outputs mentioned; the "bridge/dual" switch; a simplified diagram of the signal paths from inputs to outputs; a fuse-holder; and the AC power cord which is fitted with a three-prong (grounding) plug. The amplifier is ventilated by internal fans that come on (quietly) when power is switched on. The owner's manual contains full instructions, including handy charts showing impedances for both parallel and series hookups of speaker systems, and recommended wire gauges to use for various speaker loads and lengths of wire run.

Test Results: Although a shade under spec in some of our tests, the Sunn SA21 did acquit itself very competently and impressed us as being a well-designed, well-constructed amplifier aptly suited for commercial and professional applications.

In the stereo mode under 8-ohm load conditions, an output of 124 watts before clipping was reached in our tests. With 4-ohm loads, the amplifier delivered about 178 watts before clipping. We arbitrarily set a THD

limit of 0.1 percent in determining these power levels, a bit more than the spec'd rating of 0.075 percent.

In the bridge mode, we reached 390 watts for a THD level of 0.1 percent into an 8-ohm load.

Fig. 1 shows a plot of power output versus harmonic distortion for a 1-kHz test signal, operating into either 8-ohm or 4-ohm loads. Fig. 2 is a plot of harmonic distortion versus frequency for a constant output of 100 watts per channel into 8-ohm loads. Normally, we would have plotted this curve at the manufacturer's rated output (140 watts per channel) but, as mentioned, the amp couldn't quite make that power output level, even at midband frequencies.

The simple manner in which the amplifier could be switched from dual-channel to bridged mode, the separate output jack options, the balanced or unbalanced input choices, and the inclusion of both LED and metering indications were all deemed useful features for this type of amplifier. Also commendable was the really quiet operation of the internal fans.

General Info: Dimensions are 19 inches wide; 5 1/4 inches high; 12 inches deep. Weight is 36 pounds. Price: \$899.

Individual Comment by L.F.: There are so many things that I liked about this amp that I find it hard to quibble over the fact that Sunn may have slightly over-rated its power capabilities. I particularly admired the simple way the SA21 can be switched from dual-

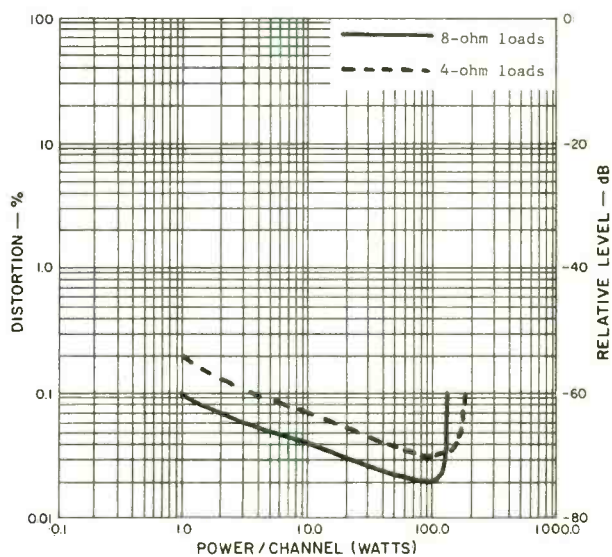


Fig. 1: Sunn SA21: Harmonic distortion versus power output, 1 kHz test signal.

channel to bridged mono mode, and the fact that separate output jacks are provided for the bridged mode. The choice of balanced or unbalanced inputs will be appreciated by users of this amplifier too. I find that the "normal" and red "limit" LED indicators offer a sense of security to the operator, insuring that sound levels are below the clipping or high distortion point. I have found that in commercial applications such as concert sound reinforcement, it often is difficult for the control engineer to pinpoint the sources of distortion; knowing that the power amp is not the culprit often cuts down the time needed to locate the offending part of the system. The fluorescent dual level indicators complement the "normal" and "limit" indicators nicely, and really let the operator know what's happening as far as power output peak levels are concerned. The cooling fans in the SA21 were among the quietest I have ever encountered in a professional amplifier.

While some readers may find it hard to justify the rather high suggested retail price of this amplifier, its rugged construction, obvious reliability, and flexible input and output facilities must be taken into account when comparing this amp with the competition.

Individual Comment by N.E.: It is easy to become preoccupied with the functionalism of this amplifier—its very versatile input and output arrangement, its excellent metering system which shows peak signal output levels on the fluorescent indicators and the additional LED readout of clipping which is governed by a special "distortion sensor." Also worth mentioning is that in addition to the externally mounted fuse, the amp has circuit breaker protection, internal fusing and an electronic power-limiting circuit that goes into action in the event of a shorted load. From these standpoints, the SA21 is obviously a pro amplifier. But in addition, it also is a quiet and very good-sounding amplifier. The signal goes through a fully complementary direct-coupled circuit, and each stage was designed for good linearity before the ap-

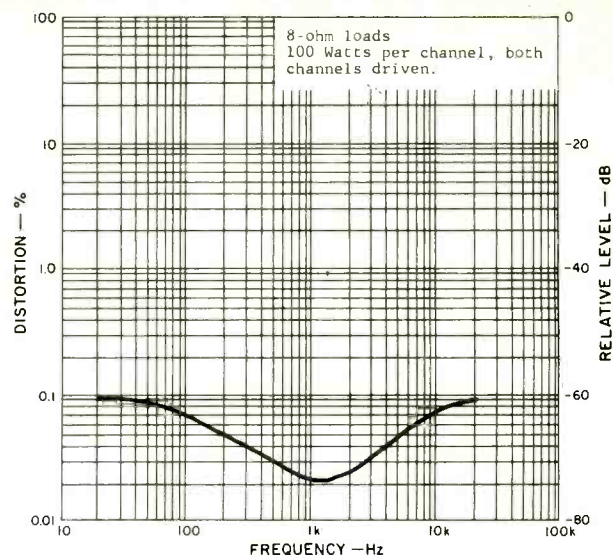


Fig. 2: Sunn SA21: Distortion versus frequency.

plication of feedback correction. This may be "theory," but the sound reproduced through the amp—with its good transient characteristics and obviously low distortion—is very real.

It might be pointed out that the fans, while quiet, are also effective. No problems were encountered during the tests, even when the amp was subjected to maximum drive conditions for extended periods.

By way of filling out the picture, the SA21 is one of a series of power amps from Sunn. Basic circuitry and protection techniques are common to all the SA amplifiers. The SA10 and SA11 are rated for half the power output of the SA20 and SA21. The SA10 and the SA20 lack the fluorescent level indicator. These two amps also have only the 1/4-inch phone jacks for unbalanced input signals, whereas the SA11 and SA21 have the phone jack and the 3-pin connector for either balanced or unbalanced input signals.

SUNN SA21 POWER AMPLIFIER: Vital Statistics

PERFORMANCE CHARACTERISTIC	MANUFACTURER'S SPEC	LAB MEASUREMENT
Continuous power for rated THD		
8 ohms, 1 kHz	140 watts	124 watts
4 ohms, 1 kHz	200 watts	178 watts
FTC rated power (20 Hz to 20 kHz)	140 watts	124 watts
THD at rated output, 1 kHz, 8/4 ohms	0.075 / 0.1%	0.1 / 0.1%
20 Hz, 8 ohms	0.075%	0.1%
20 kHz, 8 ohms	0.075%	0.1%
IM distortion, rated output, SMPTE	0.075%	0.1%
CCIF	NA	0.05%
IHF	NA	0.08%
Frequency response at 1 watt	2 Hz to 200 kHz, -3 dB	3 Hz to 300 kHz, -3 dB
S/N ratio re: 1 watt, "A" wtd, IHF	NA	83.5 dB
S/N ratio re: rated output, "A" wtd	108 dB	106 dB
Dynamic headroom, IHF	NA	0.5 dB
IHF input sensitivity	NA	0.105 volt
Input sensitivity re: rated output	1 volt	1.24 volt
Slew rate (volts/microsecond)	30	30
Power consumption, idling/maximum	NA/1200 watts	88/788 watts

CIRCLE 43 ON READER SERVICE CARD



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CIRCLE 97 ON READER SERVICE CARD

dbx 900 Series Modular Signal Processing System

By John Murphy and Jim Ford

The dbx 900 Series is a professional audio signal processing system of modular design. The system consists of a rackmount mainframe unit (5¼ inches high) containing the system power supply and separate plug-in signal processing modules. The system tested had three different signal processing modules: the model 902 De-esser, model 903 Compressor and the model 904 Noise Gate. A model 905 parametric equalizer and model 906 flanger are also available. The mainframe holds up to eight modules and therefore makes very efficient use of the rack space it occupies. The modules are interchangeable and quickly slip in and out of the mainframe.

The price of the mainframe is \$800 while the three available signal processing modules are priced at \$325 each.

General Description: The 900 Series mainframe contains the system power supply as well as all of the signal input/out connections. The signal connections are made at the rear of the mainframe by way of screw terminal strips. There are eight terminal strips (one for each module position), with connections identified as "A," "B," "C," and "D." The signal connections vary slightly from module to module, but the "A" and "B" terminals correspond to input and output connections, respectively. The "C" and "D" terminals are used variously for control signals, keying signals and/or detector signals. On the front of the mainframe to the far right is a lighted power on/off push button. The signal processing modules slide into the mainframe slots along printed circuit card edge guides and connect into the mainframe by way of card edge connectors. After the module is loaded into the mainframe it can be secured by captive thumb screws at the top and bottom. Now let's consider individually the three modules that are currently available.

The model 902 De-esser is a processor designed for a very specialized application: controlling the sibilant sounds (i.e., "S" sounds) in voice signals. In order to carry out this task the 902 functions as a special type of compressor that is particularly sensitive to the high-frequency portion of the signal being processed.

Operation of the de-esser is quite easy as there are no threshold or critical level adjustments. The amount of de-essing is simply determined by the setting of the unit's "range" control. This control is calibrated in dB from 0 dB at the counterclockwise extreme to 20 dB at



the full clockwise setting and determines the maximum gain reduction available. Proper adjustment of the range control is made easier by the 902's gain reduction display which consists of ten small LEDs arranged as a bar graph. The display is calibrated from 0 dB to 20 dB to correspond to the settings of the range control. Range control settings of about 3 to 5 dB are identified as "normal" for guidance.

There are two modes of operation for the 902 De-esser with selection made by a small push button. In the first mode the unit acts as a broadband compressor to attenuate the complete audio signal in response to a high sibilance level. When the mode button is depressed, the action of the de-esser is modified so that only a portion of the high frequency range of the audio signal is attenuated. In this mode a small LED below the mode switch is illuminated to indicate that only high frequencies are being attenuated. The high frequency crossover point is variable by way of a rotary "frequency" control from 800 Hz to 8 kHz. This control adjusts both the crossover frequency above which highs are attenuated (in the "highs only" mode) and also determines what frequencies will activate the 902 in either mode. At the very top of the module is another push button which when depressed inserts the module into the signal path and illuminates an LED indicator. When this button is not depressed, the module is hard-wire bypassed.

The second 900 series module is the model 903 compressor. This module is similar to other compressors from dbx in that it employs RMS level detection and has a soft threshold so that the compression ratio increases gradually to the selected ratio as the signal level goes above the threshold. (For a discussion of compressors and limiters as well as the dbx soft threshold characteristic, see the "Hands-On" review of



the dbx 165 Compressor/Limiter in the November 1979 issue of *MR&M*.

The 903 provides controls for the compression threshold (-40 dB to +20 dB) and the compression ratio. The ratio is variable from 1:1 (no compression) through ∞ :1 (infinite compression) to -1:1 (negative compression). Whenever the ratio knob is rotated beyond ∞ :1 an LED illuminates to indicate that the unit is in the negative compression mode. By "negative compression" it is meant that the output signal level *decreases* when the compressor's input signal level goes over the threshold. A compression ratio of -1:1 indicates that for every dB the input level increases above threshold the output level decreases by one dB. These settings are mostly of interest for special effects. Like the 902, the 903 has an LED bar graph display which indicates gain reduction (40 dB range). Also like the 902, the 903 has a push-button bypass switch at the top of the module. At the bottom of the module there is an output level control which allows for 20 dB of boost or cut. There are no attack or release rate controls; instead, the attack rate varies automatically with the program material while the release rate is fixed at 120 dB per second.

The last of the three tested modules is the model 904 Noise Gate. This unit offers an unusually high degree of control over the gate's operating parameters. Like the other units, the 904 has an LED bar graph which indicates the amount of gain reduction taking place (up to 60 dB in this case). The 904 also has a bypass switch like the other two modules. (Readers unfamiliar with the operation of noise gates may benefit from the discussion of noise gates in the "Hands-On Report" in the July 1980 issue of *MR&M*.)

The gating threshold of the 904 Noise Gate is adjustable over the range from -40 dBV to +10 dBV.

When the input signal level is above the selected threshold level, the noise gate simply passes the signal without any level change. As the signal level falls below the threshold, the gate begins "downward expansion" according to the ratio selected at the "ratio" control. The expansion ratio is adjustable over the range 1.5 to 5. Like the 903 compressor, the 904 has a soft threshold characteristic which dbx calls "over easy." Because of this characteristic, the expansion ratio increases smoothly to the selected ratio as the signal level falls rather than changing abruptly precisely as the signal drops below the threshold. In addition to the threshold and ratio controls, there is an "attenuation limit" control which allows the user to set a limit for the maximum amount the 904 will attenuate the signal. The attenuation limit can be set anywhere from 0 dB to 60 dB.

At the bottom of the 904 module are a pair of concentric controls for setting the attack and release times of the gate. The extreme settings of these controls are identified only as "fast" and "slow." However, dbx states that the attack rate is variable from 2.5 dB/ms to 500 dB/ms; similarly, the release rate can be varied from 2.5 dB/ms to 22 dB/ms.

In addition to the normal mode of operation, the 904 can be operated as a "keyed" gate by supplying a keying signal at the "C" terminals of the appropriate mainframe position and depressing the push button labeled "key." A small red LED then illuminates to indicate that the gate is in the keyed mode.

There is also one other rather unique mode of operation for this noise gate. Depressing the push button labeled "Gate" places the unit in the gate mode of operation and illuminates the gate LED. This LED glows red until the signal level goes above the threshold at which time the gate LED changes color to green. Once the signal crosses the threshold, the gate "opens" and remains open (i.e., signal not attenuated) until the gate mode is either reset or deactivated. This allows the operator to gate off an audio channel in such a way that the channel will be switched "on" cleanly as soon as program appears and then remain on with no other gating action.

Field Test: We evaluated the control action and sonic characteristics of the signal processing modules by using them to process selected tracks from one of our master multi-track tapes.

The 902 De-esser was used on two different female voice tracks with excellent results in both cases. The 902 is quite easy to operate and we found that it only took a moment to find a setting of the range control that would contain the "S" sounds without otherwise affecting the character of the voice. After experimenting with the action of the frequency control, we were happy to leave it at its mid setting of 2.5 kHz. We eventually came to prefer the "high frequency only" mode of operation because it seemed to allow the most de-essing with a minimum of other audible effects. It was found that varying the input signal level over a substantial range had no noticeable effect on the amount of de-essing action.

The model 903 Compressor was used on a number of different tracks and we were very pleased with both its action and the ease with which it can be set up. The action of the compressor reminded us strongly of the dbx 165 for its inaudibility. You can hardly tell it's there! The combination of simple controls (ratio and threshold) and the gain reduction display make the 903 a very easy compressor/limiter to use. The negative compression ratio settings provide an opportunity for creative experimentation with some unusual effects. The 903 is a highly functional compressor indeed!

Noise gates are a great idea, but in practice it seems that they are frequently unusable because of audible pumping or chopping of the program material. Often these ill effects result because the gate is providing excessive gain reduction with inadequate control. In our opinion dbx has eliminated most of these traditional problems with noise gates in the design of the model 904 Noise Gate. This is the only noise gate we've seen that can be used to improve just about any audio track by at least a few dB. On most material considerably more gain reduction can be used with no ill effects.

We tried the 904 on a snare drum track which had a fair amount of tom-tom and cymbal leakage on it. By carefully setting up the control parameters, we were able to greatly reduce the level of the leakage without otherwise affecting the sound of the snare "pop." Similarly, we used the noise gate to clean up a background vocal track with very good results. We should mention that the 904 requires some care in setting up the operating parameters for the best results. But, with a little care, truly excellent results can be obtained.

Lab Test: The specific results of our lab test are provided in the "Lab Test Summary" below. Where the characteristics of the three different modules were similar, we have provided "typical" measurements.

With maximum input or output levels of +24 dBV the 900 series should be compatible with just about any studio or sound reinforcement system. At -80 dBV the system's noise level seems adequately low. The total harmonic distortion was measured with typical control settings and was quite low, especially for these types of signal processors. Frequency

response for the modules was ruler flat across the audio spectrum and extended at least two octaves beyond either end of the audio spectrum before falling 3 dB.

The slewing performance of the 900 Series modules was excellent with the slew rate limit observed as 13 volts per microsecond. Considering that the peak output voltage of the modules is about 20 V, the system has a normalized slew rate (slew rate/peak output voltage) of 0.65 volts per microsecond per volt. This is excellent slewing performance, and with the slew rate ratio above the minimum recommended value of 0.5, the 900 Series should be free from any slewing induced distortion.

Conclusion: The 900 Series Modular Signal Processing System from dbx was evaluated both in the control room and in the lab and found to be an excellent performer in both environments. Each module performed its processing function effectively while requiring relatively little setup time. The noise gate especially impressed us as being a uniquely useful audio tool. We highly recommend the dbx 900 Series and look forward to the introduction of new signal processing modules in the future.

LAB TEST SUMMARY

(Note: 0 dBV is referenced to 0.775 Vrms)

Maximum Input or Output Level:

Typically: +24.0 dBV

Noise Level (unweighted, 20 kHz filter)

Typically: -80 dBV

Total Harmonic Distortion

(at +10 dBV with typical control settings)

	902	903	904
20 kHz	0.31%	0.047%	0.051%
10 kHz	0.18%	0.029%	0.022%
1 kHz	0.014%	0.027%	0.017%
100 Hz	0.020%	0.15%	0.017%

Frequency Response:

Typically ± 1 dB from 20 to 20 kHz

Bandwidth (-3 dB points)

902 4.5 Hz to 290 kHz

903 3 Hz to 110 kHz

904 4 Hz to 135 kHz

Typical Slew Rate Limit: 13 volts per microsecond

Typical Normalized Slew Rate:

0.65 volts per microsecond per volt

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POPULAR

THE CLASH: *Sandinista*. [The Clash, producers; recorded and mixed by Bill Price; version mix by Mikey Dread; Jerry Green, J.P. Nickolson, Maxie McKenzie, Bill Price, engineers; recorded at Wessex Studios, London, England; Electric Lady Studios, Channel One and The Power Station, New York, N.Y.] Epic E3X 370 37.

Performance: **See America first with the Clash**

Recording: **Busy as a beaver**

Six recorded sides of anyone's music is a bit much for a listener to digest, even if it's by one's favorite band. The three-record Clash set, *Sandinista* (named after a left-wing revolutionary group which took control in Nicaragua) is *too* much to digest, and even though it is by this writer's favorite band, it is not easy for him to get through it in one sitting.

Sandinista is a potpourri of musical styles, ranging from rockabilly to soul to jazz to country to reggae (lots and lots of that), and even some rock and roll. There is not, however, much of the latter, and those who are still attached to the Clash's 1977 debut or even its second record, *Give 'Em Enough Rope*, might not be fond of this effort. Those who first latched onto the Clash with *London Calling* or the *Black Market Clash* EP will be more prepared for this, but even then *Sandinista* is likely to surprise, and, perhaps, confuse or alienate both Clash fans and new-

comers. It's great that the Clash is growing, but it must now decide which direction(s) to go in.

As a double record *Sandinista* would not have seemed so overloaded. There is certainly enough excellent Clash material here to have filled one record, and enough decent stuff to stock a second. But when the group is reduced to having its temporary keyboardist's kids sing old Clash numbers, to using extended reggae dub versions which are possibly interesting only to the heavily stoned, and to including an instrumental called "Mensforth Hill," which is nothing more than the band's attempt at "Revolution #9" 1981 style, it's time to re-examine the Clash's validity.



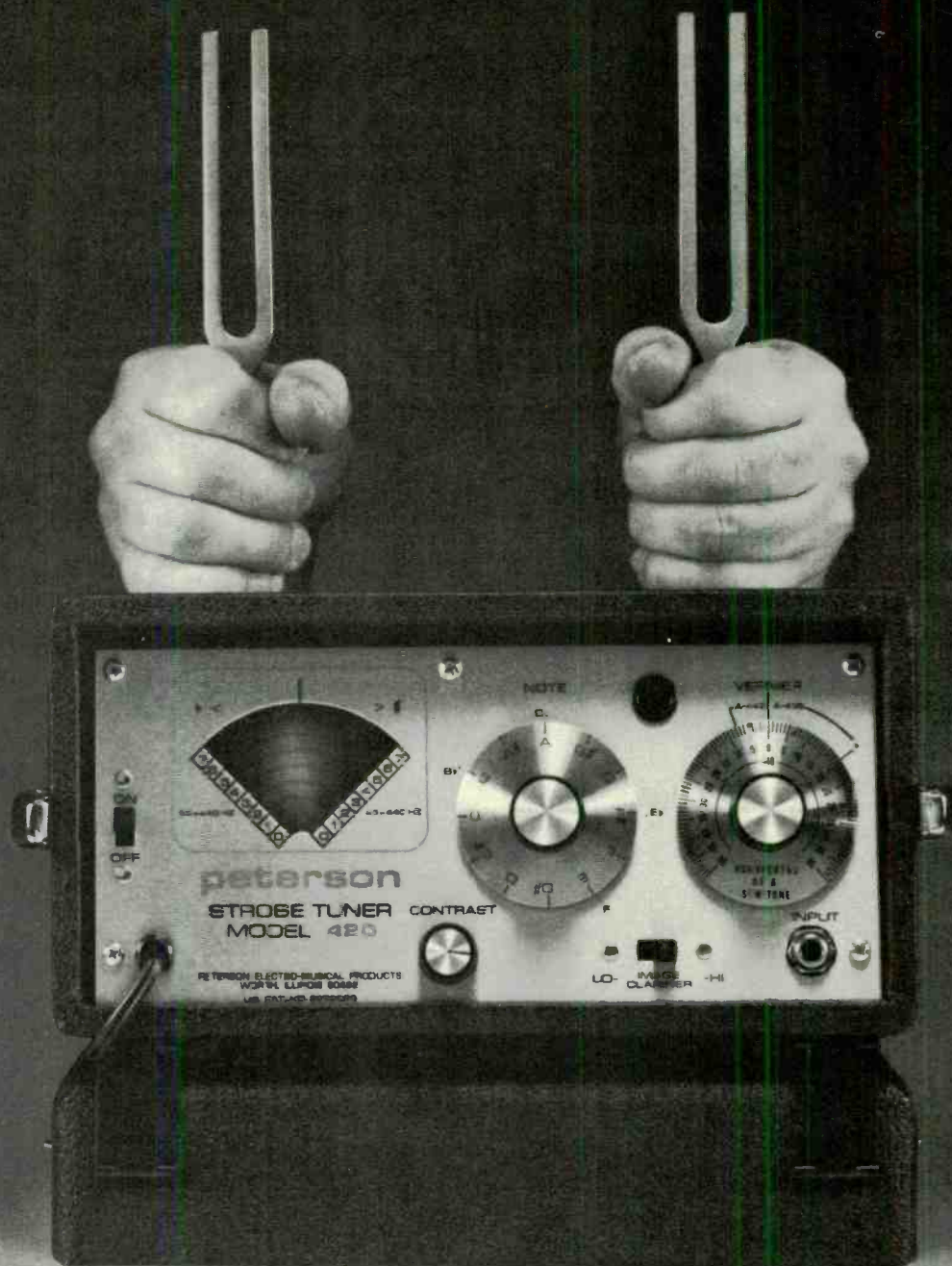
THE CLASH: Producer wanted.

If one wants to hear the Clash performing punk, that's what its first album was for and it stands up today as the most aggressive music of the punk era. History has proven, however, that the most artistically successful bands are those which progress, which refine as they grow, and the Clash was not about to get bogged down in a musical period that served its purpose nicely a few years ago. The problem with the Clash's attempt at expansion here is that it has taken on too much at once, so even the great songs—and there are a bunch—will get lost in the shuffle. The Clash must learn to edit its records.

Another reason that the Clash's epic is hard to take in one dose is the aforementioned hodgepodge of styles. Like some kind of weird, All-American juke box, *Sandinista* jumps from contemporary funk to the Supremes ("Hitsville U.K." uses the bass riff of "You Can't Hurry Love" as its takeoff point before guitarist Mick Jones and guest girlfriend Ellen Foley sing the song) to reggae to rockabilly to an orchestrated piece on side one alone. On side two, there's a Mose Allison jazz piece covered, a waltz and more reggae, with one rock tune thrown in for good measure.

This procedure is repeated throughout the remaining four sides, wandering through calypso ("Let's Go Crazy") and a gospel put-on ("The Sound of the Sinners") on side three, until sides five and six prove to be almost totally composed of filler material that no one would have missed. Not only that, but much of the recording has too much going on within the songs—percussion, extra musicians,

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etc.—until it becomes too cluttered too often.

The album's highs are as high as anything the Clash has yet recorded. "Ivan Meets G.I. Joe," "One More Time," "Up In Heaven" (a potential single by the sound of it), "Police On My Back," "The Call Up" (watch for it to become a dance rock staple this year) and a handful of other tracks stand out among the muck. But even in the name of progress, "Something About England" (orchestral progressive rock worthy of Yes or worse), and much of the pseudo-psychedelic mish-mash that turns up on the last two sides, is ridiculous coming from this group. It's one thing to forge ahead, another to get lost in one's self-importance.

Probably, a producer's perspective would have helped. The Clash took on the production by itself this time around, and apparently got so accustomed to hearing praises about how it could do no wrong that it figured it could get away with anything (and everything). Guitarist/vocalist Joe Strummer's intentions are well-taken, yet his and the band's execution is flawed. It's nice that the group learned how to perform all sorts of neat tricks in the studio—how to use reverb on its reggae, how to overdub little noises here and there—but the music itself suffers in the process. J.T.

RICK DERRINGER: *Face to Face*. [Rick Derringer, producer; Dave Still, engineer; Robert L. Demuth, Steve Canavan, and Gregory Man, assistant engineers; recorded at the Schoolhouse, Connecticut, at Media Sound, New York, N.Y. and at Uncle Sam's, Hull, Massachusetts.] Blue Sky JZ 36551.

Performance: **Multifaceted**
Recording: **Sharp**

This album, though not an abrupt change for Derringer, shows a more serious side of him along with the hard-rocking and occasionally humorous sound that most people generally associate with Derringer.

An illustration of this is the variety that Derringer displays on this album. For example, he has included (surprise!) a Neil Young tune on this album. No, this really isn't as strange as it might seem, since it's the Neil Young/Jeff Blackburn composition

"My My Hey Hey," the classic anthem from Young's rock'n' roll tribute *Rust Never Sleeps*. In keeping with the spirit of the tune, Derringer recorded it "live," complete with quixotic craziness. The cut ends poorly, with a discomfiting minute and a half fade-out.

Such minor flaws do not seriously mar this album to any great extent. Most of the album has an excellence that is subtle, not visceral, and contains little of the stuff of which platinum hits are made, yet it's still strongly appealing. Also noteworthy is the fact that this album has an awful lot of piano, much more than you would expect on an album made by a master guitarist.

Despite being well-written and well-produced (much of the album was recorded at the Schoolhouse, a private studio located "somewhere in Connecticut"), this album is definitely not for every Derringer fan. It may even be more appealing to those who don't particularly care for much of his previous work. Derringer has managed to incorporate a lot of diversity into one well-crafted album. It's a long way from the days of "Hang On Sloopy," but it proves that Derringer is doing a lot more than just hanging on.

M.D.

TRACY NELSON: *Come See About Me*. [Travis Rivers, producer; Jack Grochmal, Marcus Mitchell, Marshall Morgan, Richard Adler and Lee Hazen, engineers; recorded at Lee Hazen's Studio by the Pond, Hendersonville, Tenn., and The Soundshop, Inc., Nashville, Tenn.] Flying Fish Records FF209.

Performance: **Earthy**
Recording: **Very good**

If you want your blues dished up thick, go no further than Tracy Nelson's latest album. The premiere white earth mother has returned with 10 rhythm and blues tracks that rarely, if ever, let up. To both familiar and not-so-familiar material, she applies her distinctive alto voice, full and rich and expressive.

Some old musical friends are here: Isaac Hayes' "Hold On, I'm Coming," Allen Toussaint's "Tears," and the Holland-Dozier-Holland title track. The sound is crisp throughout, with the Nelson vocal instrument right out front and never lost behind the in-

strumental density of the arrangements. Particularly good is a duet shared with Andrew McMahon, the keyboard player in the Tracy Nelson Band.

The overall feel is that of a relaxed, sort of down-home, laid-back, little-effort session that could have been recorded either on the back porch during a hot summer day, or after hours in a small barroom. Some tracks are brighter, to be sure, almost splashy, but not in the pop format. Instead, they are bright as the old Stax-Volt R&B hits were bright. You'll find several tracks with nice gospel touches, particularly in the backup choruses. Only one track falls short, a ballad entitled "You're My World." It opens nicely but soon unfolds into a chorus-backed anthem that wastes Nelson's considerable vocal talent in a rather mawkish arrangement.

With the music delivered in a straightforward, no-frills style, the listener also can appreciate much of the backup instrumental work, thanks to the clean production hand of Travis Rivers. Barry Chance has some nice guitar lines, particularly in his fluid treatment of "Walk Away," as does Larry Chaney. McMahon's keyboards add considerable punch and instrumental underpinning to the whole enterprise as well.

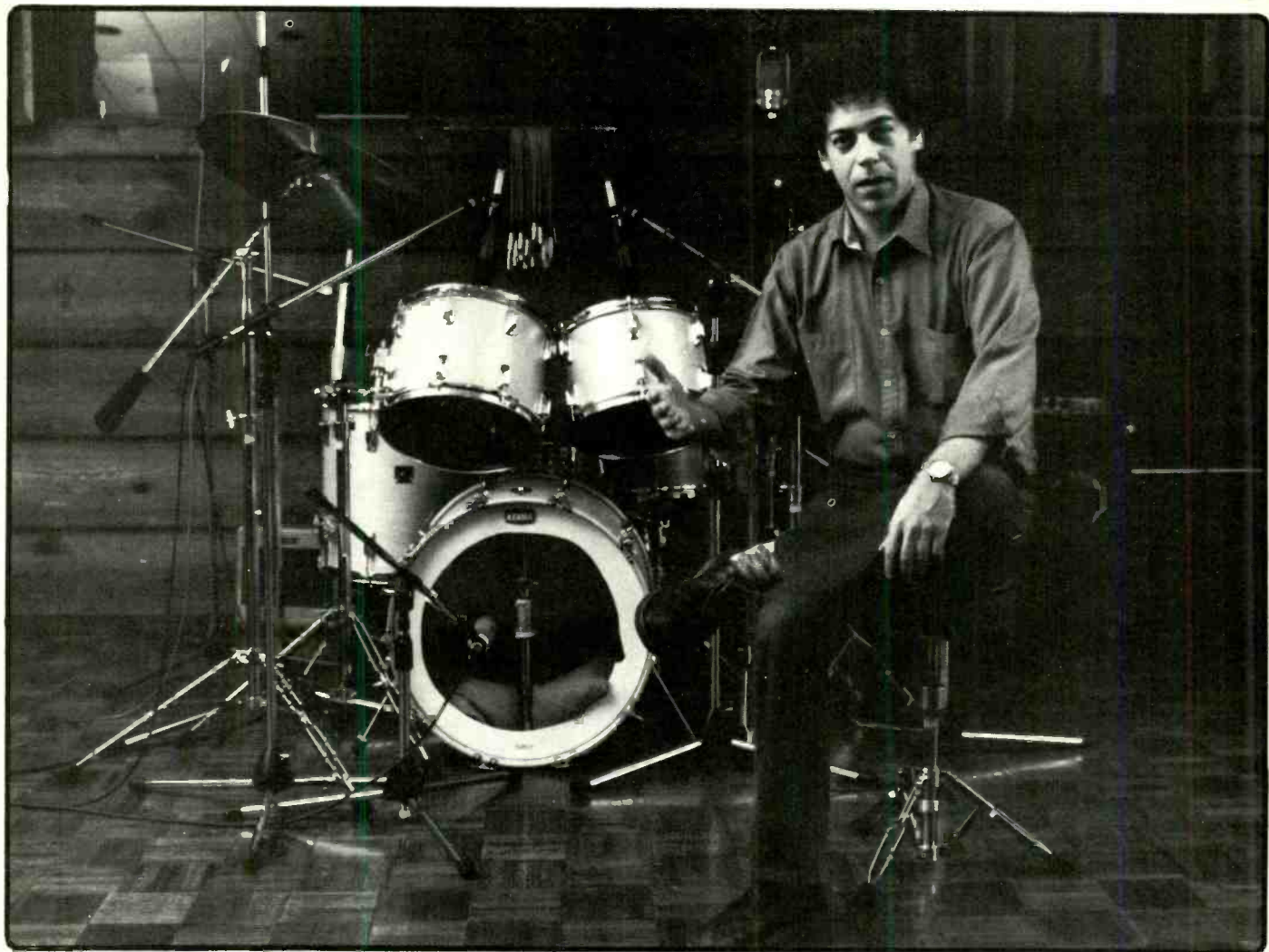
And the players seem to have their share of the fun, too, as exemplified by nice interplay among those in the rhythm section and the two horn men, Wayne Jackson on brass and Andrew Love on reeds. The title track and "River's Invitation" both give the players chances to trade some hot licks.

Nelson, meanwhile, seems so relaxed, but not insincere, on such tracks as "Hold On, I'm Coming." There is none of the frantic tension often associated with the song in her approach (she probably wouldn't get along too well with the Blues Brothers). Instead, we have a strong voice but an un-strident, non-raucous blues style.

Her voice never flags, and the result is a remarkable instrument, so deep and thick as to resemble partly congealed dark honey. (If Colleen Dewhurst were a blues singer, her voice would be like Tracy Nelson's.) Nelson can get raspy without getting hoarse or unmelodic, and the recording is such that even at its raspiest the voice can be heard. Although she tends to thin

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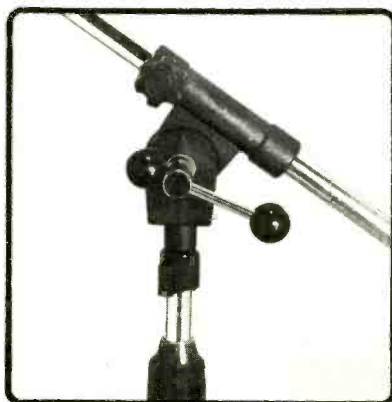


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out in upper registers, she doesn't reach too high too often. All in all, this is a great sampler of the blues, done up by one of the best blues interpreters on record. S.R.

BARRY GOUDREAU: *Barry Goudreau*.

[John Boylan, Barry Goudreau, producers; Paul Grupp, engineer; Ed Cherney, Russ Martin, Phil Jamtass, assistant engineers; recorded at Westlake Audio and Record Plant, Los Angeles, Ca. and Woodland Sound Studios, Nashville, Tenn.] Epic NJR 36542.

Performance: **Impressive**

Recording: **Honest and unadorned**

Is it more than a feeling or does this album really resemble those produced by a group named after a famous, large city in Massachusetts? Don't look back now, because it seems that this Goudreau is the Barry Goudreau of Boston fame. Furthermore, Goudreau has enlisted the aid of two other members of Tom Scholz's five-member brainchild, Fran Delp with his unmistakable vocals and Sib Hashian, heavy metal drummer extraordinaire. If you consider vocals to be a large part of what defines a group, then this is easily one-half of Boston. Add Goudreau's rhythm and occasionally fiery lead guitar, and this looks even more like a Boston reincarnation.

What was the impetus behind this album? Apparently the three Bostonites were fed up with the incredible amount of time Scholz spent producing an album. After all, it is true that Scholz, master engineer and producer that he is, spent almost two years making Boston's second album, *Don't Look Back*. But, you may say, what's a couple of years, when they're spent in the quest of perfection?

So what about this album?

Quite simply, it's good. The three, along with a fourth person, vocalist Fran Cosmo, have come up with a good album: It's clean, it's dynamic, it's driving, and it really rocks and rolls. So maybe the production is a little lean, particularly when compared to Boston's lushly textured sounds.

An interesting note: *Barry Goudreau* doesn't seem to be generating anywhere near the amount of interest that the two previous Boston albums have. This may go a long way toward proving the point

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BARRY GOUDREAU: Reincarnate?

that the bar band sound just doesn't cut it popularity-wise, no matter how good the bar band is, and in spite of strong, attractive material, whereas the thickly layered sound has a much broader appeal. Perhaps this is a point that all you practicing and potential producers should take note of. But these guys may not have to get used to bad news, since in another couple of years, Boston III may be out. M.D.

THE JAM: *Sound Affects*. [Vic Coppersmith-Heaven, The Jam, producers; Alan Douglas and George Chambers, engineers; recording studios not listed.] Polydor PD-1-6315.

Performance: **A new "Start" for the Jam**
 Recording: **Post-punk perfection**



THE JAM: Getting better with each successive release.

With each album, the Jam keep moving ahead, not content to stay stuck to the past for the sake of its fans, record company or bankbooks. Thankfully, the Jam keep getting better with each successive release. A marked growth is noticeable since the release of the Jam's previous album, *Setting Sons*. This album, the Jam's fifth, is a little lighter in its overall assault, but no less poignant.

The Jam's writer/vocalist/guitarist Paul Weller and producer Vic Coppersmith-Heaven allow for more spaces on this record. There's ample breathing room, and while the music rarely drags, it is not quite as hard and fast as previous Jam music. Weller's trademark sweeping guitar chords still crop up intermittently, and his sense of dynamics is intact, but there are more stretches of sound where the interplay between the guitar, Bruce Foxton's bass and Rick Buckler's drums takes on a singular direction. Those random bursts of power which marked earlier Jam music have given way to tempered, definite goals within each song.

Sound Affects begins with the single, "Start," Weller's unabashed musical tribute to the Beatles' "Taxman." Like that Beatles song, the rhythm of "Start" is tight and choppy, recalling the funky beat of mid-'60s soul from Memphis. Lyrically, "Start," one of the best songs ever recorded by the Jam, is a simple testimonial to a brief communication between two persons who don't know each other: "It doesn't matter if we never meet again/ What we have said will always remain."

Throughout the album, there is a clarity of sound which enables the lyrics to be heard clearly. Hopefully this will bring Jam a larger following in the U.S., since it is certainly an underrated outfit here, while in Britain its albums go straight to the top. *Sound Affects* is as certifiably British as past Jam records, but it is not inaccessible in any way. The band is developing into a trio of top-notch musicians, and has not stuck to its Mod or punk roots, knowing that time moves on and people/musicians/music/society changes. Five albums down the road, the Jam has yet to compromise or stunt its growth. *Sound Affects* once again confirms the Jam's status among the vital rock and roll bands of the day. J.T.

THE POLICE: *Zenyatta Mondatta*. [The Police and Nigel Gray, producers; Nigel Gray, engineer; recorded at Wisselord Studios, Hilversum, Netherlands.] A&M SP-4831.

Performance: **The Police haven't copped out**
 Recording: **Simple and vibrant**

The Police are to be commended for continuing to evolve, to take more daring chances, in spite of their growing popularity. While the temptation to pander to the masses might have engulfed another band, the Police moved in the opposite direction by recording a third album that in some places is almost completely inaccessible commercially. Not surprisingly, it's also the British/American trio's most interesting album in many ways.

The reggae influence that pervaded the two preceding Police albums is still in evidence here, but it's not the whitened version of reggae that seems to be the new toy so many other groups have taken to heart. The Police's use of reggae rudiments has evolved in the same direction of that state-of-the-art reggae by the Jamaican masters. The technique of dub, wherein the rhythm track is remixed to jump up from the record with the other instruments and voices woven in and out of that mix at random, is common on this album, and the Police show an intelligent grasp of the form.

In addition, the Police have incorporated other ethnic rhythms, some undoubtedly learned while the group

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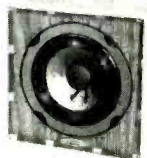
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toured such parts of the world as Japan and India not long ago. African rhythms surface on a few numbers, adapted to fit their own musical style. Sting's vocal phrasing remains lily-white and he's still a soprano, but it's easily fitted here to the soulful beat.

On the same note, several of the lyrics deal with observations made along the global road. "Bombs Away" mentions a military leader in Bombay whose "shirts are clean but his country stinks," while "Driven To Tears" talks about a land where there are "too many cameras but not enough food." Without lowering themselves to sloganeering and idealistic propagandizing, the Police manage to make a statement while never losing sight of the fact that their prime purpose is to make rhythmic, innovative rock music.

And that they do, moreso than on last year's *Reggatta de Blanc*, which seemed to find the group unsure whether it wanted to stay attached to the new wave/reggae formula it started with, or turn into the '80s' answer to Yes. Thankfully, it chose the path of experimentation, while maintaining the likeable qualities of melody and fine musicianship that made the group so instantly popular.

The Police are more playful on this LP than on the other two. And they've turned into a rather quick-minded bunch of musicians, able to feed off each other spontaneously while staying rooted as well. Drummer Stewart Copeland is mixed to the top throughout the entire production, and Sting's bass drives the tunes, though often quite subtly. Meanwhile, guitarist Andy Summers tries all sorts of tricks, including a very fragmented, contorted sound on "Shadows In The Rain," mixed deeply below the heavy bass. In the two instrumentals on the second side, he uses such effects as phasing and stinging single notes to noteworthy effect. The Police have managed to record an album that allows for unconventional production, creative and unusual use of musicianship, intelligent lyrical lines, good fun and light-headed danceability all at the same time.

J.T.

JOHN COUGAR: *Nothin' Matters and What If It Did.* [Steve Cropper, producer; Bruce Robb, co-producer; Bruce Robb, engineer; "Larold," assistant engineer; recorded at Cherokee Studios, L.A., Ca.] Riva RVL 7403.

Performance: **Wimpy**
 Recording: **Obtuse**

What happened? No, really, what happened? What has become of the ebullient John Cougar that created a powerhouse tune like "I Need a Lover Who Won't Drive Me Crazy"? The title of this album gives you the ideological message neatly.

Side one gets off to a bad start with the pusillanimous guitar and piano intro of "Hot Night in a Cold Town." This song could be improved greatly through some minor production changes. As it is, the cut has a rather disembodied quality, with badly used echo and reverb, too much EQ on percussion which gives it a harsh artificiality and a mushy guitar sound.

The following cut, "Ain't Even Done with the Night," avoids the production pitfalls of its predecessor but to no avail, since it's just plain mediocre. "Don't Misunderstand Me" repeats this pattern. The obligatory pop cut, "This Time," is well-done, and is getting airplay. Despite its being well-produced and well-written, it's just not quite the kind of song that makes you jump out of your seat. "Make Me Feel" will, though, if only to shut it off, since it's a feeble attempt at a tender ballad but Cougar's vocals are about as tender as Brillo.

Side two is—surprise!—just as bad. Strangely enough, there are two very interesting cuts here, neither of which is over 30 seconds long. What's strange about them is that while they are sort of a leader for other songs, they are not segues, but brief entities unto themselves. "Cry Baby," a dirty little ditty, isn't even listed on the cover. The other shorty, "Peppermint Special," is so hyper-charged that it's obvious that Cougar burned out on this one, to the detriment of the rest of the album. Now a real surprise: the last cut, "Cheap Shot," is downright funny. As social criticism it may be a bit lackluster, but it saves Cougar from being a complete and total wash-out. Aside from these three exceptions, though, it seems that Cougar, not unlike the month of March, had started out like a cougar and now he's gone out like a goat.

M.D.

NEIL YOUNG: *Hawks and Doves.* [David Briggs, Tim Mulligan, Neil Young, producers; "Little Wing" recorded at the Village Recorder, Los Angeles; "The Old Homestead"

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NEIL YOUNG: Taking risks but maintaining integrity at every turn.

recorded at Quadrophonic Sound Studio, Nashville and Broken Arrow Studio, Redwood City, Ca., with Elliot Mazer; "Lost in Space" recorded at Triiad Studios, Fort Lauderdale, FL, with Michael Laskow and Paul Kaminsky; "Captain Kennedy" recorded at Indigo Ranch Studios, Malibu, Ca., with Richard Kaplan; Side two recorded at Gold Star Recording Studios, Hollywood, Ca., with Jerry Napier.] Warner Bros. HS 2297.

Performance: **Poignant but laid-back**
Neil

Recording: **Unelaborate—just lays it**
as it plays

Neil Young is possibly the most respectable mainstream rocker in the business for virtue of the fact that he never rests on his laurels. Young has never repeated the same album twice, while some of his former musical cohorts have long ago become predictable and passe. This time, Young retains a low-key atmosphere. This record is mostly acoustic and country Young, featuring none of the electric raunch rock that dominated his

previous two albums, the *Rust Never Sleeps* and *Live Rust* packages.

In fact, the two sides of *Hawks and Doves* are so totally different that they can almost qualify as two separate albums. And, for whatever reason, each cut on side one was recorded at different studios, while the entire second side was recorded at yet another studio. Side one is mostly Young on his acoustic guitar, playing ballads, while side two features a more upbeat, happier, hillbilly sound. The entire production is so simple—just putting everything up front and leaving it there, with few surprises (other than a few stop-and-go exercises in pacing)—that it's a wonder other seasoned performers don't take the hint and cut out the fluff.

The Neil Young on side one is the poetic Young, the teller of stories, the writer of obscure lyrics with moralistic sub-themes. Young is both the narrator and the experiencer in various numbers, and in one, "The Old Homestead," he assigns different roles (each designated on the lyric sheet) to a naked rider, the rider's shadow, and three birds that find their way into the

song. Later, Young becomes the son of one "Captain Kennedy" (not related to any of the political Kennedys as far as this listener can tell). And in "Marine Munchkin," Young injects some laughs into an otherwise somber side by allowing his engineer to turn his vocal into that of a munchkin.

Turning over the record, one finds a different story. A fiddle player, Rufus Thibodeaux, provides the dominant instrumental coloring, and the music is lighter on the whole. Young does not sing in the abstract so much here, but more about contemporary affairs and human relationships as we know them. "Stayin' Power" is the tribute to a solid love relationship, while "Coastline" is an outright, though a bit strange, love song.

The last three songs on the album are the most curious, however. For one, all three share a trademark fiddle-tune riff that is almost identical. And lyrically, Young becomes the tongue-in-cheek neo-patriot. "Union Man" finds the singer stating his pride to be a union member, while "Comin' Apart At Every Nail" is more cynical, while the title track is almost a mindless defense of this country.

Young comes across on this album as a singer/songwriter who understands that he can get away with almost anything, and so he will certainly try to. But what never ceases to amaze me about Young is how he manages to succeed with his risks, and maintain integrity at every turn. J.T.

JAZZ

KEITH JARRETT: *The Celestial Hawk*. Keith Jarrett, piano. The Syracuse Symphony Orchestra, Christopher Keene, cond. [Manfred Eicher and Keith Jarrett, producers; Stan Tonkel, recording engineer; Martin Wieland, mixing engineer; recorded March 1980 at Carnegie Hall, New York, N.Y.] ECM 1-1175.

Performance: **Full of metaphysical**
gusto

Recording: **State-of-the-art quality**

Let the buyer beware. This is *not* jazz. This recording bears little resemblance to numerous other Jarrett

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recordings in the ECM and Impulse catalogs. I can't easily find a comfortable category for this music. For want of a better tag, call it a symphonic tone poem for orchestra, percussion and piano. If you are a loyal disciple of Keith Jarrett, you just *might* want to spend time with this puzzling work.

Jarrett has experimented in the past with quasi-classical modalities. *Arbour Zena*, music for piano, sax, and string orchestra was released in 1976 and received a fair share of critical acclaim. The string orchestra provided an eerie and haunting counterpoint to Jarrett's mystical piano melodies. A two-record set entitled *In the Light* featured Jarrett's compositions for both string orchestra and string quartet. The record was a mixed bag.

I have the greatest respect for Jarrett's courage in crisscrossing and blurring the boundaries between classical music and jazz. The question created by the release of *The Celestial Hawk* is whether his musical ambition has overwhelmed his technical skills. Frankly, I'm quite grateful that Charles Mingus never wrote for the New York Philharmonic and that Miles Davis never wrote a tone poem for classical horns. What might work melodically and rhythmically for jazz musicians might not be capable of being effectively translated into symphony orchestra language.

The Celestial Hawk (no liner notes to explicate the title are included) is pure pastiche. Listen carefully to the work's three movements and you are bound to hear musical quotations from Copland, Harris, Thompson, Bartok, Hovhannes, Villa-Lobos and moments of exhilarating piano improvisation that are unmistakably Jarrett. Finally, I am left with the impression of moments of originality sandwiched between large sections of ideas borrowed from modern romantic composers.

Which isn't to say that the recording isn't pleasant listening. It most certainly is—if you can drop any expectations that might be caused by seeing Keith Jarrett's name on the record jacket. The Syracuse Symphony under Christopher Keene's direction performs Jarrett's mini-symphony with considerable gusto and Jarrett's piano playing is technically dazzling and flawless.

The production quality is sumptuous and definitely "state of the art." The strings and percussion are mixed

so that they resonate with extreme crispness and clarity. A remarkable sonic balance is achieved so that Jarrett's piano is never overwhelmed by the full orchestral sound. *The Celestial Hawk* represents a real technical advance for Manfred Eicher's ECM label. Jarrett might not be ready yet to make the crossover from jazz to classical modes, but Eicher has proven himself a producer with the ability to make the crossover with style. He has mastered the acoustics of Carnegie Hall with as much intelligence as he has demonstrated at his home studio in Norway.

As for Jarrett, I hope that his next recording reflects his genius with jazz piano in a mode colored—but not overwhelmed—by classical romanticism.

N.W.

EDDIE DANIELS: *Morning Thunder*. [Ettore Stratta, producer; Eddie Daniels and Bob Rose, associate producers; Michael DeLugg and Jack Malken, recording engineers; Don Hahn, mixing engineer; recorded at MediaSound Studios and Secret Sound Studios, New York, N.Y.] Columbia NJC 36290.

Performance: **Smooth, with some sweet, fresh air**

Recording: **Excellent**

Let us now praise a neglected and overlooked musical instrument in the world of jazz, the clarinet. We all know about Benny Goodman, Artie Shaw, Woody Herman, Jimmy Hamilton and Buddy DeFranco, but what about today, and tomorrow? Well, Eddie Daniels, a 39-year old alumnus of the Thad Jones-Mel Lewis Band, has returned to the instrument he loves best, and we are much the better for it.

Morning Thunder is a stunning album: the recording is top-rate, the playing inspired, the material generally excellent. Some large dollops of jazz improvisation are served up, piping hot, but basic melody is never sacrificed.

Much of this is because of the instrument. The clarinet—which never quite survived the surge of popularity of the saxophone in bebop and later forms of jazz—can produce some gorgeous sounds, and in this setting, against a lush but not-too-obtrusive cushion of strings, Daniels shows that he clearly is a master. The upper end of his scale

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is clean, never shrill; his lower register is warm, never thick.

As is the case with much of today's sophisticated instrumental jazz, the dominant tempo is Latin, and the arrangements feature a wide variety of percussion and rhythmic embellishment. Such compositions can be the downfall of a less-than-accomplished recording engineer, so it's to the credit of those who put together this album that the various instruments are given a chance to breathe and a chance to be heard after being committed to vinyl. The instrumental voices are modulated nicely, so that the strings never get too tinny and never intrude on the small ensemble work that is the focus of the composition. "Good Morning Bahia" and the title track are good examples of this.

Daniels plays clarinet on all but one of the album's eight tracks. His studio's publicist has quoted him as saying: "The clarinet was such a beautiful sounding instrument to me, and I couldn't get over the fact that everybody who played it played it like Benny Goodman. I kept thinking that I would one day do an album that would show everybody how to use this instrument differently, because its potential is enormous."

Daniels and his colleagues also have written all of the music, and it seems they have written it pretty much with the clarinet in mind. But you'll also find some fine keyboard work by Jorge Dalto, guitar by Bob Rose and drumming by Buddy Williams and Steve Gadd, in addition to bass work by Anthony Jackson, Rufus Reid and Francisco Centeno. The six-member reed section also includes Ray Beckenstein and Phil Bodner.

The basic sound is bright, clean, melodic jazz that is a joy to hear. The funky "Hold Tight" is several cuts above the typical black-oriented, R&B-tinged instrumental jazz, with particularly good percussion heard in each channel. Lani Groves adds her breathy, wordless, soaring soprano to "Lost in the Rain" (she also sang on the Spyro Gyra album) in a nice blend with the instruments, and "Carnival Lady" is highlighted by Daniels' alto sax and an elaborate chart for drums and percussion. On "Forget the Woman," the best word that describes the sound is smokey, although things brighten up for the middle section before closing on a fancy flutter tonguing by Daniels.

Morning Thunder is a fine album, a

fine contribution to the catalog of recorded jazz, and it will be interesting to see what Eddie Daniels does next with his clarinet. S.R.

ZOOT SIMS: *Passion Flower*. [Norman Granz, producer; Dennis Sands (Hollywood) and Bob Simpson (New York), engineers; recorded at Group IV Studios, Hollywood, CA, and RCA Recording Studios, New York, N.Y., August 14, 1979 and December 10 and 11, 1979.] Pablo 2312-120.

Performance: **Passionate**
Recording: **Superb**

It might be said that Zoot Sims is Zoot Sims and Duke Ellington is Duke Ellington, however, when the twain does meet, it makes for nice music even if it is neither characteristically Ellington nor Sims. Zoot Sims comes out of a different era and a different discipline (Woody Herman/Lester Young) than Duke Ellington who, after his emigration from Washington, D.C., was a member of the famous Harlem stride piano school of ticklers. What happens when a swing style tenorman meets prime Ellington is a strange mix that has elements of both the earlier and later styles and yet is in neither pigeonhole. Add to this a band of Hollywood studio men who can cut the charts and charts written by an arranger following in the steps of the father of big band jazz arranging Don Redman (although never approaching his originality or feel for transcribing emotion to paper), Benny Carter, and it becomes a strange session indeed. What comes through is some trendy, boppish semi-big band charts on top of which Zoot Sims plays his heart out. For if the matching of Ellington, Sims and Carter is questionable and if even the sixteen piece band (which includes more Count Basie alumni than Ellington alumni) is questionable, the one thing which is not open to question is Zoot Sims and his love for this music. Zoot and the band are on side A of this LP. Side B is Zoot and pianist Jimmy Rowles with various bassists and drummers. Maybe it's the quartet formula or maybe I'm right about Benny Carter being the wrong man for the job, but this is the side that sends chills along my spinal column. There is a version of Ellington's dedicatory piece to Bill Robinson, "Bojangles," which is for me the highlight of the LP, although in fairness to Carter's

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Hollywood band, I must admit that I'm very taken with what they and Zoot do with another of Duke's more neglected compositions, "Black Butterfly," on side A.

Norman Granz, as usual, has endowed this LP with fine sound, nothing to complain about. Also he has, as usual, skimmed on liner notes. He does list Frank Wess as doubling on flute so the flute solos, in all probability, belong to him even though Buddy Collette (another flute doubler) was on the date playing tenor sax. No mention is made of the trombone solos which sound to me like J.J. Johnson, even though former Ellington trombonist Britt Woodman was on the date. No hint is given as to the trumpet soloist and his work is not sufficiently individual to be able to assign it to anyone in particular. The piano solos are all by Jimmy Rowles and if there is a third star on this date (besides Zoot and Duke Ellington) it is Rowles. His introduction on "Bojangles" alone is worth the price and his fill-ins amidst Carter's trendy scoring on the band sides stand out like a ray of sunshine through the dull and dingy fog.

But over and above it all is the music of Duke Ellington and Billy Strayhorn (who wrote "Passion Flower") and the wonderful way that Zoot Sims has with any melody. J.K.

PAT METHENY: 80/81. [Manfred Eicher, producer; Jan Erik Kongshaug, engineer; recorded at Talent Studios, Oslo, Norway.] ECM 2-1180.

Performance: **Youthfully exuberant**
Recording: **Crystalline**

Pat Metheny has developed a deserved reputation in the jazz world during the past decade as the boy wonder of the lyrical jazz guitar. Metheny's trademark—lush romantic melodies performed with spritely rhythmic enthusiasm—has been at a discount lately. His last two ECM recordings were disappointing. Metheny seemed devoid of new ideas and appeared destined to join the ranks of dozens of other jazz/rock/fusion players who exhausted their musical imaginations in less than a half dozen releases.

I'm delighted to report that 80/81 represents a new birth for Metheny's musical career. Much of the credit

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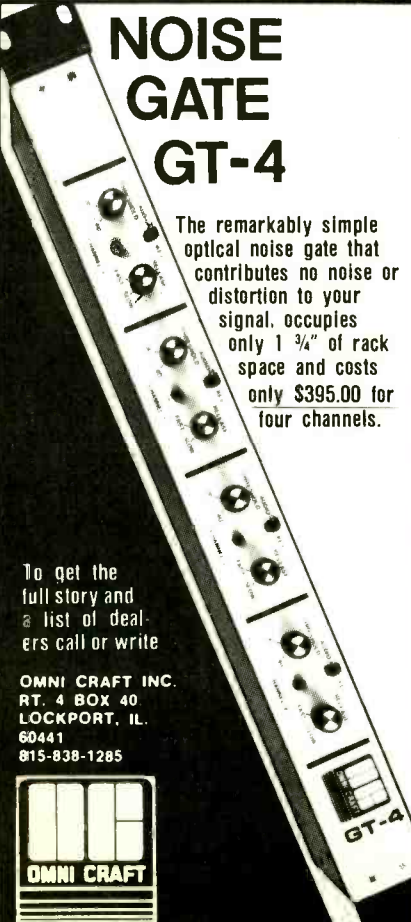
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should go to producer Manfred Eicher. Eicher decided to stretch Metheny's fingers by having him record with some of the most seasoned and adventurous jazzmen in the industry. Take, for example, drummer Jack DeJohnette and bassist Charlie Haden. They provide Metheny with a rhythm section of stunning virtuosity and steadfast solidity. Veteran tenor saxophonist Dewey Redman plays lines of stinging sweetness charged by his remarkable ear for improvisation. And Mike Brecker, best known for his funk/fusion sax work with his Arista band, reveals far more of his avant-garde side than on his own recordings. Such driving sidemen push Metheny to his limits.



PAT METHENY: To his limits.

This two-record set opens with "Two Folk Songs," variations on old American folk melodies propelled by DeJohnette's driving polyrhythms and Haden's fluid bass lines. Brecker joins in with a blistering sax solo and Metheny acquits himself with two well developed solos. Side two demonstrates Metheny's interest in more experimental jazz. "The Bat" features a slightly meandering and unfocused solo by Metheny with some superb improvisation by saxmen Redmen and Brecker. The band achieves a wonderful cohesion in Ornette Coleman's "Turnaround." Metheny seems more at ease playing within the framework of Coleman's experimental music than within the boundaries of his own compositions.

Side three is the most problematic of the set. A fourteen-minute mish-mash called "Open" dominates the side. It is Metheny's most daring foray into

open-ended dissonant jazz and he falls flat on his face. He is simply outclassed by his more experienced sidemen. He exhausts his musical vocabulary early in his extended solo and sounds utterly confused about what to play next. Fortunately, Redman and Brecker pick up the pieces by giving passionate solos and DeJohnette performs a drum solo that has to be heard twice to be believed. Paradoxically, side three concluded with a Metheny composition entitled "Pretty Scattered" which would have been a first rate title for "Open." "Pretty Scattered" is anything but scattered. It is a finely crafted bit of adventuresome improvisation and a comfort after the anarchistic vagueness of "Open."

Side four opens with the masterpiece of the session, "Every Day (I Thank You)." It is unquestionably the most mature composition of Metheny's career thus far. The melody line is gorgeous, Metheny's solo is filled with youthful exuberance, and his playing is stunningly complemented by Brecker, Haden, and DeJohnette. The album closes with a brief pastoral work for solo guitar that works beautifully with "Every Day."

Eicher's production is wonderfully transparent and spacious—exactly what you've come to expect from ECM. DeJohnette's drums are occasionally dominant in the mix and exceptionally well recorded. Eicher and Metheny are to be congratulated for resurrecting a youthful career and providing jazz lovers with so varied and energetic a session. N.W.

GROVER WASHINGTON, JR.: *Winelight*. [Grover Washington, Jr. and Ralph MacDonald, producers; Richard Alderson, engineer; recorded at Rosebud Recording Studio, New York, N.Y.] Elektra 6E-305.

Performance: **Almost vintage Grover**
Recording: **Mellow color and bouquet**

You don't need to collect the entire Grover Washington catalog to find out where his musical head is at. It's always been in about the same place—laid back, classy funk-jazz played with a surprising lack of overt cliché in almost every instance. And that's just on record. In a "live" context the man stretches and screams with the best of them.

Winelight is almost vintage Grover:

THE GIANT TRANE AND THE SINGING HORN

By Nat Hentoff

In the late 1950s, John Coltrane was a vital force in two of the most continually astonishing combos in jazz history—those of Miles Davis and Thelonius Monk. And Trane, of course, was much stimulated and strengthened by both those post-graduate professors. *John Coltrane: Rain or Shine* (Prestige) is a two-record odyssey of the emerging Trane—recorded between mid-1957 and early 1958. Coltrane was in between stays with Davis, and for some of these months, he was being tested mightily every night by Monk at New York's Five Spot Cafe.

Trane was still stretching the standard harmonic and rhythmic jazz forms. The "sheets of sound" and then the leaps far beyond all convention were still ahead. But, as Doug Ramsey says in his exemplary notes, "it was the very struggle against the limitations of the pieces he played that created the tension which helps make the work of his middle period so compelling." Yet, it is far from nervous tension; for Coltrane's playing is sure, buoyantly energetic, full of the delight of self-surprise. And the sound—as Coltrane always tried to make it—is remarkably "human" in its textures and speech-like cadences.

Among the crisply compatible sidemen were drummers Art Taylor and Louis Hayes, bassists Paul Chambers and Earl May, pianist Red Garland, and trumpeter Donald Byrd. Throughout the originals and popular standards, there is, as Ramsey puts it, the simultaneous presence of "controlled savagery and peaceful fulfillment." Since Rudy Van Gelder was the engineer, the sound is bright, crisp, and resonantly open.

Trane's former employer, Miles

Davis, is not a notable enthusiast of singers, but one exception was Shirley Horn, a Washington-based improviser (on piano as well). Actually, she has been championed by a number of musicians; but being resolutely non-faddish, Shirley never has broken through to a large popular audience. And until *A Lazy Afternoon* (SteepleChase/distributed by Rounder Records), there had not been a new Horn album in a long time.

She does phrase like a jazz horn, but not in any showboating sense. Indeed, her phrasing is marvelously subtle in its suppleness, and she never distorts the spirit of a song to make an instrumental-like point. Her sound is warm, sensuous, and is continually enhanced by Shirley's deft and quite finely shaded piano accompaniment.

What helps make this Shirley Horn's most fully realized album is the presence of bassist Buster Williams and drummer Billy Hart. Williams not only has an extraordinarily full, deep, singing sound but he *listens* and anticipates. Billy Hart, a master of brushwork, is often more of a felt than an insistently audible presence—and that is his great virtue behind a singer as intimate as Shirley Horn.

JOHN COLTRANE: *Rain or Shine*. [Bob Weinstock, Orrin Keepnews, producers; Rudy Van Gelder, George Horn, engineers.] Prestige Records P-24094.

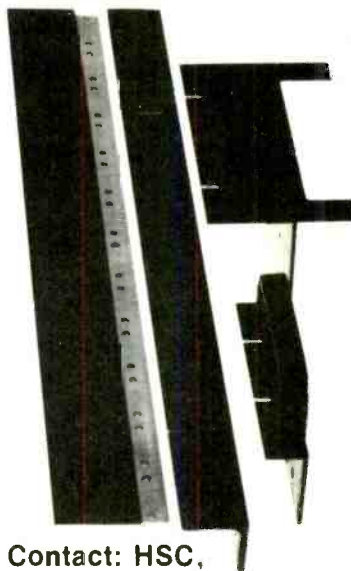
SHIRLEY HORN: *A Lazy Afternoon*. [Nils Winther, producer; Elvin Campbell, engineers.] Steeplechase Records SCS-1111.



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an emphasis on affluent but not ostentatious production; no budget spared for quality sidemen; and a seasoned approach to a kind of contemporary jazz that appeals to just about anyone who likes to feel good. The title cut opens with one of those simple, groovy little melodies that might be perfect for a "Taxi"-like sitcom theme song...relaxed, played kinda safe, but catchy. Grover's solo pumps life into the body of the song, and "Winelight" heats up to an appropriately soulful glow.

Such is the case with "Let It Flow (For 'Dr. J.')" and "In The Name Of Love," which round out side one. Each starts with the same fat, sumptuous sound and gets leaner towards song's end as the soloing heats up. Washington is almost the only instrumental soloist on this disc, though guitarist Eric Gale gets in some tasty licks and an all-star crew makes its presence felt in quiet ways: Ralph MacDonald (percussion), Steve Gadd (drums), Marcus Miller (bass), Paul Griffin (keyboards), Richard Tee (electric piano), and a few others. One particularly nice touch is the use of steel drum player Robert Greenridge.

Side two is more of the same, beginning with "Take Me There" and then mixing in a vocal by Bill Withers on "Just The Two Of Us." Far from being a letdown, as vocals on jazz albums frequently are these days, Withers' tune is a ballad nicely done and a good change of pace from the rest of *Winelight*. The

disc concludes with "Make Me A Memory (Sad Samba)," which is on a par with the other material here, a sen-

A good comparison to *Winelight* is the new *Baddest* on Motown, a two-record Grover Washington anthology featuring Creed Taylor-produced cuts from 1972 until the label switch to Elektra. Memorable selections include, of course, biggies like "Mr. Magic" and "Black Frost," and this material retains more of its bite with aging—it's just a bit grittier than *Winelight*. Still, Bill Eaton's arranging for *Winelight* is right out of the CTI school of thought, and it's amazing how little this saxophonist's sound has evolved in a decade of recording. The irony is that he still sounds pretty good. R.H.

RALPH SUTTON AND RUBY BRAFF: *R&R Duet*. [Charlie Baron, producer; John Orr, engineer; recorded at Premier Sound, New York, N.Y., October 1979.] Chaz Jazz CJ 101.

RALPH SUTTON AND RUBY BRAFF: *R&R Quartet*. [Charlie Baron, producer; John Orr, engineer; recorded at Premier Sound, New York, N.Y., October 1979.] Chaz Jazz CJ 102.

RALPH SUTTON AND JAY McSHANN: *The Last of the Whorehouse Piano Players, Volumes One and Two*. [Charlie Baron, producer; John Orr, engineer; recorded at Premier Sound, New York, N.Y., December 1979.] Chaz Jazz CJ 103 and 104.

RALPH SUTTON, KENNY DAVERN AND GUS JOHNSON: *Trio, Volumes One and Two*. [Charlie Baron, producer; Gaylord Russell, engineer; recorded at Premier Sound, New York, N.Y., December 1979.] Chaz Jazz CJ 105 and 106.

RALPH SUTTON: *The Other Side of Ralph Sutton*. [Charlie Baron, producer; Gaylord Russell, engineer; recorded at Premier Sound, New York, N.Y., December 1979.] Chaz Jazz CJ 107.

Performances: **Peerless music by Sutton and his peers**

Recordings: **Above the norm**

How much you enjoy Ralph Sutton's piano playing depends a great deal on the circumstances under which you hear him. I must admit that I was not overwhelmed with him as a member of the so-called World's Greatest Jazz Band; but then, at best, those were not the most inspiring of surroundings. That's why,—although I had heard Sutton in some remarkable "live" recordings made at Eddie Condon's and at the Hangover Club—these recordings were a revelation to me. Ralph Sutton partners with cornetist Ruby Braff, clarinetist Kenny Davern, and pianist Jay McShann for two LPs apiece and then adds one by himself. And when I say that he partners I mean that in every sense of the word. He participates tit for tat and jab for jib with the mighty Messrs. Braff, Davern and McShann, meeting them on an even level of excellence.

If I may have favorites (and you all know that I always do have my favorites), it's Braff and Sutton in tandem, especially on the too seldom heard "I Believe in Miracles." It's just the kind of tune that calls for the kind of lyricism that's Ruby's stock in trade. Also extremely creative and very amusing is their version of "Get Out And Get Under The Moon." It sounds almost as though Ruby didn't know the melody of the tune, so he went and improvised a better melody on it (neither Sutton nor Braff stick to the chord changes of the original song at the bridge leading one to wonder who chose the material). Like a good wine and a good Italian tenor, Ruby's sound has deepened and darkened with age. If it's not the flash and power thing it was in the famous Braff and Barnes Quartet days, it's become even mellower and prettier and, frankly,

Ruby Braff is one of the handful of jazz musicians left playing around New York that I'd be willing to leave my warm apartment on a cold wintry night to go and hear. There's also a "Dinah" here that I dearly love and a "Deep Summer Music" that sounds better to me each time it comes around.

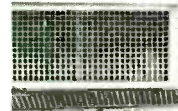
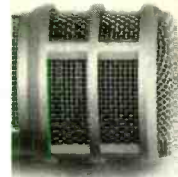
Adding bass and drums to Ralph and Ruby has its advantages. It swings a little harder but only a little because with that bass player there, Ralph has a tendency to lighten up his left hand and not work so hard at punching out the rhythm (the same is true of Earl Hines). The quartet certainly provides a fuller sound, which is something you'd notice more on the records than in a club. It also has its disadvantages in that should Ralph Sutton decide to stride he may be in danger of finding the bass player in his way, already there, on the notes where he wants to be. The main disadvantage to the bass and drums, at least here, is that they act like a Greek chorus commenting on the intimate conversations between Ralph and Ruby. As fine a bassist as Jack Lessberg is, and as excellent a drummer as Gus Johnson is, they detract from the main event: the interaction between Ralph and Ruby. Still there are gems here, notably "I Wished On The Moon" which Bing Crosby sang in *The Big Broadcast of 1936*.

The albums with Jay McShann, *The Last Of The Whorehouse Piano Players*, will probably be the most talked about albums in the series. Somehow the idea of teaming a Kansas City veteran like McShann with someone from the Condon crowd didn't seem to me like a very workable combination. But even though they are specialists, McShann and Sutton can perform outside their field of specialization. This doesn't mean that I'm ready to trust the nearest G.P. with my next brain surgery but when it's less than a matter of life or death, mix and match sometimes makes for some very interesting results. It certainly works on tunes like "Little Rock Getaway" and "Honky Tonk Train." In fact, the whole double album is a barrel of fun, including Sutton's Waller-ish vocal on "Trucking?" I don't know why but "Girl Of My Dreams" shows up on both Volume One and Volume Two of this series. If they are alternate masters, they are very similar. Since the item is mentioned only on the liner notes to Volume Two, I think it may have been a technical error in the mastering.

Kenny Davern is another player who could conceivably woo me out of a warm home on a cold night. It was a cold night when I went to hear him and Dick Wellstood at Michael's Pub and he regaled me with his vocal rendition of "Take Me to the Land Jazz." It was a version inspired by Pee Wee Russell's vocal on a Muggsy Spanier recording. It was fun that night as we both leaned up against the bar at Michael's Pub. It's still fun. And there's a burning hot version of "That's A Plenty" to open up Volume One and a lonesome wailin' "My Daddy Rocks Me" to close up Volume Two.

Ralph's solo album, *The Other Side of Ralph Sutton*, should be easier to review. There have been any number of Ralph Sutton solo recitals over the years. I like it better than the others because you hear a lot of tunes that you may be hearing for the first time like Stan Wrightsman's "Cattin' On The Keys," Fats Waller's "Say Yes" and Willie The Lion Smith's "Keep Your Temper." Others are a bit more common, but only a bit more. There's only one real warhorse, "Honeysuckle Rose," but I guess it's too much to expect seven albums for Ralph Sutton without some of Fat's greatest hits cropping up.

Not since Norman Granz devoted a couple of dozen LPs to documenting the work of the late Art Tatum, solo and with his peers, has a record company attempted to do give such a comprehensive picture of any individual artist. Charlie Baron deserves all the credit in the world for giving us a full measure of the greatness of Ralph Sutton. The flaws are more technical than anything else. The record jackets have the tunes listed in with the liner notes rather than prominently and conveniently displayed. I also found that my review copy of CJ 102 was badly pressed with a needle stick at the opening of "Sweethearts On Parade" and a skip somewhere during the first chorus of "Sunday." I've been advised by Chaz Jazz that these problems have been eliminated by changing pressing plants. The liner notes vary from the witty, jocular and fun-laden Marty Grosz to the latest pronouncements of that Norman Mailer of jazz, Richard M. Sudhalter. In between are the scholarly Dan Morgenstern and the personable James D. Schachter. I will take issue with Morgenstern about duo-piano teams who worked outside the recording studio. He omitted one of the best:



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Willie The Lion Smith and Don Ewell.

Now, as they say, I have some good news and some bad news. The bad news is you can't get these records in any record store, not even specialty shops. The good news is that they are available by mail from Chaz Jazz Records, Inc., Box 565, North Hampton, New Hampshire 03862. The price for one LP is \$11.50, when you order three or more the price is \$7.25 each and if you go for all seven it comes to \$5.64 per disc. That's because production and mailing costs make it more expensive to sell one or two records than three, four, five, six or seven. Don't blame me, I'm not an economist. And just so that you know what to choose, if you don't want all seven, Chaz Jazz has prepared a flexible plastic sampler with the tracks, or parts of tracks, from each LP which they sell for only a dollar. That gives you a taste from each of the seven delicious flavors. From there you're on your own. J.K.

CLASSICAL

HAYDN: *Symphony No. 57 in D Major; Symphony No. 86 in D Major.* The Cincinnati Symphony Orchestra, Max Rudolf, cond. [Israel Horowitz, producer; no engineer listed; recorded in Cincinnati, Ohio.] MCA Westminster 1405.

PAGANINI: *Concerto No. 2 in B Minor for Violin and Orchestra; SAINT-SAENS: *Concerto No. 1 in A for Violin and Orchestra.** Ruggerio Ricci, violin. The Cincinnati Symphony Orchestra, Max Rudolf, cond. [Israel Horowitz, producer; no engineer listed; recorded in Cincinnati, Ohio.] MCA Westminster 1402.

Performances: **Rediscoveries from the Golden Age**

Recordings: **Early stereo—honest, unspectacular, natural sounding**

Arturo Toscanini, Georg Solti, Zubin Mehta—these are the names of the superstar conductors. And why are they the superstar conductors? Because they did what they had to do to call attention to themselves, sometimes to the detriment of the music. Toscanini got away with it

because he was such a virtuoso and his orchestra (the NBC) was an orchestra of virtuosos. Solti gets away with it sometimes because he too is truly a virtuoso and so is his orchestra (the Chicago Symphony) although he is not constantly unerring in matters of taste. Mehta, virtuoso though he may be, is too lacking in sensitivity to turn in anything but a performance of grandstand fireworks such as his recently televised *Pines of Rome* with the New York Philharmonic which broke all records for speed and blast.

Nearly gone are the days when a conductor who did not behave like a virtuoso could get the kind of press that Solti and Mehta and Levine seem to grab for themselves today. The subtle conductor is part of the bygone era of Rudolf Kempe, Wilhelm Furtwangler and Otto Klemperer. A few are still around but they are secrets well-kept. It took me half an hour of phone calls to this and that source to find out what little information I could about Max Rudolf. Max Rudolf is still alive and conducting, although not as frequently nor as conspicuously as I would wish. These recordings, early stereo releases made for Decca and now reissued by MCA on their Westminster label, would seem to date from sometime in the 1960s. They show their age neither sonically or musically. No, wait, I take that back because if these records were made today they might well be over-echo-chambered and enhanced in other ways rather than put out with fairly natural sound as they are. Rudolf, after years at the Metropolitan Opera House, moved to Cincinnati and took over that orchestra and, if these records are any indication, made some fine music there. Interestingly enough, when he left Cincinnati his place was taken by another ex-Met conductor who conducted the music for the music's sake and not for his own vain glory—the late Thomas Schippers. This is not to totally write off the superstar conductor. Some things like Respighi's *Pines of Rome* and Berlioz's *Symphonie Fantastique* demand that kind of splashy, go-for-the-big-effect kind of interpretation. Some works like those of Haydn and Mozart are totally bludgeoned to death by the superstar technique and call for the kind of subtlety in which Max Rudolf excels. A precious few conductors, such as Herbert Von Karajan, can, on a good day, give each work the reading it needs but generally conductors tend to

fall into one camp (the virtuoso) or the other (the subtle).

While these two Haydn symphonies are unified in their key signature and in the sort of trademarks which marked Haydn as an original, they are separated by 10 important years in which Haydn grew from an overworked Kapellmeister to a composer of fame and recognition. Haydn's place in history was earned, not only by his composition of great music, but by his firming up of the form—especially that of the symphony and the string quartet. Realizing this, Max Rudolf accents the form of the music firmly, always a wise decision in pre-romantic music anyway, and the structures emerge with a solidity and purity that a Mehta or a Solti might sacrifice in order to make a desired effect.

With Paganini and Saint-Saens, it is a different situation entirely. This is not baroque or classical music. This is virtuosity personified. Fortunately Ruggerio Ricci is a virtuoso violinist and Max Rudolf wisely leaves the ornamentation and the embellishments in his good hands providing more of a framework which sets off the pictures painted by the soloist. For comparisons one would need to look backward to Sir John Barbarolli to find the equal of Rudolf's willingness to sublimate his own will to that of the featured soloist. Yet that, especially in such virtuoso music as the Paganini, is entirely fitting and proper.

What is shocking about the recording of the two Haydn symphonies is the realization that, with the exception of the complete symphonies of Haydn recorded by Antal Dorati and the Philharmonia Hungarica, the current Schwann #1 catalog lists no other currently available recordings of either Symphony No. 57 nor No. 86. These works are too great to be treated so shabbily by the recording industry. In fact, the whole output of the music of Franz Josef Haydn on LP is not in the state of health in which it should be. There is, I'm afraid, a tendency on the part of the record buyer and the record producer to pass off Haydn as simply Mozart's predecessor. I don't go along with that any more than I go along with the tendency to consider Brahms only an extension of Beethoven. And I don't believe that after hearing these records any musically intelligent listener will be able to deny the charm and importance of both the music and this recording of it. J.K.

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HAYDN: *Symphony No. 100 in G. "Military."* The Mostly Mozart Festival Orchestra, Johannes Somary, cond. [Seymour Solomon, producer; Jeff Zaraya, Jonathan Thayer and Tom Lazarus, engineers; Peter L. Jensen, digital engineer; recorded at Vanguard's 23rd St. Recording Studio, New York, N.Y.] Vanguard VA 25000.

Performance: **Crisp, clean chamber orchestra playing**

Recording: **Digital excellence on side one, analog excellence on side two**

The gimmick here is that the same performance was put out in two different versions. At the same time as the music was being recorded on the best available analog equipment, a Sony PCM 1600 Digital Recording System was taking down a digital version. And Vanguard has put them out back-to-back. That's the gimmick. All the audiophiles are supposed to run—not walk—out and buy one and answer the pre-addressed, stamped postcard and return it to Vanguard where the results will be tabulated and the Solomon brothers will see where they go from there.

I don't know if Norman Pellegrini is still program director at radio station WFMT in Chicago but he was when I lived there and at the time that Westminster Records came out with their lab series of studio recordings, he announced that on a certain date at a certain time he would do an A-B test between the lab version and the standard version of a certain Westminster recording. He played one version and then played a second version but instead of playing the lab version and the standard version he played the same recording (the standard version) both times to see how many of his listeners he could trick into believing they were hearing a difference. It wasn't really a fair test. A-B tests never are because, in most cases, the ear has the tendency to accept and prefer the last thing it hears unless the difference is truly startling. I'm not going to try and tell you that I hear a startling difference between the digital and analog versions of Haydn's "Military" symphony but I do hear a significant difference. It's pretty much like the specs in the liner notes say it is—increased frequency response and dynamic range

and less harmonic distortion in the digital than the analog. What that means to the layman is that the percussion, which has a tendency to muddy up a bit on the analog, comes out cleaner on the digital.

Actually side one, the digital recording, is an excellent recording of an excellent performance of Haydn's "Military" Symphony by Johannes Somary and the Mostly Mozart Festival Orchestra. Side two, the analog recording is also an excellent recording of the same performance. I would be well satisfied with either but having both I'm doubly satisfied. Musically, that is. Financially, well, this is a record that was made to retail at \$12.98 which is, I understand, not out of line for top digital discs. But, what's on the other side? The digital fans will prefer side one. Those who feel that analog recording is still the best way will prefer side two. Both camps will be stuck with an extra recording they don't need. There are some fine versions of Haydn's 100th in the Schwann catalog by such expert conductors as Neville Mariner, Otto Klemperer and Bruno Walter. There's even a version by a fine Haydn conductor, Mogens Woldike on Vanguard (not digital, it's true, but a fine version nonetheless). Woldike's recording on Vanguard is backed with Haydn's Symphony No. 101 "The Clock." So with Mogens Woldike and the Vienna State Opera Orchestra (mostly the same players as are in the Vienna Philharmonic Orchestra) you get two Haydn symphonies for \$7.95 as opposed to one Haydn symphony for \$12.98. Sure there's a difference between digital and analog, a significant difference at that, but is it worth paying an extra \$5.00 for half the music? I don't know. I won't say that if I didn't get a review copy of this record I wouldn't buy it at these prices. I'm just saying that I'd sure think a lot about whether it was worth it to me.

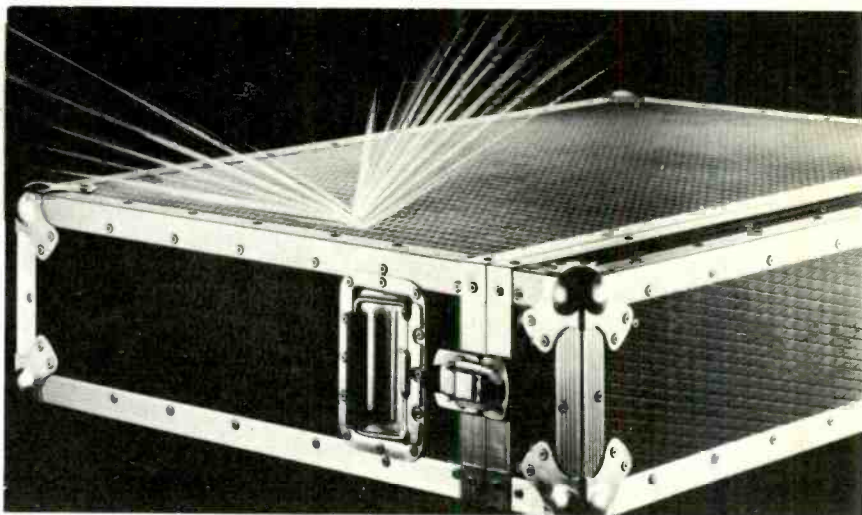
As for the performance itself the record makes an important point about the size of Haydn's orchestras. I don't know just how big an organization Haydn could count on to perform his music. To be sure, the court orchestra at Esterhazy's estate was probably not as large an orchestra as the one he was furnished in London where this music was premiered at the "Opera Concerts." I would guess that the Mostly Mozart Festival Orchestra of



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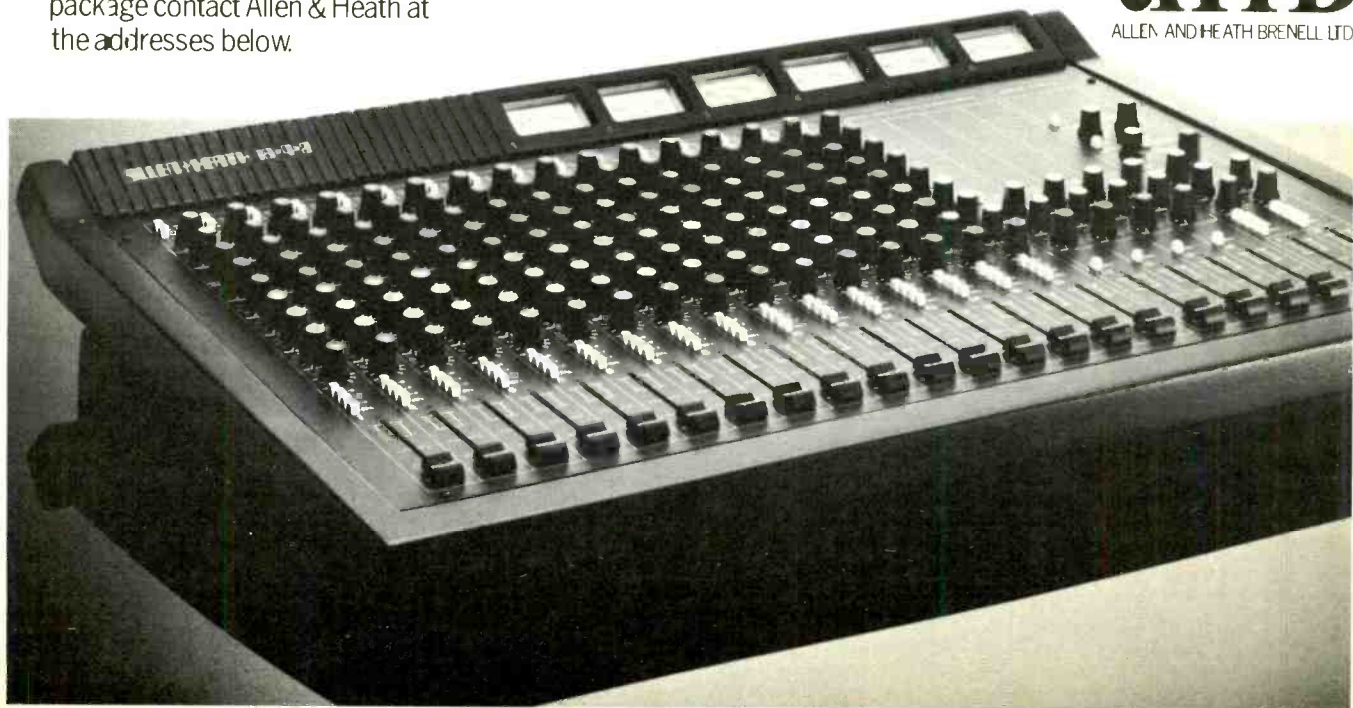
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35 players is probably closer in size to what Haydn was working with than the major symphony orchestras of today who all too frequently prefer to play music of the baroque and early classical era with their full forces robbing this music of much of its charm and playing the music neither as cleanly or concisely as Somary and his Mostly Mozart players.

Now about that business reply card that Vanguard enclosed with the record. Yes, Messrs. Solomon, I do hear a significant difference between

side one (digital) and side two (analog). I prefer side one. The difference I hear can best be described as increased frequency response and dynamic range and less harmonic distortion. And under other comments. Having one good performance of Haydn's No. 100 by Somary and the Mostly Mozart Festival Orchestra, I don't think I need a second. In other words, now that you've proven that there is a difference between digital and analog, please give us two Haydn symphonies per LP, not just one. J.K.

SHOWS and SOUNDTRACKS

ORIGINAL CAST: *One Mo' Time*. [Jerry Wexler, producer; Carl Seltzer and Miles Smith, engineers; recorded "live" at the Village Gate, New York, N.Y.] Warner Bros. HS-3454.

Performance: **Decent recreation of classic black vaudeville music**
Recording: **A bit tubby but accurate and understandable**

A friend and I went down to the Village Gate and caught Vernal Bagneris' *One Mo' Time* during the opening week. I asked producer and gatekeeper of the Village Gate, Art D'Lugoff for how long the show was booked. He replied that it would stay there as long as people kept coming to see it. As of this writing (January, 1981) it's still there and going hot and strong. There's even a road show version playing in Philadelphia (at least when I last heard they were in Philadelphia). The show is built around four black performers who play four black performers on the T.O.B.A. vaudeville circuit in the twenties, plus writer and director Vernel Bagneris who plays the white owner of the Lyric Theatre. In a way it's *A Chorus Line* dropped into the time and era of early black vaudeville in that there's backstage drama (melodrama even at times) as well as the variety acts portrayed on stage. Fortunately, only the latter appears on this recording. There's no way the backstage bickering between the artists and the manager could ever be translated to an audio-only idiom. What this recording does portray is some of the hit tunes such as "Down In Honky Tonky Town," "Kitchen Man," and "Papa De Da Da" done to a turn by the stars of the show. And, wait till you hear John Stell's comic version of "He's In The Graveyard Now." Unfortunately, what this record misses is the hot fire of the New Orleans Blues Seranaders, a sizzling, five-piece jazz band featuring Jabbo Smith, the legendary trumpet ace of the twenties, along with such younger players as Orange Kellin, the remarkable Swedish clarinetist who plays as if he was born and bred in New Orleans at a time when he was but a



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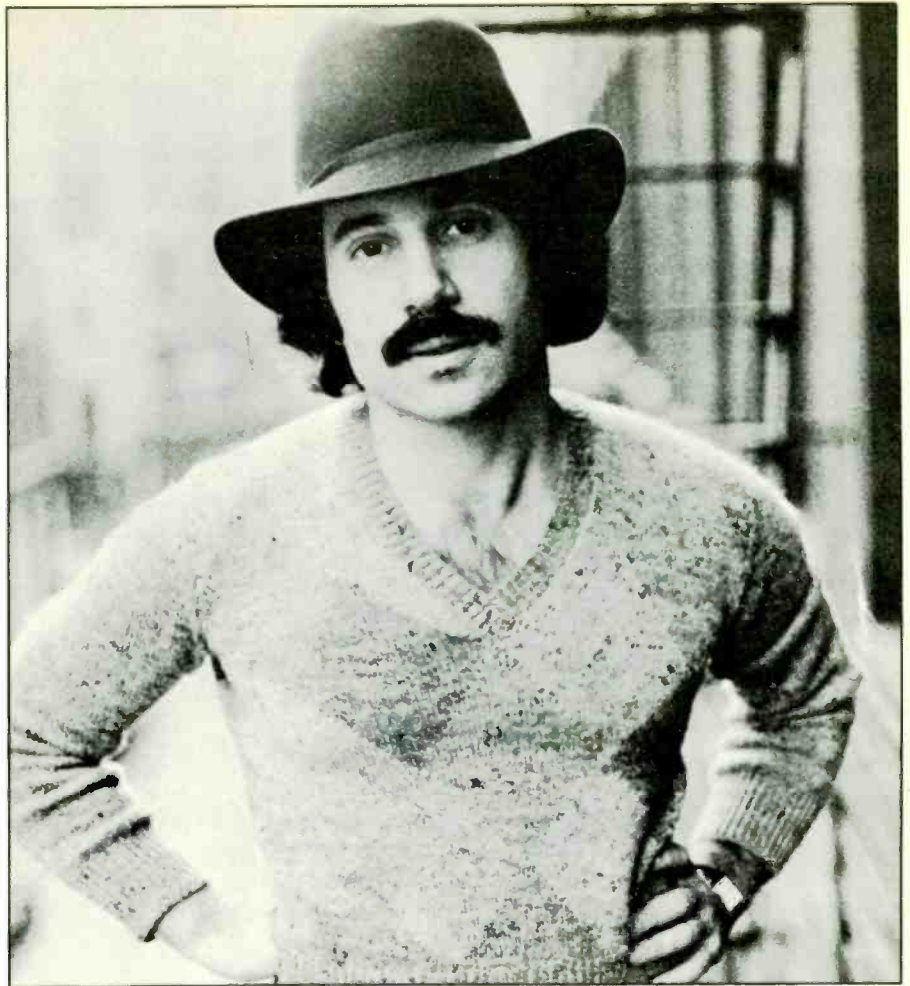
gleam in his mother's eye. The band is relegated to fill-ins here and there, an occasional chorus and only one feature, Jabbo Smith's contemporary composition, "Love." I can understand Jabbo's desire to get his tune on record. It probably won't be a national hit given the current state of the taste of the general public, but it's nice to have a shot at it anyway. Still, I wish that room could have been found for one of the band's hot instrumentals (they played "Tiger Rag" the night I was there).

There's a problem inherent in trying to capture even this much of a visual show on a disc. I'm sure that you, sitting in your living room listening to drummer John Robichaux belt out "Louise Louise," will wonder what the people in the theatre are laughing at. If you were there watching the performance you wouldn't have to wonder. Until videodiscs become an economically feasible reality, records like this will have to suffer from this sort of problem. As far as the sound goes, well, it's as good as it could be, having been recorded "live" in a room not built for recording purposes. If they'd done it in a modern studio it would have been somewhat clearer, and the balance between the band and singers would have been more controllable and that tubby quality that often shows up when a recording is made in a cavernous night club like The Village Gate would have been eliminated. Still, given the circumstances under which he had to record the show, Carl Seltzer deserves an A for effort, although maybe only a B for results. J.K.

PAUL SIMON: *One Trick Pony*. [Phil Ramone and Paul Simon, producers; Phil Ramone and Jim Boyer, engineers; recorded at A&R Studios, New York, N.Y., and The Agora Club, Cleveland, Ohio.] Warner Bros. HS-3472.

Performance: **Urbane**
Recording: **Tricks and treats**

Bob Margolis, a songwriter/performer living in Florida, has been creating great songs since he was a teenager. But he says, "I'm going to be 30 and I haven't had a hit. Am I going to make it?" The hero of Paul Simon's film and soundtrack *One Trick Pony* has had that hit. But Simon suggests that the



PAUL SIMON: A long way to go until the end of the track.

other side of the door Margolis is striving for is a kind of living hell. Through lyrics and music expressing the thoughts and emotions of fictional one-time '60s rock star Jonah Levin, Simon paints a bleak picture of the inevitable music business "tag" that freezes an artist's image, usually forever.

Completed over a year and a half ago, the songs on Paul Simon's first album in five years function quite differently than did his songs on the soundtrack to *The Graduate*, which simply served as director's comments. On *One Trick Pony* the songs are integral to the storyline. Simon does continue, though, to embroider seemingly disparate pop styles like calypso ("Late In The Evening"), blues rock ("Ace In The Hole"), and '50s-inspired ballads ("Nobody") into a stylistic whole identifiable only as pure Simon.

Unlike Roy Halee's sparser, tasteful production on the early classic *Paul Simon*, Simon's later solo albums have technically maintained a round, full presence fostered by co-producer Phil Ramone. Each ballad on *One Trick*

Pony, for example, packs a surprising low-end punch that is highlighted as much as the typical high-end approach is in this type of slow song. The large isolation booth feel of the vocals and instruments flesh out those arrangements that might otherwise sound empty. In "One Trick Pony" Simon sings: "He makes it look so easy/He looks so clean/He moves like God's/Immaculate machine." On one level, this is Simon paying homage to the miracles of contemporary studio medicine men.

Paul Simon will be forever associated with folk-rock epics like "Sounds of Silence" and "I Am A Rock" that he recorded with Art Garfunkel in the '60s, just like Jonah Levin. But as he nears 40 and embarks on an acting and songwriting career, Simon, looking more like a jockey than a pony, has a long way to go before he reaches the end of the track. This should give up-and-coming talent like Bob Margolis hope—and at least ten more years before wondering, "Am I going to make it?"

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