

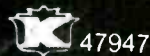
Frank Zappa

MODERN

RECORDING

& MUSIC

AUGUST 1984 VOL. 10 NO. 8 \$2.25



DIRE STRAITS

mark knopfler

RECORDING
TECHNIQUES:

AES Conference:
Art And Technology
Of Recording

MUSICIAN'S
NOTEBOOK:

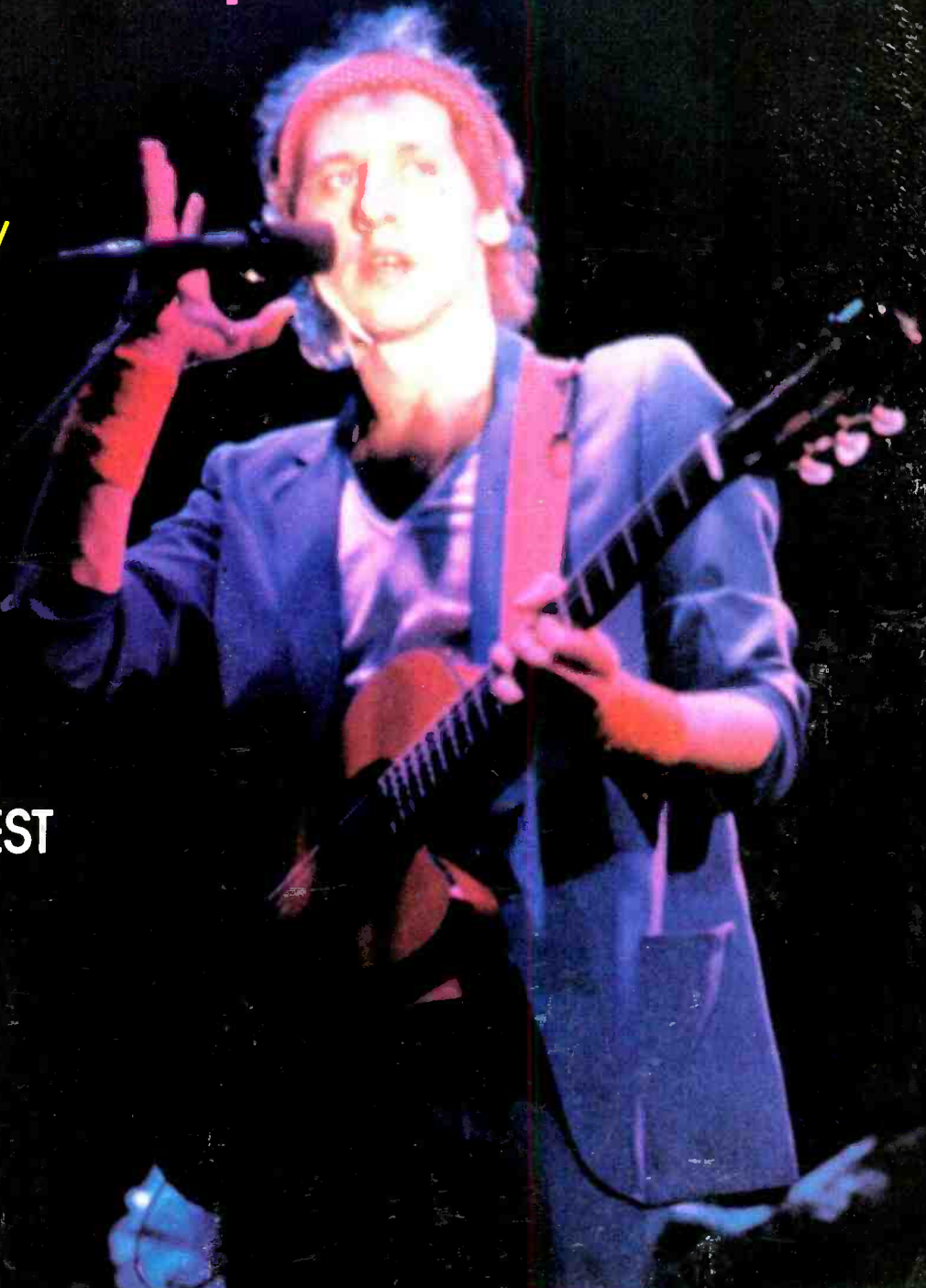
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BUILD A NOISE

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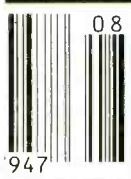
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*Manufacturer's suggested retail.



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MODERN RECORDING & MUSIC

FEATURES

10 AN EFFECTIVE NOISE ANALYZER FOR CABLES AND CORDS

by H. H. Bloom

A noise analyzer and guitar amp are all you need to test cables for continuity. In this article, Mr. Bloom gives some "how to" techniques.

13 RECORDING TECHNIQUES

by Bruce Bartlett

A concise overview of the Spring AES conference.

16 THE VIDEO PRODUCER

by Gilbert Elliott

Planning, preparing and producing are the necessary elements behind any good video. This article focuses on the role of producer—and how he is responsible for bringing the entire video together.

18 MARK KNOPFLER: PLAYING IT STRAIGHT

by Jeff Tamarkin

Mark Knopfler is decidedly unflashy. When he records a live album he does it *live*. When he goes into the studio, he takes a natural approach, relying on quality playing and well crafted songs. *MR&M* recently caught up with Mark Knopfler and spoke with him about his present and future projects.

26 FRANK ZAPPA

by Bill Milkowski

Most people associate Frank Zappa with his own unique style of rock'n'roll. What most of his rock audience is not aware of, is that he released an album of his own original, contemporary, classical pieces just last year. Zappa took some time out to speak with *MR&M* about his interest and thought on today's classical music scene.

32 JEAN-LUC PONTY

by Martin Basch

Jean-Luc Ponty is such a celebrated performer and composer that few realize he is a talented producer as well. Over the years he has experimented with new technology, and has played with such diverse musicians as Elton John and the Mothers of Invention, before he embarked on a solo career.

39 MUSIC AND THE LAW

by Eric Berman, Esq.

Record contracts and what you should look out for before signing one.



Photo credits:
Dire Straits photos: Courtesy of Warner Brothers Records.
Frank Zappa photos: Courtesy of Wartoke Concern.
Jean-Luc Ponty photo: Courtesy of Atlantic Records.

SOUND IDEAS

HACKER'S DIGEST

by Ken Pohlmann

Mr. Pohlmann espouses the virtues of word processors, with a special look at the services offered by Wordstar word processing software.

MUSICIAN'S NOTEBOOK

by Craig Anderton

The Tascam 225 Syncaset

SOUND ADVICE

by Susan Borey and Mark Oppat

With this installment our Sound Advice team addresses the theory behind some of the techniques you employ.

DEPARTMENTS

LETTERS TO THE EDITOR

TALKBACK

The technical Q and A scene.

MARKETPLACE

What's new in sound and music.

¼ NOTES

New and noteworthy events in the recording industry.

& MUSIC

Reviews of albums by Joe Jackson, The Cars, King Crimson, and others.

36

41

43

2

6

46

51

52



A Change In The Masthead

Regular readers of magazine mastheads, at least readers of ours, will note that there is a significant change in the top slot of Editor.

Mark Waldstein, who occupied that top spot has been replaced by **Jeff Tamarkin**. And, in this simple statement, lies a tale.

When MR&M Publishing Co. Inc. acquired *Modern Recording & Music* from Cowan Publishing in 1982, Mark Waldstein was already with us, on our sister publication *db Magazine*, where he was copy editor, responsible for every word in that magazine being in proper English and good grammar. That was appropriate, since Mark had come to us with a degree in English.

When *Modern Recording & Music* came into the office, we soon discovered that Mark knew as much about the contemporary music scene as he knew about English. So, more and more, he moved up the ladder of *Modern Recording & Music's* editorial staff. Since the November 1983 issue, Mark has been Editor.

So why is he gone? Some months back, perhaps almost as a lark, Mark applied for tests to get into Law School. He not only passed those tests (we think he expected that) but ended up with grades in the top 5% of the United States. So, this summer, Mark is off to law school at the University of Wisconsin. Somehow, we think that *Modern Recording & Music* will still be hearing from Mark. In any case, we wish Mark the best.

Jeff Tamarkin has been a New York City-based Contributing Editor to *Modern Recording & Music* since the late '70s and also has an impressive command of the music scene. So, it was only a natural move into the top slot for Jeff, who actually worked with Mark on the last two issues. It's no reflection on Mark for us to say that with Jeff, we will see a bigger and better *Modern Recording & Music* as each issue comes out.

* * *

Many of you have seen the Directory of Keyboard Synthesizers that appeared in the last issue. This was the beginning of a regular series. Next month, September, we will have a Directory of Audio Tape that will tell you the vital facts about quarter- and half-inch audio tape, as well as audio cassettes.

The November issue will feature a Directory of Delay Units, December will have a Directory of Tape Decks: Cassette to Eight Track, and 1985 is now being planned. We expect that every issue in 1985 will contain a Directory. Each issue will contain, in addition, articles that give features and buying information on the same subjects. As the Technology Magazine for the Music Industry, we will always be seeking better ways to bring this vital information to you. As always, you can help too. Write to Jeff and let him know what you want to see in these pages. This *is* your magazine, keep those letters coming!

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Managing Editor

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Technical Advisor

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Spare Change?

I would like to commend you for creating an informative and educational source of information for people like myself. I am a musician with a tremendous passion for the studio. I've been trained in a 24-track studio and have found it a great place to apply my technical and musical abilities.

Now, my problem. My next step is

starting my own studio, and I am at a total loss as for what to do for capital. I have a few thousand dollars of my own, but to put together the studio that I want, that's barely scratching the surface. If you have any information on any special funds, loans or grants that are available for such an endeavor I would greatly appreciate the help.

—Jerry Stanley
Brooklyn, NY

over to our readers. If any of you out there have any information, either on the whereabouts of the company, or a copy of a schematic, please send it to us here at *Modern Recording & Music*. We'll publish any information we receive.

For More Info on Drumatix...

In the March issue of *MR&M*, I read about the Roland TR-606 Drumatix. In the article that appeared, the author, Craig Anderton, mentioned another article written in the Oct. issue of *Polyphony Magazine* that told of modifications that can be made to the TR-606. I am interested in reading this article, but have been unable to locate the magazine. Can you help?

The magazine in question here is a publication put out by PAIA Electronics. You might be having some trouble finding the article because it appeared in the Dec. 1983 issue of Polyphony, not the Oct. 1983 issue. To order copies write to:

*Polymart
PO Box 20305
Oklahoma City, OK 73156*

Each issue is \$2.50 plus 75¢ shipping and handling.

Since June 1981, MR&M has been running Studio Notebook, a series that focuses on the different aspects of putting a small studio together. The Dec. '82 through Feb. '83 issues deal specifically with sources and programs for loans. The Sept. and Oct. '83 issues give information on buying and leasing property for a small business.

Back issues are available at \$2.20 a copy, plus 65¢ shipping. If you plan to order more than one issue, please contact the magazine to arrange the most cost-efficient way of mailing.

*Inquiries should be directed to:
Modern Recording & Music
Circulation Department
1120 Old Country Rd.
Plainview, NY 11803*

Has Anyone Seen This Company Lately?

I own an Advanced Audio Designs model D-250 digital delay. It is a wonderfully flexible unit, and has served me well up until its death about 10 months ago. I have competent repair people available, but no schematic. I have tried contacting the company at their address in Eugene, Oregon, but I've yet to receive any kind of response. I even had a brave soul try to devise a schematic, but he gave up. If you could give me any information at all I'd really appreciate it.

—Don Robertson
IVO Sound Recorders
Hastings, NE

We'd love to be able to help you, Don. Unfortunately, we haven't had any better luck getting through to the company than you have. At this point, we'd like to turn your plea for help

...And Dokoder's 7140 Deck

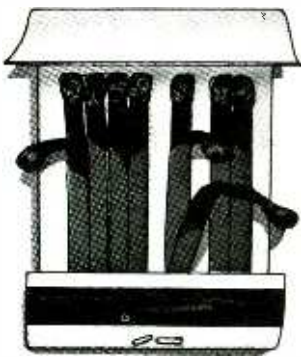
Good news for all of you who have been trying to locate schematics for Dokoder equipment, as the company went out of business some time ago. We have finally located someone with a service manual (including alignment procedures) for the Model 7140 tape deck.

For anyone interested in acquiring a copy, you may write to:

David Gray
35 Starmount Dr.
Asheville, NC 28806

A Little P.S.

It seems the Little River Band has gotten "littler," and we failed to acknowledge it when we ran an interview with them in the June issue. At the time of publication, both Beeb Birtles and Derek Pellicci had left LRB to pursue other interests. —Editor



Let's close the book
on forest fires.



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Feelin' Blue

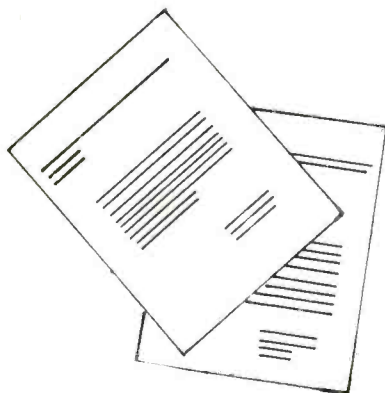
I am writing in regard to Nat Hentoff's review of the Legendary Blues Band album (January 1984, p. 59), *Red, Hot 'n' Blue* (Rounder 2035):

I am amazed that you could listen to the record and appreciate the engineering to the degree that you did. This is something so new and alien to me that I'm still reeling from the shock. I can only express my thanks and emphasize how important it is for me to know that I am not operating in a vacuum.

You wondered about the equipment that was used to translate the sound. I must confess, it was all standard fare...nothing too exotic, kind of like driving a Chevy. There was one ingredient, however, I would like to mention: Blues musicians rely heavily on physical proximity for communication. Whether this is old habit or necessary for the feel, it must be done that way. That immediately blows out all ideas about isolation of sounds. In other words, put up your mics and leakage be damned. You must learn to use that leakage creatively.

Another thing is that tape must be rolling and in the red at all times. The emotion and feel is so elusive that rehearsals are often better than "the takes." Most of the music I record is pop or rock so the blues was a real challenge for me. The musicians are fascinating characters who on the one hand are like children, and on the other hand, are grown men living on the edge. They can barely live above poverty, and are prisoners of their own abilities. My common point of reference with them is that we both work and live in a business that has few rewards other than its own, strange, neurotic allure.

—Michael Golub
NY, NY



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Talk Back

Ping-Pong Problems

I am particularly interested in your February 1984 issue's review of the Fostex X-15 Multitracker, which I found to be well written. I have been giving serious consideration to the X-15, but thought it might be a good idea to confer with someone like you who has had "hands-on" experience with it. My main objective is to get a unit which will allow me to produce high quality demo tapes—not necessarily to market in any fashion, but primarily to use for my own creative and listening enjoyment, and perhaps to use in the "audition" process when my band is booking gigs. Specifically, you mention in your review that track ping-ponging should be limited to two bounces in order to avoid excessive noise build-up. Does this mean that if I bounced tracks 1-2-3 on to track 4, then bounced 1-2 on to 3, and then recorded on track 1 and then track 2 (for a total of seven "takes"), that I should stop at that point? Or could I conceivably bounce a bit further so that I could end up with, say, 10 "takes," some of which would be third generation recordings? Could this be done without parting from your recommendation on ping-pong limitations? I would really like to be able to end up with a 10-part tape with high sound quality (for the above purposes), and if the X-15 won't accomplish this, then I might consider the Tascam 234 Syncaset (which, alas, has no EQ function—does lack of EQ pose a serious problem sound-wise in your view)?

Incidentally, I'd love to see you do a review of the 234 soon. I would be grateful for any response you can give me! Thank you!

—William J. Sheehan
Springfield, IL

P.S. Are the X-15's bass and treble controls truly effective?

Ping-ponging on any tape recorder causes noise buildups. The Fostex X-15 was measured by us to have nearly 65 dB S/N. When we suggested a practical limit of two bounces, we meant tracks 1 and 2 to track 3 would be one bounce, and then 3 and 4 coming back to 1 would be the second bounce. These bounces would reduce the S/N by about 7 to 8 dB giving you a net of 57 to 58 dB S/N. A new bounce cycle would get you under 55 dB S/N. We think that this is the lower end of what anyone would consider acceptably low tape noise. These figures would be about the same for any cassette deck used.

The tone controls on the X-15 are just that—tone controls that work as advertised. Ideal EQ should be done with at least a five-band equalizer, although the bass/treble controls here do offer a measure of tonal adjustment.

A Direct Answer

I am interested in plans for a direct box. Do you know where I can find either a schematic or a kit for one?

—Keith Brown
Jacksonville, FL

We contacted Craig Anderton and he suggested you check out the May 1984 issue of *Guitar Player*. It seems they ran a schematic for a direct box, and while it is primarily for guitarists, it can be used with other things as well. Please note, the following correction should be made in the diagram: R2 should be 3.3k instead of 1 Meg.

Write to *Guitar Player* at:
GPI Publications
20085 Stevens Creek
Cupertino, CA 95014

Distortion and Digital

Re: Len Feldman's article "The 90 dB Misunderstanding" (April issue). It's good to read some sensible, practical talk about dynamic range as viewed realistically from the playback side.

From the recording side (where I work as an engineer), however, I can partially sympathize with those who complain that "16 bits aren't enough." It is still not quite possible to make a "noiseless" recording of, say, a large percussion ensemble, although room noise does set limits in recording as in playback. And in live recording we always want to keep some reserve headroom for any last-minute "surprises."

I must remark on what you called "The Inverse Distortion of Digital" at low levels; you said that it had not been widely discussed "for obvious reasons." I have to disagree with you there—I think

there has been an abundance of discussion about all aspects of digital sound, much of it irresponsible, ignorant, and misleading. It is still fashionable in some audio salons to speak of the "well-known" and "obvious" detrimental effect of digitization on sound, especially at low levels and/or high frequencies. Digital is still held to be the enemy of warm, rich, reverberant sound just as transistors, and later ICs, were. Some pundits still preach that a digital system, by its stepped nature, must turn low-level sine waves into square waves, and that you can't hear information below the noise floor the way you can in analog recordings. Your own distortion measurements from Compact Discs, while undoubtedly valid for the test record you were using, are manifestations of this same misunderstanding.

Responsible and knowledgeable commentators have said little about "this phenomenon" in recent years because in correctly dithered digital systems it does not exist.

Unfortunately both the reviewers and the makers of certain digital audio equipment did not always understand this; your test record is apparently a product of that era. But there is no inherent reason why any digital recording must have the above-mentioned flaws. On a Sony PCM-F1, the first consumer digital audio processor to use (in its 16-bit mode only!) something like appropriate dither, tones can be clearly distinguished at levels 107 dB or further below 0 level. According to the pundits, that ought to be totally impossible. I just now listened to some music recorded on the F1 some 80 dB below optimum peak level, and while it isn't exactly quiet, it isn't distorted-sounding either. Anybody can verify these results. Sometimes I am reminded of the superstitious folk who refused to look into Galileo's telescope for fear of what they might see.

—David Satz
New York, NY

Len Feldman replied to David Satz's comments.

In response to David Satz, let me clarify that the measurements of harmonic distortion that we make at lower recording levels are confined to levels of -24 dB and -30 dB below nominal 0 dB (maximum) recording level. Our test disc, which is entirely digitally generated (including the test signals themselves), offers no opportunity to see what THD would measure at levels of, say, -80 dB or even lower. The same test disc, however, does contain a series of 1 kHz tones at decreasing amplitudes (down to -90 dB below maximum recording level) and, while these tones are not recorded in sufficient length for us to conduct a THD measurement, we are able to *listen* to them, and can tell you that at -80 dB, there is clear evidence of audible harmonic distortion. The catch in all this, however, is that in order to hear this distortion (or the tone itself, for that matter), we have to turn up the level on our monitoring amplifier to a point that

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is so high, that actual music reproduction from a Compact Disc at such levels would cause immediate overload of our amplifiers (not to mention deafening sound levels).

To put it another way, let's suppose that in the absence of proper "dithering," distortion *does* vary linearly as the inverse of recording level. If at maximum record level, THD is typically 0.002 percent, then at -40 dB it will be 0.2 percent and at -80 dB it will be 2.0 percent. But 2 percent distortion, translated into decibels, is -34 dB or so! In other words, at -80 dB level, the THD components will be another 34 dB lower, so the distortion components are at -114 dB below maximum record level. Doesn't that make the whole thing pretty academic? Even if Mr. Satz can pick out tones 107 dB below maximum recording level on digital recordings (though where he finds ambient noise levels low enough to do this I can't imagine), I seriously doubt that he could pick up distortion products that are 114 dB below maximum recording level—especially in the presence of a pure tone at -80 dB.

Eliminating Cassette Distortion

We recorded our band with a Teac 80-8, occasionally using a limiter to avoid peaks. Everything went fine so we mixed it down to a Teac 35-2B half-track with dbx. We listened to the mix after a few dozen attempts, and again everything sounded fine. However, when we transferred the mix to a cassette deck the playback was extremely distorted, especially during loud passages. We tried another cassette deck and even lowered the input levels on the cassette decks and used premium tapes with more headroom, but still we have distortion. Do we have a dynamic range problem in that the cassette recorder will not handle all the information from machines that run at 15 ips? If a cassette recorder ran at 15 ips would this problem be eliminated? Also we tried putting a limiter between the half-track and the cassette recorder and that seemed to have no effect on limiting these high levels. What is wrong and how do we prevent it from happening again?

—Dennis L. Chamberlain
Cuba, NY

We received the following reply from Merlyn Morgan, National Service Coordinator at TEAC.

In response to your query from Mr. Dennis L. Chamberlain:

The parameters of signal-to-noise, dynamic range, distortion, and frequency response are intimately related in an analog tape machine. The limits of each specification can be improved, but usually at the expense of the others. In turn, these parameters are dependent on tape speed, track width and flux level. The 80-8 has a flux level and tape speed identical to the 35-2 B, but the track width is approximately half as great. Thus, the two track unit can produce tapes with the greatest fidelity to an original source. The cassette deck, on the other hand, operates at $\frac{1}{8}$ the speed, and has about $\frac{1}{4}$ the track width of the 35-2 B. Also, the flux level is usually about 3 dB lower than the mastering deck.

Since you are apparently satisfied with the sound of the master two-track, but not the cassette, I would ask whether the cassette deck(s) that you used for the transfers were in good alignment and set up for the type of tape used. This may seem to be an obvious question, but it is often the source of dissatisfaction when transferring master quality material to a reference cassette. Assuming that the deck is within specification and calibrated to the type of cassette you are using and the cassette tape itself is in good order, the recording levels of the cassette would be the next area of investigation. The metering and recording level of a typical cassette deck are much more important than with a reel-to-reel deck. On many professional quality mastering decks (such as your 35-2 B), the VU meters can be virtually pegged during recording and/or playback and still produce tapes that do not sound unduly distorted. To attempt this with a cassette deck will almost surely result in unsatisfactory cassettes. Thus, it is a fairly well accepted practice to record cassette tapes a little lower in *peak* level than reel machines in order to decrease the possibility of overload or saturation distortion. If your cassette decks have overload indicators (peak reading LEDs) and you see these being lit up while the VU meters are reading -5 or -7, you can assume that the cassette will play back audibly distorted, even though the average level displayed on the

VU meter is well within the proper recording area. With cassette decks using LED or fluorescent displays having the peak hold feature, you can see much more easily when the signal level transients are possibly causing distorted peaks to occur.

Operating a cassette deck at other than standard, $1\frac{1}{8}$ ips., speed has several ramifications. From the compatibility point of view, no other deck will be able to reproduce your tape, making it useless for demos, etc. Technically, you would gain some improvement in frequency response and wow and flutter, but the dynamic range would still be limited by the track width (although some gain can be made in flux level due to greater tape speed). We do not recommend this approach as it appears to serve no useful purpose.

Applying a limiter between the master deck and the cassette may not, as you mention in your letter, eliminate distortion, either. What the limiter will do, if it is operating properly, is reduce peak program levels to a given level. If this level is too high for the cassette deck to safely handle, you will still have the same problem. Lowering the record level on the cassette deck will eliminate this problem. Bear in mind, however, that too low a record level will put you into the decreased signal-to-noise range of the cassette deck.

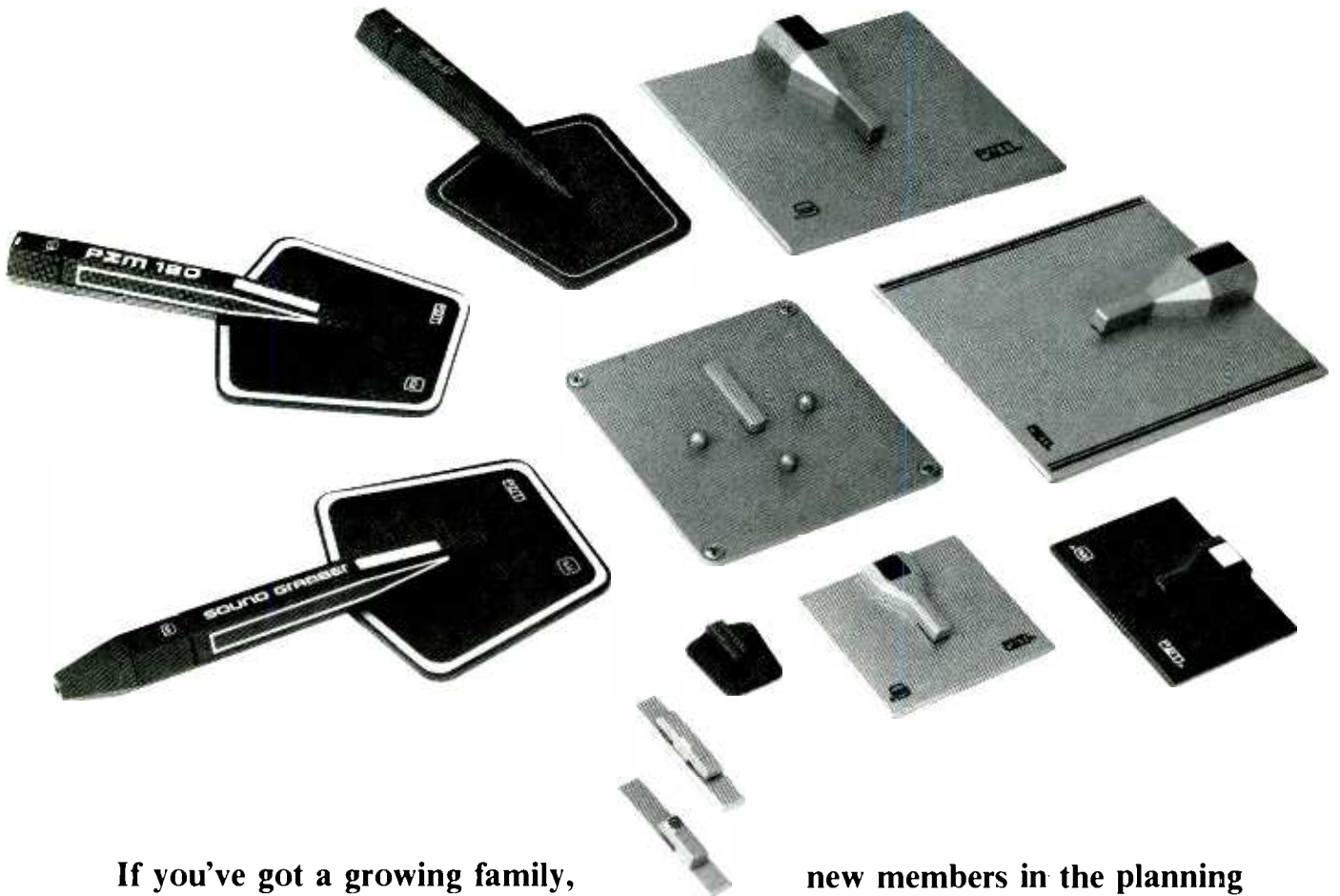
TEAC believes that the limitations of the cassette medium with regard to dynamic range can be minimized by careful circuit design, quality components throughout, and dbx noise reduction. With this noise reduction system, as you are probably already aware, the dynamic range will be greatly increased as well as providing about 10 dB more headroom before tape saturation. This would be the most logical approach to your problem.

We suggest that you apply the techniques mentioned above to determine where the disparity arises. As making music is the science and art of causing change in conformity with will, you may have to make several adjustments in both your science and art to achieve the end result in the cassette format that you are seeking. In parting, I would like to leave you with an old proverb which, I think, is directly applicable in this situation: "A chain is only as strong as the weakest link."

Best of luck in your recording endeavors.

MODERN RECORDING & MUSIC

Family Portrait



If you've got a growing family, sooner or later you need a picture with everybody in it. It's a statement of family pride, and we humbly admit that we are pretty proud of this group.

There was a time when most people didn't recognize a Crown PZM® as a microphone - even when they looked at one. Times have changed. Billboard Magazine reports in their most recent brand usage survey that 37.5% of U.S. recording studios use Crown PZMs.

This sort of demand, multiplied by many other applications, has made the family grow, with new microphones tailored for new users. In fact, the number of

new members in the planning process is larger than the number in the picture. Since a lot of our friends have only used one or two models so far, we thought we'd better introduce the family. The next time we may not be able to get them all in one picture.

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An Effective Noise Analyzer For Cables and Cords

Ordinary continuity testers may show microphone cables, guitar cords, etc. to be perfect, but some of these cables are very noisy when put into actual use. Since audio cables are not used with ohmmeters, then why not use the guitar amplifier to test your cords?

The Noise Analyzer discussed here will test cables for ordinary continuity. This is the first application. The second application is to connect the Noise Analyzer to an audio amplifier—in this case, a guitar amplifier. Then by wiggling and pulling the cable under test, a distinct crackling noise will be heard from the amplifier if the cable is defective.

The Noise Amplifier can be built as shown in *Figure 1*, using the components and values specified. Almost any cables—microphone, guitar, speaker, A.C. power cables, even switches—can be tested for defects. With a bit of ingenuity many valuable hours of troubleshooting can be avoided. This Noise Analyzer is sensitive enough to detect partial breaks in stranded conductors, or in the shielded wrap of cables.

How To Use The Noise Analyzer

Operation of the Noise Analyzer is very uncomplicated. Leave the "TEST-OFF" switch in the "OFF" position. Connect a suitable shielded audio cable from the Noise Analyzer to the guitar input (high impedance) on a guitar amplifier. Partially turn up the volume control on the amplifier. Then connect the cable to be tested to the alligator clips. Let us assume

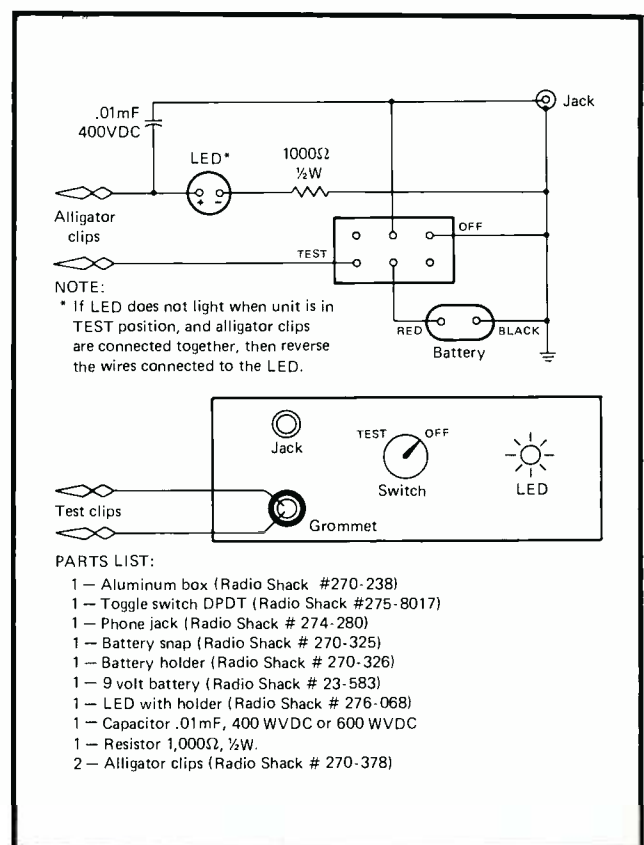


Figure 1. Construction and wiring diagram for the Noise Analyzer.

that you are testing a guitar cord. In this case, you must check the shield and center conductor separately. Connect the alligator clips to each tip of the jacks; the LED will light up if that conductor is not broken. Then shake the cable and listen for crackling noise. Do likewise with the alligator clips attached to the shanks of the plugs.

If these tests show no problem, the next test is to check for shorts or leakage between the shielded part of the cable to the center conductor. Connect the alligator clips to one plug only, making sure that the other plug is completely free. Put the analyzer in "TEST," and the amplifier volume control at "0." The LED should not light up unless there is a short in the cable or plugs. For a noise test between the conductors of the guitar cord, leave the alligator clips connected to the plug as in the last test. On the loose plug connect a "jumper" made of a short piece of wire with alligator clips at both ends; these clips are to be connected to the tip and shank of the loose plug. Put the Noise Analyzer in "TEST" with the amplifier volume turned up, and shake the cable for noise. During this last test the LED must be lit to show that all connections have been properly made.

Testing Microphone Cables

The Noise Analyzer is most valuable in testing individual microphone cables and snakes. In most

cases XLR connectors are used, and you will need to make up two XLR connectors with about 4-inch "pigtail" leads (see *Figure 2*). Bring both ends of the microphone cable to be tested to the Noise Analyzer, and attach the mating ends of the XLR pigtail adapters to the cable. Connect the alligator clips from the analyzer to the pigtails going to pin 1. Put the analyzer in "TEST" leaving the volume control on the amplifier turned up. If this conductor is not broken (or wrongly connected to another pin) the LED will light up; at the same time you can shake the cable for noise. Do likewise with the pins 2 and 3. To test for short or leakage between pins 1-2-3, proceed as indicated in the previous paragraph. There will be more tests in this case since you must check between pins 1 and 2, pins 1 and 3, and also pins 2 and 3.

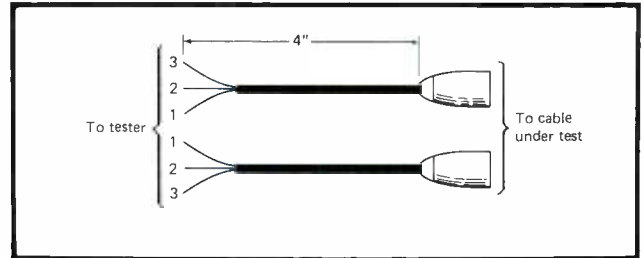


Figure 2. XLR-pigtail connectors used for testing microphone cables.

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If you have been able to follow all the procedures so far, then it should be very easy to test loudspeaker cables, A.C. power cords, etc. Another interesting test is to check earphone cords. In this case it is not necessary to disconnect the cords from the earphones. Simply connect the alligator clips from the Noise Analyzer to the shank and tip of the earphone plug. If the earphones are less than 1000 ohms D.C. resistance, the LED will light up showing continuity. Then proceed with the noise test listening for a crackling sound in the amplifier. If the earphones are stereo, test again by connecting the test clips to the shank and sleeve of the plug. Since earphones behave very much like microphones when connected to the *input* of an amplifier, you may get feedback if the guitar amplifier is turned up too much. It is often a good suggestion to test the A.C. circuitry of an amplifier. To do this you will attach the alligator leads of the Noise Analyzer to the two main tips on the power cord coming from an amplifier. Turn the amplifier switch to "ON," and shake the power cord; also "slap" the amplifier and listen for noise in the guitar amplifier. If you hear noise it could mean a defective power cord, noisy switch, loose fuse, or bad connections. If there is a ground pin on the A.C. plug, it must be tested by connecting the analyzer clips between it and the metal chassis of the amplifier. Note: In all tests involving A.C. power cords, none of these cords are to be connected to the

wall outlets—just to the alligator clips on the Noise Analyzer.

In my own case, my trusty and faithful soldering iron was not heating up as it should. I checked the continuity at the cord end with an ohmmeter, and all showed well. Then, before purchasing a new iron, I tested it with the Noise Analyzer, which showed a noisy spot in the cable. I carefully sliced open the insulation of the cable, and behold only three strands of the cable were intact; the remaining 27 were broken.

The Noise Analyzer costs approximately \$12.00 in parts, and can be assembled in about one hour. There is nothing critical about the wiring, and if you can solder carefully, no other electronic expertise is required.

Note: These precautions should be added:

- Do not connect the Noise Analyzer directly to microphones, guitar pickups, magnetic phono cartridges, etc., since the current in the test circuit of the Noise Analyzer could cause damage.
- Loudspeakers, earphones, etc., will not be harmed by the Noise Analyzer.
- When testing cables for crackling noise, disregard "hum" since in many cases it would be induced in the cable tested due to proximity of amplifier power transformers, A.C. lines, etc. In other words, with this Noise Analyzer we are concerned only with "crackling noise."



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Recording Techniques

bruce bartlett

AES Conference On The Art And Technology Of Recording

I have journeyed to the Fountain of Audio Knowledge and have returned with a bucketful. Last May in Anaheim, California, I attended a conference on the Art and Technology of Recording, put on by the Audio Engineering Society, and am happy to pass on to the readers of *MR&M* some of the information presented.

All of the comments in this article have been freely paraphrased; there are no direct quotations.

Basic Stereo Microphone Perspectives—A Review

Several stereo mic'ing techniques were discussed in this presentation. The lecturers were Ron Streicher, Pacific Audio/Visual Enterprises, Monrovia, California; and Wes Dooley, Audio Engineering Associates, Pasadena, California.

One popular technique is the X-Y or *coincident-pair* method, which uses two directional microphones angled apart, with their grilles aligned vertically (see *Figure 1*). Since there are no time or phase differences between the microphones, recordings made with the X-Y method are monocompatible. In other words, stereo recordings can be mixed to mono without any phase cancellations.

A disadvantage of coincident-mic'ed recordings is that they tend to lack "depth"; that is, the recorded hall acoustics or ambience sounds "flat" rather than spread out around the listener. Instruments all tend to sound the same distance from the listener. But by spacing the mics a few inches apart horizontally, you

can introduce small time differences between channels which increase the sense of depth and ambient warmth.

The *near-coincident* stereo mic'ing technique uses two directional microphones that are angled and spaced apart (see *Figure 2*). An example of this technique is the O.R.T.F. system, which uses two cardioid microphones angled 110 degrees apart and spaced seven inches apart horizontally.

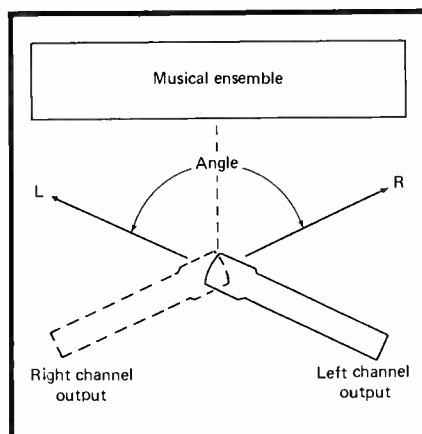


Figure 1. Coincident-pair microphone technique.

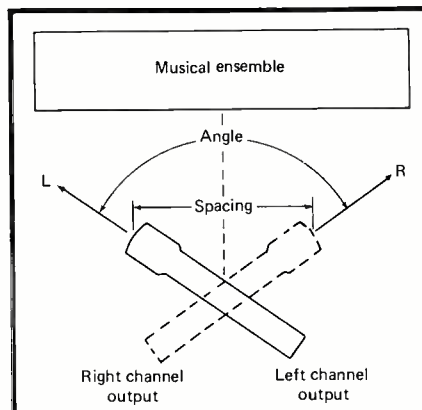


Figure 2. Near-coincident pair technique.

Another near-coincident technique was devised by Tony Faulkner, an independent engineer working in London. Two bidirectional mics aim toward the musical ensemble and are spaced 20 cm apart (see *Figure 3*).

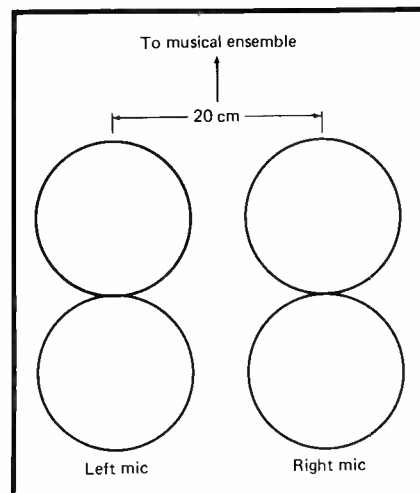


Figure 3. The Faulkner method of stereo mic'ing: two bidirectional mics spaced 20 cm apart.

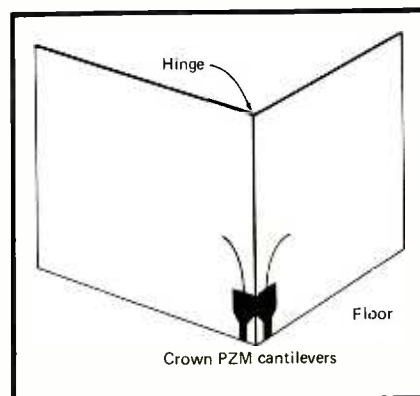


Figure 4. A coincident-stereo array using PZMs on panels.

Two Crown Pressure Zone Microphones can be mounted on a "V"-shaped assembly of two panels joined by a hinge (see *Figure 4*). This arrangement can be placed on the floor for stereo recording of chamber music or soloists.

The MS (Mid-Side) method employs an omnidirectional or unidirectional microphone aiming straight ahead toward the ensemble, matrixed with a bidirectional microphone aiming left and right (see *Figure 5*). These two mics are mounted as a coincident pair, often within a single housing in a stereo microphone.

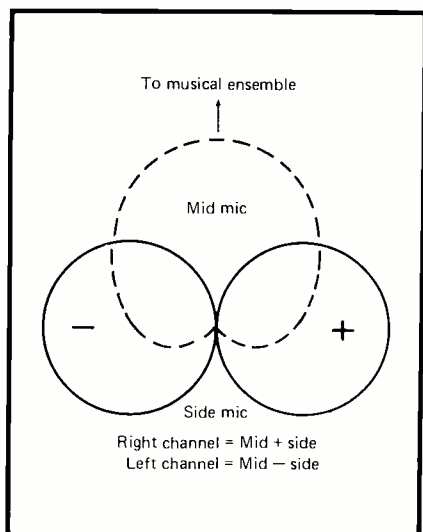


Figure 5. Mid-side stereo recording method.

By varying the level of the mid microphone relative to the side microphone, you can widen or narrow the stereo spread. This remote control of the stereo spread is highly useful for live remotes or broadcasts, where you can't physically adjust the microphones during the session.

Another advantage of mid-side recording is this: If an MS recording is heard in mono, only the mid microphone is heard; the side microphone signal cancels out. As a result, the recorded reverberation is reduced. This is beneficial because reverberation is more audible in mono than in stereo.

Binaural recording techniques typically use a dummy, or artificial, head with simulated ears, in which are mounted two omni condenser microphones. When played back over headphones, a binaural recording can reproduce the ambience of the recording venue with startling realism.

An inexpensive substitute for the artificial head is a head-sized baffle such as a panel, rubber ball, or hard cushion. *Figure 6* shows two omni mics on either side of a baffle, set up for binaural recording.

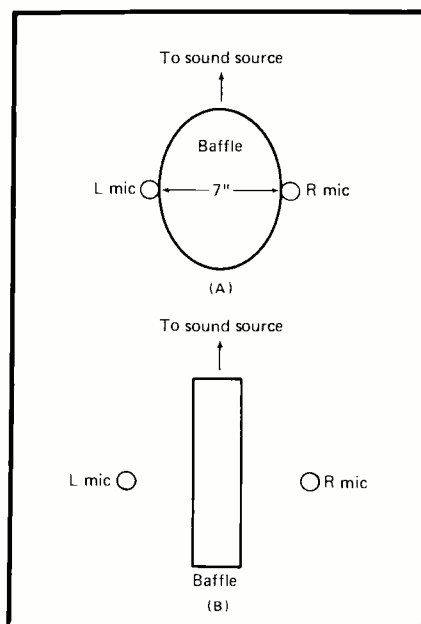


Figure 6. Two binaural recording methods.

Questions And Answers

Following the presentation on stereo techniques was a question-and-answer session on microphone applications. The panelists were:

Ron Streicher and Wes Dooley

Richard Knoppow, Audio Engineering Associates, Pasadena, California.

Shawn Murphy, Disney Studios and independent engineer, Los Angeles.

Dick Rosmini, USC, Los Angeles.

Jon Sank, Cross Country Consultants, Haddonfield, New Jersey.

Again, the questions and answers are paraphrased in this article; there are no quotations.

Question: What is your basic approach to recording?

Shawn Murphy: First I get the music to sound good in the recording room, and use as few mics as possible. Then I adjust timbre, balance, and panning in the control room.

Richard Knoppow: I use my ears; I listen. I try to keep the setup as simple as possible. Quality microphones are essential, because it's difficult or impossible to remove microphone coloration or distortion farther down the audio chain.

Dick Rosmini: I want to record the

music the musician has in mind, to preserve the fantasy. I'll use whatever works. Even a \$12 microphone is OK if it does the job.

Question: How do you make a recording that sounds good on inexpensive speakers as well as high-quality monitors?

Wes Dooley: If your recording sounds good only on a studio monitor, then you can't communicate with a wide audience. Listen on a variety of systems.

Shawn Murphy: Please your own ears on the accurate system, and also check for any problems on cheap speakers.

Question: I'm recording a quartet that includes flute and cello. I'm multi-mic'ing them about two to three feet away. How can I eliminate the scratching and breathing sounds I'm picking up?

Ron Streicher: Is your objective to accurately capture objectionable sounds, or to eliminate them? To reduce the noises, try a stereo pair at a greater distance. This arrangement may pick up more audience noise, however. Two-mic stereo recording also requires good room acoustics.

Dick Rosmini: Roll off the high frequencies to reduce these noises. To do this, you can (1) use an old ribbon mic, (2) use EQ, or (3) mic the flute from below.

An audience member, Stanley Lipschitz, noted that the spaced-microphone recording methods add subjective depth and ambient warmth due to the "phasiness" of the pickup. That is, the ambient signals recorded by spaced microphones are largely phase-incoherent, and such a stereo signal produces a pleasing, diffuse sense of hall ambience.

Question: What is your favorite microphone?

Ron Streicher: The one that works at the time. I like Schoeps microphones, or the AKG 422. Any mic will work in some situations and not work in other situations.

Wes Dooley: I'd hate to be limited to one microphone. But if I had to pick one, I like the Schoeps hypercardioid. Its tight pattern rejects unwanted sounds such as sound-reinforcement in the background. I like the excellent low-frequency response that omnidirectional condenser microphones provide.

Jon Sank: I don't use whatever works. I like whatever has theoretical appeal!

Actually, I like what I'm reviewing at the moment. I tried a pair of Crown PZM-180s on the floor of a large church to record a brass quintet. The microphones made a beautiful, crisp recording, with a good stereo blend. They smoothed out the instruments' key noises. I also like the B&K studio mics with the 16mm capsule.

Shawn Murphy: I like old mics best... spaced Neumann M50 microphones for orchestra, Schoeps, Neumann KM84, Sennheiser 421, RCA ribbon mics.

Dick Knoppow: It depends; I have no one favorite. I like Schoeps if they're available, RCA 44BX for brass, Coles ribbons, Neumann U87 for vocals.

Dick Rosmini: I've used B&K instrumentation microphones for many years. They require some compromises due to their extended low-frequency response and omnidirectional pattern. I have no favorites, but I like small microphones.

Popular Recording Techniques

This lecture session was put on by Dick Rosmini, USC, Los Angeles; Stan Ricker, a prominent record-cutting engineer; and Greg Geddes, a musician and recording engineer.

Stereo master tapes can be mixed so as to reduce vertical modulation of the record groove. It's important to keep the vertical or L-R component under control, because excessive vertical modulation is difficult for a record cutter to cut, and for a phono cartridge to track. In addition, if vertical modulation is reduced, the record can have more level or a longer playing time.

To reduce the vertical modulation (stereo difference information), do the following:

1. Pan hard-left and hard-right instruments slightly toward center.
2. Pan high-intensity tracks to center (lead vocal, trumpet solos, etc.).
3. Pan low-frequency tracks to center (bass, kick drum).

If you record two guitars on the left and right channels, panning them toward the center will also improve the sense of a musical ensemble. It's OK to pan the reverb return signals hard left and right.

An essential tool for checking vertical modulation and phase problems is an oscilloscope set up for an X-Y display. Connect the X or horizontal scope input to the left-channel console bus; connect the Y or

vertical scope input to the right-channel console bus. You may want to mount the oscilloscope 45 degrees clockwise so that vertical record-groove modulation appears vertical on the scope display.

Figure 7 shows various X-Y oscilloscope displays and what they mean. The scope has been rotated 45 degrees clockwise.

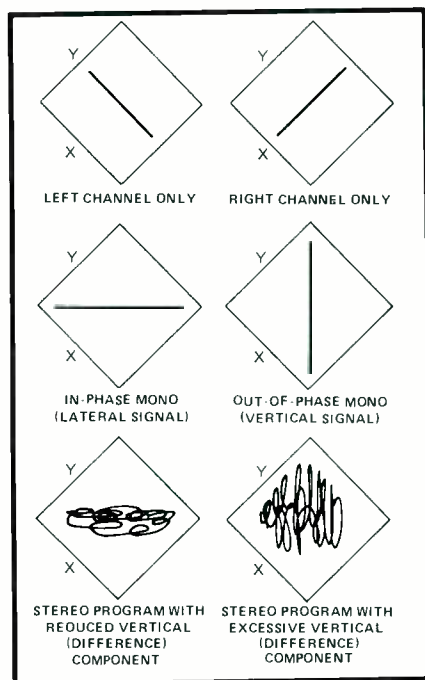


Figure 7. Oscilloscope displays in X-Y mode.

The X-Y scope can also be used to align tape heads. Connect the output of one track to the X-input; connect the output of another track to the Y-input. Play an alignment tape of a 15 kHz tone. Align the head so that the two channels are in phase (which is indicated by a horizontal line on the scope display).

If the sync head of a tape recorder is the opposite polarity of the playback head, you may have to invert the polarity of certain tracks while ping-ponging. In some consoles, the signal off the tape is the opposite polarity of the live microphone signals. Consequently, if you mix in live mic signals with ping-ponged tracks, some of the instruments will be in opposite absolute phase.

Often guitar amps are recorded with both a microphone and a direct box. The signal from the direct box may be the opposite polarity of the microphone signal. Combine both signals to mono to check for phase

cancellations, and reverse the polarity of the direct box if necessary.

Musicians hear their instruments up close. They want to hear on the monitors what their instruments sound like to them. For example, you may want to record an acoustic guitar in stereo because it sounds "stereo" to the musician.

Here's a method of doing a mix-down for pop music. Set the kick drum level to -10 VU on the VU meters. Turn up the monitor level until the kick drum is as loud as you like to hear it, then leave the monitor level alone. Bring up the other tracks one at a time and mix them relative to the kick drum.

Here's another method of doing a mixdown, this time for country music, where the vocal is most prominent. Set the lead vocal level to peak at -5 VU. Bring up the monitor level so that the vocal is as loud as you like to hear it, then leave the monitor level alone. Bring in the other tracks one at a time and mix them relative to the vocal track.

When doing a mix, first balance the levels of the tracks with no EQ. Then pan them into position, add reverb, and add EQ last.

The headphone, or cue mix is very important because it affects the musical performance. Try to add reverb to the cue mix so the musician can get a feel for the finished product.

Mic lead vocals at forehead level about eight inches away. If vocalists feel a need to sing right into the mic (as they do on stage), give them a dummy mic to sing into, and record them with the more-distant microphone.

Monitor frequently in mono to listen for phase cancellations, which are heard as a colored tone quality.

If the bass is accidentally recorded only on one channel, it can be shifted to both channels at the cutting stage by using a low-frequency crossover between channels.

Equalization that sounds good on a soloed instrument often sounds bad when the instrument is mixed with others. So don't spend much time equalizing instruments heard alone; mix them with others, then add EQ.

Musicians want to produce a unique sound on record that is theirs alone. Consequently, you can't aim for an accurate, natural sound every time.

Next month we'll continue our coverage of the AES conference on recording techniques.

The Video Producer

In the March 1984 issue we discussed why groups need music videos. The article detailed how to make your tape by using the services of a professional producer.

In this, and the series of articles to follow, we will discuss "do-it-yourself" music videos—the bargain basement video.

Music videos don't just happen. Producers make them happen. Producers bring all the elements of the video tape together in time and on budget.

By following the "Three P" principals, you can produce a music tape that is effective and artistically pleasing. The Three Ps are: planning, preparing, and producing.

The Plan

Your video starts with a plan, long before you roll an inch of tape. At the initial planning meeting you and your group decide what your tape should communicate; what look you want to achieve. At this and following meetings you decide on a budget. The buck often determines whether you are going to do all your shooting in a studio or go on location for some or most of the shooting. The budget must be considered when planning

special effects (which call for special video equipment). The budget determines what outside talent you can afford.

The planning process is important so that you can determine the capabilities of the individuals in the group. As producer you must be aware of what each member can and cannot do, how responsible and dependable they are, and how much time they can devote.

If you're using inexperienced people, consider having someone available (this could be a budget problem) who's been involved with video productions to guide the novices. The quality of the finished tape depends, to a large degree, on the producer's finding and using the special talents of people.

Planning ahead will enable you to face some "real world" problems and practical limitations. What, for example, is the capability of your equipment. If your recorder can edit, you can shoot out of sequence, or add scenes after the initial program has been taped. If you have two cameras and a switcher, you can use a wider choice of camera angles, and possibly do an entire music tape in one take.

Location shooting demands planning. You must determine if electrical outlets are available for lighting or if the power source must be

battery operated. You'll need to know things like how much power your lights draw, how close your zoom lens will focus, which colors your camera will reproduce faithfully, and the portability of the equipment.

Legal questions must be answered in the planning sessions. If you're not taping original music, you'll have to get copyright clearance. You can avoid a lot of hassle by licensing music from libraries especially made for audio-visual users.

It's also a good idea to get signed releases from everyone who appears or is heard in your video. This includes people in photographs or films that may be used. Where children appear, get a release signed by a parent or guardian.

Union requirements have to be considered when hiring most professional talent. Requirements can vary from one area to another and from one union to another. Generally the union people you hire can tell you about the conditions of employment. Or, you can always check with their agent or union office.

Permission from the owner must be obtained if you're planning to work on any private property. Municipal authorities must be contacted if you want to use such public places as parks, playgrounds, or even the city streets. Police permission is not

only required in some instances, but advisable. The police can keep on-lookers from straying onto the "set" and causing you to reshoot scenes.

If answers to these problems are formulated in the planning process, in the comfort of a meeting room, you're less apt to mess up when the actual shooting begins.

Be Prepared

Once you've done your planning, you're ready for step two—preparing. This is the time to gather the props, to write the script, build sets, find locations, hire the right people, "block out" (walk and talk through) the scenes.

If yours is a simple production, you may want to do all the work yourself. However, with a complex production, you'll need to hire special skills, and these may be limited by your budget. Michael Jackson hired the guy who did special effects on the *An American Werewolf In London* flick for his special effects. And he hired platoons of actors. It's a good bet you can't afford to do the same, but you'll probably need specialists for the script, art, titles, and graphics, building set, lighting, props, finding locations, building visual aids, operating and maintaining the video equipment, etc. And you'll need a director to take all of these elements and skills and turn them into a video that will sell your group's talents. If you're lucky, you'll get people who can do several of the jobs and this will keep costs down.

Part of the preparation is scheduling. As the show's producer, you're the traffic cop who keeps the production moving. You have to make sure that everything and everyone is available and ready at the right time. During this juggling act, you have to get estimates for all expenses and keep tabs on them so you don't go over budget. And in the midst of all this, you have to keep setting deadlines and making sure they're met.

Once the shooting starts, you make sure there are no delays caused by waiting for a missing prop. The starting point is the script. Go over the completed script with the writer and, if necessary, help with the rewrite. Repeat this process until you're satisfied that the "look" you want can be produced.

The director is the next person you'll have to work with. Very often, the producer is also the director, and that may be your situation as well.

If you hire a professional director, involve him in the project as early as possible. He can help with arrangements and artistic decisions.

When it comes time for the actual taping, the director takes over. He's the expert. He knows what the equipment will do and how to get the most out of the people on the set. And most importantly, he knows how to add production values in the shooting.

Titles and artwork come next. Working with the director, decide what's needed. Work with an artist to plan the arrangement, the type style, and the background for each piece. He should show you and the director rough layouts of what he plans to do.

The next task is to help the director make all the arrangements for the miscellaneous things that will be needed when it's time to shoot: props, costumes, equipment rental, the crew, places to shoot, music, sound effects...the list seems endless. To make sure nothing is forgotten, the director may make up a storyboard—rough sketches that show exactly what he wants to shoot. He'll also make a list of everything he needs for each scene, and ask for the producer's help in obtaining them. Many phone calls will follow, and from these calls a shooting schedule will begin to emerge.

The final preparatory step is to meet with all of the people involved to make sure everyone knows what they should be doing. This "pre-production" meeting is also a good time to get all to help with those last few hard-to-locate items.

Roll 'Em

Finally, it's almost time to shoot. Everyone knows his/her part, what he's supposed to bring and supposed to do. Set decorations and props have to look right. The lighting has to be right, and everything has to be in place. Then, the talent "talk it through" and "walk it through." When everyone has a pretty good idea of what the director wants, they rehearse, with the director watching and correcting. Now you're ready to roll tape.

As producer, you bear the final responsibility for the quality of the show. You'll make the tough decisions. You'll keep track of the expenditures. And, you'll accept the blame and the praise for what everyone else did.

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PLAYING IT

STRAIGHT



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DIRE STRAITS

THE MARK KNOPFLER INTERVIEW



When Mark Knopfler of Dire Straits decided to release a live recording of his band, he made sure that the album would *really* be live. Thus, *Alchemy*, the two-record LP released this spring, was recorded at a single concert date and no overdubs were later added to the recording.

Knopfler has always taken a natural approach to music making. In an era of top-this, Dire Straits have stuck to their original organic, guitar-dominated brand of rock 'n' roll. Knopfler, with his decidedly unflashy performing style, simply adheres to the tried-and-true practice of writing and playing well-crafted songs.

Similarly, Knopfler prefers to get down to business when making records. He is admittedly anti-technical; that is, he likes to get his music down on tape with a minimum of studio fuss. Experimentation is limited to the music itself and gimmickry

ing things about the live album is that you used no overdubs. That may be a first!

MK: One of the things that pisses people off about live albums is that they're not live to start with. They start with the bass and drums and then the singer goes in with his vocals, and then the guitarist wants to add his parts on top of everything else. By the time you've finished you've cut so far into the multi-track. I once watched an engineer work on somebody's so-called live album and I was shocked. And stunned. Even when people see certain pop stars on TV playing to audiences—when they switch on their MTV—those aren't live performances at all. I can't see any point in building up a live album from the ground up in the studio.

MR&M: You also took the entire live album from a single performance, which is quite rare. It must've been some night.

MK: It was thumping along. We could've delved into different performances but there's something wrong with that as well. Once you go to 37 different things it's not live anymore. And rather than wade through all those tapes, I just took my courage in both hands and plowed ahead. And if there's a couple of greenies in there, we'll just duck them. There were a couple of bum notes that we cut out. We also cut out all of the chats and most of the long intros; you just don't want them on a record. So it's pretty much exactly what happened.

MR&M: How was it recorded?

MK: We used the Rolling Stones Mobile; that's it. There were certain things we couldn't do, and there are some buzzes and lighting crackles here and there, but so what?

MR&M: Were any special techniques used in the recording?

MK: The engineer, Nigel Walker, just tweaked the overall thing a little bit, just brightened it. There are no special mic'ings or anything like that. One of the reasons we could do this was that the on-stage sound was together. There was no thunderous Leslie swamping everything or anything drastically wrong. It was balanced out front so we could integrate the audience sounds, and the record could get that ambience, that feeling of the whole.

MR&M: Were you more conscious of what the band sounded like on-stage because you knew it was being recorded?

MK: At first we were, but then after awhile we just said forget it and we plowed on.

MR&M: How did you work with the engineer on the mixing of the album?

MK: Well, it was great because I just got to play a lot of pool. And my game was really hot by the time we were finishing. After that I had to do the *Cal* soundtrack and I couldn't get out of the studio. Morning and night I was in there, so my game of pool went back down. But I've revived it since then.

MR&M: What was the other soundtrack you recently finished?

MK: The first was *Cal*, which was

a David Putnam film, and then I did Bill Forsythe's *Comfort And Joy*, which has a certain amount of our *Love Over Gold* album in it because that album inspired Bill to do the film. I shouldn't be saying that but it's true.

MR&M: Do you prefer playing live to recording in the studio?

MK: No, I like it all. I like rehearsing and doing sessions. I'm lucky. I like rehearsing because of that moment when you know it's happening, that you're tying it down. That's really exciting. It's almost like the early stages of a sexual relationship; it's at its freshest. Playing live has its advantages as well because you go on finding new things and polishing them, dropping things. Another thing I enjoy doing on the road is building segues between songs. The show flows more. So you end up writing whole pieces of music during soundchecks and things.

MR&M: Do you ever regret recording a song in its early stages because you develop it further in time?

MK: Yeah, like "Once Upon A Time In The West." People always came up to us and said that we should re-record it the way it is now, as opposed to the skeletal, linear approach of early on. It's become much more of a spaghetti melodrama, with strings and keyboards and missiles and who knows what. It's like a different animal; you pump it up with as much air as you can.

MR&M: Does the band contribute to the writing process or do you know what you want when you go in to record?

MK: We usually know what we want but the band does often come up with some great ideas. Then it's either a matter of rejecting or using those choices.

MR&M: Do you ever write in the studio or on the road?

MK: No. I wrote a couple of things on the road, including "Telegraph Road," because that was something I saw on the road. I started to write it on the piano during soundcheck. But generally I don't write on the road. Another one I did was "Les Boys." We saw them (the inspiration for the song) in Germany and they were the most awful cabaret act, in the disco in this hotel we were staying at. I knew I had to go right back to my room and write the song. But generally I like to write afterward because you have time to reflect.

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MR&M: When I think of Dire Straits I think of the music before the lyrics. Is one aspect more important to you than the other?

MK: They're equal. We try to achieve a totality, some kind of balance. It's not like doing a film score, where you're only telling part of the story.

MR&M: Is scoring for film challenging to you?

MK: Yeah, especially if it's a finely tuned film and very demanding. The slightest thing, if you can put a sound on it, will change what's happening. It can be a tiny thing like this (snaps fingers); it's really interesting working with that. It all has to do with what you have to work with, and I've been extremely lucky in that the films I've had to work with have been very good. I'm not having to work with sitcoms such as *One Day At A Time*.

MR&M: Do you enjoy the discipline of writing a piece of music to fit an exact length of time?

MK: It's great fun. The Synclavier is great for that because you just click the time in—stop-watch it—and try to make things fit. We have a lot of trouble in England sync'ing the film or video with the tape machine, and because I always mix on an SSL [Solid State Logic] desk it becomes extremely complicated. Then you have three machines that are trying to talk to each other. They're linked by a British invention called the Cue Log, which is supposed to provide some kind of common ground between these three machines—the tape machine, the video machine, and the console as well. So things freak out every now and again because they don't always necessarily speak the same language.

MR&M: Do you have a home studio?

MK: No, I just strum a guitar at home. I've very lazy about that. Actually, working with Bryan Ferry is very interesting because he has a room with a studio where we do the

sessions. So you make your own hours.

MR&M: I'm sure you're tired of talking about your work with Bob Dylan but if you can bear one more question, what was he like to work with? He has a reputation of being very quick in the studio but being a perfectionist nonetheless.

MK: Yeah. Well, what can I say? He was such a colossal influence on me as a kid in terms of singing, playing guitar, and writing. I've been a fan of his since his first album. I still think his later stuff is great. There were some low points but things like *Blood On The Tracks* were great. I was really pleased to meet him. I've enjoyed working with all of the people I've worked with, and I'd love to work with them all again, as well as with future people. I'd like 60 hours a day to be able to do it all. I've enjoyed working with Steely Dan, Van Morrison, Scott Walker, Bryan Ferry, Phil Everly, a few others.



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What happens is that I'll stay in the room too long, then stay out of the room too long. It's silly; I'm not going to produce myself anymore.

MR&M: What guitars do you use besides the Chet Atkins model?

MK: Mostly Schecter electrics, with Seymour Duncan pickups. I use a National steel guitar from the 1930s. I think I use about eight guitars on a show. Hal goes through four or five himself, everything from old Gibson SGs to Gretsch Rock Jets to Fender Telecasters to Strats. Each guitar will do something that another won't, so it's nice to have a guitar to fit the song.

MR&M: You have a very distinctive guitar style. Is there a trick to getting the sound that you do?

MK: No, I think I just have my own style, using my fingers.

MR&M: What amps do you use?

MK: At the moment I'm using Boogie amplifiers driving Marshall 4x12 cabinets. And I have a rack with customized effects, customized by Pete Cornish from England.

MR&M: Do you prefer working at any particular studio?

MK: I like big rooms, and since I've been doing these film things I prefer AIR in London. I've been in there for months, and I'm doing the Aztec Camera record there as well. It's a very professional studio, and I like Neve consoles to record on, and SSL consoles to mix.

MR&M: What about mics?

MK: On-stage it's mostly old Shure stuff and in the studio I like the same things that most people do, old Neumanns.

MR&M: How long does the average Dire Straits track take to record?

MK: I couldn't tell you because it differs in each case. Some go real fast and others can take hundreds of hours. You change the lyrics over time; I let some songs simmer. Other things, like "Expresso Love" and "Hand In Hand," I wrote really fast and although we played around in rehearsals it only took as long to record as it did to play the songs. "Telegraph Road" took months to put together in the form that it's in.

"Romeo And Juliet" and "Tunnel Of Love" took long to write. You sculpt them. The albums take longer each time; the first took only two weeks and the fourth was a couple of months. But I'd like it to get shorter again. I don't listen to them that much after they're done.

MR&M: What was the recording of the *Local Hero* soundtrack like?

MK: It was different because for one thing I was using different musicians a lot of the time. And there were more instrumental things. To have guys like Mike Manieri, Tony Levin, and Michael Brecker come in...they're heavies.

MR&M: Do you like to record your studio albums without a lot of overdubs?

MK: It's pretty straightforward; we're playing things all at once but other times we might be repairing a bass part or I might track a lead guitar part three times. I might take sections from other passes and stitch them together, do a composite. But it's nice if you can get stuff from one pass that just flows naturally. I felt that *Love Over Gold* was too worked on. I mean, I'm glad I did it but there was a lot of attention being paid to the sound of it. It becomes a sort of *tour de force*, which is admirable on one hand but basically doesn't move you quite as much as a more spontaneous rendering would. If you can create the illusion of spontaneity, then in a sense you've succeeded.

MR&M: I'm curious about the song "Twisting By The Pool," because it's so different than anything else you've done. How did that come about?

MK: Well, after *Love Over Gold* came out, we were going around Europe playing "Private Investigations" 95 times. And after playing a song like that so many times, all you want to do is play 4/4 rock 'n' roll. So we just went in and did it in a couple of days. It was just a tongue-in-cheek

reaction to this great big, monstrous, pretentious song.

MR&M: Do you take your own sound crew on the road with you?

MK: Oh, yeah. We have a few main people who we pay even when we're not on the road.

MR&M: Before, when I mentioned video you made a face when you said MTV. Can we assume you're not a fan of the medium?

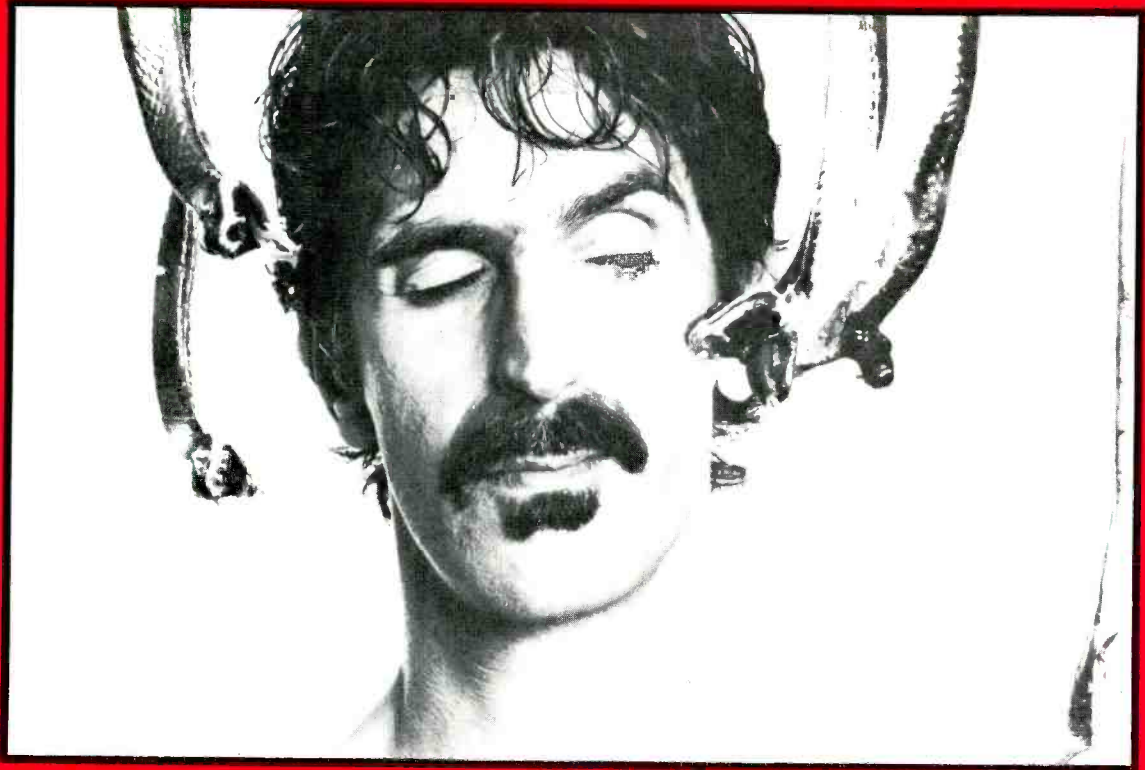
MK: Well, when I'm at home I watch the sport channel on cable. Occasionally I flick it on to the MTV channel, but after you've seen a video more than twice you're pretty tired of it, whereas you might enjoy the record 500 times. Also, they all have the obligatory sexy women, and the more Conan-style ones have the same motifs going through them. And that's all been done years ago. Yet they still turn these things out. I understand that it's got to be and it's part of what's going on now, but in the end it's radio that's most important anyway. I like good concert footage though, which is why I got involved with ours. I don't like video as much as film, either; you get a much better picture with film. It's handled with more reverence and respect; the video cowboys are just whopping away and having a whoopie time. I do have to make them (videos) though; I've been kind of lax because I haven't had the time. It can be fun and you can do good things with it. I think also that the format of MTV has become like the consultancy-based radio stations; it's become structured in its approach. It's a narrow way of doing things. One of the guys I was talking to said he's told how to walk the camera, what to say; the people aren't being allowed to exercise their own creativity. They want the whole thing to be controlled. It's very much an advertising-controlled business.

MR&M: What's next for you?

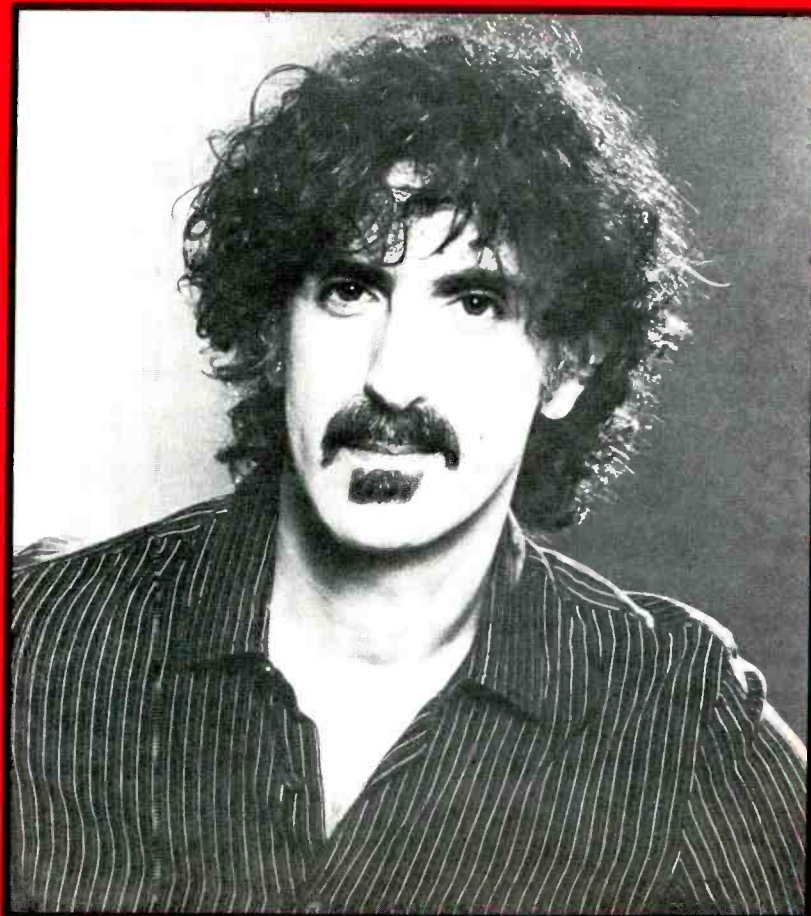
MK: I've been asked to produce Men At Work but I don't know if I'll have the time. I want to do another Dire Straits record. And then we'll probably tour here next spring (1985). We haven't played here in three years. We're actually more popular in other countries, like Australia. In New Zealand we're like the Beatles. We've played to 90,000 people there in a football stadium. It's an event but it's silly.

MR&M: You mean you don't enjoy being screamed at?

MK: It's weird; you have trouble playing. It's strange, just strange. But fun.



FRANK ZAPPA



bill milkowski

ORCHESTRAL RECOVERIES

After 18 years of playing practically every concert hall and hockey rink in the free world, Frank Zappa was nearly ready to call it quits. Disgusted with the whole exhaustive prospect of touring and playing before legions of rowdy, potentially violent fans, Zappa decided to shelve his rock career in order to concentrate on other pursuits, namely, symphonic music.

Phase One of Zappa's new career began last year with the release of a digitally-recorded album of his ambitious contemporary symphonic pieces, performed in concert by the London Symphony Orchestra. That program was conducted by 31-year-old Kent Nagano, of the Berkeley and Oakland symphonies. The recording session was produced and engineered by Zappa for his own Barking Pumpkin label.

Phase Two occurred in February 1983, when Zappa shared the baton with maestro Jean-Louis LeRoux for a 100th anniversary celebration of the music of Edgar Varese and Anton Webern, which was performed by the San Francisco Contemporary Music Players at the city's War Memorial Opera House.

Zappa's burgeoning interest in symphonic works continues. This past January, three original Zappa chamber compositions were performed by conductor Pierre Boulez's prized chamber orchestra, the Ensemble Intercontemporain, with Boulez himself conducting the proceedings at the Theatre De La Ville in Paris. An album on EMI Records is forthcoming.

Last spring, Nagano and his Berkeley Symphony presented the world premiere of Zappa's "Sinister Footwear," a ballet performed by the Tandy Beales Company and featuring the puppet creations of Ron Gilkerson.

And there's more. Zappa has been invited to guest conduct at the prestigious Magghio Musicale Fiorentino in Florence, Italy, and has also been asked to guest conduct for the Honolulu Symphony 1984/85 season and to conduct his own music and selections from Edgar Varese at the University of Buffalo in 1985.

All this from the man who brought you such irreverent rock classics as "Don't Eat The Yellow Snow," "Dinah-Moe Humm," "Illinois Enema Bandit," "Half A Dozen Provocative Squats," "Help, I'm A Rock," "Saint Alfonzo's Pancake Breakfast," "My Guitar Wants To Kill Your Mamma" and the notorious "Stink Foot," to mention just a few in his discography of hundreds of recorded compositions.

Zappa has not abandoned his rock career. He's just put it on the back burner for a while. This summer he plans to release *Them Or Us*, the 36th album of his career. Besides featuring his regular band of Steve Vai and Ray White on guitars, Chad Wackerman on drums, Bobby Martin and Tommy Mars on keyboards, and Scott Thunes on bass, it will be something of a family affair. His oldest son Dweezil will be making his debut with daddy, playing some insanely wicked wang-bar riffs on "Stevie's Spanking" and a reggae remake of "Sharleena," a love ballad that originally appeared on Zappa's *Chunga's Revenge* album. Daughter Moon Unit will also make an appearance on the new LP, offering up a

Valley Girl rap for a mock aerobics tune called "Hoznia." And Zappa's youngest son Ahmet Rodin actually penned one of the tunes, "Frogs With Dirty Little Lips," which is a little ditty he dreamed up at the age of six and sang around the house every day. Johnny Guitar Watson also makes an appearance on the new album. Other tunes include "Baby Take Your Teeth Out," "In France," "He's So Gay," "Won Ton On" and "Planet Of My Dreams."

And as if that weren't enough... there's also a book in the making and a Broadway musical in the offing, a production called *Thing Fish*, which Zappa has been working on for some time now. While in New York recently, Zappa talked about his music, his career and where he's headed.

Modern Recording & Music: I understand that you had a harrowing experience in Palermo, Italy, the last date on the last rock tour you did. Was that something that turned you off to touring?

Frank Zappa: I would say so, yes. What happened in Palermo was... we were working in a soccer stadium, it was the last concert on the tour, and I had been looking forward to playing in Sicily because my father was born there. And that afternoon I had taken a drive over to his hometown, this horrible little village called Bartenicco. So I checked that out, you know, getting into the Sicilian vibe of it all. There's this Italian schmaltz connected with Sicily for all people of Italian extraction.

So anyway, I was in a pretty good mood after exploring these old haunts. I get to this gig, had a great sound check, I had written a song that afternoon and taught it to the guys in the band...everything looked like it was going to be fine. We start the show and within 10 minutes of the beginning of the show there's this weird something going on, but you can't see the audience. It's totally black out there. They're a million miles away cause we're out in the middle of this soccer field. And I hear some disturbances. Suddenly, they got the army there and the police department and they're all fucking armed to the teeth. The next thing I know, the tear gas starts going off and guys are kneeling down with rifles, like mortars, shooting this tear gas into the stands. Bricks start flying. It turned into chaos. And we kept on playing through this. But it got so bad that we had to put wet rags

on our faces to keep the tear gas out of our eyes. And we kept playing on and on.

Finally, the lights start going on and we see that the place is being emptied out. They're firing tear gas all over the place and they're clearing these people out of the stadium. We played for about an hour and a half during this thing. And we found out later that some kids had brought guns to this concert and the cops had guns and they were shooting at each other like cowboys and Indians. Meanwhile, we're trapped in the stadium downstairs, some gangs had broken into the tour bus, there's rocks flying all over the place and it's like a little war going on. And what the fuck for?! We go there to play some music and it turns into a situation where people are injured.

MR&M: And you lost money on that tour besides.

FZ: Oh, yeah. The complete tour was financially very problematic, to the tune of \$160,000. So after that whole experience there I'm saying, "Look, I am 42 years old, I like music a lot. But I don't believe that subjecting yourself or the audience to that kind of potential abuse is something that you must have to do in order to make music. I think it's quite enough to make records. And I've got at least the next five records already on tape, 37 tunes ready to mix, with the last road band. And I'm not saying that I'm never going to go on stage again because I've done some conducting since that tour of Italy was over. But to go out there with an electric guitar and play rock 'n' roll music on a regular basis night after night in town after town...I don't want to do that. I've done it...20 years of it. It's enough.

MR&M: Would you agree that what did happen in Palermo is an extreme example of the potential for violence at any rock concert today?

FZ: Anyplace, but especially in Europe. There's a large amount of anti-American sentiment over there as a result of the actions of the present administration. It used to be that if you were an American, your name was mud. Now your name is shit. Because, if they see you on the street, you are the visible manifestation of everything they hate about a regime they don't understand, located someplace else, that threatens their country. There's so much distrust and distaste for American behavior and ideals right now. It's a bad time to tour.

MR&M: What about the American concert circuit?

FZ: American concerts are dangerous to do also because the Americans don't have any money to go out and buy tickets. So, the only things I'm really interested in doing on stage now are things with orchestras or chamber groups.

MR&M: You have no degrees, no mentor or no formal music training, yet you're composing this incredibly difficult music. How did you teach yourself?

FZ: I went to the library. It's free and it's there. And until they close down the public libraries in the United States, everybody has access to the same information. Just go and do it.

MR&M: So you were hungry for this sort of information at an early age?

FZ: Yeah, I started when I was about 14. I was writing symphonic pieces before I ever wrote a rock 'n' roll song.

MR&M: And throughout your career it's been trial-and-error with the various projects you've undertaken?

FZ: Yeah. I don't think I've mastered any of the techniques but I've gotten to a point where I'm severely competent. And in order to master the things that I've set out to master, the main thing that stands in my way is the budget to do it, because the stuff I'm working with is all expensive machinery and expensive personnel and things like that. I mean, I'm at the stage now where in order to do the things that I need to do, it requires resources beyond what I'm capable of providing for myself. Remember, it's my money that

makes these things. I'm not funded by grants or foundations or anything. If I get a sales of a concert ticket, part of that money goes back into buying equipment and the airplane tickets for the next tour and paying the salaries of the people who go out. And the costs of making records keeps going up too. So I operate just like any other small business. The capital comes in to keep the business running so that people can consume it. I mean, I don't stick the money up my nose and I don't buy a yacht. It goes right back into the music. It's like converting the income I made from "Valley Girls" into this orchestra album. But I see no way in the future that I can continue funding such projects. This orchestra album is as much as I can spend, and it's kind of a dead-end project at that because we only pressed 6,000 copies of the album and



it cost so much to do it that it's already a net loss as a project. So that gives me a number of problems for future projects.

MR&M: I understand you had a number of problems in getting this orchestral project together. What happened?

FZ: Wanna know why we didn't do this thing in the United States? Besides the bad attitude we encountered, it was a money situation. We were originally going to record this with the Syracuse Orchestra with Christopher Keene conducting, and it was going to be premiered at Lincoln Center in New York City. We had made a deal with the Syracuse Orchestra and within a matter of days they managed to double the price. It started out at \$150,000 for the whole project and then somebody in the orchestra union had found a whole bunch of extra rules that brought the cost up to \$300,000. So I said no way.

MR&M: This project has gone through a lot of sidetracks along the way. You mentioned that at various times it was going to be done with the Krakow Symphony Orchestra, then the Mexico City Symphony, then Syracuse. How did you end up with the London Symphony Orchestra?

FZ: Well, as soon as we got this extortionary message from the Syracuse Orchestra we decided to try to contact a British orchestra. First we called the BBC Orchestra but they were booked solid for the next five years. Then we called the LSO and they said, "Well, we don't know whether we can do it because we're just finishing off a film score and the musicians have one week off before they have to do another film score." And since they get to vote on everything they want to do, they put it to the orchestra and the orchestra members chose to record my stuff rather than take a vacation. They went directly from *Return Of The Jedi* to my stuff to another film. We had just a certain number of days to do the whole thing, and they were rehearsing their butts off. We had 30 hours of rehearsal for one concert and three days to record.

MR&M: They probably didn't have to rehearse that much for *Jedi*.

FZ: Well, they didn't have to because it's more traditional notation. It's not that hard to read, no difficult counting involved.

MR&M: What were the problems you encountered with the Krakow and Mexico City orchestras?

Two weeks into the tour, martial law broke out in Poland and all this other crap was happening over there. So I said, "I don't think I want to take my recording truck into Poland next to the tanks. It's crazy to do that."

FZ: I went to Mexico City and actually conducted their orchestra for a little while. They were very interested in doing the project, then after we had the rehearsal and we got down to what it would cost, the guy I dealt with added it up and wanted \$400,000. He had somehow gotten a hold of what the scale would have been if I had done it in New York City. And there was no way that they were as good as the New York Philharmonic and no way that I was gonna give them \$400,000...so I said, "Thank you, goodbye."

As far as the Krakow Orchestra goes, they had been after me for years and at one point last August, right at the end of a European tour, I was supposed to go from Sicily to Warsaw to start this project. It had all been set up at the beginning of the tour. Two weeks into the tour, martial law broke out in Poland and all this other crap was happening over there. So I said, "I don't think I want to take my recording truck into Poland next to the tanks. It's crazy to do that." So we passed.

MR&M: Can you tell me about the problems you encountered in dealing with the orchestra unions in America?

FZ: You have problems with the unions because of the way the union scale works and the cost per musician to do these projects and the further entanglement of union regulations that you have to wade through in order to do the project. That's only part of the problem. The other part of the problem is the attitude of the people on the board of directors of the various orchestras as to what they will or will not program. Then you have the economic constraints placed

on the orchestral business in the United States by the concertgoers themselves. Concertgoers will only buy tickets to certain types of events because they haven't been educated to new music. Most concerts of orchestral or chamber music in the United States are devoted to regurgitation of artifacts left to us by dead people from another country. That's classical music in the United States. If you're not dead and you don't come from someplace else, then obviously you're no good and your music shouldn't be played. That pretty much sums up the attitude of the people who make the decisions as to what orchestras play. And part of that decision is based on how many tickets they can sell to the concert.

The economics of the business are totally different from what people think of in rock 'n' roll. I'll give you an example: If by some strange coincidence you are a composer and an American orchestra wants to play your piece, something that you may have worked on for five years, in order to just get the parts copied for the orchestra it might cost you thousands of dollars. And do you know what you receive from the orchestra for playing your music? \$300 to \$500 for the rental of the materials to play it. That's how great the business is from a composer's point of view. The only time a composer has a chance to earn anything above and beyond that is if the piece gets recorded and he gets publishing royalties from those records. But those records don't sell in the huge quantities that rock records do, so the publishing royalties aren't that great. The other way

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composers stay alive in the United States is with grants or with teaching positions. But it's very difficult to see why anybody who is studying music now would ever want to become a composer. It's pretty much a dead-end street in the United States. And if you become a composer, you have to know in advance that what you're doing will probably never be played. The only person who will ever hear it is you, in your head.

MR&M: Why is that?

FZ: Because most symphony orchestras in the United States are simply doing what amounts to cover tunes of the greatest hits. Guys in orchestras have been playing Bach and Beethoven and Mozart and all that stuff since they were in the conservatory. They already know all the hits, so when a guest conductor comes to town, all he has to do is go out there, wave his stick and look romantic and it sounds perfect. It's like bar bands. Everybody knows how to play "Louie Louie." No problem. But if you hand them a piece of music they've never seen the likes of before, they'd have to learn it. So in a situation like that, if you want to try and get something brand new played, you're not going to get a good performance. For an orchestra to sound like a unit, playing something that is totally unfamiliar to them, it has to be rehearsed. So usually they won't touch a new piece because it's too much work, and also because the cost of rehearsal is so high.

For instance, some of the material I have written would take four weeks of rehearsal—that's eight hours a day, five days a week. In Europe you could get that, but in the United States you couldn't afford it. No way. And I've had offers from orchestras who want to play my music. They say they'll give it two days rehearsal, and they make it seem like they're doing me a favor. Two days? They're crazy!! I would rather not hear it played at all than to hear it played wrong. Then you have to sit there while the newspaper critics say how shitty it was when what they have heard is not what I wrote. If it's going to come out, I want somebody to hear what I wrote and I want it played correctly.

MR&M: I've heard stories about the unions being so strong in some American orchestras that they were able to keep musicians who were completely incompetent due to alcoholism and were just faking it on stage, hidden within the orchestra. I understand that these people can't be

There's so much distrust and distaste for American behavior and ideals right now. It's a bad time to tour.

fired because they are under binding contracts, yet the London Symphony Orchestra has no contracts and forces players to maintain a high degree of competence or else get booted.

FZ: The London Symphony Orchestra owns itself, it's an associative orchestra. The members own the orchestra, they hire their own conductor, they run their own business and they share in the profits. Consequently, an average guy in the London Symphony Orchestra will play 90 recording sessions a year while the average guy in the Boston Symphony Orchestra, for example, will only do 17. See, the union scale in England is lower than in the United States so it costs you less to do a project with a British orchestra. And they're eager to do work, whereas the US orchestras want to raise their pay scales up to the point where it's so sky-high that they're really not doing very many recording sessions. So ultimately their gross at the end of the year is less than what the British orchestra is going to get. On top of that, the attitude of an American orchestra seems to be: the smaller the amount of work you do, the better it is. It's really a lazy mentality, and it's the same kind of mentality that exists in other unionized industries like the auto industry. I mean, it makes me laugh when people complain about, "Hey, Japan is kicking our ass!" Yeah, they're kicking our ass because the American workers are getting all these benefits and big prices per hour for doing work, and they don't care about their job. All the quality control is gone. Craftsmanship isn't a part of your life anymore, you just want to get as much as you can from the evil capitalist pig who owns the factory, you wanna rip off the management, give them the big hose job, go on strike all the time and then when the stuff that you don't do well on the assembly line turns out to be a lemon and people don't buy it anymore and the company has to shut down, you just cut your own throat.

MR&M: By not putting back in.

FZ: Right. I just think that things would be a lot better if you are productive if you have a job, if you put in the effort and you do more work without ever having to go on strike. Then your boss, as a gesture of fairness and recognition, should give you more money...but for doing more work, not because 100 guys say, "We won't work at all unless you give us more money!" Because what happens then is the boss says, "OK, you think you got my balls in a bear-trap? I'll do this: I'll give you more money, but I'm raising the cost of my product 20 percent above what it was and I'll wind up making more profit." So the worker goes home with one dollar more in his pocket but the thing he needs to buy on the street is now costing him two dollars more. And everytime there is a strike, there is this effect. That's the economic spiral that happens. You want more money? There's no free lunch. The guy who owns the thing is not gonna take less profit. Believe me, he'll find a way to make more profit. And strikes have been so prevalent that the product keeps going up in cost, a little bit and a little bit...and the next thing you know a jar of peanut butter costs five dollars!

MR&M: The Minneapolis Symphony went on strike earlier this year.

FZ: Yeah. I can just see it: "We will now withhold culture from the entire Minneapolis area until we get more pay for fewer concerts." More orchestras have this cold what-can-I-get-outta-this attitude today. The Chicago Symphony is an exception. But you have to recognize that the Chicago Symphony is generally regarded as the best in the world. They sound good and they play like they really mean it, whereas, most of the other orchestras in the United States are not really serious about doing it. I mean, just because you have a tuxedo on doesn't mean that you're into something. They wear tuxedos in Las Vegas, ya know.

martin basch

JEAN-LUC PONTY

FRENCH FINESSE

Jean-Luc Ponty has produced all 10 of his solo records but the chances are that few of his fans even know. It's not that his talents aren't notable, just that this 35-year-old violinist is such a celebrated performer and composer in the "jazz-rock" genre that his role in the studio has been diminished by his other talents. But no matter; it doesn't bother him as long as the end product satisfies him.

Born in Normandy, France, the Frenchman has an affinity for electronic gadgetry and over the years he has experimented with new technology so much that his name may soon be synonymous with the synthesizer instead of the violin. With his roots in classical music, Ponty studied music at the Conservatoire National Supérieur de Musique in Paris and won the Premier Prix, the school's highest honor, upon graduation at 17.





NEXT MONTH

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From there, he journeyed to the Concerts Lamoureux Symphony Orchestra for three years before turning to jazz due to the influence on him of bow and stringman Stephane Grappelli. Through a series of events, Ponty played with such diverse musicians as Elton John and the Mothers of Invention before he embarked on a solo career.

Known for his spacey blend of jazz and rock, a Ponty record can be anything from an *Imaginary Voyage* through dreams or *A Taste For Passion* stemming from the heart. Ponty is notorious for hiring top professionals for his bands, which have included such guitarists as Alan Holdsworth and Jamie Glaser, Randy Jackson on bass and Mark Craney on drums.

His most recent effort, 1983's *Individual Choice*, shows Ponty at home with sequencers and himself, still trying to quench his thirst for better and more interesting sounds. Ponty recently told *Modern Recording & Music* his thoughts about his sound and his role as a producer.

Modern Recording & Music: You've produced all of your 10 records for Atlantic, yet you're mainly known as a performer, composer and orchestrator. Do you think these aspects of your work overshadow your talent as a producer?

Jean-Luc Ponty: No. On the contrary. Part of being a producer is to know all these things. But I guess to the general public it doesn't matter. What really counts are the results. I think there are professionals who are aware of it, you see. But it's OK. It's true that I don't think of myself as a producer first. I'm first of all a musician and a composer. I produce, really, because I think it's better that I have control of my own music. And I started doing that once I felt that I had enough maturity to do it.

MR&M: Who are some of the producers who helped you gain this maturity?

JLP: Nobody, really. It's only from the experience of recording in the studio with different bands. You know, I made so many recordings before I started with Atlantic that I knew how to deal with the studio. But of course I would not recommend it to a musician who has had no studio experience. It requires both studio experience and dealing with one's own ego, because usually the musician listens exclusively to his own tracks.

It's not one or two producers who have influenced me at all, it's really the experience of working with engineers.

He does this before everything and doesn't pay too much attention to the rest. And that's what a producer has to do: make sure the drum tracks and the bass tracks and everything else sounds good. Also, try to have some insight into the music and try not to be self-indulgent in terms of lengths of solos and all that. It's not one or two producers who have influenced me at all, it's really the experience of working with engineers.

MR&M: How much input did these engineers have? I take it they did more than just turn knobs.

JLP: They gave me no musical or artistic ideas, but sound or effects or certain techniques of recording.

MR&M: How do you go about choosing a studio at which to record? What criteria do you use?

JLP: Well, first, the sound of the room for the basic tracks—the drums—is very important. And of course, also, the console they have. For the overdubs, it really must be the equipment. The room is not that important because I've run everything direct since it's been all keyboards, you know, for the overdubs. And I like both Trident and Neve consoles.

MR&M: Any particular reasons why?

JLP: I like the EQ possibilities that they offer, and the sounds that you get. Everything has its importance. The machines that are used—the 24-tracks, the 2-tracks for mixing and also the monitor speakers—are very important. I mean, I definitely take a tape with me before a project and before choosing the studio—a tape of a produced album that I am familiar with—and go listen, because it is really very important to know what you get from the machines. You know, you can be fooled by monitors. You can think it sounds great, that there are plenty of highs and bass. But when you take it out of that

studio, you find out that they are not there.

MR&M: Do you have a studio at home?

JLP: No, I just have small demo equipment. But I'm going to start to install really serious 8-track equipment because of the fact that I am getting so deeply into synthesizers.

MR&M: Yes. That's quite evident on your records and in your show.

JLP: Right. So, it becomes really necessary. But I've been a bit of a bohemian for the last few years and not settling in one place and I'm not going to build my own big professional studio for this reason, and also because I only do my own albums; I don't produce other people so far. Therefore, since I only spend part of the year in the studio I would rather take advantage of new technology, because you build a studio and it quickly becomes obsolete. And I'd really like to get into digital recording.

MR&M: Your last album was released as a Compact Disc.

JLP: Oh, yes. So I guess that means that digital technology is developing more and more. Also, a lot of keyboards are digital. And it would make sense to record digital. If I had my own big studio, it would be useless for that. So I think I'll stick to the idea of the 8-track, mostly because it's a good composing tool for home. I might even get some very inspired moments, if they record well, and I'll transfer them to a 24-track.

MR&M: Have you had any offers to produce anyone else?

JLP: Yes. There's a band in Canada that has called me a few times. But I could never do it, because of my schedule. I already do so many things in my life. I already have a lot of different jobs. Between being a violinist and keeping up with my instrument—which is a difficult one and which I have to keep practicing all the time—and being a band leader

and composer, which also involves a lot of time, being a producer is one activity which is hard to fit. I'm not against it (producing others), but it depends who it might be.

MR&M: When you go into the studio are you very prepared technically or is a lot of what you do spontaneous?

JLP: I'd say most of it is prepared. We have the engineer come down to rehearsals to look over all the instruments that are going to be used so that he can discuss the tracks with me; we discuss track assignments. The first day we don't waste time in the studio since we have already discussed these things. I usually leave the engineer really free with mic'ing the drums. I leave him room for that. Then I come in and check how it sounds to see if I like it. If there are minor changes, I will make them...so most everything is prepared but it's nice to leave room for last minute inspiration, a little experimentation in the studio.

MR&M: On the average, how long does it take you to produce the record, to do the actual work in the studio?

JLP: Well, usually it's about... well, actually it's a bit hard to say. This last album was very different because I used very few musicians on it and very few tracks with musicians. Most of it was done myself, with keyboards. But in general it's about a month total. That's an average, of course.

MR&M: How have your production techniques changed from when you first produced *Upon The Wings Of Music* to now? What are you doing differently?

JLP: Well, first of all I started with a smaller budget, a much smaller budget. Therefore, *Upon The Wings Of Music* was done very quickly. I did very few overdubs. There was not much production. It was mostly playing "live" in the studio. I think the whole thing, all of the tracks, were recorded in four days. We started on a Monday and finished on a Thursday, I believe. And the mix was done in eight days, maybe 10 total. So, just because of that, the next one was so different, because I had a bit more (money). I started getting into the concept of an orchestral sound with electric instruments. So, from the album *Imaginary Voyage*, I started utilizing a much more advanced production. I was really trying all kinds of different things with stereo placement and devices, on the violin for instance, for the

sound and so forth. So, I guess it really improved, album by album.

MR&M: Was it a challenge for you to evolve from spacey records like *Imaginary Voyage* to the funkier electronic sound of your latest records? Did that present a problem for you or did it enable you to try new techniques and to experiment?

JLP: Yes, there is not much difference in terms of technique. It's just that everything improves. At the time of *Imaginary Voyage* and before *Upon The Wings Of Music*, electronic devices for instruments available in the music stores, and even in the studio, were really in the Stone Age. And these devices you find nowadays are real studio quality. That's the difference between now and previous years, that the quality has improved so much that when I do my mix for the violin, I can go into the studio with all these devices and have stereo effects right there. This is instead of going into the studio and adding up the studio devices.

MR&M: Are you then able to reproduce these sounds "live" in the studio because of these devices and the new technology?

JLP: Right. The first step is that I'm available to go into the studio and use these devices and record directly with my effects instead of recording a basic violin track or instrumental track and adding up the effects later. The effects that I am using now on stage are so professional and of the same quality you find in the studio that I can record my effects at the same time as the violin. That means there is less work involved in doing the mix because everything is already there. All you have to do is improve the EQ a little bit and that's

it. Also, on these last albums I've used sequencers that you can program in advance so that all the preparation was done at home. Then I go into the studio, connect the synthesizer to the console and push the start button, and then all I have to do is listen as a producer. I just check the sound and see how I like it. That really helps me in my job as a producer.

MR&M: Each year your band seems to change. Does that present any problems in the studio?

JLP: No. First of all, there is nobody really new on the last album or tour. The idea of the last album was to do complete solo tracks and also have guests soloists, like George Duke, who is really one of my oldest friends in the business. We go back a very long way and before Alan Holdsworth who I've also worked with. So, I was dealing with people I knew. But I don't see any problems, anyway, with new musicians.

MR&M: Overall, it seems that you are very happy with the new technology. And it also appears that the more there is, the more you experiment. Is that accurate?

JLP: Yes. Like, for instance, there is a track on the last album, "In Spiritual Love," that was supposed to include drums and bass. Then I listened to the tracks and they didn't really give me what I was looking for. Since I had all those synthesizers and a LinnDrum Computer, I decided to re-do this track just with synthesizers and rhythm computer and it gave me the flavor I was looking for. So that was spontaneous. It was not what it was planned to be.

MR&M: Some of the best things happen that way.

JLP: I agree.

Jean-Luc Ponty's U.S. Album Discography (Atlantic Records)

- 1975 *Upon The Wings Of Music*
- 1976 *Aurora*
- 1976 *Imaginary Voyage*
- 1977 *Enigmatic Ocean*
- 1978 *Cosmic Messenger*
- 1979 *Jean-Luc Ponty: Live*
- 1979 *A Taste For Passion*
- 1980 *Civilized Evil*
- 1982 *Mystical Adventures*
- 1983 *Individual Choice*

Hacker's Digest

This month, I'd like to digress a little, moving away from the scientific aspects of the computer, to discuss a softer but nevertheless highly important computer task. As a compulsive article writer and novelist, my own processing needs have naturally led me to explore the possibilities of word processing programs which provide significant advances in text composition and manipulation. Like all computer programs, they are essentially tools which enhance the user's ability to complete his task or even enhance his proficiency at the task. Unlike conventional programming languages such as BASIC, FORTRAN, and PASCAL, word processing software is much more specialized in its abilities and thus is written at a higher level at which the operator is not required to actually program. Instead, a long menu of commands presents possible manipulations of the text and the operator simply chooses whichever command accomplishes his need. In some respects, the commands represent a set of subroutines and the operator is the host calling and utilizing those modules. The result is programs which can generate text better than 10,000 monkeys with 10,000 typewriters.

Your Very Own Publishing House

Some people still persist in thinking of word processors as being nothing more than glorified typewriters. They equate the \$2,000 microcomputer running the program to an 89-cent bottle of correction fluid and conclude that they would

rather lay in a supply of 2,246 bottles of correction fluid (and ignore the rumor that the stuff causes cancer [no kidding]). I think they're wrong in their appraisal of word processors; they are much more than simple editors. In fact, when I consider the kind of text-power they provide, I would equate the \$2,000 microcomputer running the program to a \$1,000,000 publishing house, because they provide everything you need to begin with a text and end with as many copies as you wish to print—all right justified, left justified, paginated, hyphenated, formatted with header and footer, spelling-checked, underlined, boldfaced, and font-changed. Now, Doubleday doesn't hold its breath every time I power-up my word processor, but I can crank out letter-perfect correspondence, manuscripts, lecture notes, and documentation—almost anything but \$20 bills.

While the essential elements remain the same, word processing software differs according to the software company's philosophy for what works best (and sells best). In my quest for the perfect word processor (one which writes these dumb articles while I cash the checks), I've tried about every available package and always returned to my first software, the WORDSTAR word processing software by MicroPro. Since there are over 400,000 licensed WORDSTAR users out there, as well as a few unlicensed ones, I feel that I'm not alone in my opinion that it is the most powerful and ergonomic word processing package available. Furthermore,

WORDSTAR is only one of several interrelated data processing programs available from MicroPro, which together form a remarkably comprehensive software library. MAILMERGE, SPELLSTAR, STARINDEX, and CALCSTAR enable a user to create form letters, correct spelling, create indexes, and design business and financial reports.

Word Processing In A Word

Let's get back to word processing. Trying to describe how it works is a little like trying to teach someone how to drive a car without putting him behind the wheel; ideally, you should be in front of a terminal. But let's run through the basics; you can stop by your local MicroPro dealer later on for a test drive. WORDSTAR is a menu-oriented system in which an on-screen help directory gives one or two word descriptions of all commands. Additionally, more detailed information on various aspects of the program's operation can be called onto the screen. The program is easily learned with a little hands-on experience, and the procedure needed to accomplish an unfamiliar task can be rapidly diagnosed. The only confronting aspect of WORDSTAR is the extent of its capability, but I suspect that most users fall into a comfortable range of commands and only routinely utilize a fraction of what's available, saving the rest for special occasions.

Let's power-up my home-brew system (housed in black pine boxes with brass handles [real nifty]) and put in the WORDSTAR disk. It boots

up (gets ready to be used) because I have properly installed it for my system's configuration. Believe me, if it works on my system, it could probably work on any system. In general, you can purchase WORDSTAR specifically configured for your computer, or install it yourself using a simple program that holds you by the hand. As with any software, make sure you buy the one right for your operating system, be it CP/M, IBM/DOS, or whatever. (Parenthetically, I should note that many of WORDSTAR's functions can be internally varied and re-patched by the more serious user; listings of all of the user-modifiable modules are included in the manual. Special customization notes are available for the very serious user.)

We put in the disk and the main menu comes on-screen. It contains about a dozen top hierarchy commands to choose from. For example, we could rename a file, copy a file, edit a file, print a file, delete a file, or exit to the operating system. We press D to edit a file. It asks for the

file's name, and we type in "Hacker." Since "Hacker" isn't an already existing file, it opens a new one and places us in a text entry mode.

At the top of the screen is the help menu; we could turn it off for more screen space, but let's leave it on. It describes many of the most useful commands, and reminds us that all commands are accessed from the keyboard by holding down the CONTROL key (abbreviated ^) and pressing the appropriate one- or two-character sequence. That CONTROL key is the secret to controlling WORDSTAR, and you can always spot a WORDSTAR user by the muscles rippling across his left pinkie.

We begin typing our text, a Hacker's Digest column, making it up as we go along. The blinking cursor follows our progress and underlines the next available space; there is no need to hit a carriage return at the end of each line because word-wrap automatically justifies the line and starts the next line (a WORDSTAR user's right pinkie is really feeble). If you want to

exercise that little finger and enter manual carriage returns, turn the word-wrap off with a ^OW. Of course, whichever mode is selected, the carriage return is always available for use at a paragraph's end, etc.

Oops!

Uh oh, we screwed up; we spot an error on a preceding line. We could use the cursor arrows on the keyboard to move the cursor to the error, but the on-screen command explains a more sophisticated cursor control. By using the ubiquitous CONTROL key and one character key, we can move the cursor left or right one character, left or right one word, up or down one line. We hit ^E a few times to move up to the bad line, then ^F to put the cursor behind the bad word. Then the DELETE key takes it out and we type in the correct word; since we are in the insert mode, the text automatically moves to accommodate it. To complete the correction, we reform the paragraph to right-justify the margin by hitting ^B, and the cursor returns to the end

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Fine artistry of their designs.

The 1983 silver dollar coin (.77 troy oz. silver) has been designed by Elizabeth Jones, the chief engraver at the Mint. The obverse of the coin represents a dramatic engraving of the classic Greek discus thrower.

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Coins can be purchased through your local post office and at participating banks and coin dealers across the country. Or, write to: U.S. Mint, Olympic Coin Program, P.O. Box 6766, San Francisco, CA 94101.

of the paragraph where we left off. Other cursor controls include ^OC to center the cursor line; ^Q0 through Q9 is used to send the cursor to one of 10 positions previously marked with a ^K0 through ^K9. ^QE moves the cursor to the top of the screen and ^QX to the bottom. ^QC moves the cursor to the end of a file while ^QR returns it to the beginning. And there are other cursor commands.

We resume our typing and the text scrolls up the screen line by line; all of our entry appears at the bottom line on the screen. Suppose we have to read something entered earlier—we check the screen but that text has already scrolled offscreen. No problem. ^R causes one screenful of text to scroll downward, thus displaying previous text. ^C scrolls one screenful upward. ^W and ^Z scrolls down and up one line respectively. ^QW and ^QZ provide a continuous downward, or upward scroll; typing 1 through 9 selects the scrolling speed (1 is fastest, 9 is slowest, default is 3) and pressing any other key stops the screen motion.

Getting Help From A Menu

At this point we might start getting a little confused. We could use some help, so we ask for the J menu, the help menu. Once again a control sequence is used to specify your need. Among the help menus: ^JB explains paragraph reforming, ^JD explains print directives, ^JM explains tabs and margins, ^JP explains place markers, ^JR explains the ruler line, and ^JS explains the status line.

After reading some help menus, and filled with enlightenment, we try a few fancy formatting tricks. We set the tab stop (^OI), then clear it (^ON), set the left margin (^OL), set the right margin (^OR), and change the line spacing (^OS). Encouraged by our success we decide to give our left pinkie a rest and try dot commands. Dot commands are used to override a variety of default settings to create special page formats when a letter quality printer is used for the printout. The period prefixing the command alerts WORDSTAR to a change. For example, .LH__sets the line height in 1/48th of an inch increments. .CW__varies character width in 1/20ths of an inch; it could be used, for example, to space characters further apart in a title for emphasis. MT__sets the number of lines in the top margin and .MB__the bottom margin. WORDSTAR automatically numbers the pages of a manuscript at 38

the bottom, middle of a page, but we can redirect that to the top middle or any page corner, we can omit page numbers, or set new page numbers. Many other dot commands may be used to completely specify the printing format.

Perhaps one of the most important menus is the K menu; many of the file and block operations are accessed through ^K commands. If I wanted to transpose the two preceding paragraphs, I would move the cursor to the beginning of the first paragraph and enter ^KB to mark the beginning of the block, then move the cursor to the paragraph's end and set ^KK; WORDSTAR would respond by highlighting the marked paragraph. Then by moving the cursor past the second paragraph and entering ^KV, that block is moved and the transposition is accomplished. Other CONTROL operations include ^KC to copy a block, ^KE to rename a file, ^KJ to delete a file, ^KO to copy a file, ^KR to read a file, ^KY to delete a block, and ^KW to write a block to an additional file. Also in the K menu is ^KD, which is entered at the end of a text to save it on disk and leave the text entry mode.

Find and replace operations are accessed through the Q menu; when ^QF is typed, WORDSTAR responds with a "find?" request. After answering that question, WORDSTAR looks through the file and places the cursor at the sought-after location. ^QA causes the "find?" request to appear onscreen; your response then causes a "replace with?" request to appear onscreen. Your response to that request causes WORDSTAR to replace the found word with the new word. For example, if I wanted to find the word "thimble" in a text file, I would use a ^QF command. If I wanted to replace one or every appearance of the word "computer" with "microprocessor system" in my file, ^QA would easily accomplish this.

But Can It Boil Water?

WORDSTAR also facilitates many special printing functions. For example, ^PB entered before and after a word causes it to be typed boldface on the printer, while ^PD causes a double strike to produce a character slightly heavier than normal strike. ^KS underscores a word, ^PV and ^PT provide subscripts and superscripts. Other print controls provide for ribbon color change, selection of

alternate character pitch, back-spacing for accent marks, etc., as well as form feeds, line feeds, and other user printer functions.

Now that we have played with a few of WORDSTAR's features, and moreover reached the end of another Hacker's Digest column, I suppose it's time to print out this file and mail it to the magazine. A ^KS saves the file (saving a file is always necessary before printing and is advisable at frequent intervals—you never know when a power failure might occur) and returns us to the start of the file. We scroll through it, making occasional changes in sentences, or switching some text around with ^KB, ^KK, and ^KV, then invoke a ^KD to save the file again and return us to the master menu. I run SPELLSTAR, an optional dictionary program called from WORDSTAR, to check the spelling and make corrections. Finally, after saving these corrections, we hit a P for Print and sit back while the printer handles the rest, transferring to paper everything as it appeared visually onscreen.

Speaking of printers, the serious user always opts for a letter quality printer with daisy wheel, thimble, or ball element for precisely clean and defined characters. Parenthetically, I should note that many printers are now being advertised as letter quality, but that is true only in the sense that they employ a character element; otherwise the print quality is very mediocre. My NEC Spinwriter (a vintage 5500D) produces a genuinely immaculate printout, as do QUME and Diablo printers. For hackers on a budget, dot matrix printers have come a long way and sometimes even rival element printers; lower price and faster print speed are further incentives. The EPSOM printers are the Model T of the dot matrix market—unpretentious and utterly dependable.

Well, meanwhile, our printout is completed—letter perfect and thoroughly professional-looking. The file is saved on disk for future reference and this column is headed for the mailbox. The only thing easier would have been a modem between my machine and the editor's to telephonically transmit the text. Well, this is a modern publication, but not quite that modern.

Take my word for it, once you try a word processor, you'll never go back to a typewriter; maybe you can use those 2,246 bottles of correction fluid to paint your living room or something. See you next month and ^KD.

MODERN RECORDING & MUSIC

Music and the Law

Record Contracts, Part I

A record contract is the dream of most musicians, the pot of gold at the end of the rainbow. It represents huge incomes, glamour, sex appeal and a change in lifestyle. Unfortunately, signing a record contract guarantees none of the above.

Record contracts are a matter of leverage. The terms of the agreement depend on the artist's draw and charisma (or lack of it) versus the company's desire to record and exploit that artist. Clout counts. These documents are extraordinarily complex, running to 20 pages and more of single-spaced legalese. The following explanations are intended to help the artist understand what the contracts mean and their effect on his professional career, but will not prepare him to negotiate record contracts on his own.

An artist should not sign a contract at its first offer. If the record company is legitimate, it will expect and allow him to seek legal advice. If the artist is given the choice of "now or never," it is probably in his interest to say "never." He may not understand the meanings and ramifications of the contract and its effect on his professional career, and furthermore, such reticence is part of the negotiating game. It helps strike a balance in bargaining positions.

The clauses within the record contract are obviously important, but even more significant may be the terms that are left out. A provision permitting the artist or his representative to inspect the record company's books is regularly absent from the first draft of these agreements. Without such a stipulation, the artist may have no right to inspect the books and ascertain the number of sales and correct amount of royalties owed to him. A guarantee to release the record is another condition that may not be included. In this case, the artist can prepare a master tape, but will be unable to insist that it be pressed and released. As mentioned earlier, record contracts are based on respective negotiating strengths, and the beginning artist may not be able to insist on the inclusion of all the provisions that are explained hereafter. For that artist, especially, it is important to be aware of what is left out of the agreement as well as understand what it contains.

DEFINITIONS

The first and perhaps most important section of the record contract is the "Definitions." It is this section that makes the rest of the contract work. Definitions are words of art which may contain a meaning far afield from ordinary usage. A "side" for instance, means "the equivalent of a 7-inch, 45 rpm, single-sided phonograph recording embodying the recorded performances of the artist." Each "side" is the same as a "cut" or "master," all of which are the recording of a single song. An album can consist of eight to 12 "sides."

"Singles" are "7-inch, 45 rpm double-sided phonograph records embodying thereon two sides," but can also be "12 inch, 33 and 1/3 rpm, double-sided phonograph records embodying two sides." It is important that the particular format be stated in the contract. The latter format is used for many disco and break dance releases, whereas the former is the typical rock-pop format. Since each format has different pricing, the royalties earned by the artist from the sale of each will differ.

A definition of "records" is always included in the agreement, and is of the utmost importance. It is this definition which will state what records are and what they are not. Most often, records are:

all forms of recordings and reproductions, now known or which may hereafter be known...and may include magnetic recording tape, film, electronic video recordings, and any other medium or device for the reproduction of artistic performances... sound alone, or sight and sound devices.

This definition may sound reasonable, but it has extensive ramifications, many of which have a negative effect on the artist's earning potential. One must understand that the artist pays for the cost of producing all his records. These costs are taken out of the royalties he earns from the sale of those records. The company pays for promotional materials. Who

pays for a video clip of the record? Video clips are included in this definition of records. They are "electronic video recordings, sight and sound devices." But video clips are not sold; they are used for promotional purposes (although this is now changing). Since they are promotional, the record company should theoretically pay for them. Unfortunately, the artist winds up paying for them because they are defined as records. Their high cost can severely deplete his royalty fund.

Using record monies to pay for videos is known as cross-collateralization; profits from one project are used to pay for another. The proceeds of a successful album may be used to pay the bills of a record that does not sell. The artist's attorneys must try to protect their client's income by limiting or prohibiting cross-collateralization of both records and videos in the contract.

Several methods are currently used to prevent such invasions of the royalty fund from happening. Videos are removed from the record definition and are treated individually in the record contract, or they are taken out of the record contract entirely and a separate agreement specifically dealing with videos is drawn. In many cases, the artist and company share the costs of video production. As videos become more popular and their sales increase, new uniform language and practices will be devised.

It was mentioned earlier that "recording costs" are paid by the artist. This is a concept that is not widely understood. All recording costs are deducted (recouped) from the royalties earned by the artist from the sale of the records. If the record does not sell, the company suffers the loss. If it does sell, the expenses are paid back from the artist's royalty fund. Obviously, it is in the artist's best interests to keep the costs down.

Recording costs are treated differently in the two major types of production contracts. In outside production contracts the artist is paired with an independent producer who agrees to produce and deliver to the company a master tape of technical, artistic and commercial quality suitable for making records. The producer negotiates the budget with the record company and keeps (or shares with the artist) the unexpended funds if the record comes in under budget. If the artist is established, he can seek to produce the record himself, keeping both production credits and unexpended funds.

In standard artist contracts, the company keeps both artistic and financial controls. The actual recording costs are charged against the royalty fund. Unless the artist has contracted to receive an advance, he will receive no payment for recording the record other than the recording scale required by the musicians' union. A new artist will usually be given little control over the size of the budget regardless of the type of production. His contract is with the record company, which then decides whether to use an outside production company or producer, or to produce the record "in-house."

The artist should try to negotiate into the contract the right or refusal in the selection of producers. In many instances, the record company will agree to provide the artist with a list of producers from which he can choose the producer with whom he believes he can work best. Both must have clear understandings of the songs and the performer's artistic and commercial needs.

The items included as "recording costs" are negotiable, though there are standard practices in the industry. The following clause is a typical one.

"Recording Costs" means all costs incurred and paid for with respect to the production of master recordings of Artist's performances. Recording costs include, without limitation, the costs of all instruments, musicians, vocalists, conductors, arrangers, orchestrators, copyists, etc., payments to a trustee or fund based on wages to the extent required by any Agreement between Company and any labor organization or trustee, all studio, tape, editing, mixing, mastering, engineering, travel, per diems, rehearsal halls, cost of non-studio facilities and equipment, dubdown, transportation of instruments and other similar costs in connection with the production of the final master recordings, union scale payable to the Artist, production fees and all other costs and expenses incurred in producing the Sides hereunder, from time to time, and which are customarily recognized as Recording Costs in the phonograph record industry.

Some "recording costs" definitions include terms requiring payment for the use and rental of record company offices, payment to the Musicians' Performance Trust Fund (this fund collects monies based on sales, not wages, and is usually paid by the record company, not the artist), and certain advertising and promotional costs. All these items should be paid by the record company. The artist's attorney should do his best to see that they are not included in the contract.

Additional "definitions" often contained in the record contract are "controlled compositions," "royalties," and "territory." These definitions, as well as any others that appear in the agreement, are extremely important and should be carefully scrutinized. "Controlled compositions" are the "selections recorded by the artist which are written or composed and are controlled by the artist." This term refers to ownership of the underlying copyright in the material recorded, which is usually licensed to the record company. "Royalties" are the sums equal to the percentage of the retail sale price of each record sold that are paid to the artist. (Royalties will be discussed in detail later.)

"Territory" may be defined as the "United States and Canada," "the world," or "throughout the universe." (With the advent of space travel, record companies are looking to protect their rights in all locales.) It is the geographical area in which the record company can exploit and sell the record, or the areas in which the company can license others to sell and exploit the record. The artist's stature will determine the negotiability of breadth of the territory. It is in the artist's interests to limit the territory so that he may negotiate directly with distributors and pressing companies in foreign countries, thereby obtaining the best payment provisions available and saving the cost of a middleman. The artist's representatives should note, however, that the collection of funds due and owing from foreign sources may be difficult without the strength and resources of a record company behind them.

Next time, we'll discuss terms, advances, royalties, promotion and advertising.



Musicians Notebook

Tascam 225 Syncaset



Before the advent of inexpensive multitrack recorders there was a limited number of ways in which home recording nuts could get their rocks off... which is why I was ever so grateful when I convinced a friend to loan me his reel-to-reel recorder with the magical feature called "sound-on-sound." The basic principle behind "S-O-S" was that you could record a sound on one channel of a consumer-oriented stereo recorder, then bounce that sound—along with a second signal—onto the remaining channel. You could then take these combined tracks and bounce the whole mess back into the first channel. To build up more tracks, you could continue this process *ad infinitum*... well, *ad finitum* actually; the noise build-up would eventually sound like Niagara Falls on a rainy day with the wind blowing, and since every bounce was a pre-mix, you had to get each mix right the first time. Nonetheless, for those with small budgets and big dreams, this used to be the only way to overdub sounds in a reasonably inexpensive manner.

Fortunately, the inexpensive 4-track came along. Reel-to-reel recorders for consumers became supplanted by cassette recorders, and for musicians, relatively low-cost multi-channel machines meant that those who wanted to realize their musical dreams no longer had to endure the torture of infinite bouncing coupled with maximum sound degradation. Sound-on-sound became part of the scrap heap of audiophile history, soon to be joined by Quad, the Elcaset, and numerous other "breakthroughs" too obscure to merit space in this magazine.

New, Improved S-O-S. Yet sound-on-sound has now made a comeback in the form of the TASCAM 225 Syncaset. At first glance, the 225 looks like a basic cassette recorder; it runs at 1½ ips, plays standard stereo cassette tapes, and has Dolby B noise reduction. But wait... what are these switches labelled INPUT MIX? And SYNC? And why are there two RECORD SELECT buttons (one for each channel) instead of a single record switch? And panpots for each channel? Well, it seems that we have a case of musical genetic engineering on our hands, where someone at TASCAM crossed a hi-fi cassette deck with a multitrack recorder. The result, while not for everybody, occupies an interesting niche in the world of recording

technology and is the subject of this month's "Musician's Notebook."

Like most cassette decks, the 225 includes the standard transport controls (REWIND, FAST FORWARD, PLAY, STOP, PAUSE, and INTERLOCKING RECORD). In addition, if you go from PLAY to REWIND without pressing STOP first, the tape will rewind until you release REWIND, at which point it will go into PLAY. FAST FORWARD works similarly. There is also a tape counter with return-to-zero, input level pots for each channel, and two mechanical VU meters. A single bias/EQ switch chooses between standard and high-bias tapes, while another switch enables or disables Dolby B noise reduction. There is also a headphone jack (with associated level control), two RCA phono jack line inputs, two RCA phono jack line outputs, and two mic inputs (plugging into these overrides the line inputs).

Now, if this was an audiophile-oriented article, we could end the story right here... the above features are shared by the 225 with about 4,756 other cassette decks. As a standard cassette deck, in fact, the 225 gives a good account of itself and is a worthy addition to any hi-fi installation. But after all, this is "Musician's Notebook," so let's move on to some of the more esoteric features.

Independence And Simplicity. The 225 has two main functions that differentiate it from the average cassette deck. First of all, you can record on both channels independently since there are individual record enable switches for each channel and a sync in/out switch. Thus, you can record a signal on one track, put it in sync, turn off the associated track RECORD SELECT switch, turn on RECORD for the other channel, and do an overdub in perfect sync with the first track. (In this application, the 225 behaves like TASCAM's first Syncaset deck, introduced several years ago.) This function is handy for applications such as demo tapes, jingles, or AV presentations where you might have music recorded on one channel and narration recorded in the other channel. Since each channel has its own panpot, you can pan both channels left and right, or pan them to center to combine the two tracks in mono.

The second function that makes the 225 different from the rest of the crowd is simplified sound-on-sound operation. The key to this is an INPUT MIX switch, which combines a previously recorded track with a new input signal. The best way to describe how this works is with an actual example, so here goes.

Let's say you have a guitar plugged into mic input 1. Upon selecting the RECORD function for track 1, the track 1 RECORD LED will blink; playing the guitar will register on channel 1's meter. Adjusting channel 1's INPUT control sets the level, although since we're dealing with a sensitive mic preamp, you may have to reduce the guitar's volume control somewhat to avoid overload (or you can crank it up and overload the mic input for a fuzz-tone effect; the INPUT control acts like a guitar amp's master volume control in this situation). You can now press PLAY and RECORD at the same time to roll tape, and record the guitar sound on track 1.

Now, suppose that you want to perform some sound-on-sound magic and overdub another guitar part. You would initiate this process by turning off RECORD for track 1, selecting the RECORD function for track 2, and initiating the INPUT MIX switch. This takes whatever is plugged into either input 1 or input 2 and routes it to track 2; the input level is regulated by input 1 if you're plugged into mic input 1, or input 2 if you're plugged into mic input 2. (A brief aside: If you are using a high level output instrument, such as synthesizer, the procedure would be the same except that you would be plugged into the line inputs instead of the mic inputs.) But more importantly, with INPUT MIX selected, the output from tape track 1 (the one containing the first guitar part) will *also* be routed over to track 2, with track 1's panpot determining the track 1 level being sent to track 2. Go into RECORD, roll tape, and track 2 will now record whatever you had recorded on track 1, along with the part currently being played.

What Else Can The 225 Do...And Not Do? You may continue to bounce parts back and forth between tracks to build up a composition; while you can't do this forever, the noise reduction does help keep noise down, and the 225's sound quality is currently sufficient for the task. When used in this manner, the 225 is essentially an "idea machine" that allows you to almost instantly build up a composition with a minimum of effort and outboard equipment. You don't really need a mixer or other fancy gear; while the 225's control complement is minimal, it is specifically optimized for sound-on-sound recording and as such, makes the job pretty painless.

Sounds interesting, you say, but what are the limitations? One quirk is best illustrated by an example. Suppose you have recorded a sound on track 2, and bounced that—along with a new part—into track 1. Now suppose that you want to record the sound from track 1, along with a new part, back into track 2. In order to see the level being sent from track 1 to track 2 you need to go into the RECORD mode and roll tape, thus erasing whatever you had previously recorded on track 2. Why is this a problem? Should you decide after setting levels that you didn't really like the part you mixed into track 1 and want to do it over, forget it—track 2 (the track which you combined with the new part into track 1) no longer exists. Realistically, though, this isn't too much of a problem providing you

make sure that each take is exactly how you want it before you try bouncing it over to the opposite channel.

The 225 also has some interesting ways to initiate punch-ins (and like most TASCAM equipment, allows for a remote punch-in footswitch). You can do the usual: press RECORD as the tape is rolling, or if you like, you can press RECORD *before* the tape is rolling and then press the individual track's RECORD SELECT function to go into RECORD. But the most interesting option occurs with SYNC selected; in this mode, you will hear whatever was recorded on tape right up until you punch in (via either of the two methods mentioned above). At that point, the channel switches over to RECORD and you are recording. Granted that many modern decks now have this feature, but still, this wasn't something I would expect to find on a relatively inexpensive machine like the 225.

Speaking of price, the 225 lists for \$349.95. Actually, if you are serious about home recording I would advise saving up the extra \$100 to \$200 that will buy a low-cost 4-track cassette machine; these are inherently more flexible than a machine such as the 225. However, if you are primarily interested in a cassette deck for your hi-fi but also want something that gives you more creative options, the 225 is well worth looking into. Or, if you can't swing the bucks for a 4-track machine but want to get into overdubbing, aside from buying a used reel-to-reel with sound-on-sound, the 225 is probably your least costly way to get started. And for those who are looking for a second cassette deck, the 225 makes a lot of sense—why settle for "just another cassette deck" when you can get something that lets you do some interesting tricks as well?

Suggested Improvements. I have only two major suggestions for improving the 225. One problem is that the VU meters are recessed rather far back from the front panel, so you have to look at the meters straight on in order to see how they are reading. To me, LED VU meters would be preferable since they don't create parallax problems, catch transients much better than their electro-mechanical cousins, and are more visible from a distance. The other problem I encountered was the blinking RECORD function indicators; each time they blink, you can hear a tiny click in the headphones. Fortunately, these clicks don't show up on tape since the lights go from blinking to being continuously on while you are recording. Still, when setting levels and listening to low level signals at relatively high headphone volumes, the clicking can be annoying.

But these are fairly minor complaints. While the 225 isn't for everybody, it does fill a definite niche in the market since it provides a low-cost way for musicians to try out multiple parts (vocal harmonies, dual guitar leads, and so on) with a minimum of hassle. With a little care, you can even build up some pretty decent sounding demos, although I don't think any platinum albums are going to be recorded on this machine; it's not designed for that. However, if you are in the market for a standard stereo cassette deck, and are also musically active, check out the 225. Spending a few more dollars gives you a much more powerful machine than the average cassette deck, and when you wake up in the middle of the night with an idea for a song, I can't think of an easier way to get several parts down on tape with reasonable fidelity.



susan borey and mark oppat

Sound Advice

So far, our Sound Advice has been about connectors, cable, power-D, cross-overs, and other equipment. With this edition we'd like to stray from hardware into the realm of theory, hoping that a better understanding of the "how and why" will be as useful as any tool in your kit.

We like to think of the soundperson as the "software" of a system (partly because you really need to make use of the soft, squishy matter in your head to be very good). We have witnessed many occasions where a system comprised of medium-quality equipment has outperformed a supposedly superior system because the soundperson had a better understanding of the properties of sound and knew how to best use what was available.

Our first question this month comes from Mark Togan of Detroit.

I use a three-way system and wonder which polarity of the crossover should be inverted—the low, mid-bass, or high—in order to maintain the best phase response. Should the polarity be inverted at all? I would assume that the middle or mid-bass output should be reversed, but I am not absolutely sure.

There are many people who suggest reversing the polarity of one or more of the outputs of a crossover in order to align the signal more perfectly and obtain a cleaner sound. In some cases this can help improve the sound but you should understand the

concept of phasing and how polarity affects it before jumping to any conclusions.

A perfect crossover would simply divide the audio spectrum into segments that would be sent to each amp channel and speaker designed to handle that frequency range. In actuality, this does not exactly happen. The crossover has a tendency to slightly slow down some of the signal (usually at the crossover point) so that its delivery is lagging behind (is out of phase with) the other portions of the signal. It's like having three people supposedly marching abreast in a parade, corresponding to the low, mid, and high parts of the sound spectrum. If they are not in step and moving at the same speed it will be detrimental to the desired effect. If we think in terms of the movement of a speaker cone, an out-of-phase situation would exist when one cone in a system is only at 75 percent of its excursion (possible movement) when it should be at 100 percent. It will eventually get to 100 percent, but for the slow stepper in the parade, it takes longer. Phase, then, is the relationship between signals at a certain point in time. Ideally, all signals should come out of the crossovers in perfect phase.

Let's discuss polarity in relation to phase. Reversing the polarity of any output by using the polarity switch found on either the amp or crossover, or by re-wiring the hot and ground pins on the pertinent XLR connector, has the effect of

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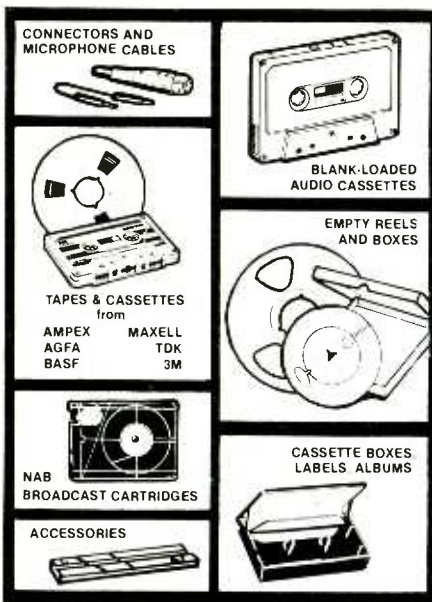
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putting that output 180 degrees out of phase. Although it may seem more natural to think of phase response in terms of time, it is expressed in degrees which, in the physics of audio analysis, turns out to be a more exact and proper measurement. The 180 degree change made by switching the polarity is the only difference you can make; you can't really "tune" the phase response, but can only get it closer to the ideal 0 degree position. If you are 150 degrees out of phase, for example, a 180 degree change will put you at 330 degrees, which is 30 degrees away from 0 degrees and a more desirable position than your original 150 degrees.

Obviously, if you are 90 degrees out of phase, switching the polarity isn't going to do you a bit of good. However, unless you possess some rather complex signal analyzing equipment, you won't be able to readily determine the *exact* phase relationship of your system, anyway. You can switch the polarity of any of the sections of your speaker system and listen for improvement. However, we feel that most electronic crossovers will be rather close to optimal phasing, and that such experimentation may prove most fruitful with passive crossovers.

Incidentally, the phase relationship is more crucial at the lower end of the spectrum. The high end frequencies move so fast that an error in phase relationship will be much smaller.

B. Myers of Hamtramck, Michigan, wonders "What is meant by speaker directivity?"

Directivity has to do with the way in which a speaker radiates sound frequencies. It has recently become one of the most prominent areas of concentration in the manufacturers' battle to better their products, and it appears to be a war well fought, as many improvements have been made in the last five years. Along with frequency response (the amount of the sound spectrum that can be reproduced) and power factor (the amount of wattage that can be handled), directivity is a critical and sometimes overlooked factor in speaker selection. There is an important difference between directivity and dispersion, terms which some people incorrectly interchange. Directivity refers to the evenness of the radiated frequencies of sound, whereas dispersion refers to the pattern of the radiation.

Let's say you have a horn rated 60 x 40. That means it should radiate, or disperse, its frequencies in a pattern that is 60 degrees by 40 degrees (horizontal measure first, vertical second). You will hear sound outside that pattern but it will not fulfill the rated quality specifications; nor will it be as loud. You can usually see the walls of the horn forming angles; these are often the angles of its dispersion. However, certain engineering designs can cause the sound to climb out of the horn in a pattern different than the angles of the horn suggest.

Directivity refers to the evenness within that 60 x 40 pattern. If you walk within the pattern while listening to a constant sound you may hear a difference in tone. Units with good directivity have very little variation, while older styles often have hot spots where the sound is louder at certain frequencies in their pattern. A horn with poor directivity may only have optimal sound in a small portion of its rated pattern, and 60 x 40 may really only be something like 45 x 28.

The trick is to get the frequencies to spread out evenly rather than beam straight out of a horn in a narrow pattern. Sound techs who recognize a problem in this area sometimes try to solve it by aiming speakers to overlap their dispersion patterns. This is not always an ideal solution, as it can create image problems and necessitates the transporting of extra units.

These days most high quality units have improved dispersion so that you only need two 60 degree horns to cover 120 degrees of audience. There is still a wide range in product quality and we recommend that, before you purchase a unit, you check out the tone quality at different angles in a listening test. Don't just stand right in front of it.

Note also that a three-way speaker's frequency graph may look almost exactly like that of the two-way version made by the same manufacturer. It may have the same components, plus a midrange unit, which will improve its dispersion and generally sound better off-axis (off center).

Please continue to send your questions about any aspect of club style PA to: Sound Advice, c/o MR&M, 1120 Old Country Road, Plainview, NY 11803.

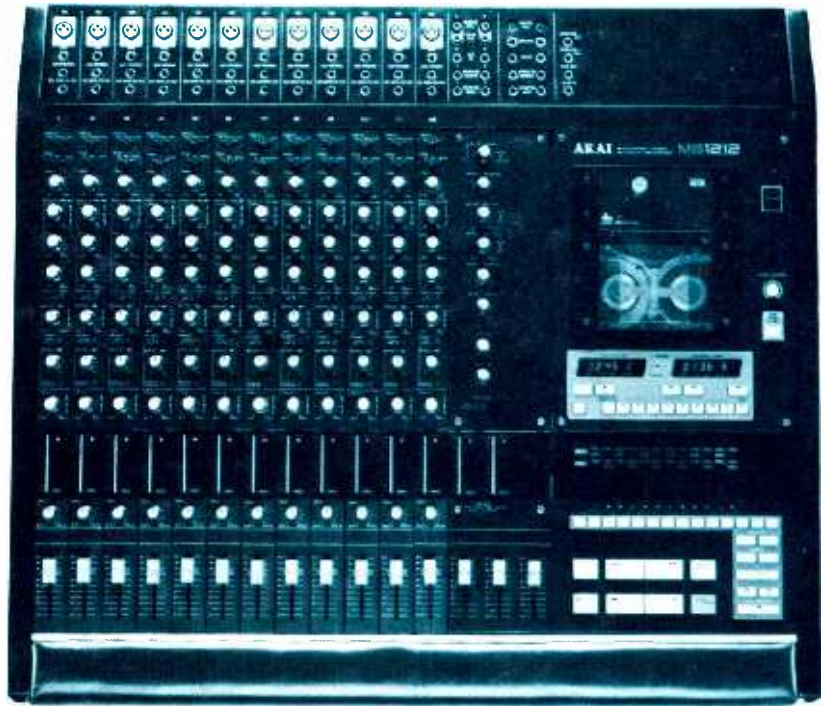
The Market Place

what's new in sound and music

AKAI MIXER/RECORDER

Akai's new Model MG-1212 12-channel mixer/recorder utilizes the SGX Lambda multi-head, which produces specifications approaching the new CD standards (40 Hz to 20 kHz \pm 2 dB, S/N 97 dB). This 12-channel multitrack recorder utilizes Akai's past experience with $\frac{1}{2}$ -inch cassette tape, plus the professional grade dbx Type 1 noise reduction circuitry. In addition, the MG-1212 has two extra channels (for a total of 14) built in for external control and sync circuitry. The digital channel assign and busing are new to the multitrack market. Utilizing the computerized multi-function locator system, the Akai MG-1212 affords real-time digital tape counting in 1/10th-second increments, as well as auto memory, manual memory, search, and repeat playback.

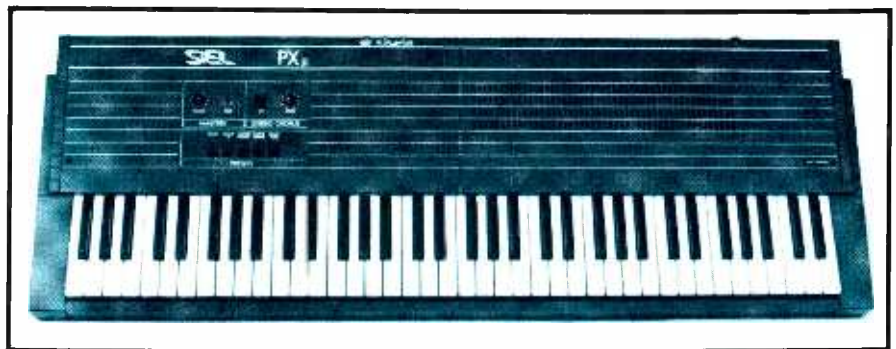
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SIEL SYNCHRONIZER

Siel's PX-Jr., available from Music Technology, Inc., is an instrument featuring completely electronic sound generation. It is fully polyphonic with dynamic touch sensitivity similar to the traditional piano. It is provided with five presets which can be combined with a stereophonic chorus effect. The range of sound varies from acoustic piano to harpsichord to bell-like tones; any of the voices can be combined. The PX-Jr. is supplied with a built-in 9-watt RMS amplifier which, together with the loudspeaker, makes it possible to use the instrument at home without an external amplifier. It is also provided with a stereo output (Lines 1 and 2) for connection to stereo amplifiers and hi-fi systems, and with a stereo output for headphones. The retail price of the PX-Jr. is \$595.

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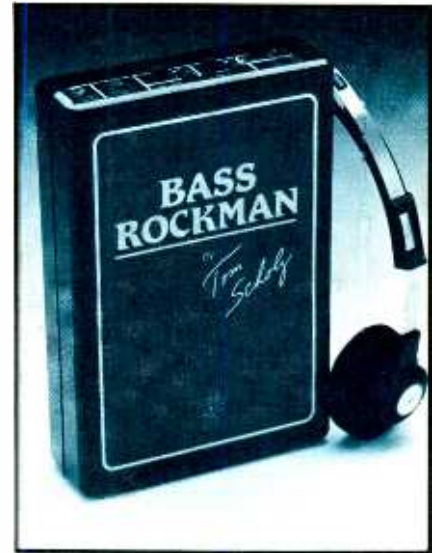


SCHOLZ BASS ROCKMAN

Scholz Research and Development's new Bass Rockman is a portable amplification device with full studio processing for the electric bass. It is small enough to fit into any bass guitar case along with its folding stereo headphones, and light enough to clip onto a belt or guitar strap. The versatile Bass Rockman can drive two sets of headphones and be used as a direct preamp to play through a studio mixing console, live sound system, home stereo, tape deck, or any power or bass guitar amplifier. An auxiliary input also enables the bass player to play along with tapes, radio, drum machine, or another Rockman. The unit features three equalization settings: a Fat setting for the heavy bottom sound, the Mid setting, designed for the snap and slap style, and the Bright setting, which has a treble boost of an extra 12 dB. The Bass Rockman also in-

cludes a Stereo Chorus designed specially for bass. It features both a Clean and a Distortion setting. The Clean setting is a stereo chorus with a clear sound. The Distortion setting has an ultra high gain overdrive circuit with proper equalization for bass. The Chorus may be turned off, giving a musician mono capabilities in all settings. The High Frequency Compressor provides 5 dB of gain reduction for piano-like sustain with bright basses. The High Frequency Clipper is a hard limiter that reduces click noises when using a pick or snapping strings on bright basses. The two high frequency modes can be used independently or together. The Sustain switch provides three degrees of smooth sustain from moderate to extra long, giving the bass player full control of how much sustain he wants from his bass.

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ARIA MULTI-EFFECTS UNIT

The Aria Rock Trek I & II are compact multi-effects systems containing Chorus, Delay, Compression, and Overdrive. A variety of exciting sounds is attainable through their selectable effects program. These units are suited for writing or rehearsing privately and also for stage performance. Standard features include instrument input, aux input, and two headphone outputs. One headphone is included. Prices start at under \$200.

Circle 35 on Reader Service Card



**YORKVILLE SOUND
MIXING CONSOLE**

Yorkville Sound's Audiopro 16-S is a rugged, professional mixing console that combines features tailored to meet sound reinforcement demands with low-noise, high-gain performance criteria (equivalent input noise is -125 dBV ref. to 150 ohms input load; maximum gain is +18 dBm). Each input channel features a pre/post-EQ Clip LED with a 60 dB Gain control, four-band EQ with mids tunable from 150 Hz to 3.3 kHz, a Channel Activity LED adjacent to the Channel On/Off switch, post-EQ/fader Effects 1 and 2 Send controls, pre-EQ/fader Monitor 1 and 2 Send controls, a Solo button with an adjacent ON LED, a Pan control, and 100mm faders. The dual Monitor buses feature Input Clip LEDs with Bus Level controls, four-band EQ identical to the input channels, Solo buttons with ON LEDs, post-EQ Output Clip LEDs, 100mm faders, balanced and unbalanced outputs, and a Stereo Bus Input for stacking. The main section features a Lite receptacle, power supply LEDs, dual 18-segment level displays, a Stereo Phones jack with Level control and Auxiliary



jack on the back panel, display and phones source LEDs, a Stereo/Mono selector switch for main program display readout, a Sine Test Tone control tuneable from 40 Hz to 12 kHz, 100mm Sub 1 and 2 (stereo) program faders with ¼-inch bus inputs for stacking, and a Main

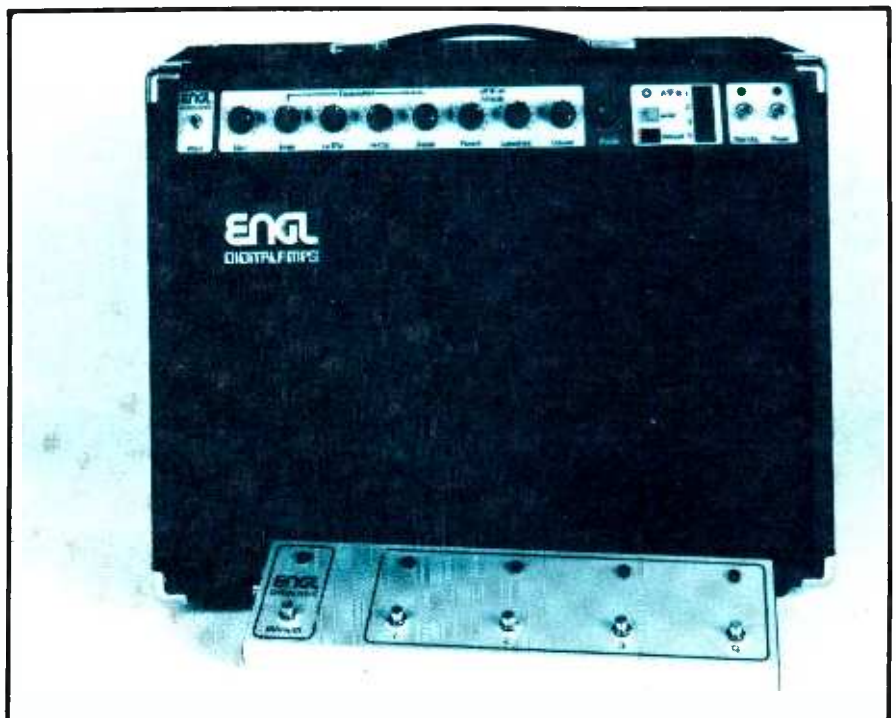
(mono) program fader. All outputs are both balanced and unbalanced. The Audiopro 16-S comes with a full, transferable, two-year warranty and an integral flight case. Its suggested retail price is \$2,250.

Circle 37 on Reader Service Card

ENGL DIGITALAMPS

The new Engl Digitalamp, distributed by Audiotec, is a programmable valve amplifier. The amplifier stores the following controls without delay, silently—via the foot control: Gain, Bass, Lo-mid, Hi-mid, Treble, Reverberation (Accutronics spring reverb unit), Effects channel (every device can be blended in), Leaddrive, and Volume. The Engl Digitalamp generates 100 watts.

Circle 36 on Reader Service Card



SEYMOUR DUNCAN COMBO AMP

Seymour Duncan's new Convertible™ 100-watt combo amp is a 100-watt all tube (E1-34 tubes) amp (it even uses a tube rectifier). A key feature of the amp design is the pre-amp section which is made up of five interchangeable modules. By inserting the right modules, you can duplicate the sounds of the classic sounding amps. You can even sound like one brand of amp on one channel and a different brand on channel two, or rearrange the module placement to create a sound that's right for you. Optional modules are available so you can experiment (changing modules requires only a few minutes). Other features include: variable power to reduce total output from 100 watts down to five watts, also controllable with a passive volume pedal; variable damping to increase the amp's control over the speaker for a crisp sound or reduce the con-

trol for a warm sound; triode/pentode switch to reduce total available output to 60 watts by using three out of five grids in each tube; and load resistor jack to match output impedance of the amp so that you will not overload the input. Other features of the amp call a tremendous amount of attention to detail: two channels that can be changed using the panel-mounted switch or the factory-supplied footswitch, separate master volume/overdrive controls, separate treble, mid, bass, and reverb controls for each channel, a built-in fan to reduce heat, stranded cable instead of solid core wire for reliability, all dove-tailed cabinet joints, Celestion G85-12K stock speaker, effects loop, slave out, and two AC convenience outlets mounted on the back panel.

Circle 38 on Reader Service Card



RENKUS-HEINZ STAGE MONITOR SPEAKER

Renkus Heinz' new stage monitor speaker, Model SMS 1582-CB, has wider coverage and allows greater mobility on stage. It is based on the successful Model SMS 1582 (200 watts, 2-inch driver, 15-inch woofer), but in place of the tightly-focused SSH 820 exponential horn, it uses the CBH 820 constant directivity horn.

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INVENTRONICS PROGRAMMABLE TUNER

Inventronics, Inc.'s new Sanderson Accu-Tuner™ is a portable electronic programmable piano tuner that stores and comparison checks optimal individual tunings for up to 54 separate instruments. It allows tuners, musicians, and acoustical engineers to quickly program and check notes, partials, octaves, and cents during tuning. Holding up to 54 complete 88-note piano tunings in 14K of computer memory, the portable unit indicates out-of-tune notes on a patented rotating LED analog display. Accurate to 1/1000 semitone, the push-button-operated system performs stretch tunings, pitch raising, and stored tunings. Insensitive to surrounding noise, the 2 lb. battery-powered device operates in measure, tune, stretch, and memory modes, and can be foot-pedal-activated to step from note to note. The Sanderson Accu-Tuner™ is priced from \$950 depending on number of tuning programs.

Circle 40 on Reader Service Card



ARIA MULTI-RECORDER

Aria Music's Studiotrack-4 multi-recorder is the newest addition to the company's line of quality electronic sound tools. It is designed for musicians, songwriters, churches, and production companies. You may record all four tracks at once, or ping-pong up to 10 layers of sound. Other features include noise reduction, 9.5cm/sec tape speed, pitch control, and microphone line input on the front of the 19-inch rack-mount chassis. Suggested retail price is under \$800.

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MAKING TRACKS

At Tres Virgos Studios **Van Morrison** is working with engineer Jim Stern and assistant Robert Missbach on a new untitled album... Also at Tres Virgos, Vancouver thrash punkers, **D.O.A.** flew in Thom Wilson from L.A. to do digi-punk mixes for their upcoming release... Recording at Fantasy Studios: **The Grateful Dead** were working on their new album for Arista Records. The LP was produced by the band itself, and engineered by Phil Kaffel. **Sammy Hagar** completed tracks and overdubs on his upcoming album for Geffen Records. Ted Templeman was producing, with Jeff Hendrickson engineering. **Stephanie Mills** was working on a new release for Polygram Records. Producing the album were **George Duke** and Hawk Wolinski, with Tommy Vicari and John Arrias at the controls... *Going For Broke*, is **Eddy Grant's** latest LP for Portrait Records. The album was written, produced, and arranged by Grant, and recorded at his home studio in Barbados... **Marlon Jackson** is currently at work writing and producing three songs for sister **Janet Jackson's** upcoming A&M album. Producing the rest of the album is dance-music specialist **Giorgio Moroder**... Recently at Unique Recording, **Southside Johnny** was putting finishing touches on and mixing his new album for Mirage Records. Billy Rush produced, with Chris Lord Alge at the board... Country artists **Moe Bandy** and **Joe Stampley** recently completed a duet album for Columbia Records, *The Good Ol' Boys—Alive and Well*. The album is a combination of analog and digital recording. Blake Mevis produced, Bill Harris engineered with Doug Crider assisting... At Disc Mastering Inc., **Randy Kling** recently completed mastering **Charley Pride's** new RCA country single, "The Power of Love"... **Emmett Chapman**, inventor of the Chapman Stick, has signed a recording deal with Big Time Records. The LP will be recorded at Mad Hatter Studios, will be produced by Dennis Mackay, and is scheduled for an autumn release... **Styx** guitarist **Tommy Shaw** is at the Chicago Recording Company working on his first solo LP for A&M Records. Mike Stone is producing... Former Traffic drummer **Jim Capaldi** completed four songs at the Automatt for an upcoming Atlantic Records release. Joining Capaldi are **Carlos Santana**, Santana percussionist **Orestes Vilato**, and Santana keyboardist **Tom Coster**. Jim Capaldi and Stewart Levine produced, Richie Corsello engineered with Ray Pyle assisting... At Trod Nossel, **The B. Willie Smith Band** and **Chris Ohlman** were in mixing albums for TNA Records... Blues harpist **Charlie Musselwhite** recently mastered his new album, *Where Have All The Good Times Gone?*, at the Sonic Arts mastering room. The album was recorded at Oasis Studio, with Greg Goodwin engineering and Pat Ford producing... The **Fresh 3 MC's** have recorded a 12-inch single at Quadrasonic Sound Systems. The single was produced by Dave Ogrin and Bill Moore, and engineered by Dave Ogrin... **Dr. Jeckyll & Mr. Hyde** have also finished a 12-inch for Profile Records. Also recording at Quadrasonic, the single was produced by **Kurtis Blow**... **Gary U.S. Bonds** has been working on a new album at Kingdom Sound Studios. Bonds is producing eight out of the nine songs himself. The ninth cut has been produced by **Miami Steve Van Zandt**... Due out shortly on the Prestige label, the second volume of **Miles Davis/Jimmy Forrest**, *Live At The Barrel*, recorded in the early '50s...

ON THE ROAD

Julio Iglesias is currently involved with his first major American tour. The tour encompasses the United States, Europe, Australia, Southeast Asia and Japan... **Herb Albert** and his Tijuana Brass band have embarked on their first U.S. tour in 15 years. The group recently finished recording a reunion album... On the video scene: Video production house Eye & Ear Teleproductions, Inc., has released the first video press release. The five minute release features blues-rocker **Johnny Winter** discussing his new album for Alligator Records, his career, as well as the blues. The video was produced and directed by Eye & Ear's Tom Hilbe and Kevin Ellsworth, and Alligator's Mindy Giles... **Rick Springfield** has finished a promotional video for "Don't Walk Away," the second single from his RCA album. The video was directed by David Mallet... **Luther Vandross** has released a video in conjunction with his single "Superstar." Chris Gabrin of Limelight Productions directed... Omega Recording Studios recently hosted the **Pointer Sisters** for a videotaping project for Public Television.

& MUSIC...



POPULAR

JOE JACKSON: *Body And Soul*.

[David Kershenbaum and Joe Jackson, producers; Rik Pekkonen, engineer; recorded at the Masonic Lodge next to Vanguard Recording Studios, New York.] A&M SP 5000.

Performance: **Divergent**

Recording: **Outstanding**

Joe Jackson gets more ambitious with each album, and on *Body And Soul* he progresses from the Gershwin-esque *Night And Day* to a combination of rock, pop, jazz and funk—usually always a little of each—and comes out with the most original, expansive music of his career.

Body And Soul, in fact, covers so much ground that its directions often conflict. Some of the songs are not actually songs but rather movements designed for virtuoso instrumentals. Though Jackson's personal, intimate lyrics unify the album, the music sounds as if he's caught between Tin Pan Alley and Swing Street.

Sometimes the songs are dichotomous within themselves. "The Ver-

dict" begins with a booming blast of brass, trails off into a soft melody and then bellows back again intermittently, and the dizzying up/down pace points to Jackson's musical indecision. A slightly more uniform song, "Cha Cha Loco" seems to be a light dance shuffle, but angry, loud horns and a creeping piano shade the song with a disturbing tension.

These songs might not have seemed so fragmented had Jackson not included "You Can't Get What You Want," which bridges the gap between his musical styles. Again a trumpet opens the song, with an energetic, prominent brass riff. The piano and lead guitar give their own versions of the same riff, and Jackson holds the overkill in his voice in check. All the riffs—instrumental, lyrical and vocal—endure, unlike, say the disposably catchy hooks of a group like Culture Club.

Jackson's voice doesn't reach that level on the rest of the album, however. Though he tries to control his voice more on this album, he still slips into a post-punk snarl, one that the clarity of the recording can't help but expose. A song like "Not Here, Not Now" has a melody worthy and demanding of a great pop voice, but Jackson obscures the intricacy.

The quality of the sound does more for the playing than Jackson's voice.

By recording in a room usually reserved for classical sessions, Jackson and Kershenbaum have approximated the acoustics and ambience of a small, uncrowded night club. The brass tracks lie separate but not distanced in the mix and Jackson's piano, as identifiable as that of Billy Joel or Carole King, comes through with piercing clarity.

The recording atmosphere works especially well on the two instrumental cuts, "Loisaida" (a translation of Lower East Side) and "Heart And Soul Of Ice." Both unfold slowly and melodically, and sometimes sound so soft and light that they could pass for Chuck Mangione or Spyro Gyra. But the precise reproduction of each instrument evokes a careful optimism and a spontaneity that make the distinctions between pop and jazz fade.

And that's probably the point of *Body And Soul*. Joe Jackson doesn't work with formulas and doesn't especially care what his audience expects. Instead he's always challenging himself and throwing his listeners curves that are difficult, but rewarding to catch.

rob hoerburger

THE CARS: *Heartbeat City*. [Robert John "Mutt" Lange, producer; Nigel

Green, engineer; recorded at Battery Studios, London, England.] Elektra 60296-1.

Recording: **Technical wizardry**
Performance: **Marvelous**

Since their emergence in 1978, change has always been the key to the Cars' success. Whether it is a change from the music surrounding them on the charts or musical changes within the band, the Cars are the epitome of the modern-day studio band, forever experimenting, tinkering and meandering until that perfect sound is reached.

And so it goes with the group's fifth release, *Heartbeat City*. Fresh, bouncy and vibrant, not to mention inundated with technical goodies, *Heartbeat City* is yet another change for the guys. Another change is that Roy Thomas Baker, producer of LPs 1-4, has been replaced here by Robert John "Mutt" Lange, most often associated with the thunderous antics of Def Leppard, AC/DC and the somewhat softer sounds of Graham Parker. The Cars also moved to a new location for this recording. Having recorded their previous efforts on Boston's Newbury Street at Synchro Sound Studio, the band did this one in England, nixing the studio they had just built.

Also new for the band was its method laying down tracks. Instead of recording drums and bass first, they were added after the songs were built around LinnDrum sequences. Guitarist Elliot Easton has expanded his repertoire, using a Roland guitar synthesizer, electric sitars and an octave guitar. As a result, each guitar part maintains a distinct and recognizable sound. Never much for solos, the band continues this practice by using each instrument or vocal for what it's worth, then letting another instrument or part take its place. Nothing is drawn out; every note, every sound has a purpose. Nothing is superfluous here.

The band gets a more powerful sound by coupling many of the instruments. For example, instead of just using a Les Paul guitar to provide melody, the Les Paul is coupled with a Telecaster for a brighter sound. The same holds true for the keyboards; two or three are layered so that the lows, mids and highs ring with freshness.

Content to let Lange take the helm after directing his own *Beatitude* solo project in 1983, vocalist/songwriter



Ric Ocasek still remains the most powerful engine driving the Cars. His songs are wrapped around simple imagery, boosting each piece in scope. "You Might Think," the first hit single from the LP, is a quirky yet solid piece of pop; it glides and grooves along until Ocasek breaks it up with a brief monolog in which his voice sounds as if it has been mixed through a food processor. "Hello Again" starts out with a simple hello, before Ocasek's greeting is mixed into a quiver; the song then gains momentum with a build-up base of chunky power chords and breezy keyboards. The title cut is a slow-paced methodical number with creepy synthesizers setting the moody tone.

The Cars give each other room to expand and explore, both as individuals and as a group. Perhaps this trust is the reason the Cars can generate so much enthusiasm in their records. It's something they've done once again with *Heartbeat City*.

martin basch

KING CRIMSON: *Three Of A Perfect Pair*. [King Crimson, producer; Brad Davis and Tony Arnold (Arny's

Shack), engineers; "Sleepless" mixed by Bob Clearmountain; assistant engineers, Nick James, Ray Niznik and Peter Hefter.] Warner Bros. EG 25071-1.

Performance: **Conscious**
Recording: **Concise**

When rumors of a new King Crimson surfaced in 1981, it sounded like an incongruous proposition. The strictly precise and dapper Fripp (who wears a necktie to the stage as if he's attending a banker's meeting) teaming up with that gangling fellow who transformed his guitar into a receiving station for an array of inhuman noises? Even the rhythm section supporting this ungodly match seemed incompatible, as if Bruford's busy lean toward jazz would compete with Levin's developing Stick prowess. Well, when it was finally confirmed on vinyl, it turned out to be a heavenly match. The eccentricities of the four partners smoothly dovetailed to form an integrated whole that did not obscure their individual fortes.

With their third release, *Three Of A Perfect Pair*, the band has taken their homogeneity into another dimension. The players have reached

the point where their sounds have, like people and pets, begun to resemble each other, often indistinguishably. Is that Bruford's floor tom or Levin's Stick punctuating a passage? Is that the snare drum or some new guitar tone conjured up by Fripp nailing down the beat someplace else? Essentially it doesn't really matter; the ensemble produces cut after cut of erratically stitched songs that, for the most part, seam up into closefitting cloaks of sound.

On the title cut, the shifting rhythmicity of electric and acoustic guitars form the backdrop for one of the best surprises King Crimson has yielded: Adrian Belew's voice. Responsible for lyrics as well as vocals, he has more firmly grasped a style by letting go of technical as well as ideological traditions, a process which is a fundamental tenet of the group. Offering a fresh, sensitive treatment of subjects that range from unrequited love to rusting cars, Belew's elastic tenor is still more blue-eyed than Daryl Hall's, but grows ever more soulful.

As if the players' abilities to masquerade as each other wasn't confusing enough, various wizardries employed at the board produce an even more complex result. On "Model Man," different components of Bruford's drumkit are sent to left and right channels, and on "No Warning," the tone of one of his low drums is shaped to resemble a basketball dribbling nightmarishly around the plaintive, affected vocal. And, of course, we have the Frippertronics, which prevail mostly on the second or "right" side of the album. Weaving sinuously around the non-mutable crippled marching bassline, they cement the 8/9 pyramid of "Industry" and help retain fluidity in the disjointed "No Warning." Fripp's impeccable scalework is the framework for the latest version of "Lark's Tongues In Aspic."

Unfortunately, at times the music on *Three Of A Perfect Pair* seems so bent on testing its cleverness that it becomes handless and approaches heartless. However, it's never pointless. Perhaps the four wise men in search of a perfectly rising meter, deserve the freedom to take a few detours.

susan borey

THE THE: *Soul Mining*. [Produced by Paul Hardiman and Matt Johnson; 54

engineered by Paul Hardiman; unknown recording site.] Epic BFE 39266.

Performance: **Superb**
Recording: **Well groomed**

Rarely these days does a debut album surface that is eclectic, eccentric *and* exciting. Yet that's what The The's *Soul Mining* is. Matt Johnson is The The and The The is Matt Johnson. They are—or he is—one in the same, a 22-year-old Englishman who enjoys fiddling with the synthesizer and blending various musical styles that usually aren't mixed together. Johnson likes experimenting with percussion as a lead rather than as filler, and his voice is loaded with angst and passion. Despite the bleakness, these are the components Johnson utilizes to produce one of the most ear-pleasing records of this year.

A little over a year ago, Johnson released "Uncertain Smile" as an import single, which was played sporadically in dance clubs. It featured a lusty, cascading flute melody that was both gentle and erotic. Unfortunately, on the album that song is cut in length and the flute is nowhere to be found. What replaces that flute, however, is a funky keyboard solo by ex-Squeeze member Jools Holland. Johnson takes risks, and in this case he came out on top.

Most of the songs are slow-paced with a headstrong beat. "This Is The Day," the most uplifting piece on the record, is introduced with a merry accordion and features lyrics that will strike a familiar chord in many people: "You didn't wake up this morning/ Because you didn't go to bed/ You were watching the whites of your eyes turn red."

Johnson's infatuation with percussion is demonstrated in "Giant." Here he used African-influenced polyrhythms and tribal-like chants, clicking sticks and a rumbling synthesizer, for a piece that meanders down the road in a dream. The album's opening cut, "I've Been Waiting For Tomorrow (All Of My Life)," is comparable to something Phil Collins might do. It begins with a countdown for a launch and then shoots into a fully loaded drum beat over which Johnson sings. Powerful bass, ripping guitars (of which few are generally used), and synthesizers are all added later to round out the piece.

In these eight songs, Johnson has

tackled jazz, blues, funk and hints of Bavarian music. And this is only his first U.S. record. The The will hopefully continue to evolve with his future endeavors.

martin basch

BILL NELSON: *Vistamix*. [Produced and engineered by Bill Nelson, except for two songs produced by Bill Nelson and John Leckie, engineered by Ted Sharp, Pat Moran, John Leckie; assistant engineers: Leon Phillips and Mick Robson; computer program and PCM sound memory manipulation, Hideki Matsutake; engineers, Mitsuo Koike and Akitsugu Doi.]

Performance: **Creative and potent**
Recording: **Spacious**

Best known as the force behind BeBop Deluxe, Bill Nelson—after disbanding that British group somewhat short of its popularity peak—has moved into the fringes of the pop scene with an ardent leap into ambient sound, film and theatre music. *Vistamix*, a compilation of material from three solo albums, shows Nelson's best in the do-it-yourself game.

Like his peers (Heaven 17 in particular), Nelson artfully combines real and synthesized drums and usually avoids the sterility that a total absence of human hands often brings to a work. He also knows how to program a drum synthesizer with more than 4/4 beat; many non-western rhythms, as well as melodies, are utilized in the dense arrangements, as in "Glow World," where a middle eastern musical theme is given a major role as it is combined with a lead guitar section that approaches Japanese tonality.

Nelson's vista is complex and full, but the listener is not exactly touched by a smooth overlap of sound waves. There is, rather, a continuous pelt of small sonic particles that forms a kinetic impression. With songs based on orchestral grooves, Nelson belongs to the unfortunately small group of composers who have taken synthesizers beyond the scope of video game accompaniment. His musical themes often possess a technological sensibility, e.g., "Empire Of The Senses," which sounds like a waddling robotic penguin. He is, however, careful to never overlook the human element. Certainly with his lyrics, and more subtlety with his music, Nelson's

MODERN RECORDING & MUSIC

nat hentoff

Looking Ahead and Way, Way Back: New York Second Line and Symbols of Hopi

For a long time, it seemed that New Orleans had ceased being a remarkably fruitful source of new jazz creators. But then came the Marsalis brothers—Wynton and Branford. And behind them, it turned out, was their father, Ellis, a pianist and master teacher who, at the New Orleans Center for the Creative Arts, was turning out other swiftly knowledgeable improvisers in addition to his sons. All of these youngsters, moreover, were steeped in classical as well as jazz forms.

When Wynton and Branford Marsalis left Art Blakey a while ago, their replacements were from this New Orleans cadre—21-year-old trumpeter Terence Blanchard and 23-year-old alto saxophonist Donald Harrison. They have now made their debut as leaders in *New York Second Line*, the start of a new George Wein Collection series on the Concord label. It's a continually intriguing set—witty, disdainful of clichés in either the writing or the solos, and revealing a sure command of structural improvisation. All but one of the tunes are originals by the leaders or the members of the band, and none is just a casual throwaway.

These players are *prepared* in every way and so, when they go for themselves, they know where they're going. Engineering is first-class—as crisp and clear as the minds of these jazzmen on the rise.

While Concord Jazz is showing us where some of the more substantial and venturesome jazz of the 1990s is going to come from, the label has also released an interlinking of jazz with the oldest of all American musics—the rhythms, the colors and the all-encompassing philosophy at the heart of the rhythms and colors of the Hopi Indians.

The set is *Symbols Of Hopi* and results from jazz pianist Jill McManus's long-term immersion in the culture of the Hopi people

in the Southwest. There are works by two Hopi song-poets, as well as originals by McManus. She has also assembled an exceptionally sensitive group of jazz players—Tom Harrell, Dave Liebman, Marc Johnson, Billy Hart—along with Louis Mofsie, a Hopi/Winnebago on cottonwood drums and rattles, along with Alan Star, a Canadian Cree, on bells and rattles.

Southwestern Pueblo music does not have improvisation, and so McManus has added sections for improvising, but she has done all of this with such care and deep affection for the Hopi traditions that nothing jars. This is lyrical, contemplative, spirit-regenerating music, and Carl Jefferson of Concord deserves credit for recording it.

As is customary at Concord, the recorded sound is just right—keeping in clear, delicate balance these intertwining streams of American cultures.

Other labels should encourage more of this musical anthropology. Jazz musicians are natural searchers in the field, as Dizzy Gillespie has demonstrated every time he has traveled abroad. So, too, with Duke Ellington, and many more.

TERENCE BLANSHARD/DONALD HARRISON: *New York Second Line*. [George Wein, producer; Don Elliott, engineer.] CONCORD JAZZ (The George Wein Collection) GW-3002.

JILL McMANUS: *Symbols of Hopi*. [Jill McManus, producer; David Baker, engineer.] CONCORD JAZZ CJ-142.

pieces have parts which tonally and rhythmically imitate breathing and the beating of the heart.

The vocals on *Vistamix* are slightly receded in the mix, as if intended to come across as just one more instrument. Nelson takes liberties with vocal phrasing, often coaxing extra syllables out of words and bending them to fit quirky melodies. He uses his "artificial orchestra" cleverly throughout *Vistamix*, swirling his synthesizers through the songs like a carf over a camera lens. If he completely broke loose from the reins of pop, future *vistamixes* would most likely be more panoramic in scope than the constraints of new wave currently allow.

—susan borey



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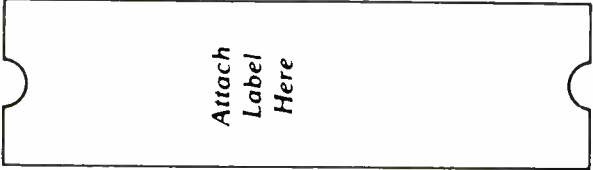
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