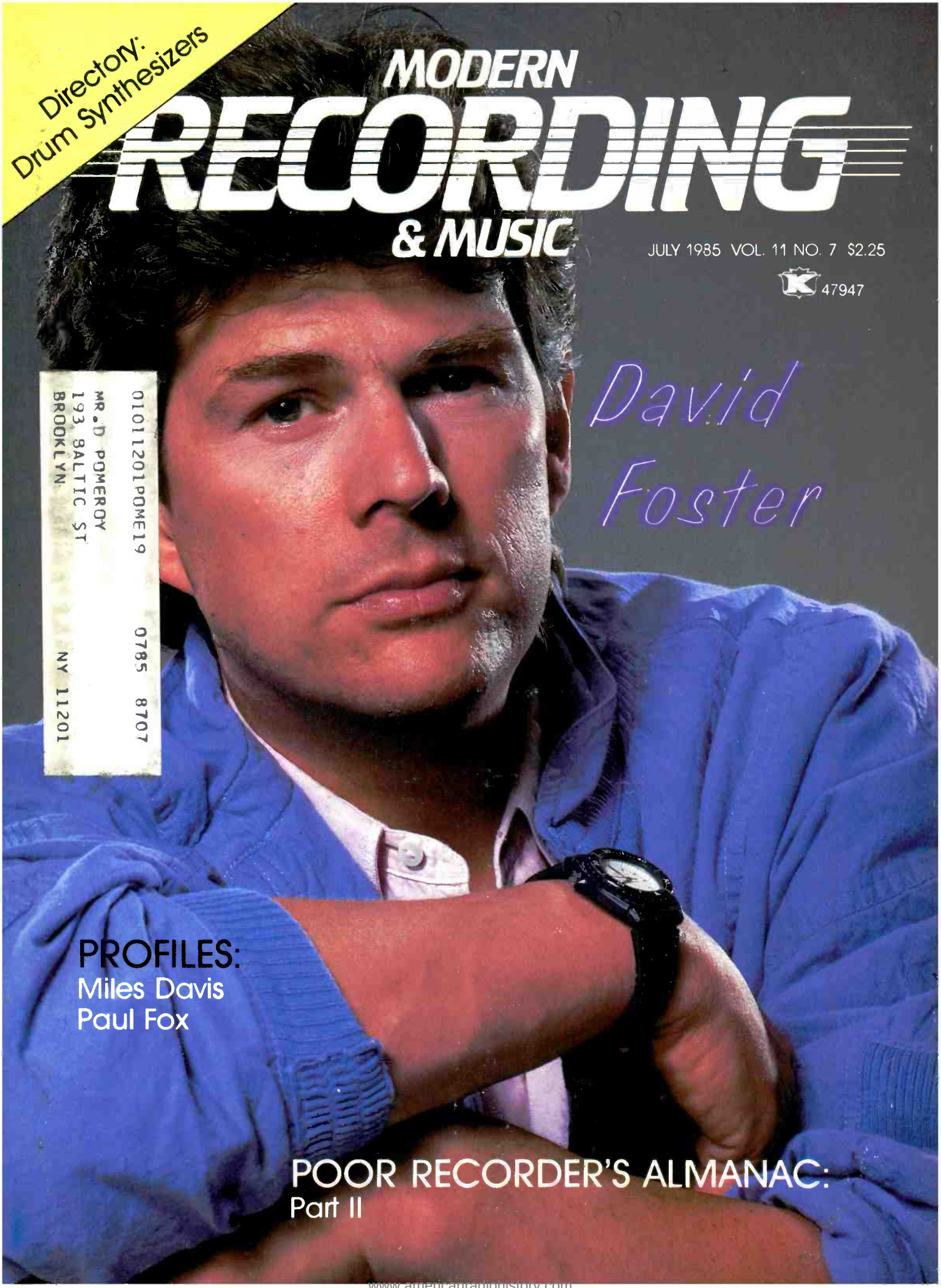

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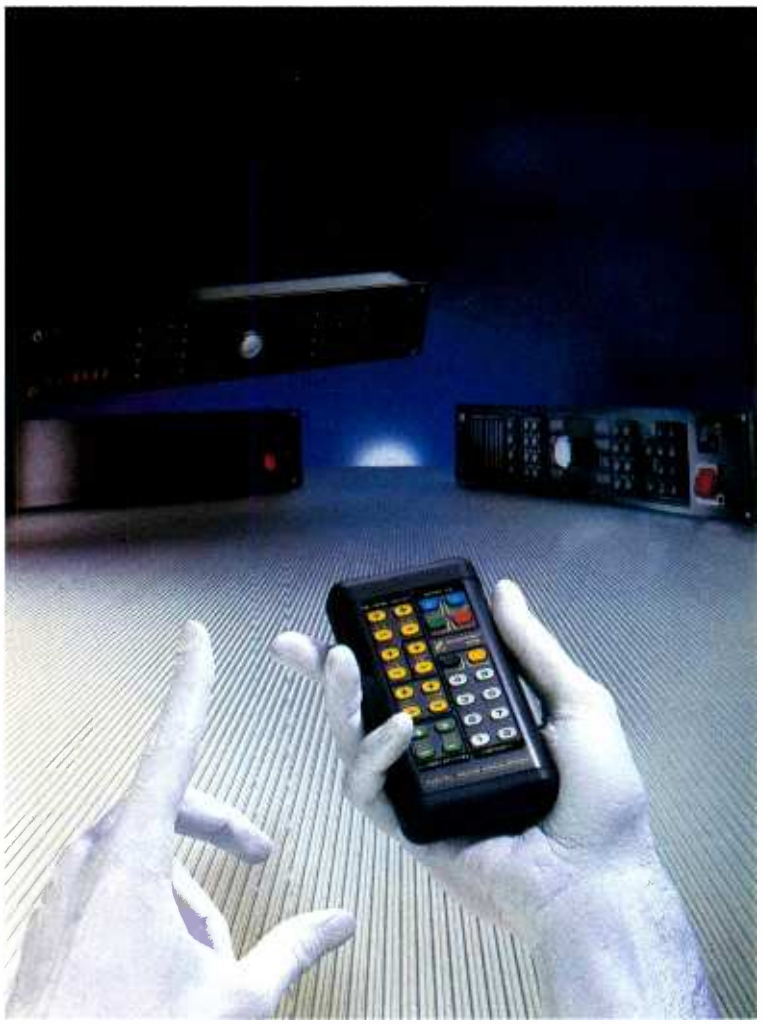

Programs

Reverberation program	
Room size	1 m^3 - 10^6 m^3 with 7 steps
Decay time	0.1 sec to 100 sec (up to 400 sec at 40 Hz)
Decay time at low frequencies	Coefficient of 0.1 to 10 with 11 steps related to selected decay time
Decay time at high frequencies	Coefficient of 0.1 to 2.5 with 8 steps related to selected decay time
Reverbration density	More than 10.000 per sec depending on room size
Density of resonance	Max 3 per Hz of bandwidth depending on room size
Reverb	Prereverb delay 1 ms - 200 ms in steps of 1 ms, level —30 dB to 0dB in steps of 1 dB 'OFF' Function
1st Reflection	1 ms - 200 ms in steps of 1 ms, level —30 dB to 0dB, 'OFF' Function
Enhance program	Simulation of rooms without perceptible reverberation
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JULY 1985
VOL. 11 NO. 7

MODERN RECORDING & MUSIC

FEATURES

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SOUND IDEAS

DEPARTMENTS

MODERN RECORDING & MUSIC

Letters

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Bob's Almanac

I've been using *MR&M* for two years now as my #1 source for info. and advice on recording in particular and the music industry in general. However, unless I've missed a few issues, it seems you've been neglecting a subject which undoubtedly is of utmost interest to many of your readers—namely, the ins and outs of recording with "multitrack cassette" format.

I won a Fostex X-15 cassette deck, which my partner and I have been using to try to create demos of our original material; but although we've gained a wealth of info on general recording techniques from your magazine, neither of us is confident that we know how to get maximum results from the deck. And since 8 or more tracks doesn't appear to be in our near future, we need to know what, if any, success we may hope to achieve in producing the best possible results with multitrack cassette format.

I believe that an increase in coverage of the subject would be enthusiastically received by the ever-growing legion of multitrack cassette-owners who look to your magazine for solutions to recording problems.

That issue aside, it behooves me to give credit when due—for producing the kind of magazine which I can consistently call the best in the field, I extend my sincerest gratitude; and I look forward to a long and satisfying relationship with *Modern Recording & Music*!

—Michael S. Harback
Reading, PA

Well, Michael, we're glad to be of service! You'll be quite pleased to learn that if you just check last month's issue (June '85) you'll find an incredibly interesting article by none other than our famous Bob Buontempo. This, entitled "The Poor Recorder's Almanac" will be a continuing column. So check this issue for part two. We're sure that this will clear up any questions you have, plus provide new and exciting ideas.

Grammy Mix Up

The article by Bruce Bartlett in the January issue—"AES Recording Techniques Workshop" reports on a classical recording workshop in which I was a participant. Mr. Bartlett kindly introduces me as one who has won several Grammy awards for mastering work I have done. While I have indeed cut several Grammy award winners through the years and many many records which were nominated for Grammys, I work in an area of professional recording that the National Academy of Recording Arts & Sciences does not recognize with any Grammys. I know at the actual workshop my introduction was accurate in this respect. I was sorry Mr. Bartlett, understandably, was a bit unclear and I wanted to set the record straight.

—Bob Ludwig
New York, NY

We sent the word on to Bruce and we thank you for so humbly setting the record straight.

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More MIDI

I have read your Jan. 1985 article on MIDI and found the section on music software very informative. I own a Yamaha DX-9 synthesizer and am interested in incorporating MIDI into my recording efforts. Since I have some technical background, I have been waiting to see some info on the details of MIDI and the nature of the signals on the connectors. Where can I find this information and does it vary with the manufacturer? Also, is it possible to obtain software interfacing specifications for MIDI instruments?

—Frank J. LaRosa
Norristown, PA

I am a subscriber to your magazine and I think it is *great*, keep up the good work. I am an electronics technician and I am currently studying for a degree in computer science. I am also interested in building a small recording studio in my home. I want to have a lot of it computer controlled. I would appreciate it if you could steer me in the direction of finding more technical data on MIDI, SMPTE hardware, and perhaps some books or articles on the software programming constructs of MIDI systems.

—George C. Davidson
Neptune, NJ

You guys are in luck! Firstly, starting this month, Tom Sheldon will be writing a series of articles on how to put together a MIDI system. He'll be delving into subjects like how to buy a computer and music software and even be comparing music software. Secondly, in this issue you'll also find a directory of music software manufacturers. Each manufacturer has included a little something about their products, so you can get a pretty good idea of what is available. The addresses of the companies included have been provided so if you need any more information you can contact them directly.

Bi-Amp Search

I am a faithful and appreciative reader of your publication, and I recently purchased a second hand BI-AMP console that needs some service. This console was first bought in Paris in 1981, and since then there has been no distributor I know of who can supply the schematics and block diagrams of this console. After some research I doubt there is any BI-AMP distributor in Europe. So I wrote to BI-AMP at the following address with no response: 9600 W. Barnes Rd., Portland, OR 97225.

Now I'm wondering if BI-AMP still exists. In case they don't, would you know of any pro-audio store that could have these schematics? Any information and help that you could give would be much appreciated. Thank you.

—Y. Chalony
Paris, France

Since we have received several pleas for the new BI-AMP address here at MR&M *we would like to set the record straight. The new address is:*

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susan borey and mark oppat

Sound Advice

Piano Mic'ing—Part 2

Last month we talked about two methods of piano mic'ing using the C-ducer and the Helpinstill units. Which is better? You decide! This month we'll provide more input for your decision and suggest a few sources for further material.

Someone recently asked us why we're addressing piano coverage in Sound Advice. Aren't pianos somewhat passe?

Well, synthesizers *have* taken over to a certain extent, but acoustic pianos are certainly still around and sound people will encounter them in clubs for years to come. Knowing how to cover the sound of a piano will help you understand how to cover other acoustic instruments.

If you work with an act repeatedly, you should know what all of their acoustic instruments sound like naturally, without reinforcement, before you determine the best mic'ing procedure.

The characteristics of sound from an acoustic instrument are complex. Nobody has been able to capture every nuance of any acoustic instrument, due to the complexity of the audio waveform. With piano, there is an additional percussive component caused by the hammer striking the string. There are directional characteristics as the sound projects from the instrument. The higher frequencies do not travel in all directions as well as the lows do, and the perceived volume level of the notes varies from the low end to the mid and high frequencies. Also, the overtones of the primary note vary, depending on the instrument's construction.

The C-ducer, Helpinstill, Countryman, FRAP, Barcus-Berry, PZM and other mics or pickups all cover instruments in different ways. Some pick up sound directly from the strings, others from within the instrument.

Why use a pickup instead of a conventional microphone? There are several advantages. First, for live sound, a pickup will give you higher gain before feedback. We suspect that the Helpinstill best accomplishes this, due to its picking up the sound directly from the strings. Secondly, pickups give higher isolation between the piano and other instruments on the stage. Finally, they can give the instrument a desirable tonality of one kind or another.

Most of these systems were developed in the late 60s, when many rock acts like Elton John, Leon Russell, The Allman Brothers and others were touring with grand pianos and wanting high monitor levels to keep up with loud stage volumes. There have been many improvements since then in microphone and monitor technology, and priorities have shifted from high volume to high quality.

Carl Countryman is one of the pioneers in the pickup business. From 1968 to 1978, Countryman made an electrostatic pickup that was installed across piano strings

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All of the above and more makes the AT-RMX64 a very impressive cassette recorder. But the mixer section is even more remarkable ...not only as an input to the tape, but as a free-standing mixer on its own. Every input accepts a balanced or unbalanced mike or line signals with 60 dB of available attenuation, and 72 dB of overall gain. With patch-in/out for every channel. Plus two "send" circuits for every channel. Even 48V to phantom-power professional condensers. But that's not all.

Dual-frequency EQ of each input gives you far more control than the usual glorified tone controls. Peak or dip at selectable low and high frequencies. Or select a high pass filter for the bass and shelving of the highs up or down.

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*TM Dolby Laboratories Licensing Corp.

That's truly impressive flexibility. And you can send any input to any sub output and/or tape channel. Add signal processing from two return channels. Pan between channels 1 and 2 if you wish. Or monitor any combination of channels with the solo bus. Create a PA mix and a monitor mix if you wish, and record the output while you perform.

The AT-RMX64 feeds your amps at +4 dBm, not −10 dBm like the "little" mixer/tape recorders. With up to +18 dBm before clipping so that you can use all the power in your amps.

In short, every basic feature you need for mixing on the road or in the demo studio. Yet the AT-RMX64 is so easy to use even a beginner can benefit from its almost intuitive design. And as your mixing and recording becomes more sophisticated, you'll find the AT-RMX64 design grows with you. Both as a "live" mixer and full-feature recorder. Indeed, the more you know, the more the AT-RMX64 has to offer.

Don't settle for a recorder/mixer that can't take you all the way to the top. Try the AT-RMX64 at your Audio-Technica dealer, or write for our colorful literature today.

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instill. It turned the ndenser microphone of other pickup systems, levels of monitor near cost around $1500. iscontinued it in favor ax series of miniature condensor microphones.

"We developed a line of very tiny, extremely flat mics that, in every situation other than those with extremely high monitor levels, did a better job," says founder Carl Countryman. "For a lot of our customers, we put ourselves out of the piano pickup business by making microphones that do a better job."

As we suspected, most Countryman mics are sold to pro sound suppliers. Stan Miller of Stanal Sound, one of the country's major touring sound companies, has a box of Neumann KM84 mics. He couldn't use those, but he uses Countryman's Isomax II because they're easy to use and, as Stan says, he's "never heard a piano sound better."

There's another advantage to the soundperson: a small mic like this, although not capable of SPL over 125 dB, is great for instruments like brass or saxophone (Clarence Clemons uses one with his Nady wireless unit). For stereo, or two-channel (high end/low end) piano coverage that is mono compatible, mount two of the cardioid versions next to each other, facing opposite directions. the close proximity of the two mics ensures that there will be no time delay between them. If the two mics are mixed, you won't get the flangey or phase incoherent sound that can sometimes occur with mics that are spaced apart.

Unlike the PZM microphone (which we will discuss in a future article), the Isomax II requires no boundary surface to reflect sound into it; however, the application notes mention that facing it towards various surfaces, like the piano lid, sometimes produces better results.

FRAP (Flat Response Audio Pickup) is another system developed in the late 60s by Arnie Lazarus, a bass player and former nuclear physicist. His line consists of ten models, although each unit is made to order. Arnie takes great pride in his units, and they've graced the instruments of many stars, including the entire string section that Emerson, Lake and Palmer toured with in 1977.

Models IT-2, F350, T-3D and FS200 are recommended for piano work, the others are for woodwinds, brass, and guitars. The piano units are piezo-electric and mount under or inside the piano.

"To do a piano you should use a mic too, because you need some ambience," says Mr. Lazarus. "There is some reverb in the piano itself because the board is so large, but all pianos are different. It's a very experimental thing."

FRAP is not a mass production type of manufacturer. Arnie likes to deal with each situation individually.

Catalogs are available from both Countryman and FRAP at the listed addresses. Please send your questions regarding sound reinforcement to us at Sound Advice, c/o *MR&M*, 1120 Old Country Road, Plainview, NY 11803.

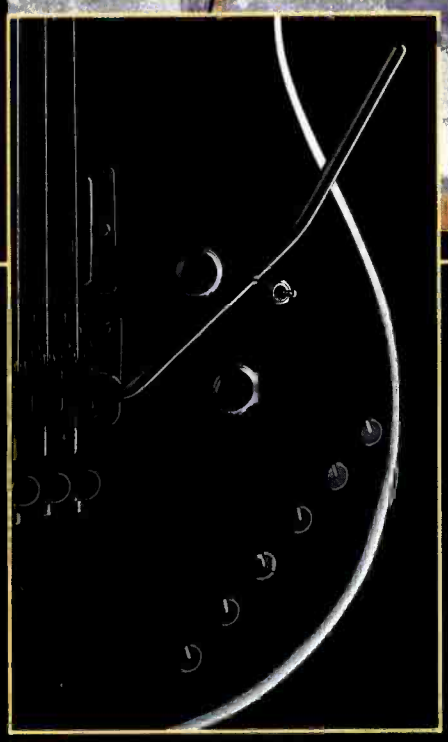
For further information:

FRAP
Arnie Lazarus
39 Seward, Suite 3
San Francisco, CA 94114
(415) 431-9350

Countryman Associates, Inc.
417 Stanford Ave.
Redwood City, CA 94063
(415) 364-9988

Broaden Your Horizons With The Kramer-Ripley Stereo Guitar

Photo by Glen LaFerman



Steve Ripley turned his imagination and craft to designing the ultimate in stereo guitars. The guitar features a six channel stereo mix with a pan pot for each string . . .

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Poor Recorder's Almanac

bob buontempo

Vol. II

Hello again!! And welcome to the Sixties. I'll bet everyone has something they remember about that fab decade. Whether you learned about sex, drugs, and rock & roll, or barely remember being born, you must know about the onset of the newest technology. Multitrack recording was just coming into its own, along with transistors, and a curious thing called stereo.

Although it had been around in one form or another since the Thirties, with some experimentation taking place before that, commercially available stereo really only came about in the Sixties, and towards the end of them at that!!

So how come in the middle Eighties many smaller (read 4-track) recordings are in mono?

In this month's issue, we will attempt to concentrate on achieving stereo for smaller recording set-ups.

For purposes of ease of communication, we are going to make a few assumptions:

1. The recording device you own is a 4-track (although these techniques will work just as well on larger track formats).

2. The frequency response is identical or very similar on both the repro and sync modes of the machine; it being a two head deck. (Some older 3 head models had terrible, almost unusable, (except for monitoring) sync playback response.

3. Adjacent tracks can be "bounced" together. (Although not a very good or common practice on professional machines, a necessary evil on smaller stuff.)

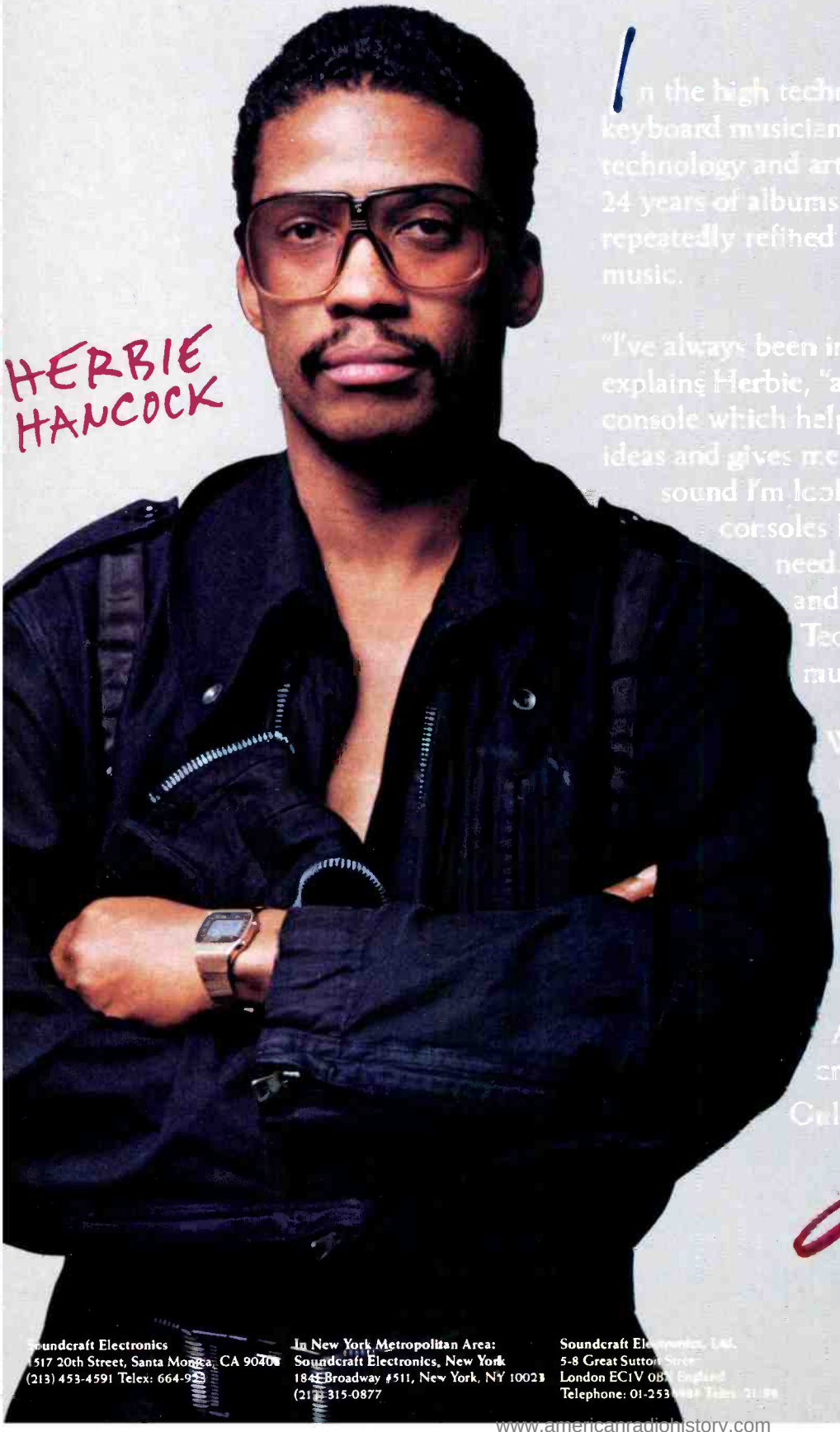
In fact, most smaller cassette/recorder/mixer combinations give this as SOP (standard operating procedure) in their explanations of adding more than four tracks to a tune.

So, to make matters even easier to understand, we are just going to assume this project is going to be done on a "Porta-Studio" or a similar cassette/mixer combo. The only difference in the ultimate goal is to have a full stereo mixdown with all the instruments, vocals, and effects you desire, and all only second generation!! (At worst case there may be some 3rd generation, but then again there will probably be some 1st generation stuff too!!)

Amazing, you say!!

Not really when you see the approach that will be taken. Oh yeah, I

TECHNOLOGY DOESN'T CREATE MY MUSIC, I DO.



In the high technology world of the keyboard musician, the dividing line between technology and art often gets blurred. Through 24 years of albums, Herbie Hancock has repeatedly refined the parameters of modern music.

"I've always been intrigued with electronics," explains Herbie, "and I still am. I need a console which helps me express my musical ideas and gives me the freedom to get the sound I'm looking for. With Soundcraft consoles I'm able to get exactly what I need. They're laid out logically and are easy to understand. Technology doesn't create my music, I do."

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almost forgot, this will also require some patience, a lot of time, some trial and error, and, the hardest part, some pretty fair talent on both the performing and recording sides. In fact, it may necessitate two musicians playing together at once; or even one or two of them playing all the way through the song with no mistakes or punches!! Impossible, you say!! Well believe it or not, it has been done before, so, what say—let's give it a go, eh!?

The way most '4-track bounce to 10 track' instructions are set up is as follows:

Track 1: Drums (I'm just making up what instruments will be used; you may substitute at will).

Track 2: Bass.

Track 3: Rhythm Guitar.

Now mix down or "bounce" all of these to Track 4 while adding synthesizer.

Track 4 would now contain a mono mix of drums, bass, rhythm guitar, and synthesizer.

You could keep doing the "bounce" while adding the synth until you got the mix in the proportion you felt was best.

When you were satisfied, you would keep Track 4 as your rhythm track, erase tracks 1, 2 & 3, and basically repeat the same procedure: Track 1 & 2 plus new material onto Track 3; Track 1 plus new material onto Track 2, and, finally, add material to Track 1.

This gives 10 second, or (on track one), first generation tracks. Four on track 4; three on track 3; two on track 2; and one on track 1. 4 + 3 + 2 + 1 = 10 tracks.

This method works—however, it is basically mono, unless you do some deal with rhythm tracks on the left, overdubs on the right, and vocals in the center. And the best place to place the bass, bass drum, and snare is usually the center. It is also the best place for the lead vocal. Besides, when is the last time you bought a mono record, or one with a strange panning situation as described above?

Well here is where the difference in my "Stereo of the 80's" for 4 Trackers begins. Listen carefully now. Some of the effects I will talk about will be explained in future issues, so don't worry about them so much and concentrate on the tracking order. Ready?

First plan on recording a STEREO mix of the drums on tracks 1 & 2 of your machine. Put the drums left on track 1, and the drums right on track 2. Print whatever effects you want WHILE recording the drums (or drum machine). For example, gated reverb on the snare, compressed bass drum, delay on the toms, etc. As I said, don't worry about how to do the effects right yet; that will be explained in future issues. The basic idea is to understand that by committing yourself to printing the effects, you will have them free for use when recording other tracks and when mixing. So don't be afraid; if you are sure you want the effect, don't wimp out. Print it when recording. You might make a mistake and hate yourself later, and want to take it off when you can't, but this is all part of the learning process of how to master this method of recording, and recording in general. The same with EQ. Get the sound you basically want and record it, so in the mix you only have to "touch it up" or blend it in a bit.

Now, AT THE SAME TIME on tracks 1 & 2, record the bass guitar or bass synth on BOTH tracks. This will put the bass in the CENTER of the mix. Assuming track 1 is panned left and track 2 is panned right, if the bass is recorded equally on both tracks, it will appear in the dead center. Be very careful with the balance of the bass and drums, and in their EQ. Also add anything that you want to the bass (such as a compressor) at this time. Record it and play it back until you have a mix you like. So, to review, track 1 will have drums left and half of the bass, and track 2 will have drums right and the other half of the bass. With me so far?

Okay, on track 3 record your rhythm guitar. Again, print it with any effect you want (now that they are all free from being used on the drum/bass tracks).

Now transfer both track 2 (drums right and ½ the bass), track 3 rhythm guitar, and a new instrument, say string synth, to track 4. Do this until you get your mix the way you want it. Again, you can process the string synth in any manner you want while recording.

Track 4 should now contain drums right, ½ the bass, rhythm guitar, and string synth. If you want to get real fancy, add a lead guitar solo or some licks, along with the strings during the bounce. Remember, you are never stuck with anything until you

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by DeltaLab

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RICHARD E. DEFREITAS—(Engineer, Musician)
Founder, DeltaLab

DeltaLab

decide that you are satisfied with it, and can always go back one step and re-do what you don't like.

When you get what you want, go back and erase tracks 2 & 3. It is always a good idea to clean a track that will contain a new part, so that in case there are punches, they are on clean tape, not on tape with unwanted pre-existing material.

Now add, say, a processed keyboard to track 2. By the way, when bouncing and tracking, you can always use track 1 for monitoring, (the other half of the drums and bass), to help you keep things in perspective.

Let's add maybe a synth brass (with effects), and, remaining fancy, the lead guitar solos and licks that you did before, only at a slightly different volume when bouncing the synth brass and track 1 to track 3. If you would like the doubled lead guitar slightly more left, add more than you did the first time; slightly right, less than before, and dead center, the same amount.

By monitoring only tracks 3 & 4 when doing this bounce, you can get the true STEREO perspective. When you are totally satisfied, listen to just tracks 3 & 4.

What you should have is track 3: drums left, ½ bass, keyboards, synth brass, and lead guitar. Track 4: drums right, ½ bass guitar; rhythm guitar, string synth, and the lead guitar again (doubled). Pan track 3 left and track 4 right.

In Stereo, this should give you a Stereo drum spread, center bass, rhythm guitar right, keyboards left, string synth right, brass synth left, and doubled lead guitar, depending on where you chose to put it, somewhere in between.

This should add up to nine tracks, in Stereo already, all first or second generation, all with the effects you want, and all in a panning that is contemporary and logical. While making the mix sound cleaner and more professional. And we ain't done yet.

Just to make matters easy, put all your background vocals on track 2 (after cleaning that and track 1 of course). If all of you can sing at once; no problem—live to track 2. If all of you is only one person, and you want three parts, start on track 2 with the first part. Bounce that and the second part to track 1. Then bounce track 1, with the first and second part, to track 2 while singing the third part. Voila! Harmony! To be redundant, they will, of course be processed while recorded.

After you clean track 1, leave it for the lead vocal, and you can save your processing for the mixdown. If you leave the lead vocal in the center, and pan the background vocals to the left, you can delay them so the delay return is panned right, simulating Stereo background vocals.

But more on how to record and use these effects next time. In fact, a company I am associated with, *REASONABLE ALTERNATIVES*, just came out with a signal processing device that includes four gates, four limiters, a delay line, and a reverb unit all in one package especially made for "PortaStudio" type setups, giving you more choice of when and how to print with effects. It's called an "Effects Processor," and is priced WELL under $1,000.00.

But in the meantime, just practice getting used to levels and EQ's and knowing your machine, so your bounces come out like you want them to sound.

And, by the way; welcome to the Eighties.

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jim rupert

Studio Notebook

Money and Your Studio

Money; the root of all evil. Money; what a fool is soon parted from. Money; the stuff that can't buy happiness, (but can help you lease it until something better comes along). Money. Cash. Receivables. Mazuma, dough, screaming eagles, jack, palm oil, shekels, capital, coin of the realm, scrip, bucks, bread and boodle.

Money.

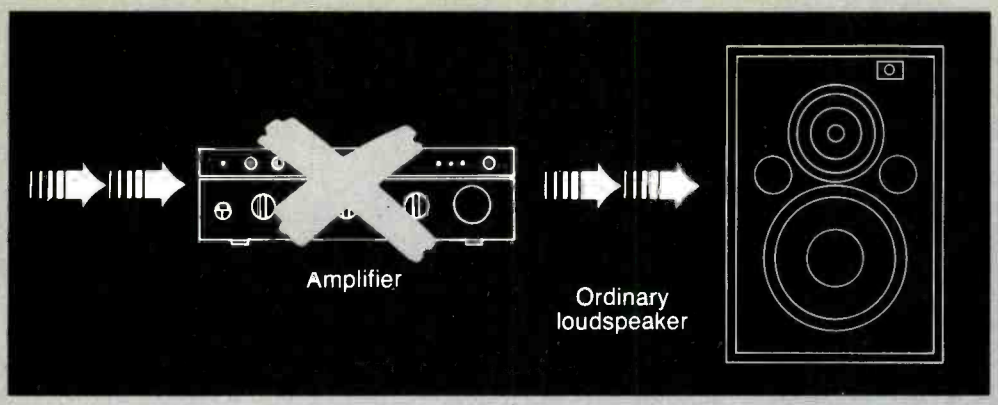
Hey, I know what you're saying; you're not interested in money any more than I am, but what the hell. It may come up at a cocktail party or something, so we might as well talk about it.

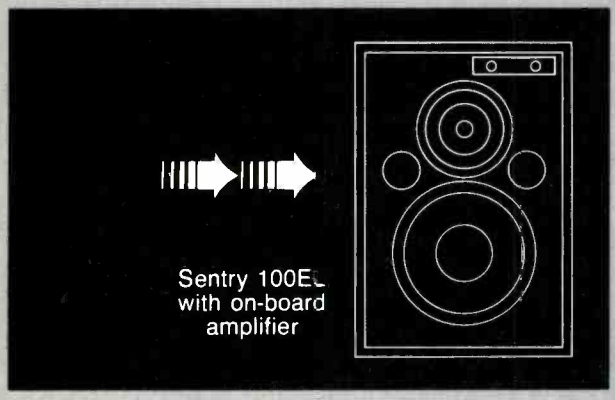
How you spend your money in your new studio is up to you. How you keep track of that dough and how accurate your records are is not only of vital importance to you but also of great interest to Uncle Sam. (Spelled I.R.S.)

The tax people have notoriously bad senses of humor when it comes time to choke up the government's share of your income. Guessing how much you've been paid by your customers can cost you extra, unnecessarily paid tax dollars out of your pocket to say nothing of the risk of having your meals catered to you for the next few years in a federal penitentiary. Remember that Al Capone ran wild in Chicago until the I.R.S. did what the F.B.I. and the Justice Department found impossible; they put Big Al behind bars for a long time. Like they say in those Army training films, "Men, don't let this happen to you!"

Last time we were examining the profit and loss statement for a mythical studio's twelve month

business year. (See Figure 1) *I noted in the previous article that an $1,800 profit before the owner's salary is taken out is simply not worth the time and effort that the owner/manager had put into the business. Some light was apparent at the end of the tunnel because*





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With speaker and amplifier in one compact, rack-mountable package, this monitor system solves problems like limited rack space, equipment transport on remotes or cramped spaces in video editing booths.

Also, by requiring less hardware—fewer cables and connectors—the 100EL keeps setup simple and reduces potential interconnect problems. And there's no possibility of power loss caused by resistance from a lengthy speaker cable.

The on-board amplifier in the 100EL makes it ideal for single-channel monitoring. Why buy one speaker and an extra amplifier channel, when the Sentry 100EL does the job all by itself? And because amplifier power is perfectly matched to the speaker system, there's no chance of damage from inadvertent signal overload.

But convenience and trouble-free operation are only part of the package. Like all Sentry designs, the 100EL offers uncompromised accuracy. So you can be certain of quality sound.

The Sentry 100EL - with the power to make your job easier. For more information, write Greg Silsby at Electro-Voice, Inc., 600 Cecil Street, Buchanan, MI 49107.

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several lessons could be learned from the P and L statement which, if corrected, might spell a rosier picture for future profits. Like what, you ask?

Like inventory, for example. Every studio needs supplies like boxes, reels, raw tape, cassette shells, labels, cases and splicing tape. An audio studio will then take these raw materials and turn them into the products they sell, i.e. masters and tape dubs. The materials required to churn out these tapes are a 'cost' of sales, or in simpler terms, money that has to be spent to have the supplies required to make up the final products.

In our hypothetical studio, the owner plopped down $6,500 for the tape and supplies he felt was necessary to have on hand to start the business. Over the course of the year, 12,500 more skins were spent on additional 'cost of sales' materials for a total of $19,000. Now the key here is how much of that inventory was left over at the end of the year. The chart in Figure 1 *shows that even though 19 grand was sunk into materials, there was $7,000 at year's end that had not been used in that time. As far as the owner is concerned, that is seven G's he would have rather had in his wallet than collecting dust in the storage closet.*

In our example, the average inventory during the 12-month period was $6,750 ($6,500 opening inventory, $7,000 ending inventory, average inventory $6,750). With the cost of sales being $12,000, the studio's average inventory was used less than twice a year. To put it another way, the inventory of $7,000 represents a materials supply for approximately seven months. To put it yet another way, the studio manager overbought the hell out his parts and supplies.

Smart cookie that our owner/manager is, he was able to cut the average down to $4,000. This meant establishing an excellent credit rating and business relationship with his wholesalers and suppliers to ensure immediate delivery when inventory was needed. This also meant keeping a sharp eye on the quantity of supplies available in the aforementioned storage closet and ordering before he hit dead bottom. In short, it meant a bit more work and a lot less leaning back on a stockpile of available supply materials. (That's what the 'in short' part meant. The 'bottom line' part meant money in his jeans. Now he'll go for the 'bottom line' part every time!)

Next, let's look at a real wart on the weenee of this studio's well-being—payroll. Whenever you have almost 57% of the service income (gross sales less supplies inventory costs) being eaten up in payroll, you've got trouble right here in River City. 56.52 percent of the $23,000 in gross profits are heading straight to the studio's employees and that is not counting payroll taxes paid to the government. It is even more serious when you consider that this percentage does not include dime-one for the owner/manager's salary either.

In a situation like this, it is dangerous to leap into a course of action until the facts have been thoroughly studied. The key is profit margin, but what is the best way to go about raising it? Either higher service charges and studio price increases are in order, or a more efficient use of the studio's employee time is needed.

The reasons behind a large payroll budget are frequently difficult to pinpoint. Is an accurate record being kept by the manager and the employees as to the time spent on jobs? Is the 8-hour day of each employee accounted for? Are clients being charged fairly and fully for all services provided? (For example, is the client for a remote recording paying time and mileage for all travel time spent by you and your employees?) When employees work overtime, is the additional expense being reflected in the charges to the customer? Is work being done on a guaranteed price basis or being charged by the hour? Can your employees fulfill their job assignments with a minimum of wasted time and effort?

These are obviously questions only you can answer. It might be that the owner/manager needs to buckle

Figure 1

Profit and Loss Statement For Gimmebucks Recording Studio—1984

Gross Sales		$35,000.00
Opening Inventory	$6,500.00	
Purchases	$12,500.00	
Total	$19,000.00	
Ending Inventory	$7,000.00	
Total Cost of Sales		$12,000.00
Gross Profit		$23,000.00
Operating Expenses		
Payroll (Not including owner)	$13,000.00	
Rent	$3,000.00	
Payroll Taxes	$750.00	
Interest	$300.00	
Depreciation	$700.00	
Equip. Maintenance	$1,250.00	
Telephone	$1,200.00	
Insurance	$500.00	
Miscellaneous	$500.00	
Total		$21,200.00
NET PROFIT (Before owner's salary)		$1,800.00

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Figure 2

Profit and Loss Statement For Gimmebucks Recording Studio—1984

Gross Sales		$35,000.00
Cost of Sales		
Opening Inventory	$4,000.00	
Purchases	$12,000.00	
Total	$16,000.00	
Ending Inventory	$4,000.00	
Total Cost of Sales		$12,000.00
Gross Profit		$23,000.00
Operating Expenses		
Payroll	$10,000.00	
Rent	$3,000.00	
Payroll Taxes	$575.00	
Interest	$300.00	
Depreciation	$700.00	
Equip. Maintenance	$1,000.00	
Telephone	$1,080.00	
Insurance	$350.00	
Miscellaneous	$500.00	
Total		$17,505.00
NET PROFIT (Before owner's salary)		$5,495.00

down and get his fanny into the control room for a little more on-line work instead of pushing it all off on the employees. It might be that the studio's prices are not high enough to meet overhead and create an acceptable margin of profit. It might be that the owner is paying too much for either the price of his supplies or the rate of his employees' wages. (Or both.) Whatever the reason, keep in mind that the competition is facing the same kinds of problems. Whoever can work out the answers with the quickest and most profitable results stand to hold the best place in line to walk away the winner. Contrary to many blue-sky thinking capitalists, there is not *room for everybody in free enterprise, only those smart enough to run a business well enough to make a few bucks. (Hopefully sufficient bucks to make it worth the hassle and the sweat.)*

Now for the fine-tuning detective work with your P and L statement. Operating expense totals can be compared to each other and to the total budget to see if appropriate percentages are being spent in each category. Is $1,250 acceptable for maintenance and repair expenditures? Does one piece of gear in particular cause you more repair fits and service bills than it is worth? Perhaps in the long run, selling the offending equipment and purchasing a newer, more reliable unit will put you dollars ahead of the repair game.

Do you do enough out of town business to justify an average of $100 a month in telephone bills? Does this include your Yellow Pages advertising charge? Are non-business related personal calls being made on your business phone lines? Do you need as many extensions as you are currently paying for?

Are your insurance rates as cost-effective as you can make them? By raising your deductible a tad, can your premiums be lowered to a more reasonable level?

Roll it all together, put it in a pan and bake in a slow oven at 350 degrees and you now have a revised P and L statement for the following year after our owner/manager decided it was time to make a little money. (See Figure 2) *After adjusting his inventory, we find a savings of $3,000 a year in the cost of sales materials. The amount of materials used did not change, nor the cost. Only the amount of materials purchased is different. Even though our mythical studio did the same gross sales two years in a row, by buying materials and supplies more wisely, we can now shoot $3,000 in savings right off the top into the owner/manager's sock/purse.*

Now add in the savings in expenditures our studio achieved by cutting back some employee hours, eliminating equipment repair nuisances, curtailing unauthorized telephone use and raising the deductible on his insurance. Let's see, we take $3,000 and add $5,495 more in savings and we have...mmmm...add the two...carry the twelve...mmm...ah, here we go, we got a lot more money for the owner/manager, that's what we got!

Doesn't that look better than the P and L statement for the year before? Even without an increase in gross sales, the owner has figured out how a tighter ship can mean a much tidier profit. And profit means money. And money means the doors stay open. (See how this works?)

The P and L statement is a tool. You can use it to build your business or you can let it lay there and rust. Give it a try. Plug in your own figures and see if any sore thumbs pop up for your studio.

In the meantime, don't forget about the Independent Record Release Competition going on now. Entries have been sparse to date, so send your discs in now. Fame and fortune could be waiting right around the corner! See the March '85 issue of MR&M *for full details. It's Action! It's Adventure! It's the thrill of a lifetime!*

Besides, if you don't enter you can't win, so nyaah-nyaah!

See you next time.

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and Recording

tom sheldon

When I was a kid, I once dissected and literally destroyed one of those small portable reel-to-reel tape recorders. From what I recall, my dad confiscated the drive mechanism and used it for some crazy experiment. That was the year I got my first cassette tape recorder. At the time, the cassette tape seemed to me to be a quantum leap forward in tape recorder technology. No more messy tapes that might snake their way loose and wrap themselves around the neighborhood. The cassette tape was clean and most important, compact. It was, like many products of the sixties, part of the never ending barrage of technological inventions that made our life easier. After all, those were the years we were introduced to Teflon, felt pens and no iron polyester double knit clothing.

New technologies are always exciting, but at the same time confusing to those too involved to keep up with them. These days, buzzwords like "computers," "sequencing," "MIDI" and "digital" are being flung about in casual conversations between musicians and engineers. What these terms mean, what they have in common and what potential future they have in the world of musicians, recording engineers and even computerists is the subject of this series of articles. Since the terms used above do have a lot in common, at least to the readers of *Modern Recording and Music*, I'll start by briefly tracing them from their roots to the present.

Perhaps the one term that has caught most people's ears has been MIDI. Many may know that MIDI is a connecting cable that allows musical instruments like synthesizers to connect with each other. But MIDI is more than the physical cable that you may have seen—MIDI is a standard set of rules that defines how these electronic instruments talk to each other. A special "on-off" coding scheme known as digital communications is used to transmit messages from one synthesizer to another. The messages sent can be anything from what key was pressed to the action you are applying to the pitch bender on a synthesizer.

Digital communications can be directly traced back to the original telegraph, in which the alphabet was converted to Morse code before being transmitted through the telegraph lines. Eventually, the telegraph became less important because the actual analog waveforms of real voices could be transmitted through the wires. It is important to keep in mind that MIDI transmits digital coding through it wires, not the waveforms of actual sounds like the telephone does. The coding scheme used by the original telegraph stuck around and grew in other areas like

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that of the teletype machine.

The teletype came about because the original operators of the telegraph got tired of tapping out Morse codes every day. As technology increased, a typewriter-like device was attached to both ends of a line and a way of decoding on one end what was typed at the other was developed. Someone eventually got the idea of attaching a device that would allow the operator to create the message before actually sending it. This meant that a way to temporarily store the message was needed. At one point, the alphanumeric codes in the messages were punched onto paper tape and replayed when the message was ready to be sent. Eventually, the idea of recording and playing back information was combined with the other technologies that led to the development of such things as computers and music sequencers.

Today, computers use the 1 and 0 coding scheme to store letters and numbers in a way that could be compared to the dots and dashes of the original telegraphs. In fact, computers are not much smarter than those old mechanical machines. Developments in integrated circuit design simply make them more compact and faster. Their entire existence relies on two states—either "on" or "off"—just like a light switch. Everything else a computer does, like adding two numbers together, depends on these two states. Imagine holding a conversation with only two words, "yes" and "no!" If you could talk at 10,000 words per second it might not be so bad—at least you could develop some sort of coding scheme to transmit your ideas and thoughts to the next guy.

Well, that's exactly what happens with the 1's and 0's in computers. As described earlier, we can represent various alphabetic characters by coding them with the 1's and 0's or "on/off" states. For instance, under the standing coding scheme known as ASCII (pronounced ass-kee), the character "A" is coded 1000001 and the character "B" is coded 1000010. So, when you type an "A" on the keyboard of a computer, 1000001 is sent to the microprocessor which in turn displays an "A" on the screen. Other codes in the ASCII scheme are 0001101 which represents a carriage return and 0001010 which represents a line feed.

Now suppose that you want to print "AB" on a printer and then advance the page and position on the print head at the left edge. All you would have to do is send the above four code strings through a cable to a printer. The printer, which also recognizes ASCII codes will interpret the strings of 1's and 0's, print "AB," advance the page and position the print head to the left. Fortunately, you don't have to talk in 1's and 0's to a computer. Microprocessors inside the machine determine what key you pressed and sends the right code down the line.

Now here's the big point. MIDI works the same way, except with musical instruments. MIDI has caused a marriage between computers, synthesizers, keyboards and other MIDI equipped instruments because MIDI talks in 1's and 0's, just like computers. The MIDI codes, however, do not follow the ASCII coding sequence, so naturally, we can't expect to send MIDI codes to a printer and have them interpreted correctly. But, a computer software program can be written that reads in the bit streams coming across the MIDI cable and interpret them for what they are—musical performance data. This program can then become quite elaborate—those that record your performance and turn it into printed musical scores already exist, for instance.

Another important point about MIDI is that it is a standard interface. The important word here is "standard." In other words, the MIDI port on the back of your machine communicates to other MIDI equipped devices in a common language, sort of like the ASCII codes used by most computers. The way the information is sent across the lines is also standard—at least that is the intended purpose. The computer industry has its own interface used to connect computers to printers, plotters, telephone lines and other computers. One of these, known as the serial interface, sends 1's and 0's in single file across a single wire. The other interface, known as the parallel interface, lines up all of the 1's and 0's in a row and sends them through eight separate wires, all at the same time. Each interface has its advantages and disadvantages. For instance, parallel interfacing, as you might expect will transmit faster than serial, but cable length is limited to about ten feet to prevent the bits from getting out of sync as they cross the line. As for MIDI, the serial interface is used to send information between

MIDI devices. The advantages offered by longer and cheaper cabling make it a good choice, but some people have argued that it is too slow, especially as more sophisticated MIDI applications become available.

MIDI, however, is a standard where there were none before, so we can expect to see many manufacturers taking advantage of it. Eventually, the most important advantage may be in the connection MIDI makes to the world of computers. Since the computer is a sort of universal all-purpose machine that performs the tasks dictated by software, we should soon see a large amount of musical software on the market that performs everything from sequencing to controlling light shows to scheduling your studio.

[*Ed. note: Elsewhere in this issue you will find a directory of computer software manufacturers with descriptions of their products.*]

In order to put a MIDI interfaced system together, you need to think about what you want to accomplish and how MIDI can play a part in your overall objectives. Let's assume that you already have some sort of polyphonic synthesizer with MIDI-in and MIDI-out jacks. One of the first things you can add is another synthesizer. When you connect the two together, via standard MIDI cable through the MIDI ports of each keyboard, any note played on one keyboard will also sound on the other. You can tune in different patch sounds on the second keyboard to get a nice mixing or layering that can be quite pleasing. My personal experience with this is that I spend more time picking out different sound combinations than I do playing the keyboard. In fact, the number of combinations can be found by multiplying the number of patches on each machine together, which in some cases may reach the thousands.

The only problem with attaching instruments together in this way is that both instruments tend to play the same thing. Pressing middle C on one keyboard plays middle C on the other. All you've really produced is a fatter sound. On some keyboards, however, you can move the octaves up or down to produce a different effect. Another effect can be obtained by connecting only one cable from the MIDI-out of the master keyboard to the MIDI-in of the slave. Now, keys played on the master will be sounded by both keyboards, while keys played on the slave will sound by themselves.

Many synthesizers come with a built in sequencer that allows you to play along with a set of notes that were previously recorded, or to play them back during a live performance. There are, however, some limitations to these sequencers. If you play back the sequence, the patch number set on the synth will usually sound for both your real-time performance and the one played by the sequencer. Many keyboards "split" so that one patch can be played on the lower portion while another is played on the upper. Now you can record a bass line in the sequencer and play along on the other half of the keyboard with a different patch. The only problem here is that split modes usually decreases the number of voices available on either side of the keyboard, which means you'll be limited to simple chords.

Adding more keyboards to your system will give you good reason to purchase a sequencer or computer music program. Sequencers like the Yamaha QX-1 and the Roland MSQ-700 will let you record up to 8 tracks of music and both are designed to connect to your instruments through

MIDI. Since the devices use MIDI, they record only performance information like key, pitch, velocity and bend—not the actual sounds. Assume for a minute that you have two synthesizers, one of which has the keyboard split feature described above. You can now lay down 3 tracks of recorded music in the sequencer and play each track back through one of the keyboard sections.

You may be wondering how you specify what track will be played by what synthesizer—that brings up the concept of MIDI channels. Just as a television is able to tune into many different channels, your MIDI equipped synth can also tune into specific channels, up to 16 in all. Assume that you have recorded the sound of a bass guitar on track 1 of your sequencer or computer music program and the sound of a jazz organ on track 2. To hear the jazz organ on the second synth, simply set track 2 and the second synth both to channel 2. Most MIDI synthesizers have a front panel switch used for selecting channels. On a split keyboard, you might set the lower portion of the keyboard to channel 2 and the upper portion to channel 3. Then, track 2 of the sequencer or computer music program would play on the lower portion of the keyboard and track 3 would play on the upper portion once you set the tracks to the appropriate channels.

Now we come to an important point to keep in mind when building a MIDI sequencing or recording system. If you want to play back 8 tracks, as Yamaha and Roland sequencers will do, you will need up to eight synthesizers to do it. Each recorded track requires a separate voice. On top of that, you'll need a mixer to route the sound outputs of each synth into your stereo system, PA or tape recorder. Since some synthesizers support keyboard splits, the number you'll need may decrease. Some synthesizers, like the Casio CZ-101 have multiple voices that can each be played individually—in mono mode. For instance, four tracks can be recorded on a sequencer or computer and played back, all at the same time as four separate patches on the Casio CZ-101. The only disadvantage is that the Casio does this in monophonic mode only—in other words, one key at a time. The Casio CZ-101 is such a good synthesizer for the price that I recommend it as not only a good starting place for the novice or experimenter, but to those who need additional voices in their system.

When buying MIDI equipped instruments, you'll want to make sure that the features on one machine can be played on another. For example, just because a slave synthesizer has a pitch bender doesn't mean you can bend its sounds from the bender on the master keyboard. Some equipment just isn't compatible because manufacturers are free to interpret some of the MIDI specifications any way they want. When purchasing equipment, have your dealer attach MIDI cabling between different instruments so you can see what works. One way of doing this is to play the master keyboard with its volume off so you can hear what the slave synthesizer will actually mimic. Another good idea is to bring your own familiar headphones along so you can experiment without disturbing others and duck out from the salesman at the same time.

With the features now available on digital sequencers like the Roland and Yamaha mentioned above, you may be wondering why you even need a computer in the first place. Many people need them for mundane chores like keeping track of inventory or the artist and performers who use their studio. The computer will also keep track of recordings and tape libraries as well. In addition to all of these, an increasing number of computer music programs are becoming available. These music programs can open up new areas in your music related business. For instance, many artists and composers can only capture their musical creations by playing. If what they play can be recorded and printed out by the computer, then these composers can instantly communicate their musical ideas to others.

Recording and composing on computers with synthesizers that sound like real instruments can boost creativity and decrease the time involved in creating these compositions. Once an idea has been created in this way, real musicians can then come into the studio to perform the piece live and at a considerable savings. There may be many composers in your area interested in this aspect.

Computers also offer a considerable increase in the amount and number of tracks of music that can be recorded at one time. In addition, you'll be able to permanently record your compositions to diskette for later playback or editing. Another big advantage to computers is that the software programs written for them can be expanded or altered at any time. In contrast, sequencers represent permanent pieces of hardware that are hard to upgrade. For instance, one music software designer, Jim Miller, recently made available to all of his users an upgraded package that includes a DX-7 voicing program and a revision that lets you create scores of almost unlimited length if you add a hard disk storage device to your computer.

David Droman, who has written a book on MIDI for the International MIDI Association, envisions many different types of programs that might be written for a MIDI interfaced computer. One program might produce special effects, such as a vibrato delay that is determined by how hard a velocity sensitive key is pressed. Another program might record the status of all knobs, buttons and sliders in a MIDI recording studio so that they could easily be reset when resuming a session later on. In the future, everyone will probably design their equipment to attach to the most popular computers. I can see the possibilities of inexpensive laser disk recording systems that, controlled by your computer, will record MIDI information as well as the real sounds of pianos and human voices.

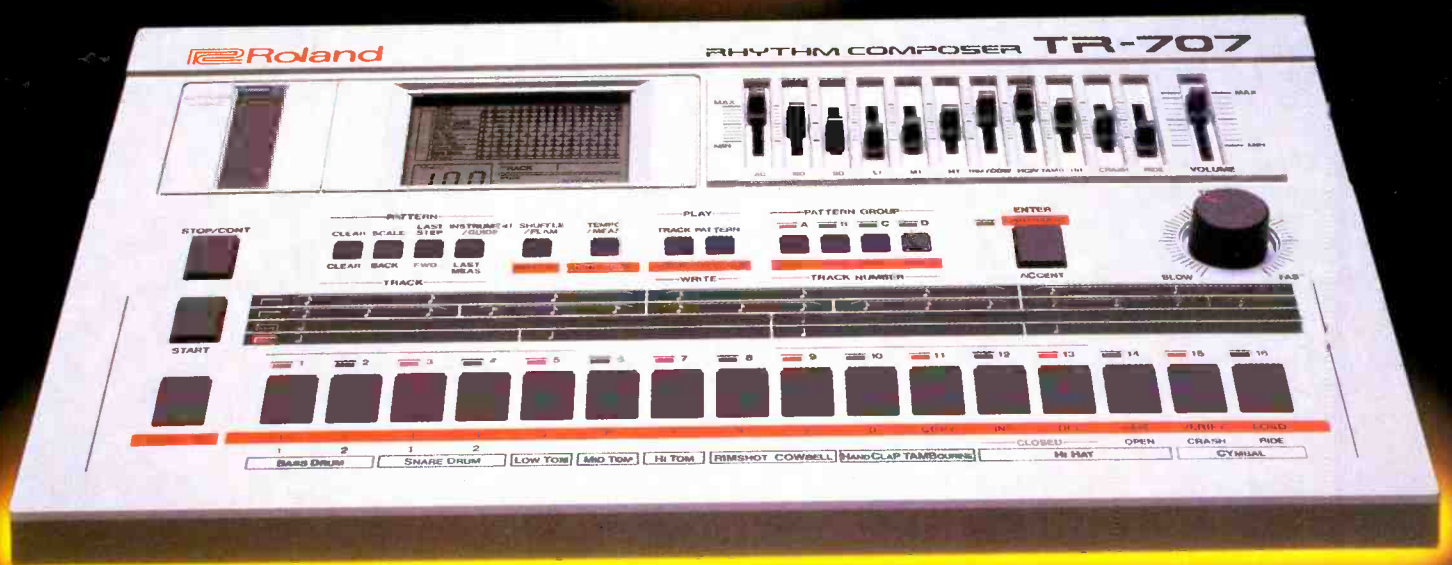
If all of these programs and hardware are going to happen, you'll want to make sure you buy the right computer in the first place. That's why it's important to buy equipment that follows various industry standards, or has made its mark in the industry. Instruments like the Yamaha DX-7 have achieved this status in the music industry and it is important to find machines in the computer field that have attained similar status. These are the machines that programmers will write their software for because they will generally have the widest audience and the most support.

In the next article, we'll go over some of the features to look for in a computer. Then we'll take a look at the current state of the computer market and do a "walk through" purchase so you'll be "armed" when you face the inevitable computer salesman. Following that article, we'll take a closer look at MIDI and how instruments connect to each other. In the meantime, happy playing.

DIGITAL DYNAMITE

Digital sounds, digital display, the new Roland TR-707 delivers dynamite drums. Perfect timing starts with perfect percussion timbres. So the TR-707 gives you 13 real drum sounds that will breathe life into your rhythm track. A mixer section and separate audio outputs for each sound, as well as stereo outputs, let you tailor your drum track to suit your taste. And with the TR-707's Flam and Shuffle functions, you're no longer restricted to a robotized "drum machine" feel. That time is long past. With its handy graphic window, the TR-707 gives you a beat-by-beat readout that makes programming easy. During playback, it counts measures and keeps track of tempo for you—so you'll always be right on time. Whether you prefer the spontaneity of real-time tap-programming or the accuracy of Roland's well-known step programming, the TR-707 has got your number. Create and store up to 64 individual patterns and assemble them into 4 different songs. With the optional Roland M64C Memory Cartridge, you can add even more memory to the TR-707, increasing its total capacity to 192 individual patterns or 12 different songs, all instantly accessible. Timely is the word for the TR-707's interface capabilities, covering today's popular interface options including MIDI, Sync 24, programmable Trigger Out, and full Tape Sync facilities. You'll be able to access external sound sources, sync up with a multitrack tape or an external sequencer. The TR-707 is ready for you—and with a list price of just $595.00 chances are you're ready for it too. For more information, contact: RolandCorp US, 7200 Dominion Circle, Los Angeles, California 90040 (213) 685-5141.

Roland



Circle 35 on Reader Service Card

Roland Makes It Happen!

gerald semanson

I.C. Headphone Distribution Amplifier

For the small studio, a means of powering multiple pairs of headphones for singing and announcing overdubs can be a problem. Traditional headphone distribution systems can be costly. Powering multiple sets of headphones with a single power amplifier can require fairly exotic impedance matching circuits and expensive attenuation controls.

One alternative to a single headphone power amplifier is to power each pair of headphones with its own individual amplifier; but this is another costly way to go. Fortunately, the integrated circuit has given us an affordable alternative.

The six-channel headphone amplifier project discussed here uses integrated circuit technology to provide a headphone amplifying system that is simple and straightforward to build, and is loud. The unit is based on the National Semiconductor LM380N-8 audio power amplifier. This I.C. features a wide operating voltage range, and a frequency bandwidth of 100 kHz with 2% total harmonic distortion at 2 watts output. The chip also features both internal short-circuit protection, and thermal shutdown protection, and the output levels through a set of high quality headphones can exceed the pain threshold.

It should be noted that the -8 suffix of the LM380N-8 refers to the eight pin version of National Semiconductors LM380. This I.C. is a 14 pin package that incorporates an internal heat sink for improved power output. The smaller I.C. was chosen for space considerations on the printed circuit board that is used.

The assembled unit is capable of powering from one to six sets of headphones, each with its own channel gain control, from any line-level (preamp) signal.

As shown in the schematic diagram, the amplifier assembly is a monophonic unit with a single distribution bus, a gain control for each I.C. channel, and the output of each I.C. connected to "mono-ed" (tip-and-sleeve wired together) stereo phone jacks. A single channel unit was chosen for cost and power supply considerations, and the fact that very few of the smaller audio consoles and sound reinforcement mixers have provisions for stereo headphone feeds.

The integrated circuits and outboard components were mounted on a Radio Shack #276-170 experimentors circuit board. This circuit board is ideally suited for I.C. construction with pre-etched and

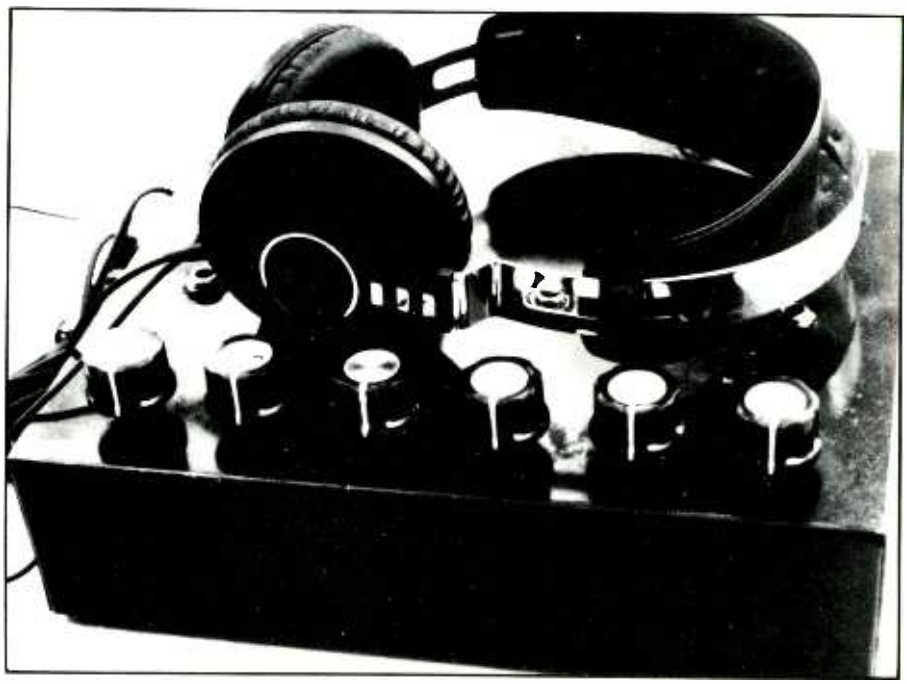


Figure 1. Completed headphone distribution box.

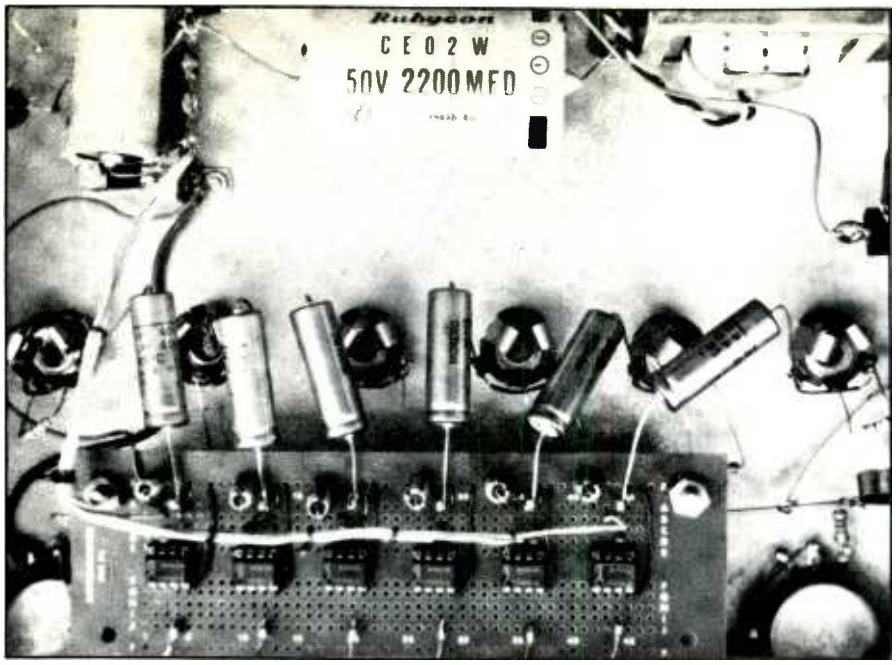


Figure 2. I.C. circuit board. Note the mounting location.

pre-drilled printed circuit paths. Using eight-pin circuit chips, this printed circuit board can accommodate six LM380N-8 amplifiers with suitable isolation space between each chip. Again, using a larger chip would reduce the number of headphone channels possible.

The printed circuit board, power supply, gain controls, and input and output jacks can be assembled in either a rack mount chassis, or enclosed cabinet. A 2½-in x 8-in. x 10-in. enclosed aluminum chassis was chosen so that the unit could be located in the studio close to the performers. This eliminates the necessity of making long runs of headphone cable from the control room equipment rack. Having the distribution amplifier in close proximity to the performers also allows each individual more precise control over his or her volume setting.

After the chassis is selected, all

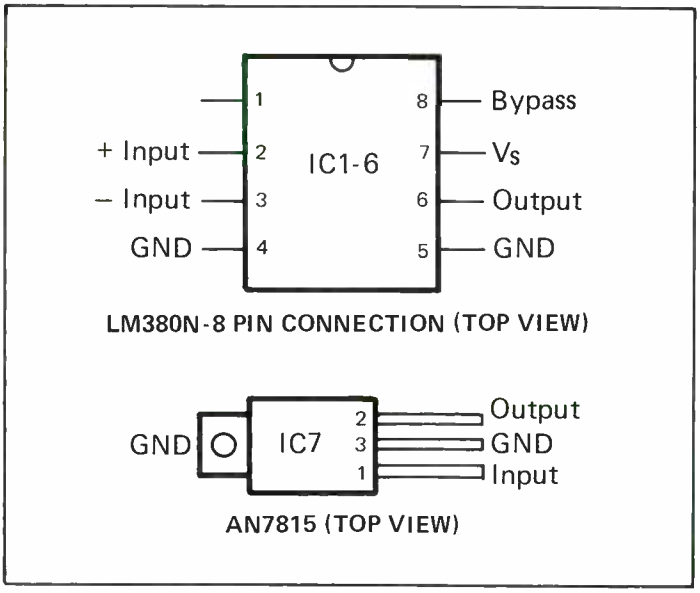


Figure 3. Pin connections for LM38ON-8 op amp and AN7815 voltage regulator.

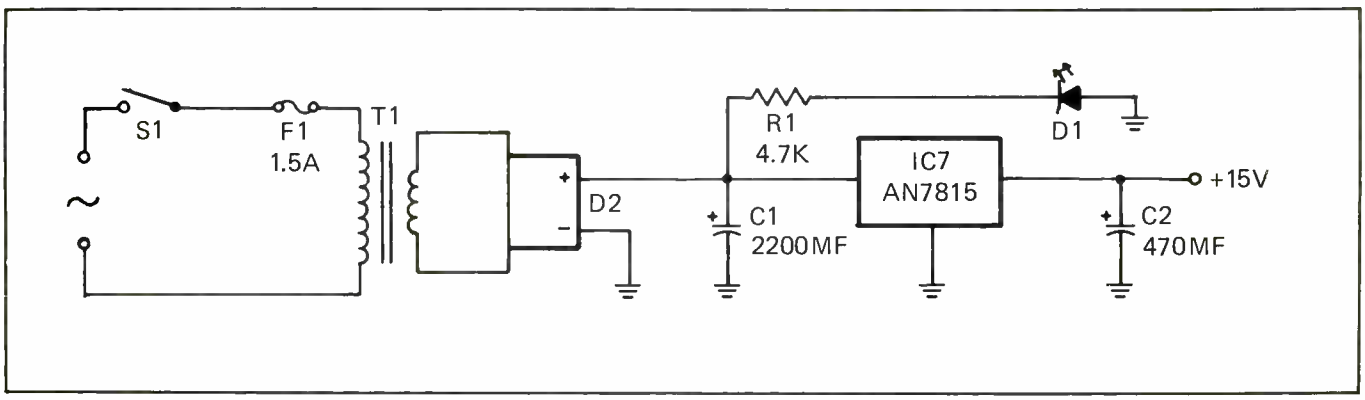


Figure 4. Schematic for power supply.

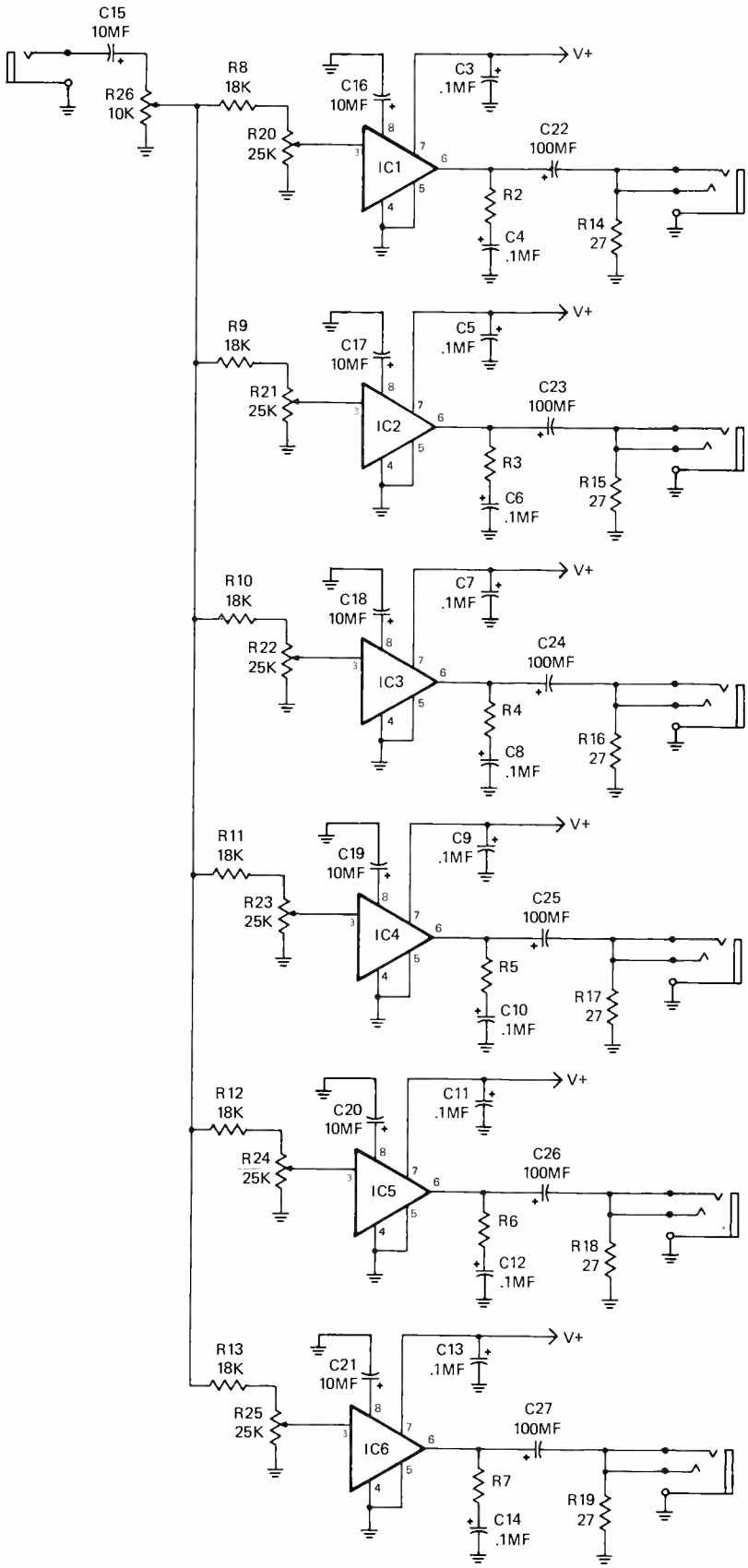


Figure 5. Schematic for I.C. Headphone Distribution Amplifier.

Parts List

PART	DESCRIPTION
T-1	12.6 volt, 1.2 amp power transformer.
D-1	Red LED and mounting socket assembly.
D-2	1.5 amp, 50 volt full-wave bridge rectifier.
C-1	2200 mf, 50 volt filter capacitor.
C-2	470 mf, 50 volt filter capacitor.
C3-C14	.1 mf 35 volt tantalum capacitor.
C15-C21	10 mf, 6.3 volt electrolytic capacitor.
C22-C27	100 mf, 25 volt electrolytic capacitor.
R-1	4.7 ohm ½ watt resistor.*
R2-R7	2.7 ohm ½ watt resistor.*
R8-R13	18 k ohm ½ watt resistor.*
R14-R19	27 ohm ½ watt resistor.*
R20-R25	25 k ohm audio taper potentiometer.
R-26	10 k ohm audio taper potentiometer.
IC1-IC6	LM380N-8 integrated circuit.
IC-7	AN7815 15 volt, 1 amp positive voltage regulator.
PC-1	Experimentors printed circuit board. (Radio Shack #276-170)
Misc.	Mounting hardware, phone jacks, threaded spacers, I.C. sockets, fuse and holder, on/off switch, line cord, etc.

*Carbon film type at 5% tolerance.

(Note: All circuit board and power supply components (except transformer) are available from the Digi-Key Corporation, P.O. Box 677, Thief River Falls, MN. 56701.

mounting hardware holes should be drilled before beginning the circuit board assembly. After the jacks, gain controls, and power supply components are installed, the power supply can be wired, followed by the printed circuit board and the rest of the components.

The printed circuit board was mounted directly over the gain controls and output jacks on 1¼ inch threaded spacers (see *Figure 2*). This mounting configuration kept the leads to the inputs and outputs of the integrated circuits very short.

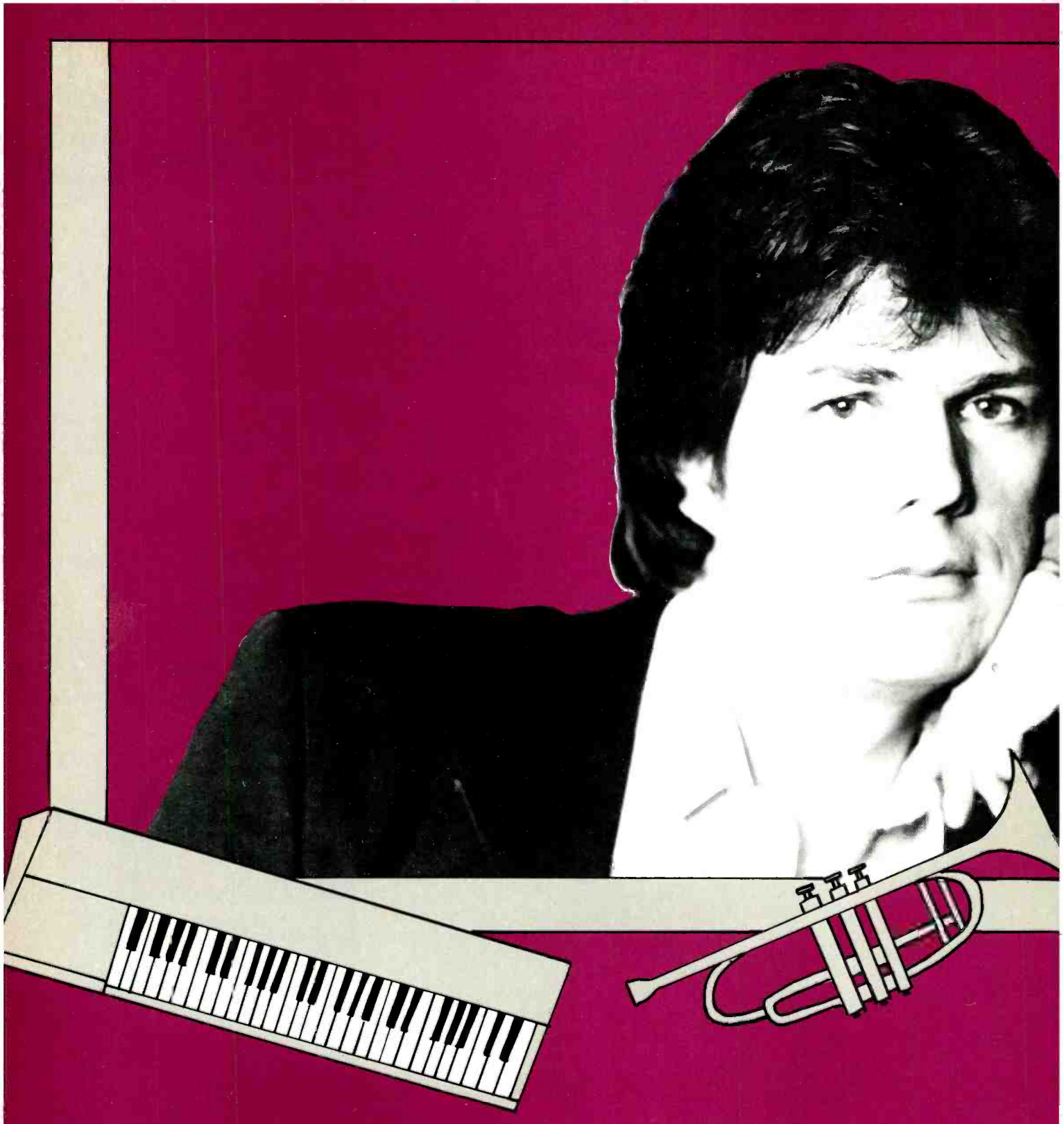
For the electronic assembly of the printed circuit board, use a low-wattage (25-33 watt) pencil type soldering iron, and high quality (60/40) rosin core solder. It is also good practice to never solder an I.C. chip directly onto a printed circuit board. Use I.C. sockets. If you ever had to desolder a defective I.C. chip from its circuit board, you know how valuable I.C. sockets can be. Also, keep all audio leads as short as possible, and check and double-check all wiring connections, and polarities.

For anyone who has never worked with integrated circuit amplifiers, good construction techniques are essential. These I.C.'s can be unstable and can exhibit random oscillation or erratic operating performance. For this reason, a well-regulated power supply is also a must. If a different power supply is substituted for the one recommended, the voltage regulation and filtering capability must be equally as good.

As shown in the schematic, the voltage supply to each I.C. is not tapped-off a voltage bus. Each amplifier chip has its own voltage feed from the power supply. This wiring configuration helps prevent interaction between the I.C.'s.

After the unit has been completely assembled, plug it in and turn it on without the amplifier chips installed. With a V.O.M., check the power supply and voltage pins of each I.C. socket for the correct reading (+15 volts). If the voltages check-out, turn the unit off, and install one I.C. amplifier. Turn the unit back on and apply an appropriate signal to the input of the unit. Check the output of the channel with a pair of stereo headphones. If that channel checks-out satisfactory, the remaining I.C.'s can be installed (with the power off).

The distribution amplifier will provide excellent performance with a wide variety and style of stereo headphones. If more channels or stereo channels are needed, the unit can be expanded as necessary with additional amplifier chips and a larger capacity power supply if required.



David Foster

Fostering Sound Results

David Foster is exhausted. He's been up for days on end producing and mixing the "St. Elmo's Fire" soundtrack and he has miles of tape to roll before he sleeps. Among those vying for his attention once this project is wrapped are Paul McCartney, with whom Foster has been writing songs, and Jermaine Jackson. Not to mention Atlantic Records, which is eager for Foster to start his second solo LP. Such is the life of one of Los Angeles' top producers.

Whether it be Kenny Loggins, The Tubes, Hall & Oates or Kenny Rogers, when artists hire the Canadian-born Foster they get much more than a producer: they get a top-notch arranger, songwriter, keyboardist and, as he'll admit under pressure, someone who can carry a pretty good tune. In no case were his talents better exemplified than through his work with Chicago. Foster, with his deft production, songwriting, arranging and playing on Chicago 16 and 17, brought the group back from terminal mediocrity and certain banishment to Golden Oldies programs. His efforts garnered him two Grammys this year: Producer of the Year and Best Instrumental Arrangement Accompanying Vocals for "Hard Habit to Break."

The 32 gold records hanging on the walls of Foster's California home further attest to his success. By his own count, he's worked on no fewer than 20 Top 20 hits. And despite all the glory, Foster remains as affable, open and unpretentious a fellow as you could ever hope to meet.

In June, Foster, affectionately dubbed the Hoser Composer, scored another musical coup. As we went to press, he was listed as producer and/or writer for no fewer than five tracks on Billboard's Hot 100. That places him second behind the Beatles, for number of singles simultaneously on the charts. Among those bubbling under is "Tears Are Not Enough" by Northern Lights, the Canadian counterpart to USA for Africa.

Foster, 35, studied classical music in his native Vancouver before touring as a keyboardist with Chuck Berry and Fats Domino in England. After those outings he came south of the Canadian border in 1973 with his band, Skylark, which yielded one hit "Wildflower." By the time Skylark disbanded shortly thereafter, Foster had established himself as a top-rate studio musician. During the mid-seventies, he furthered his reputation by playing on albums for Barbra Streisand, Rob Stewart, George Harrison and Dolly Parton, as well as the cast album for "Rocky Horror Picture Show."

A turning point in his career came in 1978 when his work caught the attention of Maurice White of Earth, Wind & Fire. Foster went on to co-write six tunes, arrange and play on the "I Am" LP. One of his songs "After the Love is Gone" won a 1979 Grammy for best Rhythm and Blues Song.

Since his E, W, & F days, Foster has traveled in tandem with engineer Humberto Gatica, producing and writing on several albums, including the Grammy award winning "Dreamgirls" cast album.

During the rare time that he's not working, Foster devotes himself to his other passion—hockey. He and Wayne Gretzky, of Edmonton Oilers fame, own a Junior League Hockey Team, the Hull (Quebec) Olympiques. He also spends time on his yacht, appropriately titled "Chartmaker."

The following interview was culled from conversations with Foster over a six-week period while he worked on the "St. Elmo's Fire" soundtrack.

Modern Recording & Music: Although you've produced or written cuts on several soundtracks, most notably "Urban Cowboy" and "Footloose," "St. Elmo's Fire" is the first film you've completely scored and produced yourself. What made you decide to do it?

David Foster: I'd been wanting to do a movie and a lot of offers had come my way. For some reason or another I'd passed on them; sometimes it was the right decision and in other cases it was the wrong one. This movie had all the elements I was looking for. I'd met the director and enjoyed him; I'd met the president of Columbia Pictures and he was into the movie. It's a very bright, young cast and it's a socially effective kind of movie. They gave me a lot of room with the score so I really got a chance to use all my synthesizer gear and just go for it and create an orchestral score in a room by myself.

MR&M: What does the score sound like?

DF: Well, you know John Williams' "Jaws?" It's ten times better than that (laughs). No, the music is very romantic. What I have discovered most about my music is that it is very romantic. Although the movie is not a love story per se, it does have its romantic moments. It gave me a chance to do my little piano melodies and embellish them with synthesizers. It's really what I absolutely enjoy doing best—sitting at the piano and playing those kinds of little melodies that sometimes turn into songs and sometimes just stay with me.

MR&M: Did you use other musicians or was it just you?

DF: There were actually no drums on the score with the exception of one song and I brought in Tris Imboden, Kenny Loggins' drummer for that. I also used three different sax players: David Boroff, Mark Russo and Gary Herbig.

MR&M: What artists are on the soundtrack?

DF: John Parr, Jon Anderson from Yes, Billy Squier, Fee Waybill, Vicki Moss and a duet by Amy Holland, Michael McDonald's wife, and Donny Gerrard. Billy Squier's song is the only one I didn't write or co-write.

MR&M: Where was it recorded? Do you have your own studio?

DF: No, but I knew I wanted to keep all the gear set up and not be disturbed, so I made a deal with a studio near my house in the Valley called the Lighthouse. I made a deal per month, so I really blockbooked the studio and it's worked out great. The way I look at it, it's like not having to look at the clock, but the calendar.

The deadline on the soundtrack got moved up by a month and a half, so in two and a half months we've done sixty minutes of music. That's like an album and a half. It usually takes me four months to do just one album. Needless to say, we've been day and nighting it. But we're all still alive and there's a lot of comfort in that.

MR&M: Some of your best songs seem to come from writing with Kenny Loggins and Boz Scaggs. You've got two tracks on Loggins' "Vox Humana" album. Have you got any plans to work with Scaggs again?

DF: Boz and I have had some good luck together. I guess you could almost call us a good writing team and yet, we don't do it enough with each other. He hasn't made an album in five years.

He came up to see me during the Payola$' project and we talked, but we just didn't get to second base. We kind of disagreed where he should go directionally and we just never pursued it. I would love to work with him again. I love the songs that we came up with together and it must be the combination of us both because neither one of us comes up with the same kind of songs when we write with other people.

MR&M: You mentioned you recently produced the Payola$. What criteria do you look for in a project?

DF: With the Payola$ I was looking for a project that would take me back home to Vancouver. It seemed right. I really like the band and their previous stuff. I liked their manager and I liked their record company. When you get to this point in my career, picking the right project is what's important, just getting work ceases to be a problem. I try to examine all the aspects—is the record company really into the project? Does the manager have a lot of clout with the record company? Does he know the ins and outs of radio? So many of us do projects, and while they might not be Grammy winners, they could have done so much better than they did because of no support.

MR&M: Has there been a project that you worked on that you thought was excellent but went nowhere?

DF: The Fee Waybill album. The thing is when the record company, in this case it was Capitol, doesn't get behind it, you have no way of knowing whether it could have been a hit or not. If they get behind it and it doesn't have a hit, you can pretty

At Record Plant in Los Angeles recording Billy Squier's song for "St. Elmo's Fire" soundtrack are (l. to r.): Billy Squier, Steve Lukather of Toto, drummer Bobby Chouinard from Squier's band, producer David Foster and David Paich of Toto.

much assume that it wasn't in the grooves, or I didn't do so good a job, or the material wasn't any good. With Fee, from Capitol's chairman of the board on down, they decided they weren't going to push the album. Six months of work down the tubes, no pun intended.

MR&M: What was the first album you ever produced? Was it Bill Champlin?

DF: There were a few projects before that. The first one was for J.P. Morgan and it never got released. It featured some of the best people in the business when we were all just up and coming. Kenny Loggins sang in the background, Ray Parker Jr. played guitar, Jeff Pocaro played drums and a lot of the other guys from Toto were on it. It was a good album, but it was slightly over-produced. The second album I did was on a couple of kids named the Keane Brothers. We had one single that came on the charts at 90 and fell off with an anchor. Then came Bill Champlin, which led to my work with Earth, Wind & Fire.

MR&M: How has technology changed since then?

DF: Well, the other night I actually brought out some of the old Earth, Wind & Fire work tapes and I was pleasantly surprised to hear the kind of rawness and realness of what we were creating back then. I guess the generalization would be that machines have taken over.

MR&M: Do you think music is too polished now?

DF: For me, it's kind of OK, because I've always been credited—or discredited—with being a slick producer. When machines came along, in a sense it was really neat because a person like myself could make an album by myself and I wouldn't have to rely on trying to get the best studio musicians. But the opposite of that is that I really liked what I heard the other night when I pulled the tapes and I really like the Phil Collins/Phillip Bailey record. I got to thinking, 'Gee, maybe humans weren't so bad after all,' I mean, I was one of them. I used to be a studio musician and we used to cut tracks with seven or eight of us in a room together and that absolutely does not exist now.

MR&M: When do you think all that began?

DF: Roger Linn, with the Linndrum machine, changed the direction of music. The drum machine is truly the most inventive tool to come along since the cassette recorder. Before the cassette recorder, when you were writing a song there was really no way of putting it down unless you were rich enough to buy one of those big, huge tape recorders, which none of us could. So you only wrote what you could remember. The drum machine started it all and now we've branched out to the Emulator and the E-2 to the Fairlight and the Synclavier until now we have the Kurzweil.

MR&M: Which ones of those did you use on "St. Elmo's Fire?"

DF: I used the Emulator 2 with some of the factory discs plus some of my own which I created with the help of Jay Graydon. I used the Kurzweil. I used the acoustic piano MIDI'ed to the DX 7. I used the Obie 8, the Oberheim Expander, a Jupiter, the Minimoog and that's about it.

MR&M: You said to your credit—or discredit—you're considered a slick, pop producer. Is that a bad thing? Are there acts that you're dying to produce but can't because of your image?

DF: We can't all be everything to everybody and I've learned that I

I think I just feel that I know more than the record companies. I always used to think that they knew all when they knew nothing. There are labels that just repeatedly contradict what I want to do and make the wrong choice for me. There are exceptions.

have a certain way and style of making records and sometimes, that's acceptable. It'll probably never be acceptable to Rolling Stone according to the few times I've been reviewed. But on the other hand, I get good reviews in People. What matters are the people. I am selling records and my music, more so than ever, seems to be reaching more people.

I try not to believe the critics when they say good things about me, because I believe them when they say good things, I have to believe the bad things too. And that can hurt, especially when some of the critics are so ruthless. The guy in Rolling Stone said about me and Boz Scaggs on the "Middle Man" LP that "David Foster has succeeded in plunging the dagger in Boz's back and the blood is all over his white shirt." C'mon.

MR&M: In the studio, some producers lay down all the tracks with synthesizers and then overdub it with real instruments. What do you think of that?

DF: I think it's a perfectly solid concept. As Quincy Jones said, take a Polaroid picture of it first and then surround it with humanity. That works absolutely perfectly to record it with a drum machine first and then bring in a real drummer either to replace what's there in whole or in part.

MR&M: Do you do it that way. Is there a specific way you record each time?

DF: I've done it every which way but up, just every possible way. As I was listening to those tapes the other night, I kind of smirked and thought that I should probably make an effort to get back to some more humans. You know, a studio can be a lonely place when you're in there all by yourself. I think of myself as a musician more than as a songwriter, producer or arranger or anything, so I love working with musicians. Although during the past few years, it's been nice just going into a room by yourself and creating a record.

MR&M: Since the late Seventies you've worked with Humberto Gatica as your engineer. What makes you two such a good team?

DF: There are other engineers that I work with, but Humberto's just perfect for me. We kind of came up through the ranks together and we've been together several years. The first time I ever heard him I was playing sessions and I heard this sound and thought "God, I've got to have that." And we've been working together ever since with very few exceptions. He truly has become a co-producer with me. Now he even gets the credit sometimes like on "Through the Fire" (Chaka Khan's latest single). I'm reluctant to say "Right, now we're going to be a real team and co-produce everything together because I still think in some ways I deserve the production credit. But he, in a lot of ways, is co-producing with me. We've really learned from each other. He's an amazing guy.

MR&M: Do you and Humberto prefer analog to digital?

DF: Well, let me say this about analog and digital, I've gotten quite used to tape noise (laughs). I mean that tongue in cheek, but I have problems with digital. We started an album with digital and I just don't think they've quite got it yet. There's a lot of discrepancies between Mitsubishi and the Sony. I just haven't had a whole lot of luck with digital, but I realize that the state-of-the-art is going that way and I want to be right along with it. It does open up a whole new ballgame.

MR&M: You work a lot out of the Lighthouse and Lion's Share. What do you look for in a studio?

DF: The first thing we look for is where is the engineer comfortable, because if he's not comfortable, then nothing's going to go right. We love working at Lion's Share. They've got two state-of-the-art rooms. They have digital and analog. They've got the Neve and Necam boards and they have 56 inputs. They have two Studer 800s and a lot of outboard gear. Humberto and I also own a lot of our outboard gear. We have three AMSs, the digital reverb and the memory unit, and we have two 250 echo units. We have Massenberg equalizers and limiters. So we don't always need that state-of-the-art room because we can take a lot of the stuff with us. We overdub on a Trident board at the Lighthouse which has proved to be very cost effective.

Then there's all the intangible things you look for, like does the room feel right. You need the right atmosphere to make music; you don't necessarily need potent and modern equipment. The atmosphere is what's important.

MR&M: What equipment do you have at home for when the inspiration hits?

DF: I have a beautiful Yamaha nine-foot grand piano. I have a great Yamaha stereo and my CD player. I have a Fender Rhodes here and a few little tape recorders. When something comes to me, I run to the piano and put this little $30 tape recorder on record and it sounds like it's over a telephone, but it's enough.

MR&M: So you don't have a room full of equipment lying around at home?

DF: No, nothing. I have some synthesizers I keep at the studio. I have an Emulator 2, DX7, OB 8, Minimoog, Jupiter and a Kurzweil. I don't have a huge array of synthesizers because a lot of time I'll bring in a programmer like Steve Pocaro. My stuff alternates between the Lighthouse and Lion's Share.

MR&M: You recorded your first solo album "The Best of Me" at

David Foster with Lionel Richie at the Grammy Awards. He and Lionel tied for "Producer of the Year."

your house. What equipment did you have to bring in?

DF: At that point, I had to bring in everything. It was recorded on an MCI 24 track and a Yamaha 2000 PA board that Yamaha donated to me. It was basically done live. I just plugged it all into my stereo, sat in front of my speakers and recorded it. And damned if it didn't become Mobile Fidelity's first new artist release.

MR&M: Why did you go with an audiophile label instead of one of the more commercially-oriented labels?

DF: I can answer that in one sentence. None of the commercial labels wanted to put it out. The commercial labels get nervous when they don't hear things that can easily be put on Top 40 radio. My album fell into a category that wasn't top 40 and they didn't know what to do, so I was pleasantly forced into going with Mobile Fidelity.

Atlantic is going to have the same problem with my second album. They want me to do vocals and all this sh--. The thing is, I do vocal albums for a living. For my solo album I really just want to play the piano. Time will tell if they're happy with what I do.

MR&M: The irony is that several of the instrumentals from your first album ended up having lyrics added to them and became subsequent hits, such as "Mornin'" by Al Jarreau.

DF: That's right. It was an instrumental album and I knew it would be a hard sell, but none of the labels would take a chance on it. Well, f--you guys. Six out of the ten songs ended up being major covers with two hits for other people. So what do they know.

MR&M: That's what's funny about talking with you. For someone who is probably disregarded as the most pop of record producers, you seem to have such a disdain for record companies and their desire to only find pop product.

DF: That's an interesting observation. I think I just feel that I know more than the record companies. I always used to think that they knew all when they knew nothing. There are labels that just repeatedly contradict what I want to do and make the wrong choice for me. There are exceptions. The main one that comes to mind is Warner Brothers with whom I have a great relationship. But it's like when you're growing up and you think your parents know everything and then you realize they don't.

We love working at Lion's Share. They've got two state-of-the-art rooms. They have digital and analog. They've got the Neve and Necam boards and they have 56 inputs. They have two Studer 800s and a lot of outboard gear. Humberto and I also own a lot of our outboard gear. We have three AMSs, the digital reverb and the memory unit, and we have two 250 echo units.

Who better to pick the single from an album than the person who has just spent four months with the album and has played tapes for his wife, brother, mother and friends and gotten responses from all of them. I guess I've been part of 15 to 20 hit singles and every time, with one or two exceptions, I've known that the song was a hit.

MR&M: Speaking of hits, you've had more than your share with Chicago. How did that union come together?

DF: When they first came out around 1967, I just fell in love with their music. So when the opportunity presented itself five or six years ago to produce them, I went to one of those big, boardroom-type meetings and they all showed up. In the end, they, or the record company, CBS at that time, decided I wasn't the right guy. I was crushed. So then they went on and made Chicago 14, which I think was not a good album at all; there was not a hit within 25 miles of that LP.

MR&M: So how'd you meet up for *Chicago 16?*

DF: When it came time for that album, I think the drummer Danny Serraphine kind of reached out and thought that I might now be the right guy since I'd had a couple more years experience under my belt. By this time they were with Irving Azoff and they had no record deal, CBS had dropped them. I went to a meeting and they started playing the tunes for 16 and I remember being very impressed with their musicianship, but not impressed with the songs. So at that point, I made a commitment where I would go to their homes and work until we had what I thought were 10 acceptable songs. We ended up writing 15 songs of which I was co-writer on about nine of them.

By that time in my career I had learned that you can't just accept the ten songs that the group says they want on the album. I learned that from Quincy Jones after I did a forgettable album with the Average White Band. The reason the album didn't happen was largely my fault because I accepted the band's ten songs instead of saying "No, these songs aren't good enough." You'll have to come up with more." Quincy taught me that and I applied that technique to the Chicago album and have been using it ever since.

MR&M: I guess it's a matter of knowing that your name is going to be on the record as well.

DF: That's exactly what Quincy said. He asked me how the Average White Band album was and I said "It's pretty good, I don't know." He asked me "Is your name on it?" and I said yes. Then he said "You better make sure it's the f--king best it can be or else you're just (wasting everybody's time)." And he was right.

Even when you strive for ten hits, sometimes you only get one, and that's if you're lucky. That's why I was so surprised when we reeled off

David Foster Discography

Producer

Outside Inside—Tubes
Dreamgirls—Cast Album
Rit—Lee Ritenour
Cheech & Chong Go To Hollywood—Movie Soundtrack
X-Static—Hall & Oates
Along the Red Ledge—Hall & Oates
From The Inside—Alice Cooper
The Keane Brothers—Keane Brothers
Danny Peck—Danny Peck
St. Elmo's Fire—Movie Soundtrack

Singles

How You Gonna See Me Now—Alice Cooper
We've Got Tonight—Kenny Rogers and Sheena Easton
Wait For Me—Hall & Oates
And I'm Telling You I'm Not Going—Jennifer Holiday
It's a Laugh—Hall & Oates
All My Life—Kenny Rogers
Twist of Fate—Olivia Newton-John

Producer/Writer

Chicago 17—Chicago
Chicago 16—Chicago
Single—Bill Champlin
Runaway—Bill Champlin
The Completion Backward Principle—Tubes
Bi-Coastal—Peter Allen
Airplay—Airplay
The Best of Me—David Foster
Can't Slow Down—Lionel Ritchie
Shine—Average White Band
Ray Kennedy—Ray Kennedy

Singles

Stay the Night—Chicago
Inspiration—Chicago
Women—Chicago
Hard Habit To Break—Chicago
Hard To Say I'm Sorry—Chicago
Love Me Tomorrow—Chicago
Look What You've Done To Me—Boz Scaggs
Talk To Ya Later—Tubes
I Don't Want To Wait Anymore—Tubes
She's A Beauty—Tubes
I've Got The Next Dance—Denice Williams
Nurse Rosetta—Alice Cooper
From The Inside—Alice Cooper
Serious—Alice Cooper

Player/Arranger

Wildflower—Skylark
Dream Weaver—Gary Wright
Here You Come Again—Dolly Parton
Lead Me On—Maxine Nightingale
Theme From SWAT—Rhythm Heritage
Nadia's Theme—Barry Devorzan & Perry Botkin Jr.
Ain't No Way To Treat A Lady—Helen Reddy
Stop And Smell The Roses—Mac Davis
Heartlight—Neil Diamond
Do Ya Think I'm Sexy—Rod Stewart
Tonight's The Night—Rod Stewart
The Girl Is Mine—Paul McCartney/Michael Jackson
Boy From New York City—Manhattan Transfer
Blam—Brothers Johnson
How Do You Keep The Music Playing—Patti Austin & James Ingram

Writer/Player

Got To Be Real—Cheryl Lynn
After The Love Has Gone—Earth, Wind & Fire
Heart To Heart—Kenny Loggins
Mornin'—Al Jarreau
I'm Alive—Neil Diamond
It's The Falling In Love—Michael Jackson
Jo Jo—Boz Scaggs
Breakdown Deadahead—Boz Scaggs
Friends In Love—Dionne Warwick & Johnny Mathis
Hold Me Till The Morning Comes—Paul Anka
I Am Love—Jennifer Holiday

Also...

Air Supply—Co-wrote "I Can Wait Forever," on the "Ghostbusters" soundtrack album
Earth, Wind & Fire—Co-wrote 6 tunes for "I Am" LP; arranged rhythm tracks, tracks for strings and horns
Kenny Rogers, Kim Carnes, James Ingram—Co-wrote "What About Me" single on RCA album
James Ingram—Co-wrote "Whatever We Imagine" on "It's Your Night" LP
Boz Scaggs—Musical supervisor; co-wrote 6 tunes on "Middle Man" LP
Kenny Loggins—Produced "I'm Free" single from "Footloose" soundtrack; wrote on "Celebrate Me Home" LP
Donna Summer—Co-wrote two songs on "Love Is In Control" LP
J.P. Morgan—Produced and arranged "J.P. Morgan" LP
Rocky Horror Picture Show—Musician/co-musical director; musician on cast LP
Skylark—Musician, writer, arranger on "Skylark" LP
Ronny Hawkins Band—Musician (featured keyboardist)
Paul McCartney—Co-wrote and produced songs on up-coming album

Studio Musician

Barbra Streisand, Rod Stewart, Tom Jones, Helen Reddy, Mac Davis, Glen Campbell, Ringo Starr, George Harrison, Frankie Valle, Roger Williams, Dolly Parton, Olivia Newton-John

four from *Chicago 17* because what I had personally strived for had come true.

MR&M: What changes did you have to make for Chicago to become a commercial success again?

DF: It was really simple. I just tried to be like them. I tried to imitate what I loved about them—the trombones, the good melodies with Peter (Cetera) singing high and tight and the double vocals. I just thought they had gotten off the track and I tried to make them sound like they used to sound. I obviously applied my own musicianship and that came up with what we would call the new Chicago sound. Maybe not terribly innovative, but certainly commercial.

MR&M: What was it like working with a band who had already had so much success? Humberto said it was a little difficult at first because they were looking over his shoulder.

DF: Right. Well, any situation in the studio is difficult. I mean, it's like a bloody marriage. The St. Elmo's soundtrack was so schizoid to me because it was like I was married to six different singers. It truly is an intimate as being married. And with Chicago there are seven really strong individuals. To say that it went absolutely smoothly would be a gross overstatement. There were a lot of problems and there continue to be a lot of problems, but out of that conflict comes greatness sometimes. That must be one of the things about success.

MR&M: Any plans for *Chicago 18* yet?

DF: Yeah, we've been talking about it. I had made a decision that I didn't want to do it just on a personal level of not wanting to go through another six months of really hard work. I felt that we had peaked. But now I feel like there's one more great album between us that's going to have to be made. Peter Cetera really wants to do another solo album. So the decision on *Chicago 18* rests largely with him. If he does the next album I'll do the next album.

MR&M: Where's the perfect balance of power between the producer and artist? On a lot of your projects, the artist is listed as co-producer.

DF: I guess there are no real rules. It's different every time. But I think it's the artist's responsibility to co-produce at least in the supportive role without getting the credit. With Chicago, I'm talking seven co-producers and that's where the problem comes in. That's difficult. On the one hand, who am I to tell Chicago how to play something, I mean, I was just a fan of theirs. They've had more success than I might ever have. On the other hand, we've got this great run going for which I'm largely responsible. That's why it's so difficult to make records together and at some point you just say "Aw, sh--, I don't want to do this again," and I'm sure they don't. We're enjoying the success and the money, but it took six months of hard work and pressure for *17* and over a year to do *16*.

MR&M: How does your style differ from Quincy Jones? You've said that he leaves a much more distinctive stamp on his work whereas you're more subtle.

DF: With Earth, Wind & Fire and Chicago both, I just tried to bury myself in their music. Because I play piano on most everything, that style never goes away, so at the very least I always bring that to a project which in itself creates the arrangement and the direction the song will go. Although there are songs like "She's a Beauty" by the Tubes where I really don't think you can hear any of me in there even though I co-wrote it and produced it.

Quincy is just very stylized. It works unbelievably well with Michael Jackson and some of his other projects, but you run the danger of it working really badly like with Donna Summer where it just didn't work at all. Of course everybody's allowed to have albums that don't work. I do tend to be more chameleon-like. That's what works best for me.

MR&M: You do all your own arranging. Do you think a good producer has got to be a good arranger as well?

DF: No, because a good producer can hire a good arranger. With me, I can do both, but if I couldn't arrange, I'd be sure I had the best arrangers. In the old days, like ten years ago, producers were mainly non-musician producers and they hired arrangers to take care of making the record. They would just sit back and have the overall objective view. As musicians we resented that greatly because we thought "Hell, what's he doing in there. He gets me to play the part, someone else to write it, someone else to sing it and an engineer to mix it. So what the hell is he doing?" But, in truth, producing goes quite a bit deeper than even all that. It starts with the song. The producers back then had great song sense and that's obviously important. I think that's what's weakest in my repertoire—being a good judge of what's a good song. Because I'm so musically-oriented, I tend to overthink songs.

Richard Perry isn't an arranger and I think he's a very good producer. He just knows who to call to get what sound. Quincy no longer arranges his stuff. I think it's just fabulous that he knows the right person to call for the right song.

MR&M: Is it difficult for you to play on an album now and not produce it, even though you consider yourself a musician first?

DF: No. What's difficult is that I can't take the time to do it. If Barbra Streisand called and asked me to play piano on a ballad, I wouldn't run to do it, but I would certainly try to make time. Being a studio musician was just such a great way of keeping your finger on the pulse of what was going on in this town because you were all over the place. So when I do get asked to play for Quincy or Rod Stewart, I try to make time. It's just so difficult because producing is a full-time job.

MR&M: Along the same lines, is it harder for you to produce a song that you've written or co-written, or watch someone else produce it?

DF: It's harder to see someone else produce it? Like on Bill Withers' new single "Oh Yeah," which I wrote and played on, it was produced by Larry Carlton. I really wish I could have produced that because I would have done it differently. It's underproduced to me, but it's a great piece of music and Bill sings it so well. It's just easier for me to produce because the material is so familiar to me, it came from my own hands.

MR&M: What's the hardest part of producing for you?

DF: It seems to go in three stages. You seem to peak or slump at least three times during the album. You're really high while you're cutting the tracks and then you slump down during the first overdub period when every day you don't seem to get any work done. Then you get high again when you start doing the vocals and the songs start coming to life. And then you slump down again when you realize out of the 12 things you've cut only seven are good, so you have to start all over again trying to find four or five more tunes and get back up again for those. So it's just up and down all the way.

I think the easiest part for me is the mixing because that's when I'm less involved and when Humberto really snaps to it.

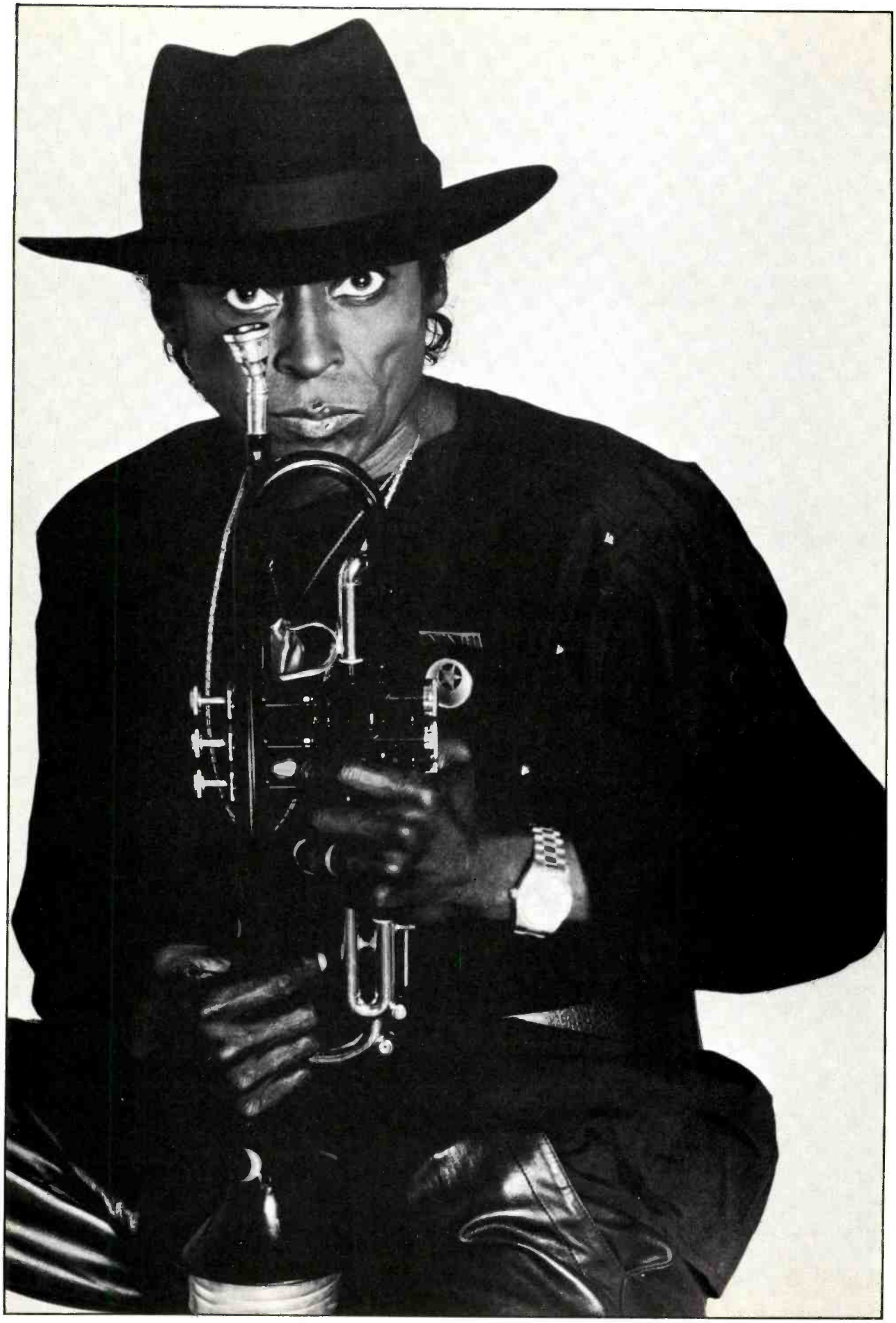


Photo by Anthony Barboza

gene kalbacher

Miles Davis Speaks For Himself

The Miles Davis Credo proclaims: *"The music speaks for itself!"* That is well and good, up to a point, as many unsuspecting journalists have learned to their discomfiture over the years. But when there is no new Miles Davis to do the talking, Miles Davis the musician must carry the load.

Such was the case during this interview, conducted April 3, six weeks before *You're Under Arrest...*, Davis' 44th and latest Columbia album, was released. At the time of the interview, no advance cassettes or session credits were available. The only new product was a 12-inch single, Cindy Lauper's "Time After Time" b/w "Katia." In this instance, unpreparedness must be excused, to a point. So, having heard only the single, this listener entered the lair of the Prince of Darkness armed with only his wiles and a thoroughgoing knowledge of the fabled trumpeter's position in the pantheon of modern music. In the absence of new music, then, one was left to ponder the *myth* of Miles Davis: He hates the press. He hates whites. He hates the word "jazz" (though he used it twice in the interview). A ponderous burden—three strikes and you're out without taking a single swing.

But such paranoia proved unjustified. That raspy, bittersweet voice was calm and patient. Notwithstanding a few vulgar locutions common to jazz musicians, the Prince of Darkness came off more like Prince Charming. What's more, not having heard the album proved propitious for this listener because the trumpeter carefully explained both the motivation for and the mechanics behind several of the new tunes, which he might not have done had the album been released. As it turned out, the onus shifted from the interviewer to the interviewee.

To call *You're Under Arrest* (the actual title is *You're Under Arrest. You Have The Right To Make One Phone Call, Or Remain Silent So You Better Shut Up*) a radical departure for Davis would be misleading, and to say that the album has caught the critics totally by surprise would be absurd. Davis has been performing "Time After Time" in concert for several years, but its inclusion on the album along with such pop ditties as Michael Jackson's "Human Nature" and D-Train's "Something On Your Mind" has taken many listeners aback. If that's not startling enough, Davis devotees will do a double take when they hear his two "message" tunes—"One Phone Call," a funky r&b-styled rap in which he engages in go-for-the-groin repartee with the cops, and "Jean Pierre/Then There Were None," a cautionary medley combining a singsong children's melody with all-too-realistic sound effects of an accidental atomic explosion. So, *You're Under Arrest* is a departure, yes; radical, no.

The term "radical" stopped being applicable to Miles Davis 15 years ago, when he pulled the pin on acoustic, small-group jazz and exploded the electronic grenade full of *Britches Brew* on an unsuspecting public.

What's most curious about *You're Under Arrest*, however, is that unlike most of his earth-shaking albums over the past 35 years, this one comes without clear warning, without a transition album presaging—and perhaps palliating—its force of impact. Whereas *Milestones* hinted at the modal breakthrough Davis would achieve on *Kind Of Blue* in 1958, and *Miles In The Sky* anticipated the electronic ambush of *Bitches Brew* in 1969, *You're Under Arrest* follows what many critics consider the trumpeter's most coherent post-comeback effort, last year's *Decoy*. *You're Under Arrest*, thus, with tunes from Lauper, Jackson and D-Train, is either an anomaly or an unabashed announcement of Davis' arrival as a pop-rock stylist.

From an instrumental standpoint, Davis and his band are availing themselves of the accoutrements of pop music like never before. Davis has been using electronic hookups for his trumpet, including wha-wha, for better than a decade, but drum machines are widely used on *You're Under Arrest;* Robert Irving III, the synthesist, is showing ever-greater facility with the DX-7 and Korg Poly-6.

Davis, nearing 60, with just as many albums under his belt, appears to be vigorously cultivating a young audience. The New York/Los Angeles resident by way of St. Louis, the man who swapped his arrow for Cupid's Harmon mute, has apparently regained his health and decided to reclaim his reputation as the leading mover and shaker of modern music.

The following interview, conducted from the trumpeter's home on the West Coast, begins with a discussion of the Record Plant, where *You're Under Arrest* was recorded, and Ron Lorman, the engineer for the album, who began his association with Davis as the remote engineer for portions of 1983's *Star People.*

Modern Recording & Music: Was your new album recorded at the Record Plant in New York City, as *Decoy* essentially was?

Miles Davis: Yeah, all of it. They treat you real good over there. My roadies seem to like it. Ron Lorman, the engineer, seems to like it. Ron Lorman asked me to give him a shot at recording, right?

MR&M: Are you pleased with the way he, and the album, turned out?

MD: Oh, yeah. He asked me could he make *Decoy*, and I told him, yeah. I told him I'd give him a chance. But I had to jump on him about those negative vibes up there. Sometimes, if you ask people to "go downstairs and get me this or that," they'll say, "It's rainin'" or "It might rain," or "There's some bumpy roads on the road," or bla-bla-bla. They give you all those excuses, so when they do something which is easy, you're supposed to say, "Damn, you did *that*?"

MR&M: You're supposed to be grateful. "Thank you, man. Wow! I appreciate it."

MD: Right. So I had to get on him about them negative vibes like that, you know. I'd ask him, "Ron, take this eight bars and put it there." And he'll start frownin' and such. [And I'll say] "Wait a minute, man. Don't do that s--t." That's the way women do. They frown. They want to give you the attitude to approach them back, by giving you a negative vibe. You might say, "Oh, well, okay, don't go." You know what I'm sayin'?

MR&M: Yes. It's like you owe them.

MD: I said, "Listen, man, if Bobby [Irving III]"—my synthesizer—"asks you to do something, you *do* it. We're the musicians...you just follow what we want you to do." So that's what happened, and we got it done. But you have to put your foot down.

MR&M: Did you have a similar problem working all those years with Teo Macero?

MD: Yeah. He's like an old woman, man. I'd say, "Teo, do this, do that." He say, "Well, Miles, you know, my wife..." S--t. F--k it. No more. I should've done it a long time ago.

MR&M: Let me ask you this: Having worked with Teo as your producer for about 20 years, did you have to make any adjustment in the sound and editing when you yourself produced *Decoy* [in 1984] with a new engineer?

MD: Yeah, well, you know. Teo. I don't wanna talk about Teo. He's a helluva musician, a brilliant musician, but he's just not for me, that's all. I can elaborate on it, but I don't want to do that.

MR&M: But being your own producer, what adjustment did *you* have to make with the editing and splicing and so forth?

MD: No, it's a different ballgame now, so that lets him [Macero] out.*

Editor's Note:
*Ted Macero responds that in the almost 20 years he produced Miles Davis' records, he saw the trumpeter in the editing room only five or six times. Macero is withholding further comment for his own book.

I know what I want to hear, and I don't drop or rush any tempo. It ain't in my body...

He's always complainin', always sick. ...Like Ron Lorman's always sayin', *"Na-na-na-na-na,"* you know what I mean? I don't need that in the studio, man, because, Gene, we had to remake everything we did in the studio, because there's different tempos, or it wasn't fat enough and we had to put in new sounds. So I just said, "F--k it." The numbers I thought would carry the album—when I heard 'em back, you know, me and Bobby Irving and my nephew Vince [Wilburn]. I have perfect time, you know, near perfect time. I can tell when tempos go off. If they go off for a bar, I can tell because I have to play against 'em....Say you're runnin' a long run or something, and behind you the tempo changes in the middle, your eighth notes become uneven. So we had to take the drum machine. Somebody like my nephew Vince, he plays drums and he don't vary the time. The time stays the same; even if he drops it a little bit, it stays the same. In Chicago they play on top of the beat instead of *way* back. Jazz musicians are so comfortable. The reason they can't do what *we* do is because they're so comfortable doin' what they do.

MR&M: They're locked in?

MD: Yeah. They feel comfortable with their cliches, you know. So we have to have new blood all the time. Especially with this s--t we're playin'. You can't have anybody saying, "No, I can't do this," that kind of negative thing. Bobby, Vincent and I virtually went into the studio with strong numbers that I thought would carry the album. The new things that would spring off didn't do it, so I wrote, on the spot, introductions, endings, replaced the music in order.

MR&M: Sequencing?

MD: Yeah. Listen, man (laughs) on "Katia" [B-side of the 12-inch single] they called me at home: "Miles, 'Katia' is 12 minutes long; we got about 10 minutes too much music." So I said, "Okay." When I went into the studio to edit "Katia," everybody [acted] like somebody *died.* It was so *good* they wanted to leave everything on.

MR&M: Yeah. "Don't touch that thing."

MD: Right. They said, "We're not gonna touch it till you get here." So I went down there and edited it. Every time John starts some runs [on guitar], and ends this and ends that—you know, that staggered start—I just took it out.

MR&M: "Katia" starts like the guitarist is right in the middle of a solo. Scofield is wailing, the band is cooking right behind him...

MD: Not *Scofield*—that's John McLaughlin.

MR&M: That's John *McLaughlin*? I didn't know that.

MD: Yeah, *of course.* John Scofield plays in a different style. He's a muthaf--ka, but so is John. John [McLaughlin] is too much.

MR&M: I hadn't heard that McLaughlin was back with you.

MD: John McLaughlin is on "Katia" and a reggae tune ["Ms. Morrisine"]. John was in town. (Coughs) Pardon me. Every time I eat ice cream I get this s--t. No more ice cream. Anyway, John was in town so I called him up. He has this girlfriend. She's French. You know the Labeque sisters? They play concert music. His girlfriend is one of those, one of the pianists. They're sisters, they play classical piano.

MR&M: Yes. She's been on some of his records, I believe.

MD: So I named the tune after her—"Katia." I wrote this thing right quick for John, and we just played behind; I'm playin' synthesizer and Bobby's playin' synthesizer. Then I punched in a lot of brass parts—*bap, bap, ba-da, da, da-da,* that kind of s--t.

MR&M: Short trumpet blasts.

MD: It turned out good. That's a strong number.

MR&M: A strong blowing number. Right from jump street, the tune really latches onto you.

MD: What happens is that the other side [of the LP], the A side, ends with like *Bap*! ["Katia Prelude."] Like that. I cut loose the chord on the synthesizer and it goes chromatically up. Straight up. Then, with a couple of *rat-a-tat* things on the drums, real sharp rolls, crisp rolls, we changed the mood. John comes in at the end on the A side. And when you turn over to the B side, he's already playin'....The start of the B side ["Katia"] is on A. When we got through with the last tune, to change the mood I let the synthesizer go, *Wa-aa-aa-aa-ah* (voice goes up) like that, and John starts playin'. You hear two or three bars, then you turn the side over and John's right into it already.

MR&M: Sounds like a very organic process.

MD: I'm tellin' ya, we just went in and molded the record.

MR&M: Tell me what Vincent's role was on the record. You mentioned that he did some drum machine. Did you later bring in Al Foster to play live drums over the machine parts?

MD: Al can't play with drum machine. He's playing on the first cut ["One Phone Call"] and he's playin' on "Time After Time"; we had drum machine on that, too. And he's playin' on "Jean Pierre" at the end. You got to hear the end, Gene.

MR&M: You've got to forgive me, man, because all I've heard is the 12-inch. The record isn't due out for several weeks. You do "Jean Pierre" again? [The tune appears twice on the live *We Want Miles* double set.]

MD: What we did on the end is we made something like a little statement. Somebody, my daughter or my wife, gave me a music box for Christmas. It plays "My Funny Valentine" on celeste, you know? So I had Bobby just play "Jean Pierre" with the changes on celeste. You hear three bells while I'm playin'. We play the "You're Under Arrest" tune at the end [next to last tune on the second side]. It goes right into "Jean Pierre." You hear *da-da/da-da/dom/dom/dom.* I had the band overlap what they just got through playin' over "Jean Pierre." It's actually two tunes. All of a sudden you hear chimes, a bell. Three times. *Dong. Dong. Dong.* We're playin' "Jean Pierre" and Bobby goes into celeste; you know how little kids like to hear those chimes. You also hear the kids gettin' out of school at 3 o'clock. You follow me? Then you hear a countdown, "Five, four, three"—"Jean Pierre" is goin' on—"two, one." Then you hear a big atomic-bomb explosion, and all the kids are screamin'. Then at the end we say, "Somebody pushed the wrong button!" George [Butler, Columbia Records vice president] told me you can't listen to that but once. It's like a political statement. It might happen!

MR&M: And "Jean Pierre" is a tune that's obviously very important to you. [One of Davis' sons is named Jean Pierre.]

MD: You know, it's for kids. The melody is French.

MR&M: I love that melody. [Hums simple singsongy melody.] It's so catchy.

MD: But that's the end of the record. I named it "Jean Pierre/Then There Were None," you know, because of the big explosion. You'll like it. It's a nice album.

MR&M: And that's the end of the record. It leaves you thinking.

MD: Yeah. It's just as strong to me as "We Are The World."

MR&M: I'd like to return, Miles, to your use of drum machine on this record. Had you used it much before on earlier albums?

MD: Well, in respect for drummers, see, I love drummers.

MR&M: You've had the best.

MD: Give me a good drummer, that's it, you know? But certain drummers drop time, and I like to play on top of the beat. But some of them drop time because they want to hear what *you're* doin'. You ever hear Buddy Miles play the drums? You know, he doesn't vary the tempo at all. If you're going to drop behind, you have to keep it there. The reason they call things "unison," and they sound unison, is because you actually play two different tempos... like you're a little sharp, or a little flat; it's so slight that they call it "unison," but it's *not* unison. If you had to call it "unison," it ain't unison (laughs). It ain't the same as somebody else. If you can hear that it's unison, and you have to name it something other than "unison," *it ain't unison*, you know what I mean? It's two guys playin', but one guy is playin' out of tune, one is playin' slightly off meter. You say, "Damn, that's two people." You know what I mean? Drummers—sometimes they play and they *listen*. And that little listen takes a speck away from the right tempo. I can *tell*. I'm gifted with that, you know. When I *hear* that [the tempo is slightly off], it's hard for me. So I don't play. I can't play. I can't play properly a run or something...

MR&M: It inhibits you.

MD: Right. It pulls me back. It's like swimmin' without warmin' up,

you know what I mean? So (cackles) we use the drum machine, and we take it out.

MR&M: You use it as a reference, in other words.

MD: Yeah. When I went in there, we used drum machine on "Time After Time" and "Human Nature." Al is on three cuts and Vincent played the rest.

MR&M: I'm a little confused, Miles. On "Time After Time" and "Human Nature," live drums were later added, weren't they?

MD: We don't use the drum machine to play a pattern. You play the pattern by being consistent. The only way a drum machine will get out of beat is for you not to pay your electric bill. [Laughs].

MR&M: So you're using it for the perfect tempo.

MD: Right. I've used it because *I* have to have the perfect tempo.

MR&M: So that you're not inhibited on your runs.

MD: Right. And I keep telling Ron Lorman and them in the control room, "It's *my* band! The reason I have a *band* is because I can't stand for somebody to tell me what to do." I tell old women that—you know what I mean?—when they start orderin' you around and s--t like that. "No, don't go like that!" So when we edit the music, I always remember, "It's *my* band. Save me a place to play."... When you use the drum machine, a lot of drummers can't play with it. You can take patches and put 'em in front. You take the good patches and a couple you want to connect. Maybe you play a melody *twice*. You play it once like you like it, and some parts that you don't like you can just switch. An eight-bar motive—you can just take it and put it in the front or back or something like that. It can save you 50 or 60 or 70,000 dollars, a drum machine. That's why everybody uses it.

MR&M: Because of the time you save?

MD: Yeah. You gotta have it because people are droppin' tempo or rushin' tempo. Some musicians play with their heart, you know what I mean? (Laughs). I don't know what to tell a person that can't—if you can't tell a person what you're talkin' about when they're rushin' or droppin' the tempo, you get somebody else.

MR&M: Have you had drummers who were resistant when you told them this?

MD: I've gotten *hernias* from drummers when they drop tempo, man. Anyway, that's that. We just redo it.

MR&M: Among the things I especially liked on *Decoy*, Miles, were the tunes co-written with Scofield, "That's Right" and "That's What Happened." In speaking with him, Scofield mentioned that these tunes began as live guitar solos, as improvisations, and that you and [arranger] Gil Evans made head arrangements from these solos. That strikes me as a wonderful way of composing from pre-existing stuff. It seems like the essence of improvised music. Have you been doing this a long time?

MD: When you write an arrangement, I can't write anything for myself. I can write when I hear like [John] Coltrane play something; I used to write chords and stuff for him to play in one bar. I can write for other people, but I don't never write for myself. I can *hear* what I want them to play. If you don't hear what you want someone to play, then you can't *tell* 'em. If you make a suggestion and they don't know what you mean, you have to be able to do it yourself. I often sit down on drums and show 'em just exactly what I want. And I do it and they say, "How do you do that?" It's because I know how it looks, I know what I want to hear, and I don't drop or rush any tempo. It ain't in my body, it ain't in my nephew's body. I usually write from the rhythm section, you know what I mean? If a drummer got a funky beat on some things—like a half-shuffle or a shuffle or a backbeat that's even—I can write something. And if I have a dynamite bass player—I have Darryl Jones—it's so easy to write for him because he's such a funky kid and he's gifted. He's like a little genius, you know? That muthaf--ka can *play*! My nephew told me to get him. I said, "Man, I need a bass player."

MR&M: So Vincent recommended him?

MD: Yeah. He recommended Bobby. All of 'em are from Chicago; they used to play in school amateur hours. Randy Hall, Bobby Irving and Vince—they were in all the school amateur shows.

MR&M: You have a very good musical relationship with Bobby Irving. The way he lays textures and atmospherics behind you is really gorgeous.

MD: He didn't know that when he came with me. I had to show him. You know, I put all those synthesizer sounds behind "Decoy" and "Code M.D." A lot of things we write together. A lot of things are his, but they don't have that thing I want on the bottom. I often tell him, I say, "Bobby, if there's a melody, there's another one somewhere that goes with it."

MR&M: An implied melody?

MD: Yeah. Or an obbligato. Or something that can *throw* the melody you write, and you put it in a different texture. It's something that always can fit it that makes it *moreso*. It's like *shinin'* gold or *buffin'* diamonds, you know what I mean?

MR&M: You bring out what's there innately.

MD: That's right, but you bring it out to the *max*.

MR&M: That's an interesting comparison.

MD: Listen, you ever hear "Only The Lonely Hearts" [sic], the melody that goes with that? You've heard Frank Sinatra. I *love* that melody; we used to sing it in high school.

MR&M: Besides Cindy Lauper's "Time After Time," your new album also has Michael Jackson's "Human Nature" and "What's Love Got To Do With It," which was a big hit for Tina Turner. Did you record these tunes with this particular album in mind?

MD: We played all those tunes in concert, but I couldn't do Tina Turner because it wasn't the right tempo; so I scratched it [from the record]. I wanted to do it about a year ago, but something happened.

MR&M: So you first performed these tunes live and, I assume, checked out the audience response.

MD: Not "Human Nature." I haven't played that live.

MR&M: Did you say that the Tina Turner number is *not* on the album?

MD: No. We recorded it, but I have to do it again.

MR&M: When I spoke with Scofield some months back, he also mentioned that you'd recorded tunes by Kenny Loggins, DeBarge and Dionne Warwick. Is that so?

MD: Yes. And Roberta Flack. I *love* singers, you know. I think the greatest sound in the world is the human voice. "We Are The World," man, with all those singers—it goes right on *through* me.

MR&M: I get chills down my spine when I hear it.

MD: *That's right.* That's where I pick a song, man. If I hear a song like "Time After Time," it hits me like—I get a rush like cocaine. You get that rush, you know what I mean? Or you see a pretty woman, you know, that

Selected Miles Davis Discography

As a Leader
The Compete Birth Of The Cool (Capitol 11026)
Conception (Prestige 7744E)
Tune Up (Prestige 24077)
Workin' & Steamin' (Prestige 24034)
Miles Davis (Prestige 24001)
Miles Ahead (Columbia 8633E)
Milestones (Columbia 9428E)
'Round About Midnight (Columbia 8649E)
In Person At the Blackhawk (Columbia C2S-820)
Kind Of Blue (Columbia 8163)
Seven Steps To Heaven (Columbia 8851)
My Funny Valentine (Columbia 9106)
In Europe (Columbia 8983)
Live At The Plugged Nickel (Columbia C2-38266)
"Four" And More (Columbia 9253)
Heard 'Round The World (Columbia C2-38506)
Porgy And Bess (Columbia 8085)
Quiet Nights Columbia (8906)
Sketches Of Spain (Columbia 8271)
At Newport (Columbia 8978)
Directions (Columbia KC2-36472)
Circle In The Round (Columbia KC2-36278)
Miles Smiles (Columbia 9401)
E.S.P. (Columbia 9150)
Sorcerer (Columbia 9532)
Nefertiti (Columbia 9594)
Miles In The Sky (Columbia 9628)
Filles De Kilimanjaro (Columbia 9750)
In A Silent Way (Columbia 9875)
Water Babies (Columbia 34396)
Bitches Brew (Columbia PG-26)
At The Fillmore (Columbia 30038)
Black Beauty (CBS Sony SOPJ 39/40)
Jack Johnson (Columbia 30455)
Live-Evil (Columbia 30954)
On The Corner (Columbia 31906)
Big Fun (Columbia 32866)
Get Up With It (Columbia 33236)
Agharta (Columbia 33967)
Dark Magus (CBS Sony SOPZ 96/97)
Pangea (CBS Sony SOPZ 96/7)
The Man With The Horn (Columbia 36790)
We Want Miles (Columbia C2-38005)
Star People (Columbia 38657)
Decoy (Columbia 38991)
You're Under Arrest (Columbia FC-40023)

you want; you get that *thing.*

MR&M: And you know that feeling is real.

MD: Yeah. I got it when I heard "Time After Time." I'm sittin' there lookin' at video and Cindy Lauper comes on singin' this song. I said, "God *damnnnnn*!"

MR&M: Some of the tunes on your new record are *current* pop numbers. I've got the feeling that a lot of critics are *not* going to like it.

MD: They liked when I did *Porgy And Bess.*

MR&M: I'm sure the new stuff is happening. But you know how people quibble. There are old ladies out there who are critics.

MD: Not the old ladies. They don't listen to me. *S--t.* They listen to some other trumpet players. Not *me.*

MR&M: But a lot of those other trumpet players are getting a lot of their stuff from you. They may not always admit it, but they do.

MD: Well, we all steal from each other, anyway. I had a girl tell me, she said, "Miles, I got pregnant off of *Sketches Of Spain.*" Another girl told me, "You know how much money I made f--king with *Sketches Of Spain* on?" Or *Quiet Nights.* People like certain things, like melodies. I gave the album to Quincy [Jones] and he loved "D-Train." We couldn't call it "D-Train"; it's called "MDI/Something's On Your Mind/MDZ." That's on the album....We had an earthquake out here last night, man. My whole building shook. We're right on the ocean. I thought, "What the f--k was that?" I was doin' a lot of sketchin'. You gotta check out them dancers in the middle of my album, Gene. Is there anything else you wanna ask me?

MR&M: You say that, for you, the greatest sound in the world is the human voice. Even with electronic instruments, you've managed to retain the essence of the human voice. Is that a difficult thing to do?

MD: No, not if you have a tone like mine that is recognizable. No matter what I play, when you hear my tone you can tell it's me. Japanese people, man (laughs), they hear me warmin' up and they start screamin'. They can tell it's me...It's my tone [on the trumpet], it sounds like I'm speakin'. In other words, an instrument should be an extension of you; it's supposed to sound like you—the way you walk, the way you dress, you know.

MR&M: So the instrument plays *you* instead of you playing it?

MD: Right

MR&M: I wanted to ask you about these pop tunes you've covered, Michael Jackson and Cindy Lauper...

MD: Wait a minute, Gene. I didn't do it because they're famous...

MR&M: You did it because they're good tunes.

MD: Right.

MR&M: I know that in the late '60s, when *In A Silent Way* and *Bitches Brew* came out, you were said to be listening to Sly Stone and Jimi Hendrix. Were you recording any pop tunes at that point?

MD: Yeah. I did Bronislaw Kaper's tune. He wrote "On Green Dolphin Street." I mean, I did all those ballads, all them ballads from South America, you know? All those tunes—the guitar concerto on *Sketches Of Spain.* All those are Spanish melodies. Some of them we made up ourselves. And I'm gonna start doing a little calypso. I heard Harry Belafonte. I went down and hung out with Sammy Davis Jr. this weekend in Las Vegas. Harry Belafonte was down there, man, and he sounded *great.* And he's playin' calypso. Of course, Sammy's Number One. And I caught the Pointer Sisters; they're dynamite. They got a new tune comin' out... that's a muthaf--ka tune. I told 'em, "Send me the lead sheet so I can do it." But, I mean, Sammy said that Harry renewed his faith in calypso. And I been hearin' calypso melodies for at least four months. You know those little eight-bar melodies in calypso, like (hums) *da-da/da-da/da/da-da/da* ...You like that?

MODERN

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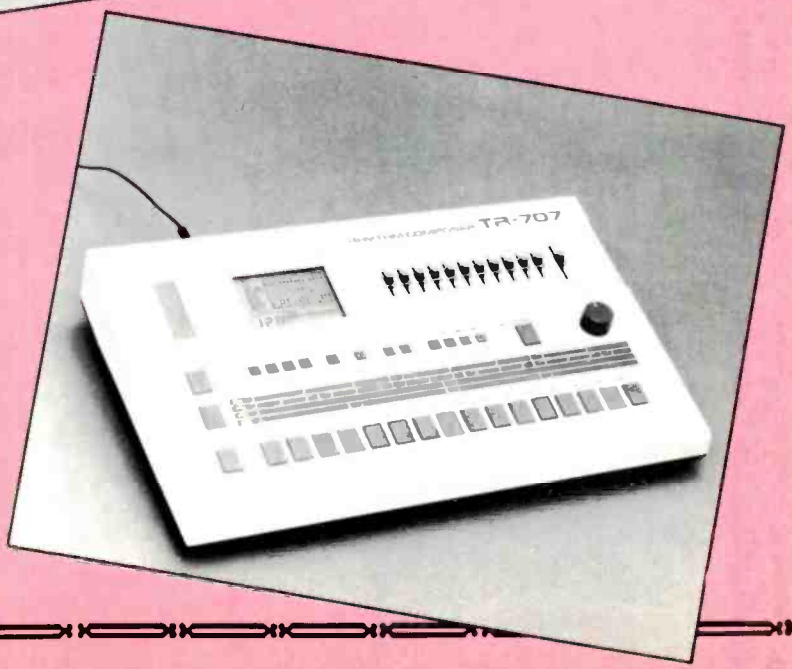
Drum Synthesizers



DIRECTORY OF DRUM SYNTHESIZERS

The directory that follows is listed alphebetically by manufacturer. Within each listing, we have shown those drum synthesizers and which (if applicable) computer or system they will interface with.. All the information was supplied by the manufacturers. We asked for pricing on all products, but if it is not there, it is because we were not given it.

It is strongly suggested that any special interests you may have can be best satisfied by writing directly to the manufacturer. A list is at the end of the directory. Please tell them you saw it in Modern Recording & Music.

J.L. Cooper

J.L. Cooper Sound Chest II
The Sound Chest II is a programmable MIDI drum computer consisting of individual voice modules under the control of a computer module. Triggered by drum pads, MIDI Note On commands, and tape sources, the voice modules contain a basic drum sound and space for an additional sound chip set of the user's choice. Each voice module boasts extensive programming capabilities, including volume, tuning, dynamic tuning, dynamic filter, and decay rate. Additionally, the user can program up to ten patch chains of up to 16 steps each. $2995. Extra voice modules are priced from $350-$450. For address see Europa Technology, Inc.

DYNACORD

Dynacord Digital Drums
The Dynacord digital drums offer a complete set of controllers consisting of seven 13-in. pads and one 20-in. pad; and the Percuter, an 8-channel digital drum computer. Each channel operates a plug in EPROM cartridge which can be easily interchanged. All eight sounds can be driven dynamically by the drum pad or any other kind of triggering: trigger microphones, sequencers, drum machines, or any other pulse source. $2175 for complete system without cartridges; $60 for drum cartridges, $90 for cymbal cartidges. For address see Europa Technology, Inc.

DURALINE INDUSTRIES INC. (SYNDRUM)

Model 178
A high quality, very dependable percussion synthesizer capable of producing a variety of sounds and effects from which to choose. The single Syndrum and control console provides complete control over the sonic characteristics including pitch control, modulation, sweep, wave form and noise. Velocity sensitivity guarantees full expression while playing. $179.

Model 278
Same as the 178 above except features include: dual sound source, mic level out, headphone out, individual and mixed outputs with master volume. $349.

Model 478
Same as the 178 above except features include: quad sound source, and same features as Model 278.

Model 179
A self-contained package with basic tom, clave and kick drum sound. On-board controls include sustain, sweep, tune and volume. $79.

E-MU SYSTEMS, INC.

Emulator SP-12
The SP-12 is a sampling percussion computer featuring built-in user sampling to nonvolatile memory with programmable timing, decay, mix, and tempo (with accelerandos and deaccelerandos). The sounds are, bass, snare, rim, electronic snare, four toms, four electronic toms, claps, cowbell, three hi-hats, crash, and ride cymbals. Other features include: auto correct, velocity sensitive play buttons, step programming, and built-in SMPTE code reader and generator. $2745.

Drumulator
The Drumulator features the ability to create complete complex rhythm tracks with digitally recorded sounds of real drums in any time signature, and will correct timing errors in your playing. The digitally recorded sounds are bass, snare, rim, high tom, mid tom, low tom, clave, cowbell, handclaps, open and closed hi-hat, and ride cymbal. Maximim song length is 6 hours, with a capacity of 64 songs of 36 segments (10,088 notes each). $745.

LINN ELECTRONICS

Linn 9000
The Linn 9000 is the first musical instrument to integrate a MIDI keyboard recorder and digital drum machine in one unit, with operational functions identical for both. The 9000 precisely captures every aspect of performance simultaneously for as many as 16 MIDI-equipped polyphonic keyboards. This is achieved by recording digital signals rather than actual audio signals. $4990.

THE MUSIC PEOPLE (DRUMFIRE)

DF-500
The DF-500 features five electronic sensors which are attached to the drummer's present acoustic set. Each of these pickups convert mechanical energy to electrical impulses. Each of the five channels is independently mixed for sensitivity, oscillator decay, sweep, volume, balance, pitch and left/right pan. $580.

OBERHEIM ELECTRONICS

DX Digital Programmable Drum Machine
Incorporating all of the features most asked for in a mid-priced drum machine, the DX contains a new crash/ride cymbal voice in addition to a full complement of MIDI functions. Other features include Punch-In/Out, record countdown, cue tempo, and selective loading of sequences and songs. $1395.

DX Stretch
As an add-on to the DX line of drum machines, the Stretch provides four rows of three voice buttons each for user-changeable voice chips. Features are the same as the DX Drum Machine, above, and storage is via improved cassette interface. $495.

DX Voice Library
The DX Voice Library is a constantly expanding selection of voice chips available to the DX owner. Traditional and electronic drum sounds and percussion voices are available and the chips are easily user-changeable. $29 for a single sound chip.

ROLAND

TR-707 Rhythm Composer
The TR-707 uses a digital sampling process-digital recording of real instruments-to create 13 different sounds. Flam and shuffle functions allow you to produce rich and expressive patterns. Create up to 64 individual patterns and use these patterns to write complete rhythm tracks with a total memory capacity of 999 measures.

DDR-30 Digital Drum System
Roland's digital drum system consists of the DDR-30 Digital Drum Module and two kinds of drum pads-the PD-10 Bass Drum Pad and the PD-20 Snare Drum/Tom Pad. Features include realistic digital sound sources, flexible sound modification and MIDI compatibility. The system has six drum voices-bass drum, snare, and four tom sounds. Four different PCM digital sounds are provided for each voice.

SEQUENTIAL CIRCUITS

Model 400 Drumtracks
The Model 400 Drumtracks is a fully programmable drum machine with 13 digitally recorded drum and cymbal sounds. Volume and tuning are programmable for each sound. Extensive editing options include auto-correct, overdub, record, erase and copy. The overall memory capacity is 3300 notes. $1295.

Model 420 TOM
The 420 is a fully programmable drum machine featuring 8 digitally recorded instrument sounds. TOM lets you program volume, tuning and stereo pan individually for each of its sounds. Rhythm patterns can be recorded in real time or in single tap step mode. Total memory capacity is over 3000 notes. $799.

SIMMONS

SDS 9
Simmons latest analog/digital 5-piece drumkit with state-of-the-art electronic drum technology. $1850.

SDS 7
100 memory programmable expandable analog/digital drums. $4000.

CB 700
4-piece analog drumkit for the beginner or semi-pro. $995.

SDS EPB
8 bit digital sampler and E-PROM blower. $795.

SDS 1
Digital drum pads with user changeable memory chips.

SDS 400 & 200
4 tom and 2 tom add-on packages.

YAMAHA INTERNATIONAL

RX15 Digital Rhythm Programmer
A fully MIDI-compatible drum machine, the RX15 represents a marriage of Yamaha's advanced LSI technology with sophisticated PCM digital sampling. The drum machine can create simple or intricate rhythm patterns and they can then be programmed into complete songs and played back with the amazing realism of digitally recorded drum sounds. $495

RX11 Digital Drum Machine
The RX11 is an expanded companion to Yamaha's RX15. The twenty-nine percussion sounds of the RX11 can be routed to a mixing console through twelve 1/4-in. phone jacks for individual instrument outputs, stereo left and right mixed output or any combination of the two. The sounds include three bass drums, eight snare drums, two rimshots, two open and two closed high hats, a high hat pedal, four tom toms, ride and crash cymbals, two hand claps, two cowbells and a shaker. $895.

Directory of Manufacturers

DURALINE INDUSTRIES (SYNDRUMS)
11300 Rush Street
El Monte, CA 91733

E-mu Systems, Inc.
2815 Chanticleer,
Santa Cruz, CA 95062

Europa Technolgy, Inc.
1638 W. Washington Blvd.
Venice, CA 90291

LINN ELECTRONICS
18720 Oxnard
Tarzana, CA 91356

THE MUSIC PEOPLE (DRUMFIRE)
P.O. Box 648
West Hartford, CT 06107

OBERHEIM ELECTRONICS
2250 S. Barrington Ave.
Los Angeles, CA 90064

ROLANDCORP US
7200 Dominion Circle
Los Angeles , CA 90040

SEQUENTIAL CIRCUITS
3051 N.First Street
San Jose, CA 95134

SIMMONS GROUP CENTER INC.
23917 Craftsman Road
Calabasas, CA 91302

YAMAHA INTERMATIONAL
P.O.Box 6600
Buena Park, CA 90622

Please write directly to the manufacturer; tell him you saw it in Modern Recording & Music's July issue.

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Updates

Music Software

DIRECTORY OF MUSIC SOFTWARE

This Directory of Music Software is an updating of the complete Directory that appeared in our January issue. We suggest that you refer to that issue as well as this one, for both additionl products and manufacturers.

The directory that therefore follows is listed alphebetically by manufacturer. Within each listing, we have shown which software is for which computer(s). All the information was supplied by the manufacturers. We asked for pricing on all products, but if it is not there, it is because we were not given it.

It is strongly suggested that any special interests you may have can be best satisfied by writing directly to the manufacturer. A list is at the end of the directory. Please tell them you saw it in Modern Recording & Music.

CHERRY LANE TECHNOLOGIES

Texture
This software is available for the Apple or IBM PC computers. Records patterns of music, and gives you the ability to edit in real-time or step-time. 64 patterns with 8 tracks of musical phrases can be linked into a song. $199.

MARK OF THE UNICORN

Performer
The Performer is a synthesizer hook-up for the Apple MacIntosh computer. It is MIDI compatible and includes a sequencer. The Performer interfaces with Mark of the Unicorn's music editing package, The Professional Composer. This allows you to enter music from your synthesizer using Performer and then print it using the Professional Composer.

JIM MILLER

Personal Composer
The Personal Composer software interfaces with the IBM PC or XT as a 32-track multifunction recorder with unlimited overdubs per track. It provides manuscript printing using traditional notation and custom notation for scoring vocal, orchestral, piano and percussion. The software is capable of sequencing an unlimited number of MIDI synthesizers simultaneously. $495.

MOOG ELECTRONICS

Song Producer
The Song Producer is a hardware/software interface system and links any MIDI instrument to the Commodore C-64, SX-64, or C-128 computers. The system is a real-time/step-mode, MIDI/drum/sync color video computer music system. The interface has MIDI IN, THRU, and 4 MIDI OUT connectors; 8 Drum Tigger (gate) output jacks; CLOCK IN/OUT and DISABLE IN/OUT, and 2 FOOTSWITCH IN jacks. $395.

MUSICDATA

SoundFiler
This software is for the Apple II, IIe, and Commodore 64 computers. It stores programs from many popular MIDI instruments to floppy disk, organizing an entire MIDI set-up under computer control. Programs can be named by the user, and most instruments support MIDI SoundFiler's ability to load and save either individual or complete sets of programs. $75.

NOTABLE SOFTWARE

Rightersound I
Rightersound I is a set of high quality synthesizer patches for the Yamaha DX-7. The 16 programs included are: six string programs, four brasses, five keyboards, and a jazz harmonica. Each sound is a result of hundreds of hours of experimentation and testing by a top synthesizer artist for suitability in live performance and studio work. Programs are printed on preset charts for easy programming. $25.

PASSPORT DESIGNS

All Passport products require an Apple IIe, II+, or Commodore 64 computer with one disc drive and a monitor, a Passport MIDI Interface, and one or more MIDI equipped synthesizers.

MIDI/4 Plus
This software allows you to compose, orchestrate and arrange complete multitrack recordings using a synthesizer, drum machine, personal computer and tape recorder. Four separate channels control individual keyboards simultaneously, or the same channel controls several

keyboards. It combines unlimited overdubs, real-time editing, and tempo control with powerful editing features including Punch-in/ Punch-out, single step playback and fast foward/rewind. $99.95.

MIDI/8 Plus
The MIDI/8 Plus has all of the features of the MIDI/4 Plus, plus sequence chaining, linking, and the ability to merge tracks together on four additional tracks. $149.95.

MIDI Player
This software is a computerized music presentation system for MIDI/4 Plus and MIDI/4 recordings. It allows you to arrange and digitally store a whole set or album of music on computer disk and play it back through the MIDI system in any designated order. MIDI Player syncs music playback with real-time computer graphics. $79.95.

Leadsheeter
The Leadsheeter is a printing program that prints out sheet music in the Treble Clef Piano Score format. The program transcribes directly from any MIDI keyboard in real-time with auto correction. Once the music has been transcribed, lyrics, chord symbols, markings and titles can be entered and edited onto the screen. Handles note divisions, seconds, accidentals, ties and more. $99.95.

Polywriter Utilities
Utilities integrates and links Passport's music printing and recording software. It allows you to take the music you've recorded with MIDI/4, 4 Plus, or 8 Plus, transcribe it into music notation, edit the arrangement on screen graphically, add lyrics, and print out scores. The Utilities program also lets you play back Polywriter and Leadsheeter files through the recording packages. $79.95.

OCTAVE PLATEAU

Voyetra 8 Voice Editor
The Voice Editor runs on either IBM PC (MPU-401 interface; at least 128k RAM; DOS 2.0 or higher) or the Commodore 64 (Siel MIDI interface), and works only with the Voyetra 8 synthesizer. The software provides complete and easy access to all parameters of Voyetra steps and programs. Full screen graphics editor shows all features and signal paths of the Voyetra, making it easy to understand and use its sound capabilities. All changes to programs are heard instantly and sounds may be named, stored and loaded on disk. $79.

ROLAND

MUSE (MIDI User Sequencer Editor)
The MUSE software is a sequencing/editing program designed to run with the Roland MPU-401 interface and any MIDI equipped instruments. MUSE works with the Apple II, IIe, II+ (64k minimum), and Commodore 64 computers. MUSE is a comprehensive, easy to use software system which offers a wide range of functions in a fast and easy format. MUSE can be operated by the diamond pattern formed by the I,J,K,and L keys on the keyboard, or by a joystick or game paddle. $150.

SEQUENTIAL CIRCUITS

Model 900A
The 900A (Dumptraks) is synthesizer linked and interfaces with the Commodore 64. The 900A provides you with a quick and easy method for saving and cataloging sounds, sequences, songs, and rhythms patterns from most Sequential products. Other features depend on the synthesizer being used. $40.

SOUTHWORTH MUSIC SOFTWARE

Total Music
This software is a MIDI based sequencing, composing and transcription system that interfaces with the Apple MacIntosh computer and any MIDI keyboard. The software provides 16 track recording (real and step time) with multiple edit modes, full recording of all MIDI parameters, three screen display modes, selectable autocorrection and 50,000 note capacity. $389.

DR. T's MUSIC SOFTWARE

Keyboard Control Sequencer
For Commodore 64 and any MIDI instrument, this software is a general purpose sequencing package. It allows recording on 16 tracks in real-time and step-time, with full edit of individual notes or sections of sequences. $125.

DX7 Patch Librarian
This software is a patch editor for the Commodore and the Yamaha DX7 and DX9 synthesizers, and the various Yamaha TX expansion modules. This allows easy on-screen editing, disk storage and printing of patches for the Yamaha DX series of synthesizers. $75.

CZ Patch Librarian
Same as the DX7 Patch Librarian except it works with the Casio CZ series of synthesizers. $65.

Directory of Manufacturers

CHERRY LANE TECHNOLOGIES
P.O. Box 430
Port Chester, NY 10573

MARK OF THE UNICORN, INC.
222 Third Street
Cambridge MA 02142

JIM MILLER
14000 Edgewater Lane NE
Seattle, WA 98125

MOOG ELECTRONICS,INC.
2500 Walden Ave.
Buffalo, NY 14225

MUSICDATA, INC.
8444 Wilshire Blvd.
Beverly Hills, CA 90211

NOTABLE SOFTWARE
P.O. Box 1556
Philadelphia, PA 19105

OCTAVE PLATEAU
51 Main Street
Yonkers, NY 10701

PASSPORT DESIGNS
625 Miramontes Street
Suite 103
Half Moon Bay, CA 94019

ROLANDCORP US (ROLAND)
7200 Dominion Circle
Los Angeles, CA 90040

SEQUENTIAL CIRCUITS
3051 North First Street
San Jose, CA 95134-2093

SOUTHWORTH MUSIC SOFTWARE (BILL LEWIS)
Box 275 RD-1
Ann Lee Road, Harvard, MA 01451

DR.T's MUSIC SOFTWARE
24 Lexington Street
Watertown, MA 02172

Please write directly to the manufacturer, and tell him that you saw it in Modern Recording & Music's July issue.

SPECIAL NOTE

In September our Directory will be **Keyboard Synthesizers.**
In October it will be **Small Consoles/Mixers**
November has **Delay Units**
December is **Raw Tape and Tape Recorders.**

Do you manufacture any of these products? Let us know so we can be sure to include you in these upcoming directories.

Paul Fox

melinda newman

Studio Synthesist

Photo by Jeffrey Mayer

Musically speaking, Paul Fox has arrived. As a synthesist/arranger/producer for such artists as the Pointer Sisters, the Tubes, Motley Crue, Smokey Robinson, the Commodores and more, he had an album and/or single to which he contributed in some capacity on the Billboard charts every week of 1984.

A native New Yorker, Fox moved to California several years ago. After cutting his teeth in San Francisco teaching music to kids in a CETA program, taking private piano lessons and playing in local bands, the 31-year old Fox migrated to Los Angeles in 1979. He quickly carved a niche for himself playing in clubs before he landed his first session with producer Norman Conners working on a Jean Carn album.

Since then, Fox has become one of LA's most in-demand studio synthesists not only for records, but movie soundtracks and television. He's worked on such soundtracks as "Flashdance," "Stayin' Alive," "Beverly Hills Cop," and "Swing Shift," as well as creating special effects for the television shows "Trapper John" and "Automan."

Although he and his synthesizers will travel, he prefers to work out of Summa Studios, owned by his manager Rick Stevens. It's stocked with recording equipment furnished by Stevens and also Fox's elaborate array of synthesizers. Recent projects include producing and playing on Cock Robin's new album, and producing a demo for new artist Bonnie Hayes.

Modern Recording & Music: How'd you get your first studio job with Norman Conners? Was it through your work at clubs?

Paul Fox: No, actually what happened was that I had a friend who was an engineer and his producer turned to him and said 'We need a synthesizer programmer; find me one!' So my friend called me one day and asked me if I could bring my Prophet V down to the studio.

MR&M: Thank God you were home.

PF: Exactly. It was like one of those Hollywood stories. I was programming for Sonny Burke and he asked me what I was doing the next day; he had booked a session and I ended up playing on it so it was kind of a snowball effect. At that time there were a lot of keyboard players who were really good keyboard players, but they didn't know that much about synthesizers. So producers would hire programmers to work and I got to work with a lot of the best keyboard players in town—Bobby Lyle, Greg Mathiason, Greg Phillinganes, Sonny Burke—they were just not really adept at programming, so I broke into the business by programming. I would make a point of playing (keyboards) during the breaks to make sure people knew that I could play and slowly I began getting more calls to play as well because it cost them less to hire one guy who could play and program than one programmer and a keyboardist.

MR&M: Sounds like a good way to win friends.

PF: Actually, it was really an attrition kind of thing because those guys were learning more and more about the synthesizers themselves and most of the time now Phillinganes and a lot of them will do their own programming and just bring me in to do specialty programming.

MR&M: Have you totally given up playing the acoustic piano?

PF: No, I still play it although I don't get a chance to do much recording with the acoustic because my reputation is more as a synthesist. I figured if I'm going to play music that's more commercial, I'd rather do something that to me feels like it's coming from the heart; more expressive. Which is why I chose the synthesizer because there weren't really any precedents in pop, the guys that were using it were still wide open...whereas piano wise (with jazz) there was already Bill Evans, Chick Corea, Herbie Hancock and Oscar Peterson and they all already played great. So I basically keep my piano playing for myself and I still write at the piano quite a bit. You should still be able to play a good song on the piano or the guitar without all the production.

MR&M: The majority of your work has been with black artists or dance oriented. Do you think that music is best suited for synthesizers or is that what you listened to when you were growing up?

PF: Both, I was in there right from the Beatles to the Four Tops and Temptation and Sam Cooke and Otis Redding. I think what happens is that most of the rock acts are self-contained. Most of your R&B acts, in terms of ones with vocalists, are not. What I've noticed is that you've got a lot more need for session work with R&B acts because you basically have a producer and a vocalist call in studio musicians to do the records whereas a rock band is already put together and will just call in musicians for special help.

MR&M: Having said that you work with a lot of R&B, you've also gone to the other end of the spectrum and worked with Motley Crue on "Shout at the Devil." How'd that come about?

PF: That connection came through my friend Jay Winding who had been working with producer Tom Werman. That was an example where there were no keyboards in the band and at first they didn't even really want to deal with them. The keyboards were used mostly for adding color to help make the record sound a certain way. If you listen to that record—or most of the cuts that have synthesizers—you can't really tell they're there because they're blended in with the guitars. But it just adds to the overall sound of the record.

MR&M: Most heavy metal bands rely on guitars and drums. Was the resistance you were met with overwhelming?

PF: At first, from what I understood, they were not thrilled with having keyboards for a couple of reasons. Number one, like you said, they're a guitar oriented band. Number two, they didn't want to come out with a change in their sound...To a certain extent there is a synthesizer backlash with the heavy metal audience. They're more gung-ho about the guitars and their attitude about new wave stuff is that it's done by a bunch of wimps. But Motley Crue turned out to be very nice guys and they were very bright. The guitar player and Nicky Six, the bass player, were involved in the studio and once we started doing stuff, they really got into it, Tom Werman ended up having to put the reins on all of us because we'd start doing things and Nicky would say 'this is great' and Tom would say 'No this isn't great, it's changing the sound of the group.'

MR&M: Which cuts did you play on and which synthesizer did you use to provide them with a subtle touch?

PF: Most of the album was done with the Prophet V and the Emulator. The kind of sounds we went for were almost guitar-like sounds; almost like a synthesizer brass sound but with a lot of filter on it so it had a lot of edge.

When you have a band like Motley Crue and you have basically drums, bass and guitars, you have a certain harmonic area of frequency range that these instruments occupy and what we did was to fill in the shading around those instruments so that when you go to mix the record, there's that quality of a blend that you can get between certain instruments. Overall, the synthesizers were pretty much tucked away; you don't hear it so much as feel it.

MR&M: Another band you worked with which probably wasn't too familiar with synthesizers was America. Did they call you in because they wanted to make their sound more current?

PF: I think it was the first time they'd used synthesizers. Richard (Burgess, one of the album's producers) was trying to capitalize on the vocal sound America already had, and also trying to present the band in a way that was a little more contemporary so that the music would blend in with what's happening on the radio right now.

On the song that I worked on we used a lot of voice type sounds out of the PPG Wave. Between Richard and

myself, we discussed the concept, which was to take their vocally oriented sound and enhance that with synthesizers. I enjoyed working with Richard very much. He introduced me to the SMPTE reading clock.

MR&M: How is that different from a SMPTE code?

PF: It used a SMPTE code to enable a synthesist to sync up different machines that have different codes. It's similar to what a Dr. Click does, but at the time it was the only unit. Now there are a couple of other units that do the same thing, but Richard brought that one over from England. He was also using Mitsubishi 32-track digital on that album and that was the first time I'd ever worked with that format.

MR&M: Lately you've also had quite a lot of work as an arranger. For example, you arranged several of the cuts on the new Commodores album. Did your arranging skills develop with your musicianship?

PF: Pretty much. When I was studying in school and when I was into jazz, I was writing and arranging for anywhere between eight and 20 pieces; I've always kind of had a sense of orchestration. But that was curtailed when I first started doing sessions because I was one of the last guys in; there would be a real rhythm section on the record and they'd bring in synthesizers just for the sweetening. Then with the onslaught of drum machines and synthesized bass and with all the sampling type instruments like the Emulator and the Fairlight, they're starting with the synthesist and having all the drums by machine, so now I'm the first guy to come in. On a lot of tracks, like Thelma Houston's next single "Generate Love," we cut all the drum machines, synthesizer bass, and keyboards and then we brought in Paul Jackson Jr. to play guitar and Nathan East to overdub bass so we had a real bass and a synthesizer bass.

MR&M: Why would you do that?

PF: Generally you bring in the guitar because there is still no instrument that can do exactly what a guitar player can—the sound, the nuances, you really cannot reproduce with a synthesizer—not for my money anyway. As far as the bass goes, there's still a certain sonic property of a real bass that makes it sound just that much better. A synthesizer bass can sometimes work on its own and sometimes adding a real bass to a synth bass produces the combination of a sound that you really can't discern. You know the instrument is a bass, but you can't really tell for sure, to me, it just makes for a better bottom on the record.

If it's a choice between a live musician and a synthesizer and the budget is there, I'd say hire the real guys because it's going to sound better if that's what you're looking for. Both drummers and string players feel that they may be put out of work. But with the new equipment, and I may be out of line here, if I were a drummer, I'd have a drum machine and know how to program (it).

MR&M: With the Pointer Sisters' "Breakout" album, all the tracks were completed with a LinnDrum that was then replaced by an Emulator. Now with the synthesist being one of the first musicians brought into the studio, do you think that would still happen?

PF: Probably not. I think that was Richard's (Perry, the album's producer) first album using a lot of machines and I think he was being exposed to synthesizers in a very concentrated way for the first time. When we programmed stuff for a cut that got pulled for "I'm So Excited" on the album, we used the Emulator. I was also called in for "Automatic." When Richard heard the drum sound I did. I had a few more options than the LinnDrum because I had sampled my own drum into the Emulator. The way I'd sampled things I had eight different pitch choices for every drum. When Perry heard the different sound possibilities I had with the Emulator, he just loved the sound, such as a snare drum sound that you just can't get in the LinnDrum. It's the Simmons drum as the source, but I programmed the Simmons drum myself and then when I put it into the Emulator, I had a choice of 24 differerent notes so you could find a pitch that blends perfectly with the track.

"Automatic" is a mixture of the Linn, Simmons and the Emulator. Richard was discovering things as we went along and he's the type producer that just takes the time to make the album sound right. So if he's already got something down, but he thinks he can take the time to make it sound better, he'll do it.

MR&M: On that album it seemed like every synthesizer and sampling machine known to man was used. How do you know what's right? Did Richard Perry tell you the sound he wanted and you'd run with it?

PF: Pretty much. What I've tried to do is build up a system where each instrument will not duplicate to any big degree what another one does, although they may partially overlap. At that time I had a Prophet, Jupiter 6 and 8 and the Emulator.

MR&M: What exactly does the Emulator do?

PF: It's basically the complete opposite of the other stuff mentioned. It's a sampling machine. It takes sounds that already exist and you can then record those sounds into the memory of the Emulator and then produce them on the keyboard. It's like using a very, very advanced tape deck.

MR&M: Isn't that cheating, if you use someone else's voice as the original material?

PF: Not really, it depends on what you're using and how you're using it; although it can resort to that. When sampling instruments first came out I had a little bit of a philosophical problem with them because to me I don't think the goal of the synthesist is to recreate sounds that already exist because they're not going to do it as well as the sounds that already exist. What I like to do is take a sound that already exists and use it in a way so that it becomes something else. With synthesizers in general what I like to do is create new sounds that give the listener some kind of emotional response; the same kind of emotional response he would have gotten listening to strings.

MR&M: You see no problem with both acoustic and synthesizers coexisting?

PF: No, I'm in the process of finding a balance between the two of them. I just finished producing some stuff where I cut all the tracks with a synthesizer and drum machines and a real guitar. Then I went back and put a bass and real drums on the track. This is a demo for Bonnie Hayes, the sister of Chris Hayes who plays with Huey Lewis. I just kind of stumbled on that, but the advantage was that by cutting all the tracks on machines I had a perfect time element—everything was cut to the machine so that the meters the players played in did not vary.

I'm not saying this works everytime but for this project it was the right way to go. You get so used to a drum machine sounding a certain way and then when you stick a real drummer with very good time on a track playing the same thing as the drum machine, it just sounds so much better.

MR&M: What about the theory that synthesizers put people out of work?

PF: That's a really tough question because I don't feel that's what these machines were meant to do. If it's a choice between a live musician and a synthesizer and the budget is there, I'd say hire the real guys because it's going to sound better if that's what you're looking for. Both drummers and string players feel that they may be put out of work. But with the new equipment, and I may be out of line here, if I were a drummer, I'd have a drum machine and know how to program [it]. A lot of the smart ones like Jeff Pocaro and John Robinson have done this. If you call them up and say "We need a drum machine, we don't want real drums,' they don't have to be a keyboard player to program a drum machine. As a drummer, I'd think you'd have an advantage over someone who isn't a drummer because you'd know the basics. I think the fully equipped 1980's studio drummer is going to have a real kit, a Simmons kit, and a drum machine so there's no excuse to say he lost his gig to some guy with a drum machine.

MR&M: What if the drums were done with an Emulator?

PF: It's the same kind of thing. The rock and roll drummer can take his own drums, make up some great drum sounds via a sequencer and with his Emulator. Now they're coming out with drum machines that will be able to sample drums. It comes down to how open minded you are about the new technology: if you're willing to learn about it and how much you're willing to spend to keep up with it. I think it's a matter of striking a balance. Right now we're in a stage of gimmickry. We're in the infancy where it's big fun for someone to turn on an Emulator and get a string sound out of it. In terms of the longevity of the instruments, I think that's just a period we're going through. I hope that ultimately the instruments will be used to produce beautiful and new sounds that are as important to pop music or any other kind of music as when the electric guitar came out in the 1950s and is now a standard...To me, it's so limiting to say 'Let's just try to imitate horns and strings.'

MR&M: Do you think someone could cut a pop album today without

Summa Inc.'s Equipment List

In today's professional music production, the interrelationship of synthesizer technology and computer/musical developments necessitate that the synthesizer musician and programmer have, at his disposal, the most up to date instruments and technology. The following significant keyboard instruments and equipment are a part of the Paul Fox equipment arsenal:

Synthesizers and Computer Musical Instruments:

Emulator EMU-1
Emulator EMU-2
Fairlight/CMI (With MIDI)
Oberheim Xpander
PPG Wave 2.2
Prophet-5
Mini-Moog
Roland Rack-Mount Vocoder
2 Yamaha DX-7 Synthesizers
Jupiter 6
Yamaha CX-5 Music Computer
Yamaha Rack Mounted DX-7 Module (8)

Sequencing & Timing Devices:

Linn 900 Drum Machine/32 Track Midi Sequencer
Dr. Click
MSQ 700 Sequencer
EMU 1 & 2 Sequencers
Yamaha CX 5 Music Computer
Fairlight/Page R Sequencer
LinnDrum Machine

Also Available:

AMS Digital Reverb
Roland Digital Delay (SDE 3000)
Bel Digital Delay (W/8 Seconds Sampling)
Dynotronics Tri-Stereo Chorus

CONTACT: Rick Stevens/Summa Entertainment Group Incorporated
8507 Sunset Boulevard/West Hollywood, California 90069
Telephone (213) 854-6300/Telex 882836 Summa Ent UD

I think it's up to people to expose their kids to good music, like classical and say this is one kind of music and here are some others. In a certain sense, pop music is the lowest denominator of all the musics of the world. Regardless of synthesizers, there are going to be people who think the new music is terrible and will want to play the old music. I think it all comes down to the song. If it's good music it's going to go on; if it's bad, it's going to be forgotten.

using synthesizers and have it be a commercial success?

PF: Yeah. I don't think John Cougar uses any. And the Honeydrippers' album used real strings. Although Mick Jagger has, I don't think the Rolling Stones have used them. So it's possible. There also could be a backlash against synthsizers. You get so used to hearing a Simmons; for a minute there was a Simmons drum on every record you heard and that was big fun for about a year. And then someone puts out a record with real drums and everybody gets excited about that because it sounds so different.

MR&M: What's your favorite synthesizer and why?

PF: Although it's not a synthesizer per se, my favorite instrument is MIDI. The way I use instruments is that I MIDI them all together, I may have a real string sound in the Fairlight and a real string sound in the Emulator but then I'll also add in another synthesizer and by the time I blend all the sounds together, you can't tell what I'm using. The ability to be able to hook up different sounding synthesizers with each other like with MIDI and construct an overall sound by using the best properties of each is the biggest leap we've taken.

My new favorite is the DX 7. I also love the Roland Jupiter synthesizers and the Minimoog. But if I were going to walk into a session and was told to take just one synthesizer, I'd take the Prophet V because I know it better than any synthesizer.

MR&M: When you speak of all this technology, I start to worry that I'll never hear a real live violin again.

PF: I think it's healthy to react to it; if people don't react that's where the danger is. I think it's up to people to expose their kids to good music, like classical and say this is one kind of music and here are some others. In a certain sense, pop music is the lowest common denominator of all the musics of the world. Regardless of synthesizers, there are going to be people who think the new music is terrible and will want to play the old music. I think it all comes down to the song. If it's good music it's going to go on; if it's bad, it's going to be forgotten.

MR&M: What type of equipment has Rick stocked your studio with?

PF: What we have is a 24-track studio. At the present time we have an Amek-Tac Matchless console which is in the $20,000 neighborhood, it's not fullblown like a NEVE or SSL, but it's quite adequate for synthesizers because it's very clean. We're in the process of updating to a Trident Series 80 console which is more like what you'd find in a fully professional studio, because we also rent Summa out. We have a unique situation of a studio based around synthesizers; an all direct studio. In other words, we don't have a live room. We can't record drums, but we can do vocals and guitars because we have a room big enough to do that.

We have an MCI Transformerless Machine 24-track and a lot of state-of-the-art outboard gear which is really what allows us to make high quality masters in here. We have an AMS digital reverb, a digital delay, two Roland SD 3000 digital delays, an Eventide harmonizer, a dbx 160 limiter, a Roland vocoder and Lexicon 224X digital reverb, so there's a lot there, including all my keyboards. Everything is patched in.

When I get my eight DX 7 racks, we're talking about having close to 17 or 18 synthesizers available and a board and there's room for about five or six people to work comfortably in the room. Cock Robin did about 90 percent of their synthesizer overdubs there. I've been co-producing McFadden and Whitehead's latest record and we did virtually 60 to 70 percent of the record here because I did use some live tracks.

If someone wants to sweeten a track they've already cut with a synth, they can come here and pay a lot less money than if they were to go into a Record Plant or a Sound Castle. So producers can bring their masters here; they don't have to pay a cartage fee because everything's already set up. If you pay for a day's rate, you basically get a 24-hour day. You're saving a lot of money on studio time and we include the Fairlight, two DX-7s and the Jupiter 6 with the studio.

MR&M: With the advent of synthesizers and relatively cheap four-tracks people are beginning to put out more albums by themselves. Where does that leave you and do you think it's quality stuff?

PF: I think it's generating more quality. Bruce Springsteen's "Nebraska" is a case in point. Any artist has those moments of creativity when the muse taps you in the middle of the night and says 'Wake Up.' If Bruce can sit there with no one around and pop on a tape recorder with a pretty good quality sound so he can sing and play something that may be turned into a record, I think that keeps you closer to the magic of the moment.

brian battles

Ad Ventures

I write, produce, supervise, and voice hundreds of radio and television spots and over the years I've worked with dozens of advertisers and agencies. Somehow I'm still relatively sane. Many books and articles have been written on the subject of broadcast advertising, but the goals are always the same: advertisers want to increase their prestige and make more money. Your job, therefore, is to massage their egos and help them appeal to vast masses of people. If you've tried to record songs aimed for the Top Ten, you'll see the similarities.

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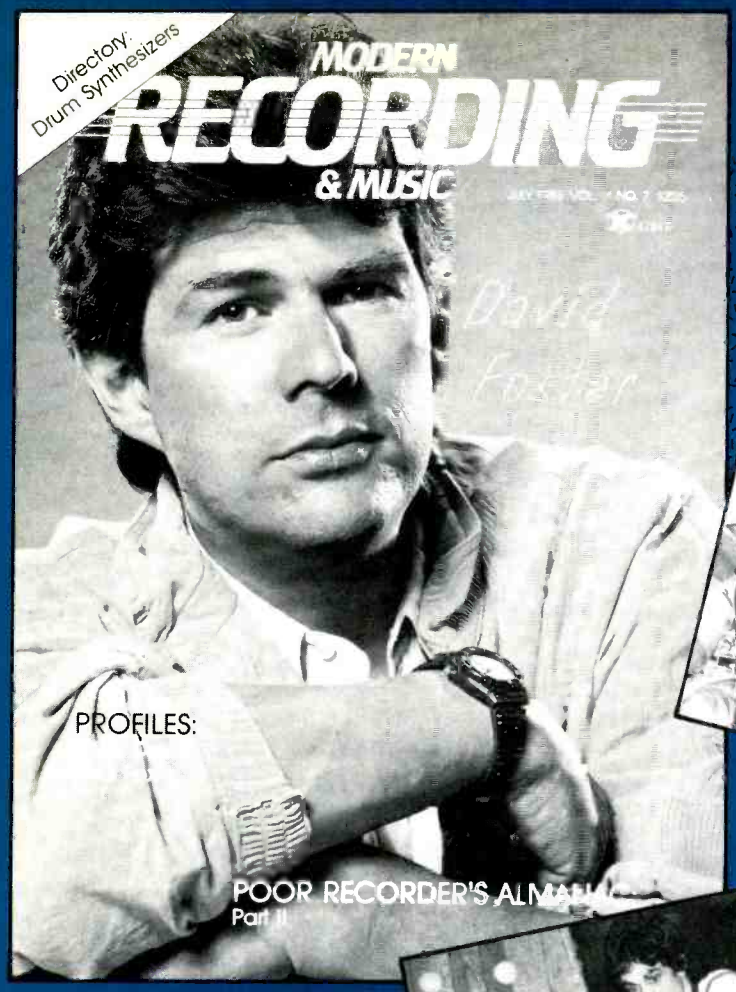
How do commercials get to your ears? It's a strange, esoteric, arcane, and perverse process called a business transaction. The majority of commercials blasting from your radio are created in the following manner: the merchant is contacted by a sales representative from a station and persuaded to buy air time, then he gives the station the basic points he wants included in his ads. These include not only his type of business, its location, hours of operation, phone number, and various sale items and prices, but often his name, his wife's name, how many years he's been around, why he feels that his place has better merchandise than the place down the street that sells the same thing cheaper, his dog's name, some type of catchy slogan like "You've tried the rest, now try the best," his nickname, and other essential details. Next, someone takes these facts and writes the script, or *copy* (usually the continuity director, production director, sales representative, announcer, the merchant himself, or his brother-in-law who used to be a disc jockey in college), then one of the station's staff announcers goes into the station's production room, digs through a beat-up stack of relatively unknown instrumental or jazz albums, or perhaps the station's library of groovy prepackaged production music tracks, until he finds what he thinks is a suitable piece of background music, or *bed*, then he records himself reading the copy over the music bed. The advertiser hears his spot played for him over the phone from the station or the salesperson brings a muddy cassette to his place of business. After he has ordered the usual four or five revisions and gives his approval of the final version it goes on the air according to how many times he's paid to have it run. This seems just peachy to the average businessman because he has no idea that it can be done any other way, or he feels that professionally-produced commercials are too involved or expensive. Here's where you come in. If you can convince a committed advertiser that your studio can create a sharp, high-quality ad at a cheap price, it's time to hire yourself a first-class accountant and get ready to start bringing in the big bucks. A good CPA can also show you how to take a fat deduction on your Golden Shovel.

Beginning with this issue you'll get the opportunity to apply some techniques for creating revenue by using your recording studio to produce commercials. Radio and television jingles, music beds, and voice-over work may never have occurred to you to be a realistic means of generating much of an income, but that's only because you've probably thought you were above prostituting yourself by cranking out amoral propaganda. As a dedicated capitalist, however, you can easily rise above this ethical silliness and get to work. Many skilled recordists and producers throughout the country spend large sums of money building and constantly upgrading their facilities without a reliable source of funds. They just hire themselves out to musicians under the impression that their studio will earn a few dollars per hour cutting demos and limited-release records for local artists, hoping that someday a few of their clients will make it big and give the studio the professional reputation needed to draw high-paying "name" musicians. This is not only a method of building prestige and generating income, it is also a very efficient way to go broke. Writing, arranging, and producing commercials is a lucrative business, and nearly every multi-track recording operation is already equipped with the basic tools necessary for success in this arena.

If you'd like to explore the possibility of using your studio as a tool for putting together radio and TV commercials, *Ad Ventures* will serve as a guide. I'll discuss the type of equipment your facility should have, how to do your own local market research to get started, identifying and approaching prospective clients, putting together your studio's demo tape and resume, the types of commercials you might work on, a brief look at the terminology and techniques you'll encounter, as well as tips on your presentation, selling, budget and finance, and even thoughts about opening up your very own advertising agency.

Your feedback is encouraged, and I'll try to keep a straight face if I address any specific queries.



The Technology of Tomorrow... Today!

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Product Profile: The Kramer-Ripley Stereo Guitar

The recently unveiled Kramer-Ripley Stereo Guitar might prove to be a real breakthrough in the multitrack recording of guitars. When tracking a guitar in stereo, or doing overdubs, precision is of essence. With the Ripley Stereo Guitar, all one must do is appropriately pan each string to get the desired stereo effect.

The pickups used are six channel humbucking pickups, and each string has its own preamp and pan pot. There is also a master volume and a tone control. A stereo guitar cord is used to connect the guitar to a passive splitter box. Two standard mono cords then connect each channel (left and right) to their respective amps. Ideally, the amps should be identical with identical settings and any effects or processing one channel goes through should be duplicated on the other.

When properly set up, the sound produced by the guitar is great. With progressive panning (low E hard left, gradually up to high E hard right) and a widely spaced pair of amps, one gets the image of a wall of six amps.

Panning the strings alternatively —E left, A right, D left, etc —gives the ability to play "twin" guitar parts, since notes on adjacent strings gives the impression of two players playing in harmony.

Another dramatic panning method is to pan low E a bit left and A a bit right. The remainder of the strings are then panned gradually from hard left to hard right. This causes the rhythm line (on the low strings) to sound big and full, and the melody to shine out as an entirely different instrument.

The concept is the brain child of veteran guitarist Steve Ripley. Steve's background includes being an independent engineer and producer in Oklahoma as well as being Leon Russell's personal engineer. Steve also toured as guitarist with Bob Dylan.

According to Steve, "I was looking for a way to record guitar in stereo with the same type of natural stereophonic spread a grand piano has." He then experimented with the idea and chopped up his Fender Telecaster to put in a custom made six channel pickup. He played the guitar into a Tapco mixer and then into two amps. After two years and tens of thousands of dollars, Steve came up with the prototype of the current guitar. Steve originally conceived the guitar as a studio guitar, but since it's so flexible, it can be used as a live performance guitar.

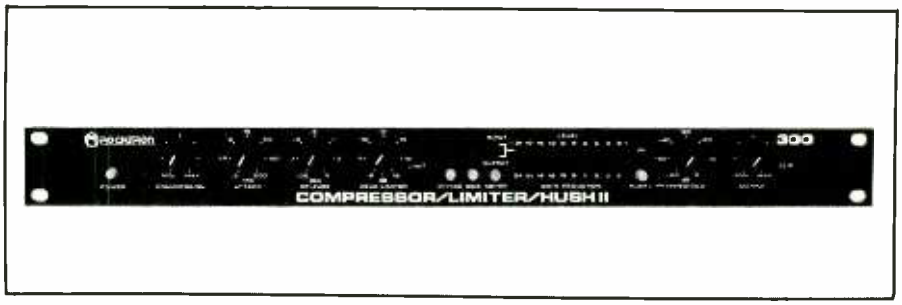
Since the guitar was so unique, Steve spent five years trying to contact Eddie Van Halen so he could use the guitar. After unsuccessfully trying to contact Van Halen, a break came when a mutual contact gave Eddie a Ripley Guitar brochure and Eddie called him. Although the guitar is a total departure from what Eddie usually uses, Eddie loves it. In fact, he used the guitar on the song, "Top Jimmy," from the *1984* album.

Steve Ripley has made and sold guitars under his own name and thanks to Eddie Van Halen, he now is working with Kramer Guitars. This will only prove to make his guitars more accessible and visible to the public. In coming months you can look forward to a feature interview with this multi-talented guitarist/engineer/producer/inventor.

The Market Place

what's new in sound and music

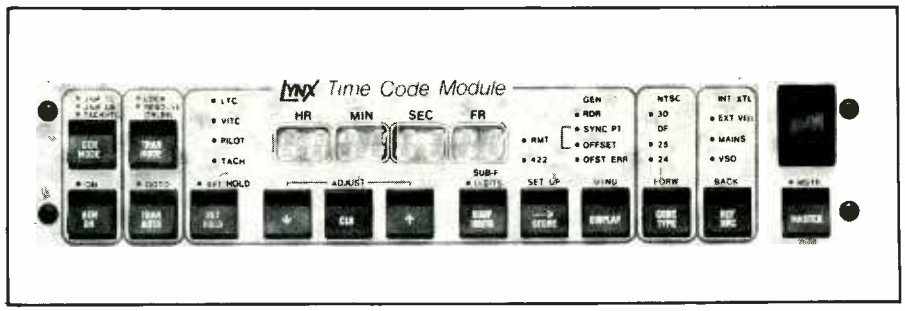
NEW ROCKTRON COMPRESSOR



The Rocktron Corp. Model 300 compressor provides a combination of compressor/peak limiter/Hush II (noise reduction). Rocktron has built its patent pending Hush II noise reduction right into the package, making the Model 300 the only compressor/limiter to feature dynamic filtering and low level expansion, solving the problems encountered in many compressor/limiter applications. In applications where maximum gain reduction is required, other compressors fall short, suffering from an increase, and modulation, of the noise floor. By incorporating their unique Hush II noise reduction, they've eliminated the problem, providing the ultimate in quiet compression. The model 300 provides program dependent logarithmic compression, offering the smoothest transition into compression. The compression adjustment simultaneously controls the threshold of compression and input level to maintain a constant output level independent of the amount of gain reduction used. When the input signal level exceeds the threshold, gain reduction begins and logarithmically increases in relation to the input signal level. The Model 300 simultaneously performs the functions of compression, peak limiting, low level expansion, and dynamic filtering. This unit offers frequency dependent limiting/compression. Upon insertion of an outboard equalizer into the side chain input, the Model 300 becomes a very effective de-esser, and can also be used as a pre-emphasis compensated limiter. The unit utilizes two independent ten element LED meters, providing constant monitor of the amount of gain reduction in use and selectable input/output level. A clip indicator is provided to indicate if the maximum input/output level is exceeded and a limit LED indicates peak limiting. The suggested retail price of the Model 300 is $429.00.

Circle 40 on Reader Service Card

TIMELINE TIMECODE MODULE



A new concept in SMPTE timecode equipment, the TimeLine LYNX timecode module incorporates the three elements of a complete timecode system in a single half rack enclosure. Each LYNX module contains an independent time code generator, a wide band timecode reader (to 60x speed), and a transport synchronizer with built-in parallel interface. To function as a high performance chase synchronizing system, one module is connected to each controlled transport. Up to 32 modules/transports can be on line simultaneously. The system features the unusual ability to freely select any machine as the current timecode "master," and to take machines on and off line without regard to hierarchy. Also featured is an RS422 serial port for external computer control, and for interconnecting to the forthcoming LYNX timecode controller. The LYNX system is compatible with all worldwide timecode standards, and comes complete with self contained power supply which operates from 100-250 VAC, 50/60 Hz. Suggested retail price for the module is $2,450.

Circle 41 on Reader Service Card

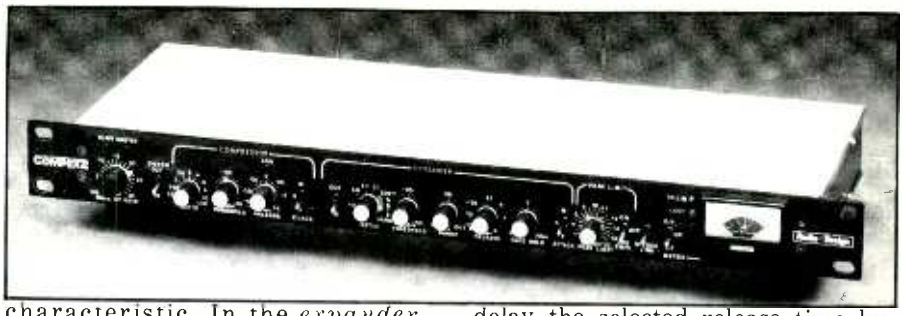
NADY CORDLESS HEADPHONE SYSTEM

Nady's infrared cordless stereo headphone system allows studio musicians to monitor through a high-fidelity headphone without the restriction of headphone cords. The system works with any audio source, and has a range of about 35 feet. The system consists of an infrared transmitter, model IRT-200, and an infrared headphone/receiver, model IRH-210. Special transmitter units are available from the factory to provide more coverage in large or oddly-shaped rooms. These transmitters are series-linked in a master/slave arrangement. The headphone/receiver has a frequency response of 50 to 15,000 Hz, and is powered by a single 9V battery. The transmitter is AC powered, and plugs directly into any audio output, sending out high-quality audio, including perfectly separated stereo. The infrared light signal, which transmits the audio information usually carried by a cord, is picked up by an infrared sensor on top of the lightweight headphones. The reception zone is 360 degrees, so the wearer has complete freedom of movement. Any number of receiver/headphones can be used in an area. The system retails for about $150.

Circle 42 on Reader Service Card

AUDIO + DESIGN'S COMPEX 2 LIMITER-COMPRESSOR-EXPANDER-GATE

Audio + Design's new Complex 2 offers separate *compression, expansion-gating,* as well as overall *peak limiting;* but does so with an extension of softer ratios and thresholds to -60 dB below normal operating levels—thus wide dynamic programs can be processed in a subtle manner throughout the program with ratios as low as 1.25:1. Other features include a choice of Log/Lin (logarithmic/linear) release times, plus a unique AGC Auto Release



characteristic. In the *expander* section the ratio may be continuously varied from 1:1.2 plus *auto* mode for use with wide band material. A further function of the Expander Gate Section, is the *gate-hold* circuit which can be triggered to delay the selected release time by anything up to 2 seconds. This allows a fast release to be used and a selected beat sequence to be repeated through the rating *window.*

Circle 43 on Reader Service Card

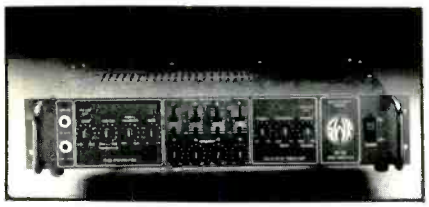
RAPID SYSTEMS FFT ANALYZER

Rapid Systems' new Spectrum FFT Analyzer Peripheral for IBM, Apple and Commodore personal computers provides the frequency resolution of analyzers costing thousands of dollars more. Applications include signal analysis, FFT, vibration analysis, transient analysis, frequency counting, chromatography, and ultrasound and audio analysis. Standard features offer a variable order of Fast Fourier Transform, in sizes from 16, 32, and up to 1024 points. Sample frequency choices range from 100 Hz to 500 kHz and input voltage choices (peak to peak) from 1.6 volts to 320 volts. Speed is 30 seconds for a 256 point FFT on the IBM and longer on the Apple and Commodore, depending on transform size (includes time to collect data, perform analysis and plot spectra). Also featured are: selectable time window, rectangular or Hanning; baseband or Venier band operation, with user's analog antialiasing filters; voltage and power spectrum computation; power spectrum averaging; high resolution display formats for spectral amplitude; and one keystroke printer operation for hard-copies of spectrum data. Plus all the post processing capabilities of the computer are available—to store and retrieve spectral analysis from disk, allowing the user to analyze and process the information, and to compute and word process. Additionally, the Spectrum Analyzer Peripheral provides the user with all the capabilities of a powerful 4-channel digital oscilloscope, with 2 MHz sampling rate, 500 kHz analog band width and diode protection on all inputs. Graphics display is color enhanced, using up to 138x288 pixels for data display (up to four traces)

and four lines of text for initial (default) values of the scopes parameters. A fast, informative menu driven operation provides keyboard control of gain parameters for channels A, B, C, D, time base values, number of channels and trigger mode. Peripheral includes data acquisition hardware, all connections to personal computer and software disk. The Rapid Systems Spectrum Analyzer Peripheral is available for the IBM PC and XT, and the Apple II and IIe for $648 for the Commodore-64 and SX-64 is $548.

Circle 44 on Reader Service Card

SWR ENGINEERING BASS AMPLIFIER



SWR Engineering's new model PB-200 include an all *tube* preamp section, variable limiter, an Aural Enhancer, bass and treble controls and a footswitchable, *variable* frequency graphic equalizer for tone shaping. Gain and master volume controls set listening levels. Back panel switches include two effects loops, a balanced line or direct XLR out, a variable crossover for bi-amping and two speaker jacks that are powered by a 200 watt power amp. Housed in a double space rack mountable aluminum chassis, the PB-200 weighs 13 pounds and is only 8½-in. deep. Retail price is $799.

Circle 45 on Reader Service Card

STUDER ANALOG MASTERING RECORDER

An all new recorder from top to bottom, the Studer A820 presents significant advancements in tape transport mechanics, microprocessor-based control systems, and audio electronics design. The A820 offers four tape speeds (3.75, 7.5, 15 and 30 ips) and is currently available in ¼-in. mono and stereo formats. Other configurations, including center track time code and ½-in. two-track, will be available in mid-1985. The A820's die-cast transport chassis serves as a stable base for two DC spooling motors and a new Hall-commutated DC capstan motor. The pinch roller assembly is positioned by two microprocessor controlled stepping motors for smooth, silent operation. The die-cast, plug-in headblock has improved shielding and built-in preamplifier; each headblock format has an identification module to automatically access the correct pre-programmed audio parameters. The wide transport deck easily accommodates 14-in. reels. The transport control electronics of the A820 represent a dramatic departure from earlier designs. A820 operating features are controlled by a network of microprocessor-based sub-systems, allowing software control of virtually all transport parameters. Approximately 40 different user-programmable functions may be assigned to various keys, including address locate (5 memories), roll back with programmable time, locate start, zero locate, tape dump, reverse play, library wind, and vari-speed. Tape handling is gentle and precise. For smooth starts, the capstan begins rotation (on a defined acceleration ramp) only after the pinch roller has engaged. A closed loop servo system for the spooling motors constantly monitors reel inertia for optimum acceleration and braking characteristics. Tape tensions may be software programmed and stored. A dual thumbwheel control facilitates efficient tape-cut editing. One thumbwheel fast winds the tape in either direction at increasing speeds, while the other precisely positions the tape for an edit. The audio electronics of the A820, incorporating the latest advancements in phase compensated amplifier technology, are available with transformer or transformerless inputs and outputs. All audio parameters are stored in non-volatile digital memory, with ample storage provided for various tape speeds, tape formulations, and headblock formats. Options available include a RS 232/422 serial interface and center track SMPTE time code channel. When equipped with these options, the A820 is ideal for use in sophisticated audio/video post-production applications. A standard version two-track stereo A820 with console and meter overbridge has a list price of $9,900.

Circle 46 on Reader Service Card

INFINITY RS11 MINI REFERENCE MONITOR

Infinity System's new RS11 is a compact high fidelity loudspeaker also ideal as a mini reference monitor in recording and broadcast studio applications. The RS11 is acoustically designed for accurate, clear sound reproduction, while its ultra small dimensions allow for easy placement adjacent to recording consoles, or other locations where space may be limited. Constructed of durable high grade materials, the RS11's componentry consists of a 4-in. polypropylene low frequency driver, and a 1½-in. polycarbonate tweeter. Crossover is achieved by a sophisticated frequency dividing network which provides phase linearity and an overall smooth response. The specifications for the RS11 are: a power handling capability of 50 watts with a sensitivity of 87 dB; 1 W; and an operating impedance of 6 to 8 ohms. The frequency response is 75 Hz to 23 kHz, ±3 dB and the dimensions

are 12-in. × 5¾-in. × 7½-in. deep. The RS11 comes with a net weight per speaker of 6 lbs. and is priced at $112 per pair.

Circle 47 on Reader Service Card

AUDIO-TECHNICA MIXER/RECORDER

Audio-Technica US, Inc., has introduced a new mixer recorder, the model AT-RMX64, at the recent 1985 NAB show. At the heart of the new product is a full-featured, 6-input mixer, coupled with a 3-motor direct-drive cassette recorder. The AT-RMX64 is designed to accommodate any microphone or direct input, including low impedance balanced professional microphones requiring 48V phantom power. A total of 60 dB of available input attenuation guards against overloading. Two-band parametric equalization is available on each input, with choice of shelving or peak/dip control and continuously variable frequency and gain controls. Two auxiliary sends are included, switchable from pre-EQ and fader to post EQ and fader. Returns have individual volume controls, and all inputs and returns can be assigned as desired. Each input can also be sent to any of four sub masters. SOLO switches permit monitoring any input or return regardless of fader settings. With 72 dB of gain available in the mixer, the AT-RMX64 easily drives power amplifiers or outboard gear. Separate monitor and house mixes are readily available to the user, with flexibility which rivals dedicated performance mixers. The

unit is capable of making 4-track tapes at 3¾-ips speed for use as demos, or 1⅞-ips 2-track tapes compatible with all standard cassette units. Providing punch-in/punch-out capability, variable pitch control Dolby Band C-type noise reduction and individual track recording, the AT-RMX64 permits songwriters and musicians to create high quality demo tapes from virtually any source. The result can be mixed down to two channels, playable on any standard tape recorder. Four VU meters plus an overload LED assist in controlling each output channel. In addition, the Solo bus is visually monitored by a 7-element LED display. A choice of headphone outputs adds to the overall flexibility of the AT-RMX64. The recommended resale price of the ATRMX64 is $1,495.

Circle 48 on Reader Service Card

1/4 Notes

MAKING TRACKS

At Criteria Recording Studios in Miami, **The Romantics** have been completing tracks for their upcoming album. Co-producing and engineering are Gordon Fordyce and Peter Solley. Assisting on the project is Dave Axelbaum. **Air Supply** was recently in working on vocals for their upcoming LP. Mike Fuller was at the board and Bob Ezrin produced... **Blue Oyster Cult** has been at Bearsville Recording Studio in New York working on their new LP for CBS Records, with Sandy Pearlman producing and Toby Scott engineering. Hard rockers, **Icon,** were in mixing their newest LP with veteran Eddie Kramer producing and Mark McKenna and Chris Isca engineering... At Soundshop Recording Studios in Nashville **Ronnie Mcdowell** and **Buddy Killen** produced "One Big Family" to aid the World Hunger Fund. A video of the session was also done. Buddy Killen is also producing the new **Exile** album with Pat McMakin engineering... At Philadelphia's Kajem Recording Studios, Alan St. Jon (of the Billy Squire Band) has been recording and mixing a self produced LP. Mitch Goldfarb is engineering... **Nile Rodgers** was producing tracks for **Teddy Pendergrass** for Paramount Pictures with James Farber engineering... At Power Play Studios in New York, Bruce Forrest from Atco Records was in to do 7-in. and 12-in. remixes of **Nomo's** new release, "Red Lipstick." The single is being produced by Dick Rudolph and mixed by Julian Herzfeld... Master Sound Studios in Atlanta, GA recently finished work on a project for the band of The US Air Force Reserve. Included in the session were a 40 piece concert band, a dixieland band, a bagpipe ensemble, and a rock band. The recording utilized a Sony PCM 3324 multitrack recorder and a Mitsubishi X-80 2-track recorder. Also at Master Sound, Atlantic Recording artists, **First Love,** a Chicago-based group, completed work on a single. The session was co-produced by **Jason Bryant** of the S.O.S. Band, and **Bernie McLean,** of the Creative Entertainment Corp., Chicago, IL... **UCA Recording** in Utica, NY, has just completed a year long renovation of its facility to now offer 24-track recording. The equipment inventory now includes a 3M-79 24-track tape machine, an Amek 'Angela' console, a Lexicon 224XL digital reverb with LARC, an EMT 140, a Lexicon Prime Time digital delay, and a large collection of state-of-the-art outboard gear. The renovations also included remodeling to provide lodging for out of town clients... At New York's Boogie Hotel, **John Waite** was recording his forthcoming album for EMI Records. The project was co-produced by Stephan Galfas and John Waite. Galfas shared the engineering with Chris Isca. Manhattan Records recording artists, **Doppelganger,** worked on a forthcoming release with engineer/producer John Potoker, and was assisted by Mike Larkin. Upcoming projects include **Honeymoon Suite** recording their new album for Warner Brothers Canada with producer Tom Treumuth and engineer Frank Fillipetti...

MISCELLANY

Le Mobile, the remote recording and mixing truck is moving its base from New York to LA. Le Mobile is the only remote truck in North America with a Necam-automated Neve console and dual Studer A800 24-track recorders. The truck will still be available for projects throughout the US and Canada. Recent projects handled by le Mobile were the **Prince/Shiela E.** concert in Houston, **Triumph** and **Hall & Oates** LA shows, and John Fogerty's live video shot... **David Bowie** has been signed to star in a new fantasy film, "Labryinth," in a role written for him. He will be one of only two live actors appearing in the film. Bowie will perform in "Labryinth," as well as write the songs...

& MUSIC...

TOM ROBINSON: Hope And Glory
[Produced by Robin Millar and Tom Robinson; engineered by Mike Pela, Dennis Weinreich; additional engineering by Alastair Houston, Johnny Schinas; originally mastered by Greg Fulginiti at Artisan Recorders; recorded at Power Plant, London, Redan Recorders, London and Windmill Lane, Dublin.] Geffen GHS 24053.

Recording: **Homogenous**
Performance: **Frothy**

Throwing off the spiky exuberance of 1980's *Sector 27* and the moody simplicity of 1982's *North By Northwest*, the outspoken Robinson teams up with producer Robin Millar for a polished about-face in musical direction. Created with lusher arrangements and fuller instrumentation, the songs, I report with more regret than relief, no longer sound like rugby team cheers led by an optimistic captain.

Deeper, more even-tempered, Robinson's voice is, at times, buried in layers of brass and synthesizer but still projects lyrically to penetrate the weak cracks of machismo, to solidify the strengths of vulnerability, and to decry war.

Although he has kept some tried-and-true, reggae-inspired song structures, Robinson ventures into new musical territory on this album, most of it mellower than any previously explored. The walking bass line with syncopated high-hat on the title track, and the up-front vocal on the hit "War Baby" lean toward easy jazz, and the bass-sax duet at the end of "Old Friend," Robinson's strongest ballad yet, reflects a classical influence.

It's strange to see how much effort has gone into sanding Tom's endearing rough edges down. The saxophone, once rock n' roll's saucy rebel, is omnipresent on *Hope And Glory*, but its presence only serves as a sedative.

With its homogenizing orchestra and polished solos, the album is deprived of an interplay of dynamics which quicken the pulse. The mixing board, rather than the musicians, is responsible for conveying intensity here, and it goes against the grain of Robinson's heartfelt observations which deserve clear, undetracting production. In cases where an echo strives to accentuate an emotion, a whisper or a scream, untampered with, would prove more effective.

It's clear that Robinson, unfortunately relegated to cult status, has chosen to gamble his rough-and-ready following for a rivulet in the mainstream. I hope he manages to reach his goal with a full crew of old and new fans on board.

susan borey

FIONA: *Fiona*. [Produced by Peppi Marchello; engineered by Mike Scott and Brian McGee; Wizard Recording Studios, Briarcliff Manor, N.Y., and The Hit Factory, New York. Atlantic 7 81242-1]

Performance: **Scorching and gutsy**
Recording: **Lively and exciting**

Fiona has literally arrived from out of nowhere, (well, actually New Jersey), and is starting to take over the airwaves with her very first single, "Talk To Me," from this debut album.

Fiona can be stereotyped as the next Pat Benetar. Or the next Ann Wilson. Or the next Patty Smyth. You get the idea. Fiona Flanagan combines elements from the styles of all the fem rockers, and adds a few of her own, to create a record that is exciting and refreshing from start to finish.

The Lass' strong, powerful and piercing vocals are mixed up front throughout the recording, and although clarity is sometimes lost in the high end, her voice blends nicely with the melody instruments. The keyboards and guitars also blend together well and add character to the overdubbed distorted guitar on

"You're No Angel," which features bright and full back-up vocals that shine right through the powerful rhythms. The strong, crisp bass techniques of Donnie Kisselbach complement the dynamic, well balanced drumming of Joe Franco. The addition of some electronic drums to his kit creates a more textured finish to the well balanced drum sound.

The epic ballad "Love Makes You Blind" really hits home as clean, full synthesizer overdubs adds to Ms. Flanagan's gutsy, raspy voice. On this cut, the vocals are recorded with a 'rough edge' that makes Fiona sound almost like Janis Joplin.

Although most of the recording has little stereo panning, "The Na Na Song" features a well panned acoustic sounding guitar into by guitarist Bobby Messano. During the very textured build-up into the chorus, more and more vocal overdubs (mostly Fiona's) seem to enter from nowhere. Throughout the chorus, a barely audible overdubbed track of Fiona's unbelievably powerful vocal chords literally push the lead vocal track right out of the speakers. Despite the fact that the overdubs in the chorus are superbly done, during the verse the lead vocal track could have been placed more prominently in the mix, as it sometimes becomes too sound distant.

The hit "Talk To Me" features an incredible sax solo by Rick Bell, and the sound is warm and bright. Only a hint of echo gives the sax a 'homey feel.'

Throughout the LP, the vocals are rough sounding (in a good way) and only a hint of echo is used. In some key spots, an over-reliance of reverb seems to make the sound muddy, but all in all this is a good recording. And the catchy rhythms and fine vocals make this a stimulating record.

—sammy caine

BIG COUNTRY: Steeltown
[Produced by Steve Lillywhite; engineered by Will Gosling; recorded at Polar Studios, Stockholm and Rak Studios, London; mixed at Rak Studios, London and Roundhouse Studios, London; mastered by Greg Calbi at Sterling Sound, New York.]
Mercury 822 831-1 M-1.

Performance: **Inspired**
Recording: **The Right Stuff**

Big Country's music is firmly rooted in traditional Scottish and Irish folk sensibility. It has the characteristic soaring accompaniment (with guitars replacing bagpipes), percussion that is straightforward and nearly martial in tone, and terse, smooth melodies sung by a voice that combines reservation with smoldering passion. However, because of its pace and, more importantly, the treatment of the drums, it never subsides into folk music; it projects a tougher exterior.

In keeping with the themes of the lyrics, which cover the problems that result from post-industrial decline and rising militarism, producer Lillywhite had taken care to keep an edge on the potentially gentle music. The drums are pushed forward in the mix; their low and mid range is accentuated. The timbre is not unlike a strong heartbeat, and it's proper that this symbolic pulse of optimism should have overriding prominence.

The guitars create a variety of textures. Power chords drone on "Flame Of The West," making a cloak of sound against which a treble-edged solo is sharply outlined. Two guitars weave a duet of single notes into a counter-melody on the title track, and create a delicate backdrop for feminine sentiment ("Come Back To Me"). On "Tall Ships Go," the guitar's melodic theme is prominent, and runs throughout the entire song. However, it doesn't recede when the vocal comes in; it occupies a secondary position which shifts with the listener's perspective.

Stuart Adamson's vocals are not spotlighted, they blend with the instruments, and you need to strain to catch the lyrics. With the high end rolled off, the vocals are further muted, and sometimes lose a sense of immediacy, although the honesty and passion still shine through. This effect is even further heightened by a slight delay imposed between the lead vocal and harmony, which also gives a dreamlike depth to the presence of more than one voice.

susan borey

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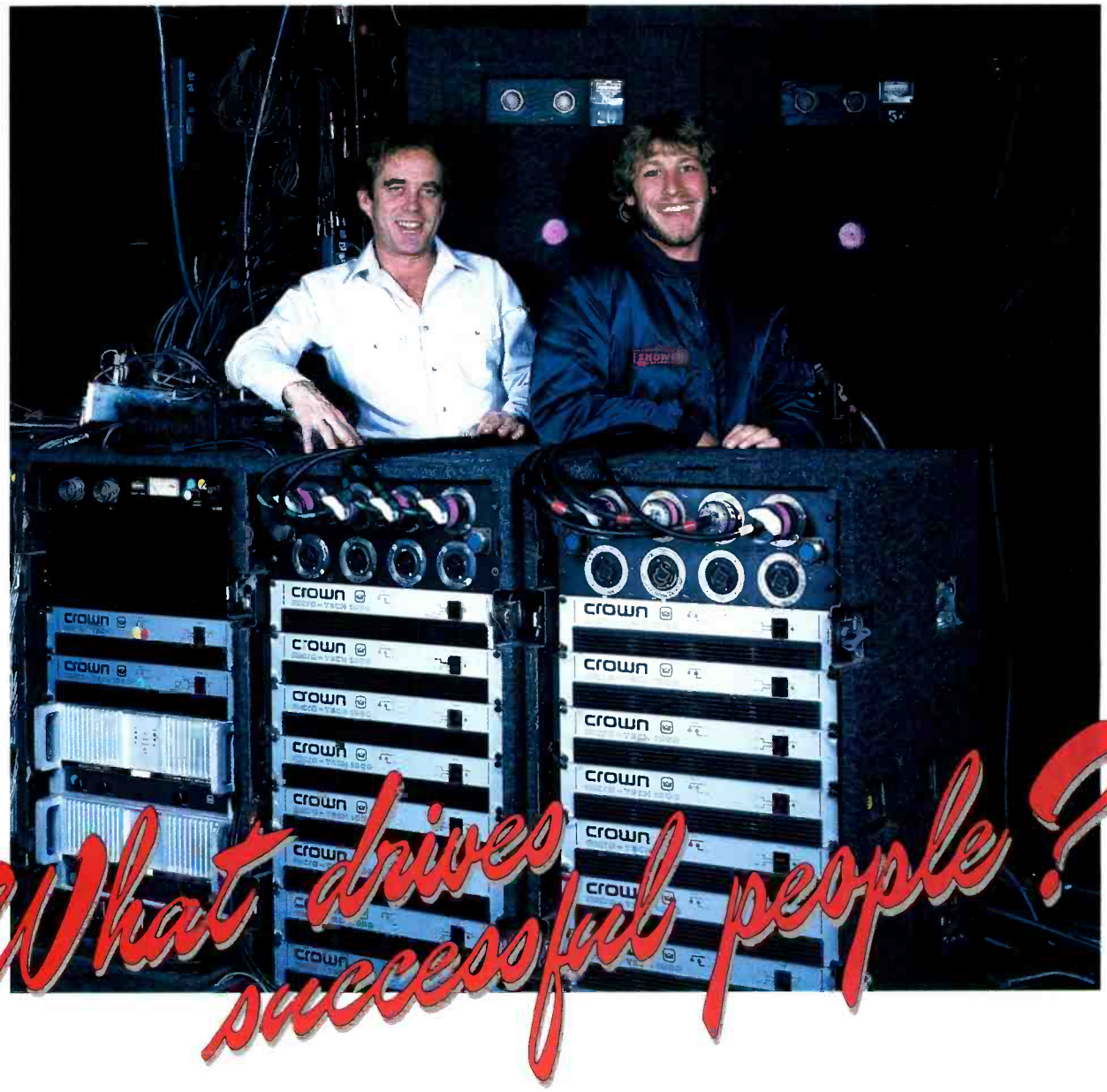

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