

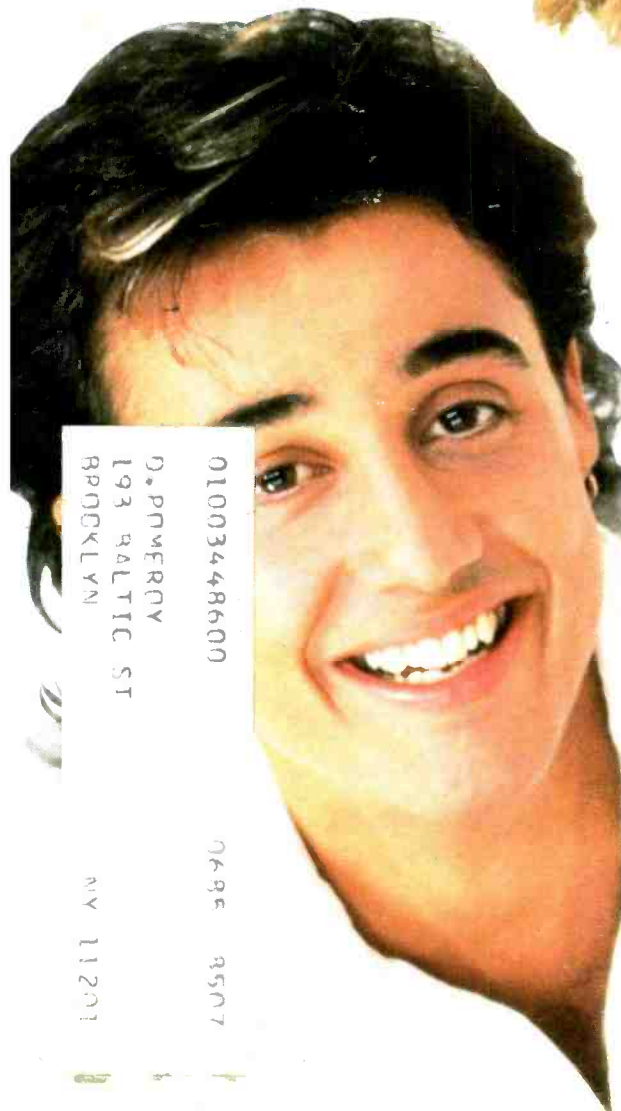
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JUNE 1985 VOL. 11 NO. 6 \$2.25

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PROFILES:
Rick Davies
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MUSICIAN'S NOTEBOOK:
The Oberheim Xpander

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Photo by Glen LaFerman



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MODERN RECORDING & MUSIC

JUNE 1985
VOL. 11 NO. 6

FEATURES

16 DAN HARTMAN: AN INSTANT REPLAY OF SUCCESS

by Jimmy Guterman

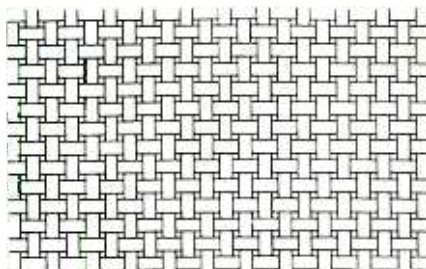
Last year Dan Hartman made quite a comeback returning to the charts with "I Can Dream About You," a hit tune that made it big from last summer's *Streets of Fire* soundtrack. At the time that *MR&M* goes to press, Dan Hartman is rehearsing for his first tour in a decade! *MR&M* met with Dan in late March to discuss his career up to this point and what he's looking forward to in the future.



22 RICK DAVIES: BOUND TO GET FUNKY

by Susan Borey

Supertramp, categorized as a "sophisto-rock" band, is bound to have a new sound now that half of its original songwriting team (Roger Hodgson) has departed. *MR&M* met with Rick Davies and Supertramp's engineer, Norman Hall, about their recording standards and their new LP.



28 THE POOR RECORDER'S ALMANAC: PART I

by Bob Buontempo

In Part I of his series, Mr. Buontempo insists that *YES*, you can make hit records in your own 8, 4, or 2-track facility with today's technology.



32 WHAM! MAKES IT BIG AS THEY GO-GO!!

by David Thomas

George Michael and Andrew Ridgeley are Wham!, and, for men of their age, they have obviously achieved an incredible amount as performers, writers and producers. Just try to turn on any radio and *not* hear a tune by this *talented* duo. *MR&M* caught George Michael in London just prior

to embarking on Wham!'s world tour and he spoke with us a bit about his approach to recording and his views on Wham!'s world tour.

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PROFILE: GUITARIST RICHARD THOMPSON

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by Jimmy Guterman

British rock n' roller Richard Thompson can hardly be called a *commercial* artist. But he *is* coming *very* close to a commercial breakthrough in America these days with his new album, *Across the Crowded Room*. Come along with us and meet this guitarist legend.

SOUND IDEAS

MUSICIAN'S NOTEBOOK

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by Craig Anderton

The Oberheim Xpander.

SOUND ADVICE

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by Susan Borey and Mark Oppat

This month our sound advisors discuss the challenge of capturing the complex sound of acoustic piano.

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Having Trouble Finding Us?

I am writing in appreciation of your magazine. I feel that it's quite informative and well-written. In addition, it's one of the few that keeps up and speaks on an intelligent level.

It's a shame that although Detroit is a large city, few, if any, of the music stores here sell your magazine, because so many people want to make demos and other recordings and go about it in the wrong ways.

So this is just a reminder to keep up the good work and best wishes for your future.

—Lucius Austin
Detroit, MI

Thanks for the kind words; we can't get enough of them! As for the availability of MR&M in music stores, we'd love to see more stores carry the magazine, and we invite you and any other readers to let us know the name and address of any music store in the area that isn't carrying MR&M. We'll take it from there. Once again, thanks for the encouragement and we hope you keep enjoying Modern Recording & Music.

A Quest For Knowledge

I'm wondering if you can help me. I am looking for recording schools in the U.S. and Canada. I've sent letters to every school I can find, but there aren't many of them, as far as I know. I would appreciate any help as far as who to contact.

I just began reading *MR&M* in April, and I would like to say that it's the best magazine I've ever read. I understand so much more now by reading your magazine. I, for one, appreciate a magazine getting near the basics of things instead of going way over my head with a lot of technical information. I really hope you can help me find some recording schools because after reading your magazine I would like to get into recording.

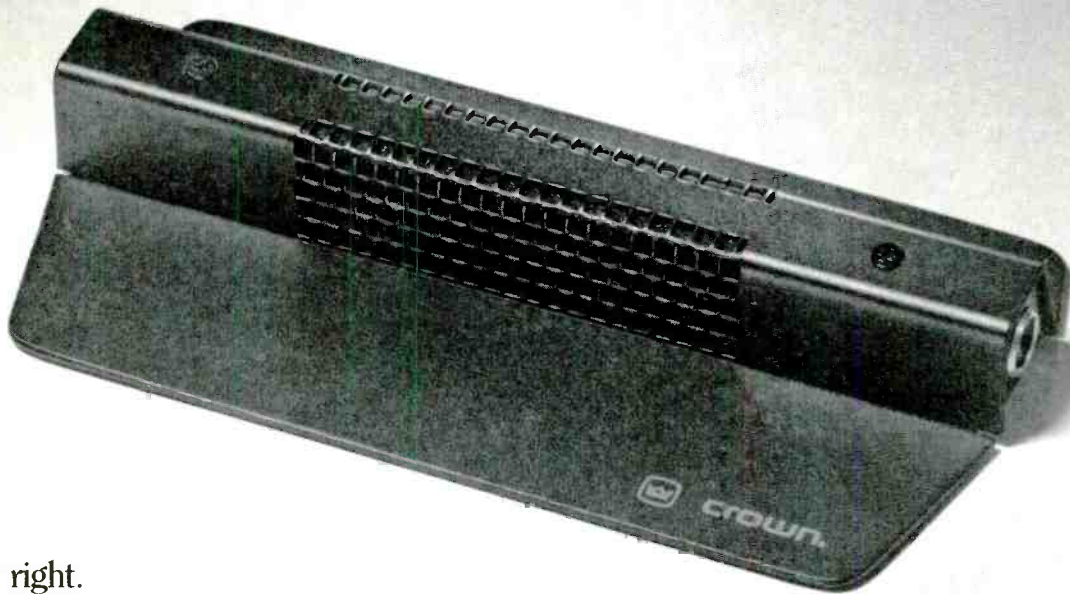
—Mike Kallis
Mattoon, IL

The only comprehensive listing of recording schools that we know of is the Directory of Educational Programs published by the Audio Engineering Society. It can be purchased by sending a check or money order for \$3.00 to the AES at 60 East 42nd St. NY, NY 10165. Good luck with your new interest.

Editor's Note: The group featured on the cover of our March 1985 issue was Jack Mack and the Heart Attack. We wish to extend our apologies for any inconvenience.

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Talk Back

Cassette Tones

Would you please describe the correct procedure for putting test tones on a stereo master tape to be used for cassette duplication? Are the same test tones used regardless of format and speed (½-track at 15 ips vs. ¼-track at 7½ ips for example)? How exactly does the engineer at the duplicating facility use these test tones?

How exactly should one label the tape box when sending it off to a duplicating plant?

—Andy Widders-Ellis
Eugene, OR

Reply from Bruce Bartlett to Andy Widders' letter.

Here's a brief answer, Andy. A

fuller explanation is coming in a future article.

After cleaning, degaussing, and aligning your tape machine, record the following tones on both channels simultaneously with NO noise reduction (about 20 seconds each):

1. 1 kHz at 0 VU.
2. 1 kHz, 15 kHz, 10 kHz, 100 Hz and 50 Hz at 0 VU for 15 ips or -20 VU for 7½ ips.
3. If Dolby-A is used, record an encoded Dolby tone at 0 VU, followed by an encoded 1 kHz tone at 0 VU. Dolby-A tones should be generated by each track's encoder.
4. If dbx type I is used, record an encoded 1 kHz tone at 0 VU. If a "zero offset" is used, note the

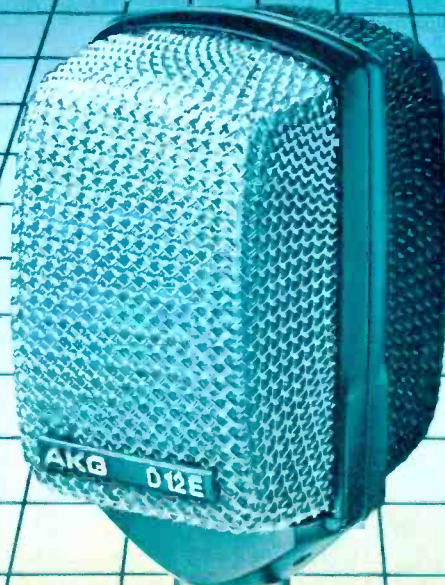
offset level (e.g. 0 VU program = -3 VU on tape).

The duplicating engineer uses the 15 kHz tone to align the repro head, the 1 kHz 0-VU tone to set overall level and channel balance, and the other tones to set playback EQ. Then his or her tape machine will play back the same tonal balance and stereo balance that you recorded during mixdown.

Make a separate reel for side 1 and side 2 of the cassette, with running times about equal to conserve cassette tape. Include the following information on the tape box label:

1. Tape head format, stereo/mono, speed, playback EQ (usually NAB), noise reduction, "tail-out" designation.

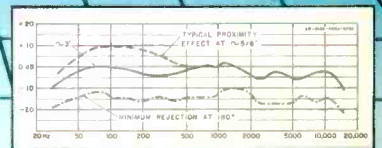
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engineers. For more information on the entire Gauss line, see your authorized Gauss dealer or write Cetec Gauss, 9130 Glenoaks Blvd., Sun Valley, CA 91352, (213) 875-1900, Telex: 194 989 CETEC.

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2. The location of the test tones (usually at the beginning of reel 1), tone frequencies and levels as recorded.
3. The flux level corresponding to 0 VU (e.g., 0 VU = 250 nW/m).
4. The location on tape of the highest peak level in the program.
5. Album title, artist, studio, engineer, producer.
6. Song titles and timing, total running time per side.
7. Suggestions for EQ or level settings for each song, if desired.

Ampeg Transformer Search

I have a problem which you may be able to solve. I have an old Ampeg amplifier, model number ET-2 and I need a power transformer. The numbers on the transformer are PT-106 or 682 249. I wrote a letter to Ampeg and they informed me that the transformer is no longer available and I would have to find a company that may have a sub.

Can you please help me out?

—George Smith
Staten Island, NY

Of course we can. Mel Levinson at Ramco Electronics, 365 Canal St., NY, NY 10013, might be able to substitute for the transformer, but he said he might have to see the amp first. Contact him directly and we're sure he'll be able to help you.

TEAC Tune up

I recently picked up a used TEAC studio 8-track recorder (½-in. tape). It needs some tuning up and I am trying to locate some information on it. The headcover is missing and I assume this had the TEAC logo and model number on it. On the transport chassis. I found the serial number. It is 70H81014.

The channel amps, level controls and power supplies are vertically mounted above the transport. Could you possibly help me locate service manuals or operating manuals, and/or any information on this machine? Its cost new and its present value?

The heads are worn and it won't completely erase. Could this be caused by the worn erase head? Aligning the head doesn't help

(just makes it worse, of course). Thank you for your help.

—Jeff Brown
Alexandria, IN

We contacted Mr. Merlyn Morgan, the Assistant National Service Manager at TEAC. The following was his reply.

In response to your inquiry regarding your TEAC/TASCAM recorder the following may be of assistance.

The recorder you mentioned is our Series 70, Model 70 H8, which is a ½-in. 8-track master multitrack recorder/reproducer. This unit was produced by TEAC between 1972 and 1977. Since the unit is more than seven years old, we cannot guarantee that we can provide all the parts for it—although we have the parts which are commonly needed for service, such as heads, belts and motors. We have information on microfiche for this model and we can provide you with a set of schematics. You may contact us directly for this information. The owners and service manuals are no longer available in printed form.

Suggested list price for the unit when new was approximately \$3,000. Value today would depend upon condition and should range between \$500 and \$1,500.

While it's possible that the lack of erasure is due to worn heads, it is more likely that the unit needs to be calibrated as well as having the heads replaced to make it perform within our specifications.

You can contact Mr. Morgan at TEAC Corp. of America, 7733 Telegraph Road, Montebello, California 90640. We would sincerely like to thank Mr. Morgan of TEAC for his assistance in answering this and past questions.

Dokorder Returns

Could you please find it in your hearts to help me locate new heads for my Dokorder 8140 tape machine? I got no reply from their last address in Lawndale, California, and I can't seem to locate the company anywhere. If you do not have their address, do you know of anyplace that will customize heads for the unit?

—Addison Dickinson
Newark, OH

I have a question which I have been informed you can answer. I

own a 4-track Dokorder that has been cutting in and out on one playback channel. Where may I obtain parts and/or repair services for this machine?

—Lewis Rinken
Lake Park, MN

Since Dokorder has been out of business for about ten years we were quite surprised to receive two letters regarding these tape machines. No one we spoke to knew of anyplace to obtain direct replacement parts, although some said they could substitute for or customize parts needed.

For heads contact: Veldon Leverich at Taber Manufacturers and Engineering Co., 2468 Embarcadero Way, Palo Alto, CA 94303. The phone number is (415) 493-3811.

For any repair services, contact Studio Electronics, 87 W. Palisade Ave., Englewood, N.J. 07631. Their phone number is (201) 894-5148. Also, while both companies stated they can most likely substitute or customize parts, they also said it might be very expensive.

Headphone Filler

I own and operate a small 8-track studio in a remote area and I'd like to take this opportunity to tell you how much I appreciate your magazine. I can think of no single thing a small studio could benefit from more than a subscription to Modern Recording and Music.

Now my question! I found the Nov. '84 Headphone Distribution Systems article by Rick Chinn very informative, but not entirely satisfying. I realize that the Rane HC-6 is a wonderful product, but what if you can't afford one right now? As Mr. Chinn mentioned in passing, many studios use a single high power 8 ohm rated amplifier for headphones. This is what I would like to do, but:

- 1) How (and of what type) should the "in-wall" wiring for the system be done?
- 2) What example impedance headphones would you choose for such a system, and should all the phones match?
- 3) How should the headphones (and our ears) be protected from potentially excessive voltage and conversely, how can we protect the amplifier from headphones shorting out?

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Believe me, I have asked around, and can never get a straight answer to these questions. No one seems to really know, so I'm petitioning you for the final word!

—Thomas Blain
Ashland, WI

We received the following reply from Rick Chinn.

Thank you for your comments. I'm sorry if I left a few holes but I hope that you'll understand that I had to stop somewhere as the article was getting a bit long. I'll try to answer your questions in the same order as in your letter.

1. What sort of wiring should I use?

Good question. I thought it was obvious, but obviously it isn't. From the sound of your letter, I'm going to guess that you want to use a spare amplifier for your phones system instead of getting a dedicated phones amplifier. I'm going to also guess that you want to run speakers off of this now and again. OK?

If so, then you should run 14 or 16

gauge wire for each headphone bus. If the run is fairly long, then calculate the maximum run by allowing the wire resistance to amount to 10% of the load impedance. The loss due to wire resistance will then be around ½ dB. For #14 wire, the maximum run under these conditions is 247.5 feet. For #16 wire, it's 155 feet. It's not really worth going below #16 wire, unless the run is very short.

If you're only going to run headphones on these lines, then the wire can get smaller, say 18 to 22 gauge. Shielding isn't necessary, but you should get an overall jacketed twisted-pair wire, like Belden 8461.

If your studio is in a commercial building, then you must check your local electrical codes to see if the wiring must meet other standards (conduit, insulation rating, temperature rating, etc.). If you must describe the circuit, tell them its loudspeaker wiring, and give the amplifier power. It might be helpful if you knew what the voltage output was also (as the inspector might not know how to calculate it).

If you're running the wiring through walls, keep it away from

your microphone wiring. Don't run it through the same holes as your mic lines, drill separate ones. Try to not let the two cables run parallel to each other (unless they are separated by more than a foot) for more than 10 feet.

Once you leave the wall, you want a cable that is robust, yet flexible. My own preference is use XLR connectors so I can use microphone cables to get from the wall to the distribution boxes.

2. What impedance headphones should I pick?

Don't approach the problem from the impedance standpoint. That's putting the cart before the horse. Like I said, the impedance really doesn't matter, as long as you have enough voltage. Approach the problem from the standpoint of:

- a. How much power do I have available?
- b. How loud do I want to go?

As I said in the article, it's common practice in many studios to use a medium sized power amplifier to drive the headphone cue system. As I mentioned in my article, the 8 ohm power rating required to drive a headphone cue system depends on the impedance of the headphones. Typically this amplifier might deliver 20 to 100 watts into an 8 ohm load. I don't recommend huge amplifiers (more than 100 watts) because of the possibility of damage, not only to the phones themselves, but (more importantly) to someone's ears.

Let's look at the voltage capability of a 20 watt and a 100 watt amplifier, then look at some typical headphones and see what sorts of level we can get.

First, find the voltage that represents 20 watts across 8 ohms:

$$\text{Using Ohm's law, } P = E^2/R, E = PR, V\sqrt{PR} = E$$

$$20 \times 8 = 160, \sqrt{160} = 12.65 \text{ volts}$$

Now do the same for 100 watts across 8 ohms

$$100 \times 8 = 800, \sqrt{800} = 28.28 \text{ volts}$$

Now, let's consider a hard-to-drive headphone: the Sennheiser HD414, 2000 ohms, 102 dB/1mW

$$P = 12.65^2/2000 = 80 \text{ mW} = 19 \text{ dB above } 1\text{mW} = 121 \text{ dB SPL with } 20 \text{ watt amplifier}$$

$$P = 28.28^2/2000 = 400 \text{ mW} = 26 \text{ dB above } 2 \text{ mW} = 128 \text{ dB SPL with } 100 \text{ watt amplifier}$$

Now, let's look at a lower impedance headphone: the Koss HVX, 85 ohms, 89 dB/1mW



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Tom Whisner (owner) MANTICORE

In the Laboratory The Carver PM-1.5 was rigorously tested by Len Feldman for MODERN RECORDING (February 1985). His laboratory test results also prove that the PM-1.5 really delivers. The following quotes from the Lab Report are reprinted with permission of MODERN RECORDING & MUSIC:—

"The first thing we noticed when we began to work with the Carver PM-1.5 was the ease with which the amplifier delivered almost limitless power to speaker loads which we had previously considered to be difficult to drive to loud levels. This is the sort of amplifier that just refuses to quit"

"The amplifier delivered a clean 480 watts per channel into 8-ohm loads with both channels driven for its rated harmonic distortion level of 0.5%. Even at the frequency extreme of 20 Hz, power output for rated THD was 470 watts as against 450 claimed by Carver. Furthermore, at rated power output, distortion decreased to an insignificant 0.015% at mid-frequencies and 0.007% at 20 Hz. When connected to 4-ohm loads, the PM-1.5 delivered 750 watts per channel for rated THD of 0.05%—far more than the 600 watts claimed by Carver. Clearly, when it comes to specs for a professional amplifier, Carver has taken a very conservative approach... All (manufacturer's claims) equaled or exceeded published specifications—usually by a wide margin."

"Carver has managed to deliver a tremendous amount of power in a small lightweight package at a very reasonable cost..."

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$P = 12.65^2/85 = 1.88W = 121 \text{ dB SPL}$
with 20W amp

$P = 28.28^2/85 = 9.4W = 128 \text{ dB SPL}$
with 100W amp

Hmmmm...isn't that odd...the sensitivity ratings and the impedance of the phones combined to give exactly the same results. (Believe it or not, I picked the two examples at random.) As you can see, you must look at the whole picture. Now in reality, the 85 ohm phones won't get quite as loud, as some of the available voltage output is lost in the series resistors in the distribution box (see *Figure 3* in my original article).

The series resistor in the box causes a certain amount of loss. This loss depends on the impedance of the headphones. As the headphone impedance rises, then the resistor causes less and less loss. For this reason, I'd pick headphones whose impedance was perhaps 3 times the value of the resistor to minimize the loss.

As you can also see, there isn't much (7 dB) difference between a 20W and a 100W amplifier, at least

when it comes to driving phones. In reality, I think that even 121 dB SPL is plenty, even though it's 9 dB from the threshold of pain.

You should pick your phones on the basis of:

- a. cost
- b. sound
- c. ruggedness

After you select some representative models, plug their specs into the formulas to see if they will be electrically suitable. As for the actual impedance, the only factor that the impedance really affects is how many phones you can hang on the amplifier output (phones impedance/8, roughly).

What would I pick? Something in the 100 to 2000 ohm class. This would be a good compromise between using them on the cue system, and in the headphone jack of a console. No 8 ohm phones for me, thank you.

3. Should all the phones match?

Good question. It's nice if they're all identical. Not so much from an electrical standpoint...but from an audio standpoint. If they're all iden-

tical, they'll sound the same. If they're not, then coloration differences of the different types could get in the way. The coloration difference is interpreted as an EQ difference, which gets interpreted as a difference in the mix. If the different types of phones are on separate mixes, then it's less of a problem. The only good reason I can see for having them all electrically match is so that the level is the same for all phones in the system. But, if the sensitivity and impedance work for you (like in our example above), then the impedance doesn't matter (as far as matching goes).

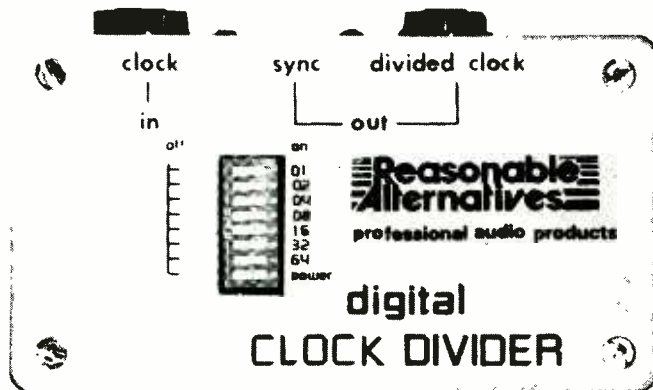
4. How do I protect the phones and peoples' ears from potential damage caused by the larger amplifiers? How do I protect the amplifier from shorts caused when the plugs are pulled?

Refer to *Figure 3* in my article. As you can see, the resistors connected to the individual jacks isolate each jack from the amplifier. Plugging in or unplugging here can't short anything as the amplifier is always 47 ohms "away" from the jack. I recommended XLR connectors for the amplifier to box connections as XLR connectors don't short anything out when you plug or unplug them.

The resistors also provide a small measure of protection for the phones. But the real protection comes from the impedance of the headphones themselves! Again, look at the previous example. For the 2000 ohm phones, the 100W amplifier can only deliver 400mW into the headphone load. My own experience tells me that this is a bit much for the Sennheisers, so I would be careful to watch the overall level delivered to the system, if I were using the 100W amplifier. If the headphones have a maximum SPL rating, you can calculate backwards to see how much voltage that is, then see what that voltage would be if it was delivered across 8 ohms.

Remember that the 8 ohm rating is only a reference so we can calculate the voltage output.

As far as protecting your ears, the level with the 100W amplifier was only 128 dB in either case. I don't think that there's much cause for alarm. If you're really conscientious, you can hang a VU meter across the output and calibrate it so it reads 0 VU when the 'phones are really loud.



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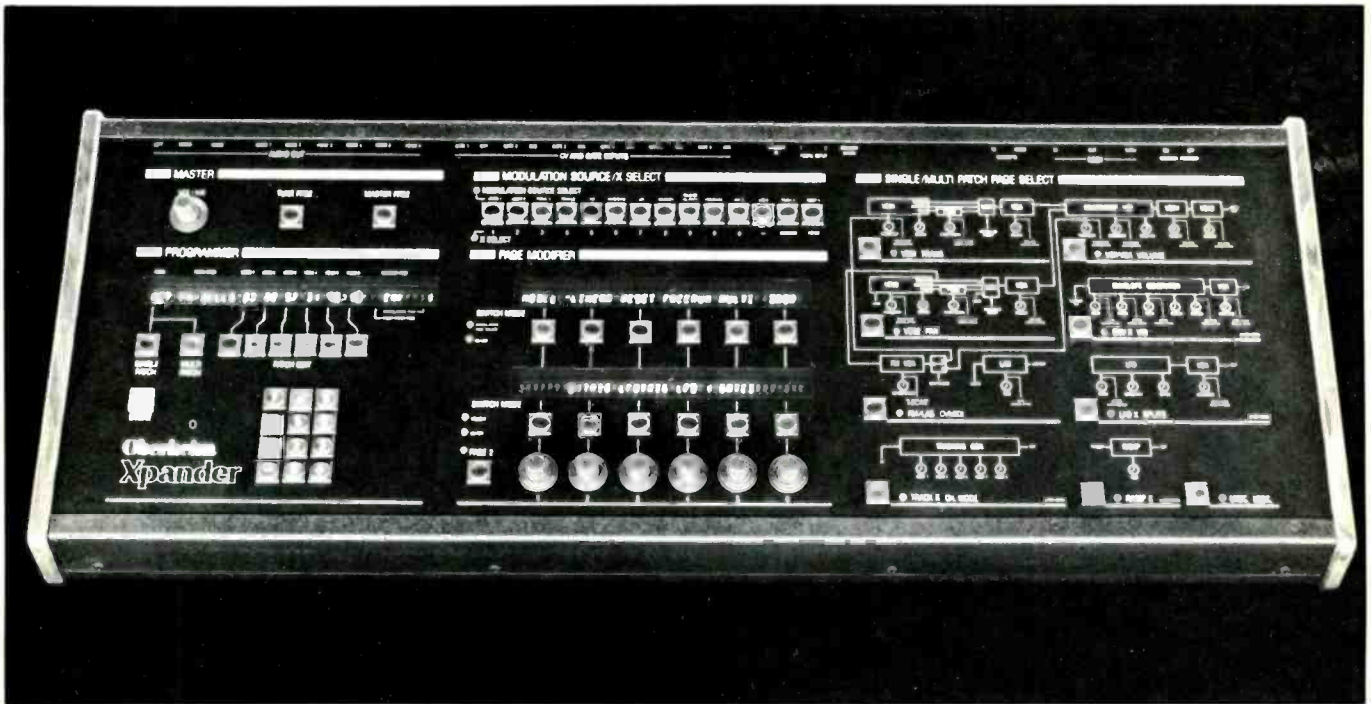
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Musicians Notebook

The Oberheim Xpander



By now, the Oberheim Xpander (introduced about a year ago) is not exactly news; it has been reviewed in other publications, and there are quite a few satisfied Xpander owners out there. But that doesn't mean that the Xpander is no longer of interest. Rather, it seems to me that the Xpander was ahead of its time when introduced, and that times have just now caught up with the Xpander. For example, features that didn't seem quite as significant only a year ago have taken on new importance in the brave new world of MIDI.

Those who want a detailed description of the Xpander from a synthesist's point of view should look up Jim Aikin's comprehensive review in the September 1984 issue of *Keyboard* magazine; his piece covers all the bases, and I see no reason to repeat it here. This review will concentrate more on the Xpander from a conceptual standpoint for those who might not fully understand what this deceptively unassuming little box can really do.

What is it? The Oberheim Xpander contains six synthesizer voices, but these aren't just any voices—each voice is capable of a remarkable degree of sonic complexity, for reasons which we'll cover later.

There is no keyboard on the Xpander. Instead, you

can drive it from six individual control voltage and gate outputs (thus making it ideal for interfacing with the Oberheim DSX sequencer) or via MIDI. Both models, which are *not* mutually exclusive, are quite powerful. Accessing via MIDI means that you can use virtually any MIDI device as the controller, including "mother" MIDI keyboards, remote keyboards, and MIDI-output guitar synthesizers. Something like the GR-700 guitar synth takes on new life when driving the Xpander, and for MIDI-output only guitar controllers (such as the SynthAxe), the Xpander is a dream come true.

About those voices. To fully appreciate the Xpander requires a bit of background on the grandfather of synthesis, the modular synthesizer. This type of instrument consists of dozens of dedicated modules (individual VCAs, VCFs, VCOs, envelope generators, ring modulators, etc.), whose inputs and outputs connect together with patch cords. While patch-based synthesizers give tremendous flexibility, changing from one sound to another can literally take hours due to all the re-patching required.

After modular instruments had been around for a

while, musicians found out that many acoustic instruments could be simulated with a relatively limited combination of modules, namely two VCOs, a VCF, a VCA, and two envelope generators (one for the VCF and one for the VCA), plus pitch bend and vibrato modulation. This combination of modules, or any other combination of modules designed to form one complex note, is called a "voice." Polyphonic synthesizers use an individual voice for each note; and to keep track of all the control settings, *programmable* polyphonic synthesizers store the settings in memory.

Unfortunately, though, what was gained in ease of use was lost in flexibility. Many of the beautiful, detailed sounds coaxed from the original Moog modular systems simply could not be produced from an instrument with more limited sonic options. The Xpander, though, is a different kind of machine. It represents some truly original thinking and takes excellent advantage of today's technology. Each voice contains the traditional dual VCOs, VCF, and VCA, but also includes five delayed ADSR envelope generators, five LFOs, four ramp generators (where you can set duration and up/down direction), three "tracking" generators (which, stated as simply as possible, alter the shape of a modulation curve), a lag processor (commonly used for portamento and "smoothing"), and multiple VCAs for overall level control.

Each of these "modules" in the voice is also very comprehensive. For example, the oscillators have their own level controls, and the filter is capable of 15

distinct modes (not just the usual 24 dB/octave lowpass). And when it comes to modulation, just about anything can modulate anything else thanks to the Xpander's "modulation matrix." Those who remember the old Putney synthesizer with the pin matrix (where plugging in a pin connected one of several rows of outputs to one of several columns of inputs) will feel quite at home with the Xpander, which has the same matrix concept—but translated from hardware to software. In other words, if you want to modulate LFO 1 with LFO 2, you just select LFO 1 as the destination and LFO 2 as the source. You can specify up to six sources for each destination, so you can have your filter tracking the keyboard, being modulated rapidly by one LFO, responding to the keyboard dynamics, and still have room left over for three other sources. And remember, *each* voice can have its own set of adjustments (or you can adjust the same parameter on different voices simultaneously).

By now, if you have the idea that the Xpander is capable of some really complex sounds, you're right. You can even do FM effects, and if someone tells you that analog synthesizers aren't capable of doing FM, you might want to point out that since the two oscillators for each voice are fabricated on the same chip they track each other perfectly.

So how important is it to have such a complex voice? In my opinion, very important. I feel that synthesizers have often been used percussively because it is not possible to create sustained yet *interesting* tones on the average synthesizer. Of course, you can add some

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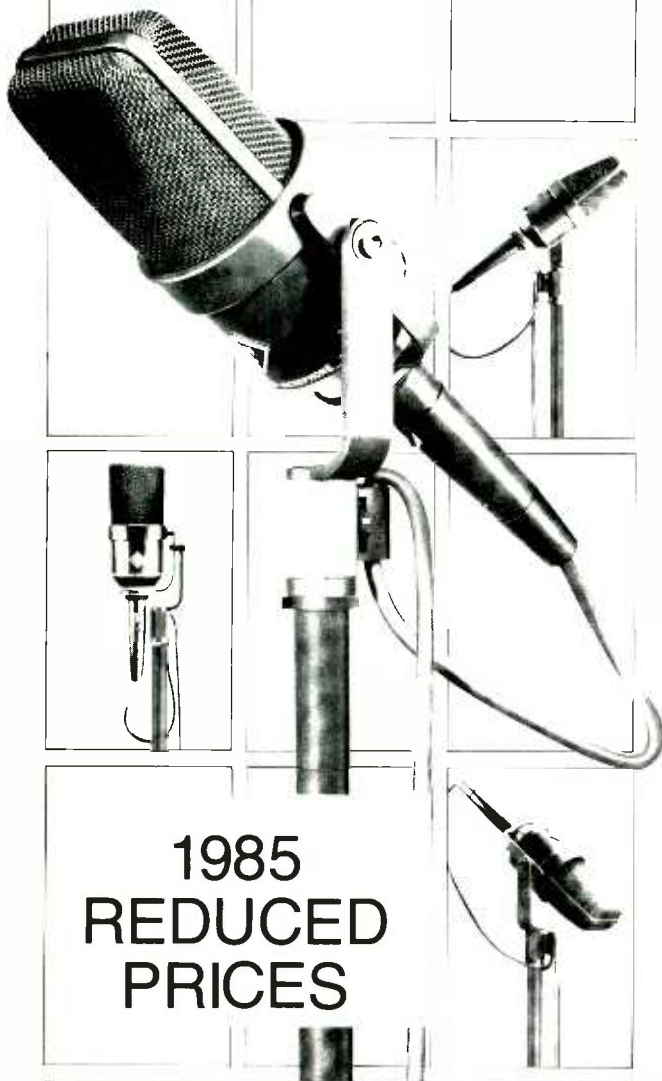
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pitch-bend to spice things up, but face it—a synth waveform is inherently dull. With the Xpander, though, you've got enough capabilities to create a voice that varies subtly (or not so subtly) over a long period of time. I found myself playing slow, beautiful melodies simply because it is so easy to create truly vibrant sustained notes.

For sound effects, the Xpander is remarkable. Most synthesizers these days are meant to produce tonal music, and the Xpander can certainly do that. But if you want something that can sound like 50's electronic music, the Xpander does the job. In fact, there are some factory patches where so many modules are interconnected that the patch simply plays itself.

Controlling the thing. The people at Oberheim have gone out of their way to make the Xpander relatively easy to operate. The Xpander uses a "page" system, like the Voyetra or OB-8, that allows a limited number of knobs and switches (six and twelve respectively) to alter a seemingly unlimited number of functions. The "page modifier" section of the instrument is set up as five "rows" (see the accompanying photograph); from top to bottom you will find a green alpha-numeric fluorescent display, six upper switches, another green alpha-numeric fluorescent display, six lower switches, and at the bottom, six multiple-detent knobs. When you call up a page (such as the VCO1 page, VCF/VCA page, LFO page, etc.), the top display lists the parameters you can modify, while the bottom display lists the existing parameter values. For example, with the VCO2 page the top display lists **FREQ**, **DETUNE**, **PW** (pulse width), and **VOL** as variable parameters. To change one of the values (as indicated in the lower display), you turn the knob directly below the parameter label (i.e. turn the located knob below **FREQ** to vary the frequency). Different parameters have different values; -63 to +63 seems most common, but some cover a narrower range, and some have positive values only. You can also enter a number using a row of number keys located just above the Page Modifier section; for this you first press the switch above the associated knob, then press the appropriate number keys.

And what about the switches below the upper display? These select modulation sources for the particular parameter shown in the display. For example, press the switch under oscillator **FREQ**, and you can select up to six different modulation sources using the number keys (which under these circumstances double as controller select keys). At first, it takes a while to figure out exactly what's going on with all the different pages, but a little practice makes things totally clear.

The programmer. A third display shows the general status of the instrument, as well as which program has been selected (this shows both a number and name of your choosing). The Xpander stores 100 "single" programs, where all notes play the same patch. However, you can also store 100 "multi" programs, which combine up to six single programs in useful ways. Multi programs allow you to do keyboard splits, or doubling/tripling of voices; you can even split the keyboard into three overlapping "zones," each of which can have its own patch. Perhaps most interestingly, multi mode lets you treat the Xpander as a



multi-timbral synthesizer, where *each voice* may be controlled individually via a separate MIDI channel.

MIDI. The Expander has one of the better MIDI implementations I've seen. Five of the controllers (Lever 1, Lever 2, Pedal 1, Pedal 2, and Pressure) can be assigned to any MIDI control number from 0 to 122, as well as to MIDI pitch bend information. To give an idea of how MIDI controllers work, suppose you want to control the Xpander filter cutoff frequency from a "master" instrument's vibrato amount controller (often called the "right wheel"). If the MIDI master sends out vibrato amount information over controller channel 1, with the Xpander you would first choose the filter cutoff MIDI controller (Lever 1, Lever 2, Pedal 1, Pedal 2, or Pressure), then assign the chosen controller to Xpander MIDI controller channel 1. That may sound complicated, but really, it's not all that difficult...just remember to match up the controller channels when exchanging data from machine to machine, and assign the controller channel to the correct parameter in the Xpander.

Overall evaluation. There is much, much more to cover with nowhere near enough space to do justice to the task. As a synthesizer, the Xpander lives up to the claim that it is a fantasy realized—for many years. I dreamed of a synthesizer that was as easy to use as a cheapo programmable yet versatile enough to make me not wish that modular synthesizers would make a comeback. The Xpander is a total success on both

counts. It also has that clean, dry (or maybe I should say "brut") Oberheim sound that cuts through well on tape and seems to suffer minimally from bad sound systems. It takes a while to learn the instrument, but once you do, it's not that difficult to program considering the very high level of sophistication.

But perhaps the Xpander's greatest value is indeed as a high-class expander module. MIDI sequencers are great, but there's always the problem of finding enough synthesizers to give you a bunch of different sounds. Sequential made an attempt at solving this problem with the Six-Trak, but the voices themselves were pretty weak. With the Xpander, though, you have six *great* voices that are just ripe for MIDI control. I used the Emulator II sequencer to program six different channels of MIDI melody lines, and sent them all to individual Xpander voices. Hey...this is what MIDI is all about! Combining the digital sampling sounds of the Emulator II with the analog sounds of the Xpander made for a great combination, but sequencing the six highly complex Xpander voices, then playing Emulator on top of that, was even more fun.

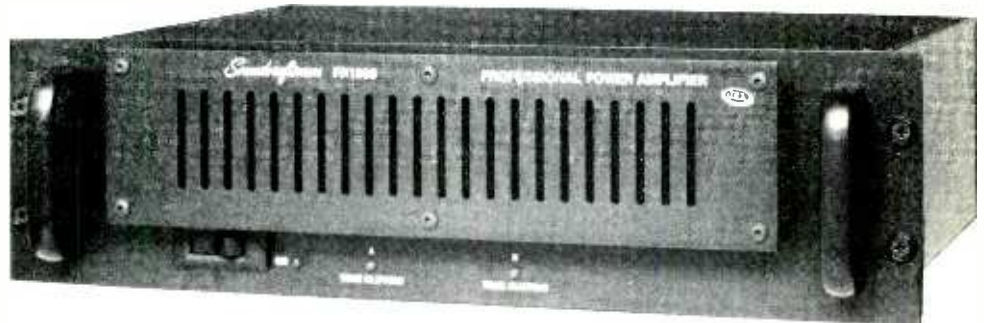
Do I like the Xpander? You bet. And for \$2995 list, you do indeed get value for money. If you're into MIDI and understand that there's a lot more to analog synthesis than people generally realize, you are going to really enjoy playing with the Xpander.

P.S. Oberheim also makes the Matrix-12, a 12 voice keyboard synthesizer based on the Xpander that features a velocity sensitive keyboard.



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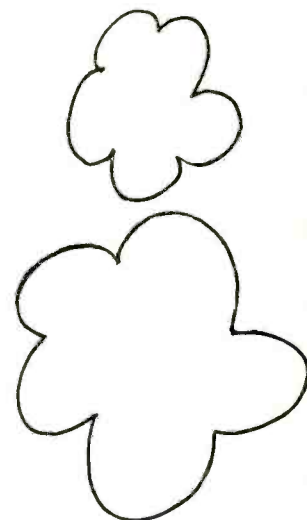
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Dan Hartman

Instant Replay of Success

Nineteen eighty four was a year of many rock n' roll comebacks. Tina Turner and John Fogerty got all the headlines (and rightly so), but they weren't the only artists who returned to the spotlight last year after a long absence. Of those less-celebrated, the most unlikely return may be Dan Hartman's. Hartman's public career started with the Edgar Winter Group (for whom he wrote "Free Ride") and led to a checkered solo career as an artist (the 1979 disco smash "Instant Replay"), writer (for Diana Ross), and producer (Plasmatics). Hartman's return to the charts with "I Can Dream About You," one of the few listenable songs from last summer's *Streets of Fire* soundtrack, places Hartman firmly in the center of the pop zeitgeist. With co-producer Jimmy Iovine and new songwriting collaborator Charlie Midnight, Hartman's new LP has spawned two dance floor hits (the aforementioned title track and "We Are the Young"). *I Can Dream About You* has its share of obvious moments, but it is still an effective showcase for this self-proclaimed "studio rat's" skills. *Modern Recording and Music* sat down with Hartman in late March at New York's Top Cat Studios, where he was rehearsing for his first tour in the past decade.



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Modern Recording & Music: How did "I Can Dream About You" happen?

Don Hartman: Jimmy (Iovine) and I have known each other for years. He worked on the Edgar Winter Group's *Shock Treatment* album as assistant engineer for Shelly Yakus, and we stayed in touch over the years. One time I was in California and he was producing Stevie Nicks' *Wild Heart* in the same studio I was working in. I saw him in the hallway and he told me he was working on the *Streets of Fire* soundtrack and he'd like me to submit something. I had a tape of "I Can Dream About You" sitting around the studio as a demo. I sent it to him and he loved it. The version on the record is mostly my demo version, even though the original demo was

much more electronic-sounding. The electronic drums at the beginning are there for the whole track. Jimmy added a real drummer, a real bass player, and a real guitar player. He gave it a more human rock element to complement my electronic dance element. It's got the best of both worlds.

MR&M: Why has it been ten years and why now?

DH: The 'now' question is easy. I'm making music I'm excited about that can be played live. I never stopped making music because I have the studio in my house, but I didn't have the means to play them live. I was doing a lot of dance music that I couldn't play live and honor it as an art form. What I'm doing now can be played live with a rough rock n' roll band. The two kinds of music that are

prevalent today, rock and dance music, have finally come together. That's where I am—rhythmic dance rock n' roll.

MR&M: What's your approach to synthesizers?

DH: I prefer synthesizers without a sequencer. I don't like the sequencer to play the part. I like to play it live—it feels better.

MR&M: Do you think you'll be working with Jimmy Iovine in the future?

DH: I don't know. People change between albums. When it comes time for the next album, I don't know if he'll have the time. There are so many variables. When the next album comes up, there'll probably be more steps I want to take. It's difficult to produce yourself. You have to keep a wide enough perspective and you

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Orban Parasound De-esser

Crown D60 & D75 Headphone Amplification with Koss Pro 4AA & 6AA

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Pioneer SA-8100 Stereo Amplification with JBL 4315s

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have to be ruthless and cut and edit. Sometimes you get confused and need an outside ear. I recognize that. Some artists don't recognize that and come out without something sounding weird because of it.

MR&M: How do you hear "Instant Replay" almost a decade down the road?

DH: I'm successful at communicating. When I'm in the studio messing around. I don't think, "This sounds commercial." I just turn the music up to 10 and have a party. My natural inclination is what lifts me off the floor. With your own studio, you can either get real lazy or become a workaholic. When I play "Instant Replay" now, I listen to something that at the time communicated in the best way I knew how. It incorporated the trend of the time with real communication. I did that song because I was in love and I was elated. I did the whole thing in one week as a gift. It reflected the times. A lot of my rock friends said at the time, "That's a hip record." If you listen to the disco records of that time, "Instant Replay" had more of a rock edge. I just put together a new

When I play "Instant Replay" now, I listen to something that at the time communicated in the best way I knew how. It incorporated the trend of the time with real communication. I did that song because I was in love and I was elated.

version that we'll be doing on this tour. It will reflect the sounds of the Eighties now, instead of sounding like 1978 disco. I'm still proud of the original. The vocal performance is great and it achieves a feeling. That's the most important thing. The song communicates.

MR&M: With "Instant Replay," you were a rarity, a white man with a disco hit in the midst of the racist 'Disco Su--s' movement." With the new album, you seem to be making a conscious effort to integrate stereotypical "black" and "white" styles.

DH: That's right. It's not so much a

conscious effort as the consciousness of my focus. On "I Can Dream About You," the idea was to establish myself as a vocalist. I want to make mainstream records—I don't want people to miss my message. I don't want to be too weird. I want to be heard—I want to communicate. I'm a rock n' roller, but I also love rhythm n' blues and soul. I love the spirit, the passion, and the sexuality of R&B much more than headbanger rock n' roll—even though some of my favorite albums are *Pyromania* and *For Those About to Rock*. They're headbanger albums, but they also have soul.

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When you get into the areas of eroticism, politics, and belligerency, you have to be careful. Some of it will get out. Both Charlie and I have slanted minds. If "Relax" or "Sugar Walls" can be hits, there is a place for that kind of stuff, too. It's fun and interesting to write about that. Or with politics: Third World people own the bomb. That's probably where the nuclear war will start. They have nothing to lose. You can write about that. It'll be just another record from a romantic cynic.

Two years ago, I fired everybody around me. I fired my manager, my lawyer, everybody. I got away from everything. I wanted to carry forth a concept of dance rock n' roll and the people around me wanted to do the same stuff again. I wanted to do a *Big Bam Boom*. They weren't behind me, so I quit and disappeared for eighteen months. I lived my life. Along the way, I was writing. "I Can Dream About You" is what I was trying for. It's crossover, black, white, rock, dance, and has a great vocal. It's everything. Remember, it looks like black people do "I Can Dream About You" in the video. People saw the picture sleeve and said, "Huh? He's white. This can't be Dan Hartman." If they like the music, that's all that matters.

MR&M: How is getting ready for a tour different from preparing to record?

DH: I don't actually get ready for records. I just do 'em. It's day to day; I live in it. For the tour, it's been easy and fun for the band to master tracks that are mostly just me on the album.

MR&M: How has producing or

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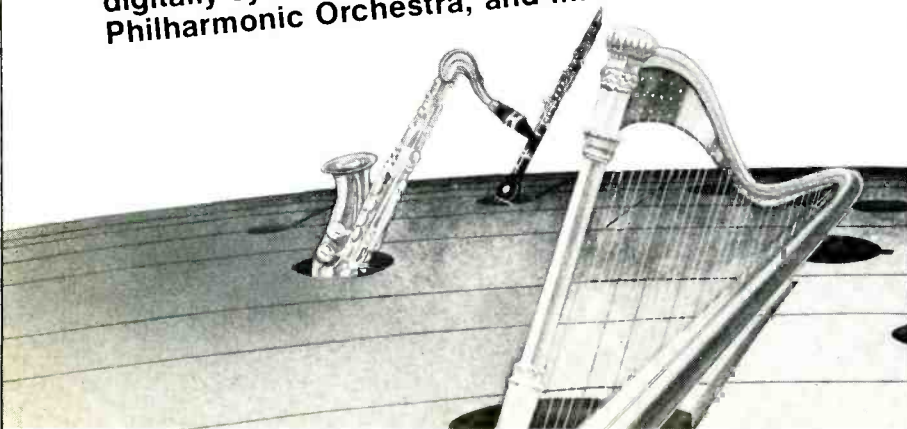
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DIGITAL

engineering other people's work affected your own records?

DH: When I do somebody, else's record, I'm a totally different person. I feel more of a responsibility to make sure nothing's messed up. Like my own work, I try to go for the magic, the essence of that artist. But I am more careful.

MR&M: You've said you want to play mostly small venues on this tour. Can you make money doing that?

DH: No. I'm not going out to lose money—who wants to bleed?—but I don't think it's all about money. I don't necessarily want to make money on the road. I've been lucky to make money from my records. When I go out on the road, I pay my band all the money. I don't make any money. My manager gets his cut, the expenses get paid, and I come back with the same amount I left with.

MR&M: But you do get to play in front of people.

DH: Yeah, that's it. The thing is to translate the studio excitement onstage. You've got to live what you're doing onstage. It's got to be raw energy. It doesn't have to be perfect. If it was, it would be boring.

MR&M: What inspires you?

DH: Sex.

MR&M: That's a great motivator, but anything else?

DH: I'm inspired because people are starting to hear me. I want to be heard. When no one's listening, I'm not real motivated. I'm motivated by listening to Chaka Khan. She's the Jimi Hendrix of our age. She'll sing and sometimes it sounds like Hendrix's guitar. It's the same essence of freedom he had in his solos. She's a major vocal influence and inspiration. I love Foreigner, Vangelis, Robert Palmer. Lotsa stuff.

MR&M: "I Can Dream About You" became a hit mostly because it fit snugly in the current dance/rock sound that's all over CHR. Was that calculated or accidental?

DH: It was luck. I do not consider those things when I'm recording. I just do what I want to do.

MR&M: Do you and Charlie have a set writing method?

DH: I met Charlie eighteen months ago when I cut myself loose of the corporate leeches. I met him through some people at CBS and tried some songs together. Those songs had a real uniqueness. When we write a song, we have a reason. I like songs that have no reason at all, but they don't wear very well. If you want to say something and mean something,

you'd better have something strong to say that'll reach people. We usually start with a title, discuss it. He'll go off somewhere and come up with the lyric and I can read his lyric and hear the music. I don't fight it—I just get it down on tape.

MR&M: What kind of music can we expect from you and Charlie next?

DH: We're discussing topics. We want to get strange, but still communicate. It'll be weird.

MR&M: What do you consider weird?

DH: When you get into the areas of eroticism, politics, and belligerency, you have to be careful. Some of it will get out. Both Charlie and I have slanted minds. If "Relax" or "Sugar Walls" can be hits, there is a place for that kind of stuff, too. It's fun and interesting to write about that. Or with politics: Third World people own the bomb. That's probably where the nuclear war will start. They have nothing to lose. You can write about that. It'll be just another record from a romantic cynic.



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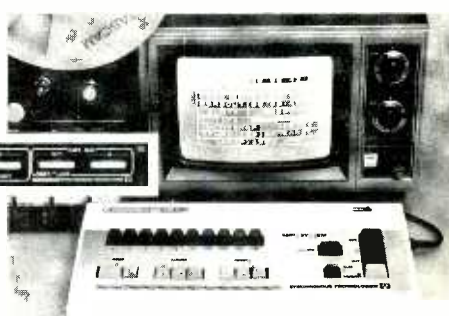
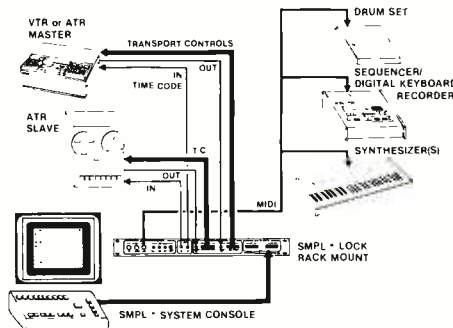
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Bound to Get Funky



(l. to r.): Rick Davies, David Gilmour, Bob Siebenberg, David Kershenbaum, John A. Helliwell and Dougie Thomson.

Penetrating popular culture with a decade of carefully arranged, self-dubbed "sophisto-rock," Supertramp is charting a new course after the amiable departure of half of its original songwriting duo. Roger Hodgson, who penned and sang "The Logical Song" and "It's Raining Again," left the band in 1983 to pursue a solo career. The streamlined group is now fleshing out the musical version of keyboardist Rick Davies, whose songs were always the less whimsical and harder hitting of the pair. Davies' blues-rooted compositions have led the band into a funkier vein on their latest release, *Brother Where You Bound*, which features a 17-minute title track that takes a swipe at political paranoia.

Over the years Supertramp has been credited with meticulous record production and careful concert sound. *Crime Of The Century*, released in 1974, was considered a landmark studio achievement; its crisp clarity was enlisted to demonstrate stereo systems and used as a reference for checking studio speakers.

Rick Davies and Supertramp's engineer, Norman Hall, spoke to *MR&M* about how they've maintained their strict standards for record making and how advanced technology makes the task even more of an adventure.

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dynamics and tone of the drum. Later on, our drummer came in and re-did his drums over the drum machine. It was quite tricky, and it took a few shots through, but we managed to get it back to life rhythmically.

MR&M: You more or less used the drum machine to keep a steady beat?

RD: With a piece like "Cannonball," which is seven minutes of solid straight groove, it's tough for a rhythm section to hold rock steady. We got pretty close the other way, but just couldn't quite hold it.

MR&M: Dave Gilmour plays some guitar on the album...

RD: Right. He comes over with a whole guitar setup which he puts straight onto the record. Everything is mixed, echoes, repeats. He's got four amplifiers and two pedal boards which he's constantly clicking. He's got this whole thing of playing with repeats and instead of toying with it later, he's already got the whole thing happening.

NH: He uses a guitar synthesizer which has pre-programmed sounds on a cassette. He can plug his cassette in and play along to that and what he plays will be enhanced by whatever sound he's using on the cassette. It's

make something sound good, right? But, in general, if you have a really good musician who knows his instrument, he'll come in and just make it sing without you having to do much at all, which should be the way, really. Mostly, an engineer's job is to enhance or stretch the harmonics of what's being done, not to really change the sound. If the engineer is trying to make a sound, I think there's something wrong.

MR&M: "Cannonball," the first single from the new album, will also be released with a dance re-mix. What changes will be made to the mix?

RD: I have no idea. We're handing this over, really, to a guy called Tom Scott who had done this kind of thing before. It's an interesting experiment for Supertramp. We're basically going to take him the tapes, which is 72 tracks for him to think about.

MR&M: Aren't you concerned about handing your "baby" to someone else?

RD: I don't know about concerned. If it's really unacceptable we'd have to step in and say "no," but he's got a good reputation and he'd done some good stuff.

NH: We spend ridiculous sums of money trying to get as good a sound as possible. For example, on this album we used one 16-track and two 24-track machines in order to keep first generation sound. It all eventually comes down to a tiny cassette. That's the killer. Compact disc is probably the new way and I think it's going to get better. Personally I think it's got a way to go, but I firmly believe it's here to stay.

MR&M: Is your mixing process affected by your consideration of what kind of system the record will be played on?

RD: Yes. We mixed in Ocean Way in LA and there was a small stereo system set up in the actual playing room of the studio. When they were getting pretty close, we'd pump it through to this small system. We'd go listen to it and it had a totally different feel after hearing it from the main control room.

MR&M: Can you describe your recording process?

RD: On this record we tried to get our bass, drums and piano down as a unit. John [Helliwell] usually plays saxophone and he's got quite a high success rate of getting his solos down from the original track. He tends to respond to a good take with a good solo. Over the years a lot of them, like on "The Logical Song" and "You're Bloody Well Right" were from the original takes. He tries to get it all at once, as well.

Then we start to build. I've usually got a rough vocal down.

MR&M: Do you usually have all the parts in mind before you go into the studio?

RD: This album was demoed totally, for the first time, in my home studio. I have a 24-track machine, which is an...

NH: Ampex 1200. There's an API 32 by 24 board, Tannoy monitors, a lot of tube microphones and a lot of outboard gear which is the usual sort of equipment... AMS equipment. Lexicon digital reverb, the usual array of limiters. Rick's got various musical instruments that he uses, LinnDrums, and we use the Oberheim drum machine also.

MR&M: What instruments do you have at home?

NH: Jupiter, Yamaha C25, Wurli-zer, PPG, 9-ft. Steinway grand, a couple of Yamaha DX7s. OB-1, Moog. When the need comes up for certain instruments we just get them.

RD: We hired a guy called Gary Chang for some of this album, the guy



Personally speaking, I think digital is great, it's fantastic, but it still has a little way to go before it has the warmth and character that's necessary for recording with Supertramp. But then again, The Night Fly by Donald Fagen was recorded digitally and it's great!



great because he's in total control of his sound. He doesn't leave it to anybody else. He gets his sound and it's like a finished product. Musically he knows what he's doing and he doesn't leave it to chance.

MR&M: As technology extends our capabilities, do you think musicians will choose to leave less to producers?

NH: I think most good musicians are in total control of their sounds, because the sound of something is made by the guy who's playing the instrument. From an engineering point of view, you can struggle to

MR&M: There seems to be a constant echo on your voice...

RD: There are various echoes throughout. It's just for variety. If you have an album of basically one voice all the way through, you have to really try to give it as much variety as you can. Otherwise it's going to get monotonous.

MR&M: I have the special CRO² "audiophile" cassette of your last album, *Famous Last Words*, and it really is heavy on the high end.

RD: Well, how "special" was that? They really should try to get cassettes to sound better.

with the Fairlight/PPG MIDI-ed together.

NH: We used the Synclavier, too.

MR&M: Did you program it?

RD: They program it. It's a full time job. They've got whole libraries of sounds and they can blend them together and program them in. It's a whole within itself now. There are too many facets to be good at all of them.

MR&M: Will you strive to become more adept at the programming end, or would you rather leave it to someone else?

RD: I'd like to understand it more. Especially for demos with the drum machine patterns. That's the real priority for the next go-round, to be able to get into the track more before too many outside influences disturb your view of it.

MR&M: What studio did you use for the new album?

RD: Ocean Way in Los Angeles.

MR&M: Did you track and mix in different studios?

NH: We tracked, overdubbed and mixed in different places. The tracks and mixing were done in Ocean Way, and the overdubbing was done at Rick's home studio. Plus a couple of tracks on the album were recorded at Rick's studio. "Cannonball" was.

MR&M: And you mastered...?

NH: At Master Disk in New York with Bob Ludwig.

MR&M: What kind of boards did you use to record and mix?

NH: We recorded in Ocean Way's Studio B which has a Dalcon board. The nice thing about it is that you can press a switch and it brings into line a bank of API equalizers that are outboard.

It's a beautiful studio to record in. It's a very large room. They've got lots of outboard equipment which is really good stuff, like Lang and Pultec equalizers, which are very warm sounding.

When we mixed in Studio A there was an API board and the same array of necessary outboard equipment. It's also got George Massenburg moving fader computerization. With this album we could not have mixed without the aid of the computer. We kept everything first generation by going on to three tape machines. You'd need four people to mix if it wasn't computerized.

MR&M: Was your pre-production very complicated?

NH: Pre-production was the demo that Rick did entirely on his own. He played everything. It gave everybody an excellent idea of what was needed.

MR&M: Can you think of other ways in which the last wave of new technology has affected your music-making process?

RD: I suppose the big thing these days is the drum machine. I haven't used them to compose yet, but I'm going to try to do a few things with it. I think you can go overboard, but the great thing with it is that it's so instant, and also, with the Portastudio, you can be your own engineer.

MR&M: How important is video to your work?

RD: It's a fact of life. You're obligated to do it. Sometimes you'll get into it and other times you really don't have a clue what video you would like.

The long track, "Brother Where You Bound" is going to be a complete film which is slightly different from a video. We're in the process of doing that now and it's going to be interesting to see how it'll turn out.

MR&M: Where do you stand in the analog vs. digital debate?

RD: I personally have always been advised to stay with the analog.

NH: We discussed going digital this time. Personally speaking, I think digital is great, it's fantastic,

but it still has a long way to go before it has the warmth and characteristic that's necessary for recording with Supertramp. But then again, *The Night Fly* by Donald Fagen was recorded digitally and it's great.

There are certain technical things that I find displeasing with digital. When you have a complexity of high end, it tends to push the mid-range a little bit forward, hence, a tendency for harshness, which is the last thing you want to have. It's quite possible to get good digital recordings, but in general, complex high end situations tend to become a bit grainy sounding, not quite as nice to listen to as analog tape.

MR&M: I've heard that the title track, "Brother Where You Bound," is a 17-minute long song about Communism.

RD: Well, it's really about a guy's paranoia rather than specifically Communism. He's convinced that forces are taking over his country, taking over his town. Whether it's imagined or real is a question that goes through the piece and the film we're making about it as well. It's not a statement from the band about Communism or anything.



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Remember, the hits of the fifties and early sixties were done on one to three (yes, three!!) tracks, and "Sgt. Pepper" was recorded by George Martin and the Beatles on a 4-track. (Actually, I believe, it was on two Studer 1-in. 4-tracks with inter-machine bouncing, but you get the point.)

For those of you who are ready to put me in mothballs, Bruce Springsteen's "Nebraska," released only a couple of years ago, was recorded on a TEAC Porta-Studio (their first unit, the Model 144, available for *well* under \$1,000, probably a much less complex set-up than most readers of *MR&M* really serious about recording already own!

Not to mention the debut albums of the Eurythmics and Berlin, both done on small 8-track machines, a method still used for basic tracking by many hitmakers (such as Phil Collins).

On a more personal note, a friend of mine, David Merrill, from NYC, recently did the music for a "Break Dance" instructional album that was recorded on a ¼-in. 8-track Fostex

machine at home—and released nationally on Atlantic records!!!

And, to be philosophical for a moment; music and recording belongs to *everyone*, not just the rich kids whose Daddies can afford to buy them a house with \$50,000 worth of instruments, (and a full 24-track studio to record them all on in the basement), after a hard day of driving their expensive German sports car.

Or the MultiNational Corporations called record companies, that decide who, what, and how you will hear (and see) the music that their lawyers and accountants deem "commercial."

But it also belongs to the "Little Guys," who may only have talent, dedication, and love of what they do to keep them going, and need to express their art on perfectly viable equipment, but gear at which effete recording "snobs" would look down their noses.

Well, if you have saved your pennies to buy your 4-track cassette machine, and love it to death, these writings are for you.

Now, to lighten up a bit.

This series of articles will attempt to explain some "tricks" you can use to help get "that hit record sound" on various instruments, vocals, and overall mixes without needing a megabuck facility. You will have, essentially, a "short cut" method of recording techniques that will allow you to emulate contemporary record sounds.

I know that there are various

opinions on the philosophy of obtaining an "instant sound" as opposed to learning the basics and developing a sound of your own, (sort of the immediate availability of a great sound stored on a drum machine vs. the ability to figure out how to get that sound on your own from an acoustic kit), but look at it this way:

1. It's just a starting point for you to take off from; the originality of your personality will shine through, and the style you develop will become distinctively yours. Or:

2. The tapes you make will sound more like records, making the material you record stand out better for record companies and the public to hear, be it your own, or your client's composition. Or, if that still doesn't work for you:

3. Money: Cashola, bread, scratch, dough, loot, or a dent in debt to downpay a deposit for a digital delight! You'll get more work for your studio if your tapes sound more like what's on the radio, or if that's too disgusting for all you rich, artistic types out there, more like what your clients want to hear.

But seriously folks, the tips and suggestions given here can be used to creatively enhance your tapes, and use (hopefully) novel and clever ways to achieve sounds that would otherwise be beyond the (financial) means of most of us little guys.

Some of these ideas are original; others are pretty common knowledge, but possibly not widely known by lesser experienced engineers, and

some are borrowed, no, let's be honest, just plain stolen from techniques you're likely to hear every time you turn on MTV.

And just who, you may ask, am I to have obtained and decided to bestow upon you this priceless information?

Well, although I haven't had any number one records (yet?), I've charted a few times, worked with several national acts, and have almost ten years of recording experience.

But most important of all, I also own a small studio that started as a 4 and is currently a 16-track, so I know almost all the problems small studios have, and probably have less, or owe more, money than most of you studio owners out there in studio land.

And when it comes to "keeping up with the equipment Jones," I Jones for the newest, unaffordable (for me) toy as much as, if not more than, anybody; never mind the old standards (still ain't got that U-47 tube mic yet).

But I did need a plate (reverb, that is), and since I couldn't afford one of those either, I did a little research, a couple of years of experimenting, and figured out how to build one of those mothers.

I wrote an article about it for *MR&M* that appeared in the May, 1983, issue and since the response was so overwhelming, I'm trying to do the same thing again, only this time with how to inexpensively build sounds. I also started a company (Reasonable Alternatives) to manufacture equipment especially aimed towards the small studio.

And while we're on the subject of equipment, you ask, just what *WILL* we all need for these sonic miracles?

Yes, Virginia, some equipment is mandatory, (besides tape, a mic, and a machine), but, fortunately, you probably already own some of it, or if not, and you've been a good little boy or girl, (please, no sexism intended), and kept all your back issues of *Modern Recording*, projects for almost all of this wonderful stuff is right there in those pages, at *well* under what it would cost you to buy them for list at your local pro-sound dealer. These items include:

1. A *GOOD* reverb unit. You'll be surprised at the difference good reverb makes on your tapes. The entire sound of your studio changes and takes on a new "professional" sound. The drums and vocals have a totally different quality that separates the demos from the masters. I

HIGHLY recommend you building a plate, or finding one you can afford. Like I said, May 1983 *MR&M* tells you how.

Recent technology has also brought the price of digital reverbs down so much that some of the smaller units are extremely versatile and *incredibly* good buys. There's always *MR&M*'s "Hot Springs" construction article by Craig Anderton, too.

But no matter what your preference, good reverb is a *MUST!!* It's not only necessary for quality reverberation, but for many effects I'll be describing as well. In fact, I'm sure you'd be hard pressed to find a recording made nowadays that doesn't have a plate, or the digital equivalent, on the drums, especially the snare.

2. A compressor/limiter. I'd recommend a compressor, since they often have an adjustable compression ratio, while a limiter is usually defined as having a compression ratio of ten to one or more. Again, this will be used for effects as well as compression, and, again, a construction article exists in a *Modern Recording* back issue.

3. A noise gate. Ditto for the effects/gating reason and the existence of a "How To Build" article in *MR&M*.

4. A delay unit. The way the prices on these babies have come down, you can't afford not to have one. They are also necessary for a multitude of effects, and besides, you probably already own some sort of delay unit already.

Optional stuff that I like: Noise Reduction—don't be a snob, if you use it right it works great on small track formats, and really allows them to give excellent results, especially on second (or greater) generations resulting on "Ping-Ponging" or "Bouncing" tracks.

An "exciter" of some sort (I feel it's like taking a blanket off the speakers), adds presence, brightness, definition, spaciousness, and a "record" sound quality to tapes.

And that's about it for now. As things progress, we'll get into other areas, I'm sure. I'd appreciate your comments and any feedback (pun intended) about this column. If you are interested in having a cassette or "Sound Sheet" available so you can hear what you are reading about, please let me know that too.

So, so long until next time, when we will attempt to do something really relative; catch up to the technology of the Sixties.

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Sound Advice

Piano Mic'ing

One of the soundperson's greatest challenges is to capture the complex sound of acoustic piano. There are as many ways to cover the piano as there have been soundpeople born since Presley came back from the Army. Obviously, the first methods involved using microphones, since nothing else was available at the time. This remains by far the most common method.

The other approach is to use one of the various pickups which have been developed. C-ducer, Helpinstill, Countryman, FRAP and others have all developed unique systems. Each has its own sound, installation methods, operation and cost.

There are several advantages to using pickup systems over microphones. The first is stability. A pickup is attached to an instrument whereas a mic must be supported, usually by a stand which includes a gooseneck or boom. If the mic is not placed exactly the same way for each performance, the sound can vary substantially. Also, in the case of movable instruments such as acoustic guitars, the pickup allows the performer to move about without straying from a microphone.

Secondly, with the pickup mounted, you don't need to set up and carry those extra stands.

Thirdly, it is much easier to use effects units on a signal from a pickup than a microphone. This is partly because of the stronger dynamics, and also because of our fourth reason, the pickup's greater isolation from other sound sources.

This month we are going to explore two of the pickup systems, the C-ducer and Helpinstill. Later we will cover other pickups and answer questions you send us concerning this topic and others.

C-ducer, the newest pickup method,

was originally developed by three engineers, one of whom was a percussionist who was primarily interested in covering Latin percussion.

It is a strip-like unit that resembles the last few inches of a belt. It comes in 3- and 8-inch lengths and is $\frac{3}{4}$ -inches wide. The casing is a vinyl material. The whole "tape" (as the pickup is called) is very flexible and can even be wrapped around things without being harmed.

Without going into technical details, this unit works both on capacitive and electret principles. It has exceptionally high headroom—a unit mounted on a tabletop struck with a blow can produce up to a 30 volt

output. It has a very linear and wide frequency response.

The C-ducer (*Capacitive transducer*) is designed to be attached to the surface of any instrument using thin double-stick tape. The tape must be thin so that the total vibration of the instrument is transmitted to the C-ducer. The C-ducer has low enough mass so that it will not affect the operation of whatever it is applied to, with the exception of drumheads and cymbals.

The 8-inch strip is most commonly used, and the 3-inch is used when the 8-inch is too large.

The C-ducer "tape" plugs into a preamp which is either a single or



C-tape Developments' C-ducer pickup system.

dual tape battery-powered unit or a mono, dual mono, stereo or 6-channel unit which is phantom- or AC-powered from an optional power supply.

While the application of the C-ducer is unlimited, it is most popularly used on pianos, partly because of the ease of installation (just stick two of them to the sound board). As with any pickup, you will want to experiment with placement while following the few pointers given in the manual. (Such as not to cross a bridge line of the piano, because the sound board resonates out of phase on each side of the bridge.)

So how does it sound? In our test (which utilized only one pickup rather than the recommended two) it sounded very clean and had high rejection of other adjacent sounds. Although you can hold a C-ducer up to your mouth and talk to it, it reacts mostly to vibration of a surface. If you wanted to cover a voice you'd have to mount the pickup to a plate that would vibrate perfectly in the vocal range. Since the surfaces of musical instruments approximate the sounds you hear, a pickup that can capture that will do a great job. The C-ducer

does a very good job for most instruments.

Another kind of pickup is made by Helpinstill. The company introduced their pickups in the early 70s along with their pianos, which utilized the same pickup system.

Elton John was the first of many stars who called on Charley Helpinstill to design systems for them. In Junior High, Helpinstill had played with Johnny Winter and has since recorded with others and released his own records under the name of Ezra Charles, a name Neil Young gave him.

The company expanded in the 70s and Helpinstill sold it in 1980 to some local Houston investors. According to Charley, who answers the phone himself (if you catch him in), "The company nearly died. I bought it back in '83, and I'm still here. I just sold one of my new humbucking pickups to the bass player in the Fabulous Thunderbirds. You can use it on piano, too."

The Helpinstill line consists of several models. The Model 75 is the economy 2 element unit, the 110 is a 3 element, the 175 is a 6 element for use in grand pianos only. The new hum-

bucking pickup can be used on piano or upright bass.

The 75, 110 and 175 all use a passive coupling box which controls and mixes the levels from each element, then couples the sum signal to a mic level transformer for feed to the board. The pickups are really like large guitar pickups: lots of turns of fine wire over a flexible magnetic 3/4-inch wide strip which is either 16-, 18-, or 24-in. long. The whole pickup is sealed over with heat shrink tubing.

This system is inductive; the pickups have to be in close proximity to the vibrating metal strings to create a signal. There are three serious problems with the concept. First, it takes quite a while to get the pickups in place. Second, they put out a low level signal (they aren't too sensitive), and third, the pickups are fairly fragile.

The Helpinstill can give good results on some pianos, especially if you want a slightly twangy sound. The isolation from adjacent sounds is very good compared to a microphone, and probably better than the C-ducer; however, the C-ducer has a much more natural sound, greater ease of installation and competitive cost. Still, there are many artists who prefer the Helpinstill unit, and since it is installed permanently in touring pianos, it is not inconvenient to use.

The Helpinstill was one of the first piano pickup systems. The C-ducer is one of the latest. Next month we will talk about some of the other pickups, as well as microphone techniques.

Sound Advice wishes to thank Charley Helpinstill of Helpinstill Products and Glenn Mullis, executive vice president of C-ducer, for assistance with this article.

Send your questions, experiences and ideas for future topics to us at:

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You can reach Helpinstill Products or C-ducer at the following addresses:

Helpinstill Products

5720 Green Ash

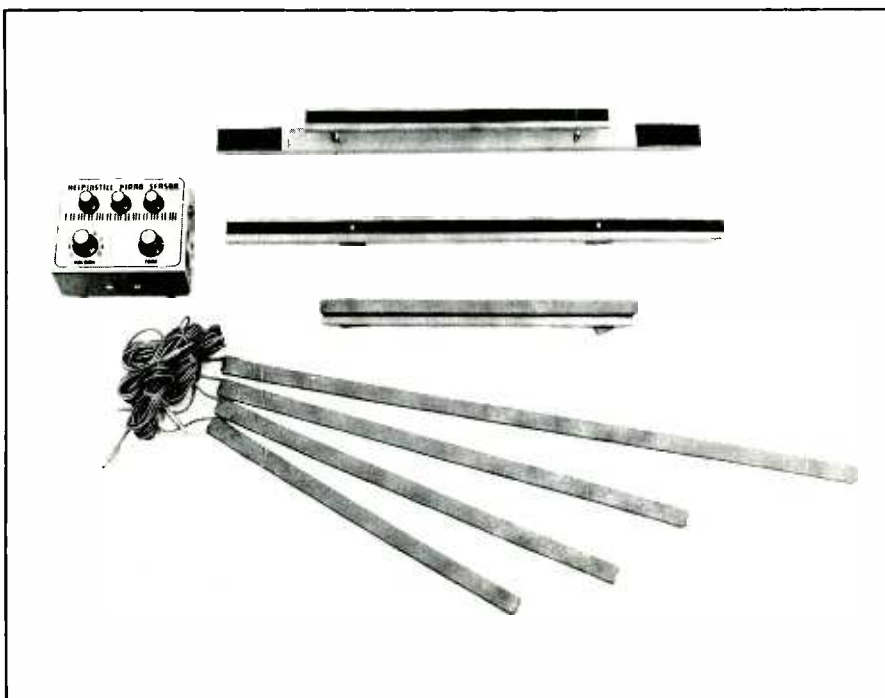
Houston, TX 77081

(713) 664-5922

Charley Helpinstill

C-ducer

Contact: Modern
Recording & Music



Helpinstill Products' piano pickup system.



WHAM!



George Michael is not a man who is necessarily modest about his work. As he says, "I'm twenty-one years old and I'm not saying this to brag, but I've achieved more as a performer, writer and producer than anyone else ever has by the same age." It's a fair enough remark. His songs for Wham! have produced top five hits in twenty-seven countries around the globe and shifted fifteen million records in the past two years. Stevie Wonder or Michael Jackson might argue that they did pretty well in their youth too, but the fact remains that George Michael's achievements are impressive and his control over his output is total. Just prior to taking a world tour to Japan, Australia, and the US, he spoke to *MR&M* in a London TV studio about his approach to his own creative work.

Making It Big As They Go-Go!

Modern Recording & Music: Where do you expect to find an audience in America? Do you know who bought “Wake Me Up Before You Go-Go” and “Careless Whispers?”

George Michael: I have no idea, although my main worry about “Go-Go” in the States was that we would be seen as a girl’s group. I don’t really mind that, but the only trouble with it is that we have not made a teenybop album at all, and there might be a lot of people who would enjoy *Make It Big* who don’t feel that they can stomach Wham!’s image. When you listen to a song like “Everything She Wants” it’s annoying that people can just write us off because our faces are everywhere. The only trouble is that unless we really fight it twenty-four hours a day with our promotional



campaign we really tend to get the girls’ market by default. In the end my view of what we are doing in America is that it is all in the lap of the gods. I just hope people understand the humor of it. When we get up on stage we send up the whole idea of being a screamer’s band, we’re so openly, ridiculously flirting. We just say we’re going to have a good time tonight and you can scream if you want, but it’s all a bit of a joke.

MR&M: How do you think you’ll compare with the other British bands that have broken America recently?

GM: I don’t know what American audiences are going to be like, but I’ve seen Duran Duran and The Thompson Twins, who have both become very big in America and they haven’t gotten anything like the

response from their audiences that we get from ours. Basically I think people are going to respond the same way everywhere. I just hope that American critics will be able to say that we give the audience a better time than any other band that has come from England recently.

MR&M: You're very aware of the marketing of your own work. To what extent do you write your songs with a specific commercial aim in mind?

GM: I never work like that with melodies. Usually I will get a melody and work right to the end of it before I know what type of a song it's going to be. But quite often I'll work towards a specific feel on a track—I'll want a record to have a swing feel, or a straight-down-the-middle mid-tempo feel. There's not much that I write that doesn't stem from some other influence. For example, *Make It Big* was a black album, which I was taking from the black sounds of the late '60s and early '70s, whereas on *Fantastic* all I could handle was what I'd been listening to for the past five years and I didn't have the guts to go any further back in my influences.

MR&M: Aren't you worried that you might be accused of lacking originality?

GM: I have no shame about that at all. It's very rare to get the combination of a great song and a totally original idea on a record. That's what everyone aims for, but it's very hard to get. I was thinking half way through the making of *Make It Big* that I was really pleased with the songs and they all sounded different, which was what I wanted, but I was worried that people would say, "Yes,

but where's *his* sound?" The honest truth is that if I want a sound, and as a writer I know that I do, then I am going to have to find one. But I am in no hurry to do that. I've got a whole lot of influences that I have to get rid of first.

MR&M: How do you think you could get to that sound of your own?

GM: I don't know. I was sitting here just now thinking about my arrangements and I decided that the reason I could never drag myself away from a fair amount of imitation was that with the instruments that have been used in popular music for the past fifty years, people have worked out which are the best possible arrangements—which instruments sounded best with each other, which rhythms suited which sounds, everything. If I'm writing a melody I might worry about an arrangement because it sounds too much like something else, but then I think, 'Hell, that's the best way for it to sound. Either I'm going to imitate or I'm not going to realize the full potential of the song.' I really do try not to be imitative with melodies and with chord patterns too. But there is something about those cliched chord patterns that I love. I love pop music and I love those natural chord changes that people expect. I know that I could sit down and do everything very differently, but for one thing I don't want to for the moment and, two, I don't have the time.

MR&M: I guess that you, or anybody, only acquire a style that is not derived from other people once you decide what it is that you really want to say with your work.

GM: Whatever I want to say eventually will be strongest musically, not lyrically. The things that I believe and that I would sit down and have a long conversation about wouldn't be right for a three minute song. I don't think that my personal politics, for example, are of any real value to the people who buy my records. Only on few occasions can somebody do that with real punch, but it's very rare. I think it's fine that there are people who have that ability, but it's not what I'm good at. That's not to say that I am a shallow person, but my main ability is musical, it's not in getting my political ideas across to the general public. Also, I don't think that it's always right for wealthy musicians to talk about things which they themselves don't experience.

MR&M: But what about something like the Band Aid record? You were involved in that and it did a tremendous amount of good.

GM: Yes, but it didn't cost anybody anything more than a day of their time. There was an incredible amount of wealth in that studio. People were singing, 'Feed the World,' and saying it was the most worthwhile thing they'd ever done and I thought 'Did you actually do anything else about it?' I'll bet most of the people there didn't even go and buy the record. I couldn't reconcile singing a lyric like that with just giving a bit of my time, so I did something about it. (Wham! have donated all the royalties from their million-selling British hit "Last Christmas" to the Ethiopian appeal—a figure that is estimated will be in excess of \$300,000.)

MR&M: Just to go back a bit into your past—were you a great record collector as a kid?

GM: Yes, as much as I could afford to be. I had Motown records that my parents gave me when they didn't want them any longer, which was a good start. After that I listened to an awful lot of Elton John and Queen. I loved anything that had a good melody.

MR&M: Did you get at all affected by the punk revolution in England?

GM: My reaction to punk was that I didn't have much to say about it. I was really into soul at that time, which was sexy, and punk was definitely not sexy. But I did understand at the same time that it was very healthy for the music scene.

MR&M: I can remember your part of North London going crazy about Saturday Night Fever.

We aren't even in rock n' roll—there's a new business now. It's show business, which is new in this market, presenting it to young people as opposed to being for adults as it used to be. It's totally professional and it's totally to do with respect for yourself. The old rock n' roll lifestyle is old hat. There are still people who would like to think that it isn't, but it is.

GM: Oh yes. At the age of about fifteen, Andy and I were really getting into all that. I suddenly thought to myself, 'What have you been doing with yourself going to gigs, when you could go and dance at a club and pick up a girl.' I was just at the age when I was getting old enough to go up to the London clubs. Then there was a brief flirtation with New Wave, things like the Talking Heads and Elvis Costello, which were really good, but not too many other people around knew about it. I think it's really a pity that there isn't the same kind of semi-commercial alternative around now.

MR&M: Were you a good musician as a child?

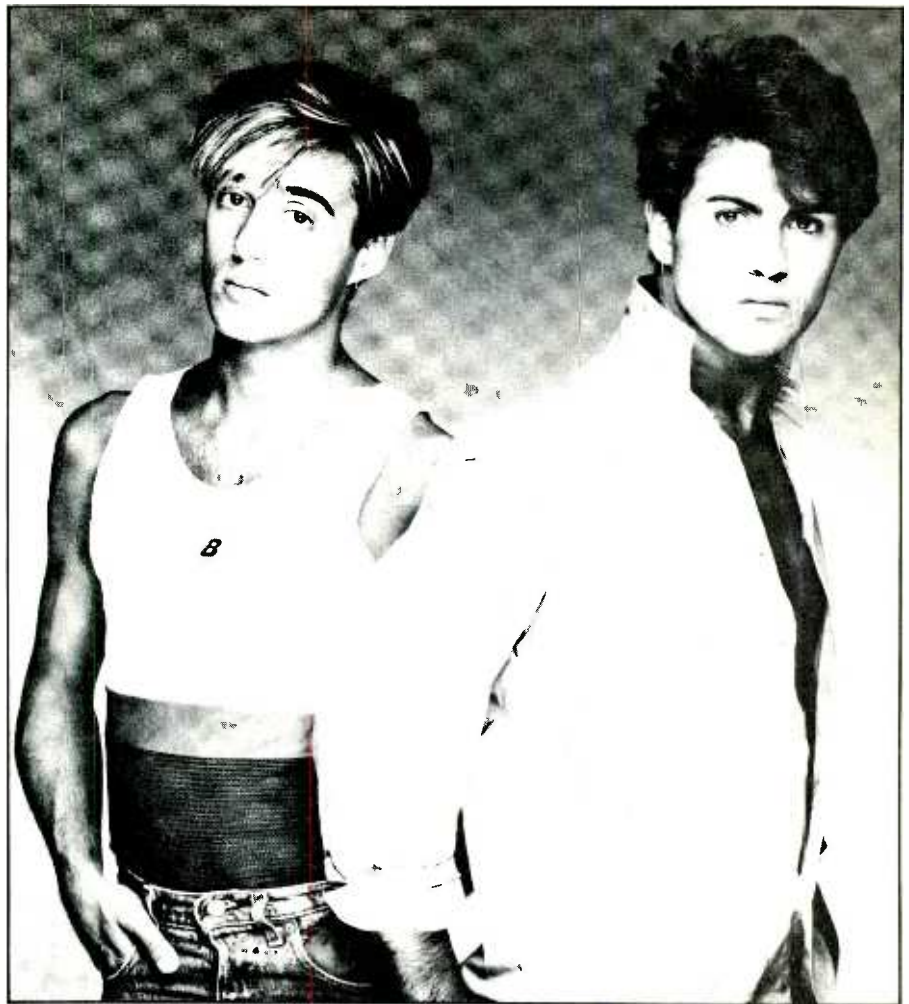
GM: No. I played the violin when I was a kid, but I wasn't any good at it because I didn't enjoy it. I played the drums when I was twelve or thirteen.

MR&M: What do you use to compose on?

GM: I compose in my head usually. I used to compose that way because I didn't have a tape machine. I wrote all the melody lines to "Careless Whisper" just sitting on a bus. I always write things in my head, let them go around in my head, then I forget about them. Later I come back to them and if the ideas are still there I know that they are commercial and that I like them. When I first got a record contract I bought all the equipment that I thought I should use, but when I looked back later at *Fantastic* I realized that all the best tracks were the ones that I had made up in my head, so I went back to that for the new album. I would hum the melody lines and the bass lines to myself again and again and then once they were cemented in my mind and I knew them off by heart I would go down to the studio with the musicians, get them to play the songs on the keyboards or the bass, telling them the feel that I wanted, and then I'd fill it all in after that.

MR&M: How competent are you—technically-speaking?

GM: Technically, not much at all, but I'm gradually getting there on the production side. I'm beginning to know quite a bit about the mixing desk. I've started to know which frequencies to ask the engineer to set for which instruments. My main job this year is to take on arranging and make sure that I understand it in every area and then what I have tended to do is just to get the most natural sound quality I can. You can



imagine that *Make It Big* has been played in one take by a very polished live band. In fact a lot of the backing tracks are totally live. The basic track for "Wake Me Up Before You Go-Go" was done in one take without any drop-ins [overdubs] at all. To me the two options are either to be like Trevor Horn and go for stunning sounds of your own, or just get a great

sound on each instrument and go for a live take. "Careless Whisper" was the same—just one take. There was loads of stuff bunged on later, but basically the feel is live.

MR&M: There was quite a lot of confusion about that track; didn't you have to re-record it?

GM: Jerry Wexler did one recording of "Careless Whisper" with me.

There was an incredible amount of wealth in that studio. People were singing, 'Feed the World,' and saying it was the most worthwhile thing they'd ever done and I thought 'Did you actually do anything else about it?' I'll bet most of the people there didn't even go and buy the record. I couldn't reconcile singing a lyric like that with just giving a bit of my time, so I did something about it.

Then we re-mixed that, which meant re-shooting the video and then we completely re-did the track about four weeks before it was due to be released. When we originally made it I was totally in awe of Jerry Wexler and it was the first time that I had ever felt like that about anybody that I'd worked with. Usually I have trouble convincing myself that people know what they're doing. In this case I had to get drunk in order to sing, I was so nervous. Anyway, my publisher and I had loads of discussions about whether the record was good enough for the song and whether there was enough of me in it because it just did not sound like me. I said, 'It's great. Jerry's done a great job on it,' and for the first time since we'd started I was blind to what was going on because the song was already two and a half years old and I just did not

have a clue about where else I could take it. Eventually I just thought, 'Sod this. I'm going to go in and do it as if it had never been done before with the musicians we normally use and see what happens.' The track was so much better because I was relaxed and I think that our usual musicians did a much better job than the Muscle Shoals section.

MR&M: There are some old soul greats who'll be turning in their graves at the sound of that! They'd be shocked to hear that coming from someone that they'd say hadn't paid their dues.

GM: I think that both Andrew and I have always despised the whole old rock n' roll attitude of going on the road and paying your dues. There are still people who say of Wham! that we've just been thrown in and haven't paid our dues and don't know the

background, that we don't know what rock n' roll is. It's all a load of rubbish. We aren't even in rock n' roll—there's a new business now. It's show business, which is new in this market, presenting it to young people as opposed to being for adults as it used to be. It's totally professional and it's totally to do with respect for yourself. The old rock n' roll lifestyle is old hat. There are still people who would like to think that it isn't, but it is.

And with that our conversation ended. One of George's aides came in and said that he had some work to do. Ten minutes later he was performing to a live television audience comprised of almost a quarter of the entire British population. Wham! were their usual impeccable, professional selves. That, as they say, is show business.

jim corona

A Talk With Wham!'s Engineer Chris Porter

MR&M went on to speak to Wham!'s engineer, Chris Porter, about the technical side of the recording and producing process with this multi-platinum group.

We generally expected to be overwhelmed with technical information from Porter and were surprised to hear that the project actually was focused on getting the material more musical rather than being locked into pumping out a precision high-tech album. Obviously, these gentlemen had the right approach at the right time. Just try turning on any radio and not hearing a tune by Wham!.

When asked about the direction of the project, Porter explained that George Michael and Andrew Ridgeley (Wham!) are mentally prepared and have a clear, musical picture of how they want their material to sound. The group has a natural instinct for portraying particular veins of music (Motown, ballads, pop, R&B) and really work at perfecting their material. Porter commented that sometimes he's taken aback by the professional character of these young men of twenty-one.

The group originally worked with Porter on a holiday season song, "Last Christmas." They felt he had the proper technical abilities and a similar taste in music which is a huge plus as far as communication between creativity and technology goes. Porter also explained that the project was to be recorded in the south of France at Miraval Studios owned by Jaques Loussier.

Miraval was to host the majority of the recordings for this album while a song or two and additional

overdubs were done at Advision Studios in London.

Their procedure when recording basically was this: 11am to 6pm—work the material out, catch a bite to eat, then return to the studio and lay the rhythm tracks down with a guide vocal.

As far as mic'ing George and Andrew, Chris used such select microphones as Neumann's U87 and AKG's C414 EB and "The Tube." Most of the reverb/delay used for this album was echo plate. He used the EMT 140 (Porter said the sound of the echo plate differs from studio to studio), AMS and Lexicon 224X. On the song, "Careless Whispers," they were looking for the old-fashioned vocal sound which they knew could be achieved at Advision.

On the tune, "Everything She Wants," the LinnDrum was used and layed down on only one track. This wasn't intended to be the keeper drum track, but eventually they did use it.

For "If You Were There," an Isley Brothers tune, the drums and voices were recorded in an entirely concrete room for natural ambient effect.

The instrumentation was not all that sophisticated. Roland's Juno 60 and Yamaha's DX-7 were both used throughout the album.

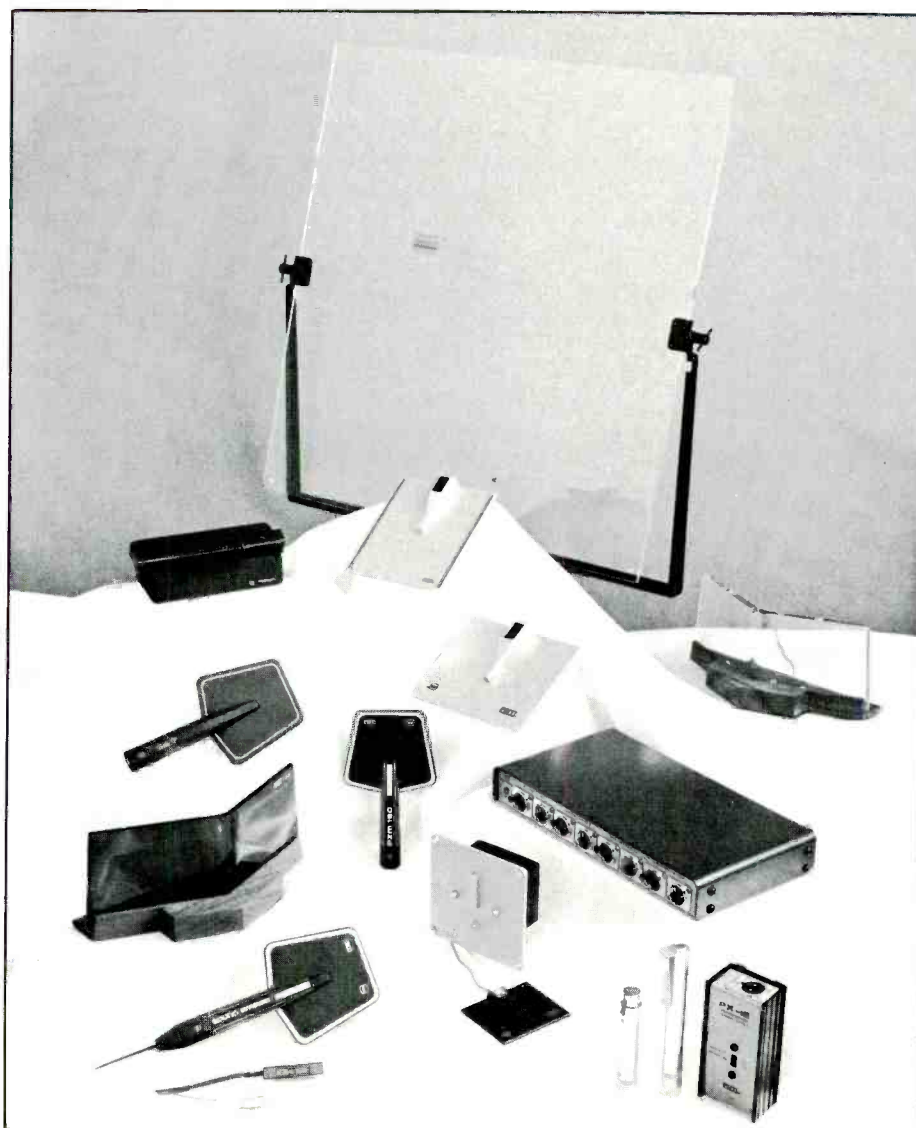
For mixdown, they used 30 ips analog and then the Sony PCM-F1 (Betamax) converted to digital.

One last thing, we felt compelled to ask Porter who were his favorite American producer and engineer. His answer was Quincy Jones and Bob Clearmountain.

Again, many thanks to Chris Porter. Wham!, Columbia Records and Rogers & Cowan Public Relations.

MODERN
RECORDING
& MUSIC

Looks At
Microphones



A microphone serves two purposes. Firstly, it acts as a transducer to change the acoustical energy of sound waves to an electrical signal. Secondly, it is expected to perform this task *accurately*, regardless of its use--recording, broadcasting or sound reinforcement.

Since the microphone is the first piece of equipment that affects the sound being recorded or broadcast, choosing the right one for your needs is very important.

The following charts can supply the information necessary for making the right choice, but only if you know how to use them. The information in our charts came directly from the individual manufacturers so all of the information is not always supplied.

Understanding The Specs

The microphone type is actually its principle of operation. A dynamic moving coil mic operates on the same principle as a speaker (only in reverse). They provide good frequency response and excellent protection against overload distortion. They are not very noisy and are generally very rugged. Condenser or capacitor mics operate on the principle of capacitance. Condenser mics offer very good frequency response and generally good overload distortion protection. Electret mics provide excellent frequency response.

The directionality of a microphone is determined by its polar pattern. The three essential patterns are omni-, uni-, and bi-directional. While these are self-explanatory, it should also be noted that some mics provide more than one pattern.

The sensitivity rating is the output power produced when a 1 kHz tone excites the microphone element. Obviously the lower the number is (higher value) the more sensitive the mic will be. The sound pressure level at % distortions shows the percentage of distortion occurring at a given SPL. A high SPL with a low distortion rating will indicate an accurate microphone.

The specifications in these charts will assist you in choosing a particular model--only after you choose the proper category of mics to fit your needs. Keep in mind that quality is not always commensurate with the price. In these charts a dash has been used where a manufacturer did not supply the requested information and a blank used when the information is not applicable. Remember the best way to test a mic is to listen to it.

Now on to the charts...

Model
Type
Patent(s)
Frequency Response, dB, +/- dB
Impedance, ohms
Sensitivity, 1 kHz, -dBm at % distortion
Dimensions L, D, W
Weight, oz.
Finish
Connector
Price, \$
Features

Model	Type	Patent(s)	Frequency Response, dB, +/- dB	Impedance, ohms	Sensitivity, 1 kHz, -dBm at % distortion	Dimensions L, D, W	Weight, oz.	Finish	Connector	Price, \$	Features
AKG											
D-321	dyn	40-20k	300 57	128 1	7.32 1.87	11.6	matte gray	xlr	170.00	Patented magnet suspension noise cancelling system.	
AKG Tube	cond	30-20k	200 40	128 3	8.87 1.63	24	satin brown	xlr	1700.00	Adjustable patterns, successor to the C-12 tube mic, large diaphragm.	
C-422	cond	20-20k	200 44	133 1	9.25 1.63	15.2	satin black	xlr	2500.00	Stereo mic, adjustable remote control patterns, large diaphragm.	
460B ULS Combo	cond	20-20k	500 63	138 1	7.25 13.82	5.6	satin black	xlr	482.00	Modular system, various heads and accessories.	
D-310/S	dyn	80-18k	270 58	128 1	7.5 1.75	9.0	nickel	xlr	135/150	Available with or without built-in on/off switch.	
D-302B	dyn	80-18k	290 57	128 1	7.32 2.13	12	nickel	xlr	185.00	Built-in low frequency eq switch, plug-in replaceable capsule.	
D-330BT	dyn	50-20k	370 58	128 1	7.38 2.07	12	nickel	xlr	210.00	Built-in low and hi freq. eq switch, plug-in replaceable capsule.	
D-1200E	dyn	25-17k	200 53	128 1	6.13 1.44	8.5	nickel	xlr	140.00	Successor to famous D-1000E, BMS eq switch.	
Audio Technica											
AT853	cond	30-20k	400 50	130 1	1.18 .476	1	black	xlr	175.00	Ultra miniature, full range, studio condenser for piano, hi-hat, and cymbals.	
AT813	cond	40-20k	600 55	130 1	8.0 2.0	6	cham-pagne	xlr	136.00	Wide range affordable condenser for piano, cymbals.	
AT813R	cond	30-20k	200 49	140 1	8.0 2.0	6	cham-pagne	xlr	198.00	Full range condenser. For piano, cymbals, hi-hat, brass, percussion.	
ATM63	dyn	50-17k	200 56	150 -	6.0 1.25	8	dark gray	xlr	160.00	Wide range dynamic for snare drums, toms, etc.	

Model

Type

Pattern(s)

Freq. Response, dB

Impedance, Ohms

Sensitivity, I kHz, -dBm

Dimensions, L, D, W

Weight, oz.

Finish

Connector

Price, \$

Features

Model	Type	Pattern(s)	Freq. Response, dB	Impedance, Ohms	Sensitivity, I kHz, -dBm	Dimensions, L, D, W	Weight, oz.	Finish	Connector	Price, \$	Features
Beyer											
M69	mov. coil	50-16k	200	144	-	7.15 1.0	10.7	black	xlr	165.00	
M88	mov. coil	30-20k	200	144	-	7.12 1.0	10.7	black	xlr	320.00	Built-in hum-buck filter
M160	dbl. rbn.	40-18k	200	152	-	6.44 0.91	6.5	black	xlr	360.00	
M130	dbl. rbn.	40-18k	200	152	-	5.03 0.91	5.3	black	-	440.00	
M101	mov. coil	40-20k	200	149	-	4.64 0.88	5.6	black	xlr	220.00	
M201	mov. coil	40-20k	200	150	-	6.30 0.94	7.8	black	xlr	190.00	Built-in hum-buck coil.
M260	rbn.	50-18k	200	153	-	7.48 1.18	10.6	black	xlr	200.00	
MC734	cond	20-18k	150	137	138	3.74 0.98	-	nickel	xlr	830.00	Also available as MC734PA with black finish and higher SPL rating. 48V phantom power.
Bruel & Kjaer											
4003	cond	10-20k 2	30	50	135	6.5 0.63	5.3	matte black	xlr	719.00	Low noise omni, needs B&K power supply 2812, equiv. noise 17 dBA max., overload 154 dB SPL peak.
4004	cond	10-40k 2	30	10	148	6.5 0.47	5.3	matte black	xlr	719.00	High intensity omni, uses power supply above, equiv. noise 26 dBA max, overload 168 dB SPL peak.
4006	cond	20-20k 2	30	12	135	6.5 0.63	5.3	matte black	xlr	780.00	Low noise omni for phantom 48V powering, equiv. noise 17 dBA max, overload 143 dB SPL peak.
4007	cond	20-40k 2	30	25	148	6.5 0.47	5.3	matte black	xlr	780.00	High intensity omni for 48V phantom powering, equiv. noise 26 dBA max, overload 155 dB SPL peak.

Model
 Countryman
 ISOMAX II elect card
 C,H, or B cond hyper
 ISOMAX II elect omni
 O cond
 ISOMAX elect hyper
 TVH card
 EM 301 elect omni
 cond
Crown
 PZM30GP elect hemi.
 cond
 PZM-31S elect hemi.
 cond
 PZM-62P elect hemi.
 cond
 PZM-6S elect hemi.
 cond
 PZM-12SP elect hemi.
 cond
 PZM-180 elect hemi.
 cond
 PCC-160 elect half
 cond super card

Model	Type	Pattern(s)	DB, * -dB	Frequency Response,	Impedance, ohms	Sensitivity, I kHz - dBm	Sound Pressure Level at % distortion	Dimensions, L, D, W	Weight, oz.	Finish	Connector	Price, \$	Features
ISOMAX II elect card C,H, or B cond hyper	card hyper	50-20k	600 57	-	0.31 0.62 0.15	-	-	-	matte black	xlr	265.00	Sound reinforcement, excellent for all instruments requiring directivity.	
ISOMAX II elect omni O cond	omni cond	20-20k	600 57	-	0.31 0.62 0.15	-	-	-	matte black	xlr	265.00	Miniature omni mic for sound reinforcement.	
ISOMAX elect hyper TVH card	hyper card	70-18k	270 52	-	0.87 0.47	-	-	-	matte black	xlr	405.95	Directional lavalier mic for broadcast.	
EM 301 elect omni cond	omni cond	50-15k	600 52	-	0.34 0.75	1	-	-	matte black	xlr	348.00	Conference-table mic.	
Crown													
PZM30GP elect hemi. cond	hemi. cond	20-15k	150 47	150 3	5.2 6.0	6.5	-	-	black or gold	xlr	329.00	Pressure zone mic, bright sound.	
PZM-31S elect hemi. cond	hemi. cond	20-15k	150 49	150 3	6.2 5.0	6.5	-	-	silver alum.	xlr	329.00	As above, natural sound.	
PZM-62P elect hemi. cond	hemi. cond	20-15k	150 47	150 3	2.5 3.0	5.0	-	-	blk or gold	xlr	329.00	As above, low profile, bright sound.	
PZM-6S elect hemi. cond	hemi. cond	20-15k	150 49	150 3	2.5 3.0	5.0	-	-	silver alum.	xlr	329.00	As above, low profile, natural sound.	
PZM-12SP elect hemi. cond	hemi. cond	20-20k	150 47	150 3	7.17 4.0 0.88	2.0	-	-	black nylon	xlr	249.00	As above, self-contained electronics, battery or phantom power.	
PZM-180 elect hemi. cond	hemi. cond	20-20k	150 47	120 3	7.17 4.0 0.88	2.0	-	-	black nylon	xlr	169.00	As 12SP above.	
PCC-160 elect half cond super card	half super card	50-18k	150 31	120 3	6.7 3.2 0.872	11.5	-	-	dark gray steel	xlr	249.00	Supercardioid boundary mic for stage plays, lecterns, news desks.	

Model	Type	Pattern(s)	dB, \times , dB	Frequency Response,	Impedance, ohms	Sensitivity, I kHz, -dBm	Dimensions L, D, W	Weight, oz.	Finish	Connector	Price, \$	Features
Fender												
D1	dyn card	50-14k	200 78	-	7.3 2.1	10.3	satin gun- metal	xlr	89.00			
D2	dyn card	50-18k	250 76	-	7.3 1.9	12.3	satin gnmtl	xlr	149.00			Smooth sounding vocal/instrument mic.
D3	dyn card	50-15k	250 79	-	6.8 1.7	7.6	satin gnmtl	xlr	149.00			Smaller size high performance vocal mic.
D4	dyn card	70-15k	600 73 10k	-	7.3 2.4	11.3	satin gnmtl	xlr	79.00			Dual impedance and switched on/off.
P1	elect card cond	30-20k	250 71	150 1	8.0 1.64	6.2	satin gnmtl	xlr	239.00			Studio quality very-high-SPL mic with selectable HP and LP filters.
P2	elect card cond	30-18k	250 73	127 1	7.9 1.9	7.7	satin gnmtl	xlr	119.00			M/V selectable.
M1	elect card cond	30-20k	250 74	148 1	1.2 0.5 2.4	10.6	satin gnmtl	xlr	189.00			Cardioid miniature mic with notch filter and application kits.
M2	elect card cond	70-16k	600 68	134 1	1.2 0.5 1.1	7.6	satin gnmtl	xlr	119.00			New introduction miniature cardioid with battery/phantom power.
Fostex												
M115	dyn hyper card	90-12k	600 60	-	0.88 13.0	7.8	matte nickel	xlr	99.00			Gooseneck mic for consoles and industrial applications.
M120	dyn hyper card	70-14k	250 57	-	1.3 17.25	19.4	matte nickel	xlr	119.00			As above.

Model	Type	Patterns(s)	Impedance, ohms	Sensitivity, 1 KHZ, -dBm	Dimensions, L, D, W	Weight, oz.	Finish	Connector	Price, \$	Features
			db, +, -db Response,	1 KHZ, -dBm	at % Distortion					
M505	dyn	50-15k	250 56	-	2.0 6.8	10.6	black/ gray	xlr	139.00	
M11RP	dyn	40-18k	250 51	140	2.6 2.6 7.0	20	matte gray	xlr	499.00	Patented RP technology for high output and low distortion.
M22RP	dyn	40-16k	250 51	140	2.7 9.6	26	matte gray	5AN/ xlr	899.00	Mid-sized stereo mic.
M55RP	dyn	70-18k	250 57	140	2.0 6.5	9.0	matte gray	xlr	349.00	Vocal mic, patented RP technology.
M77RP	dyn	80-20k	250 58	130	2.0 6.75	10	black	xlr	179.00	As model M55RP above.
M80RP	dyn	50-18k	250 52	140	2.0 1.8 5.4	9.5	matte gray	xlr	429.00	Patented RP technology for high output and low distortion.
M85RP	dyn	50-12k	250 56	140	2.0 6.5	9.5	matte gray	xlr	329.00	Nearfield mic for iso-both recordings in high ambient noise areas.
M88RP	dyn	40-18k	250 52	140	2.0 1.8 6.5	11.6	matte gray	xlr	539.00	Patented RP technology for high output and low distortion.
HM Electronics										
System 87	cond	50-15k	-	-	8.95 1.2	12	black	xlr	2600.00	Wireless system, Shure SM87 element, companderized R.F. 115 dB dynamic range, identical to cabled SM87, battery powered receiver option.
System 85	cond	50-15k	-	-	8.95 1.2	12	black	xlr	2600.00	As above but with Shure SM85 element.

Model	Type	Pattern(s)	Frequency Response, dB, +/- dB	Impedance, ohms	Sensitivity, 1 kHz, dBm	Sound Pressure Level at 1 kHz, dBm	Dimensions, L, D, W	Weight, oz.	Finish	Connector	Price, \$	Features
System 58	dyn	card	50-15k	-	-	9.35 1.2	-	-	xlr	As above but with Shure SM58 mic element.		
Sys 25	dyn	card	100-12k	-	-	10.5 1.2	14	silver	xlr	2200.00		
Sys 42						3.54 2.4 0.82	2.5	beige	xlr	1875.00		Any lavalier mic may be used with this basic body pack unit.
Sys 420						3.54 2.4 0.82	2.5	beige	xlr	1265.00		As Sys 42 above.
Multivox												
DM76	dyn	unidir	70-15k	500	76	7.0 2.5	9.5	gold/ red/ othrs	1/4"	49.95		Close proximity mic.
WC75	elect cond	unidir	50-16k	70		8.0 2.5	8.5	silver	-	59.95		Wireless FM mic, with auto level compressor. Uses 88-100 MHz range.
2M79	dyn	unidir	-	-	-	8.0 2.5	8.5	silver	-	109.95		Vocal wireless, as WC75 above.
V12	dyn	unidir	50-18k	600	73	7.0 2.5	10	silver gray	1/4"	129.00		Close proximity low impedance mic.
Nady												
601/701										2450.00- 3250.00		Wireless systems operating in VHF 151 and 216 MHz, a system is one receiver and one transmitter, several versions are available, including a true diversity reception system.
501 VHF										850.00- 900.00		Three types of transmitters available-handheld, lavalier, instrument, operating range is 200 ft.

Model	Type	Pattern(s)	Frequency, db, * -db Response,	Impedance, ohms	Sensitivity, 1 kHz, -dbm	Dimensions L, D, W	Weight, oz.	Finish	Connector	Price, \$	Features
Neumann											
KM 83i	cond	40-20k	200	-	123	0.83 4.3	2.8	xlr		349.00	
KM 84i	cond	40-20k	200	-	123	0.83 4.3	2.8	xlr		349.00	
KMR86i	cond	40-20k	200	-	123	0.83 7.3	7.4	xlr		885.00	Adjustable patterns from omni to cardioid to bi-directional.
U 89i	cond	40-18k	150	-	134	1.8 7.3	14.1	xlr		950.00	Adjustable from omni to card, hyper card, wide angle card, bi-directional.
U 87i	cond	40-16k	200	-	122	2.2 7.9	17.6	xlr		1000.00	Adjustable omni, card, bidirectional.
U 47fet i	cond	40-16k	150	-	137	2.5 6.3 8.6	25	xlr		875.00	
USM69i	cond	40-16k	150	-	133	1.2 1.9 11.5	18	xlr		2100.00	Adjustable omni, wide-angle card, hyper card.
KMR82i	cond	40-20k	150	-	128	0.8 15.5	8.8	xlr		675.00	
Peavey											
CD-20	dyn	50-16k	250	76	140	2.25 6.25	8.0	coated metal	xlr	109.00	
CD-30	dyn	80-19k	300	77	140	2.25 6.25	8.0	coated metal	xlr	119.00	
HD-40	dyn	80-18k	300	77	140	2.25 6.25	8.0	coated metal	xlr	129.00	

Model	Type	Pattern(s)	dB, +, -dB	Impedance, ohms	Sensitivity, 1 kHz, -dBm	Dimensions, L, D, W	Weight, oz.	Finish	Connector	Price, \$	Features
EC-10	elect cond	40-20k	150	57	140	1.79 6.5	7.5	coated xlr metal	140.00		
EC-11	elect cond	60-20k	150	57	140	1.79 6.5	7.5	coated xlr metal	140.00		
EC-15	elect cond	40-20k	150	52	135	1.79 6.5	7.5	coated xlr	135.00		
											Note: In Peavey's amplifier listings in the April issue, we inadvertently listed their model CS-400 as C5400. Note this correction in your issue. CS-400.
B410	elect cond	120-16k	200	51	134	8.25 2.06	10.5	matte brown	105.00		Ball head, built in on/off, quick release adapter.
B413	elect cond	120-16k	200	51	134	16.19 2.06	16	matte brown	105.00		Gooseneck mount.
B414	elect cond	120-16k	200	51	134	16.19 2.06	17	matte brown	120.00		Same as B413 but with on/off switch.
B432	elect cond	16-20k	200	50	134	7.68 1.13	9.5	matte brown	205.00		No proximity effect.
Samson											
HT-20/58	dyn card	20-15k 3						ABS	xlr + $\frac{1}{4}$ "	1295.00	Wireless system, uses Shure SM58, true diversity receiver.
HT-20/85	cond card	20-15k 3						ABS	xlr + $\frac{1}{4}$ "	1450.00	As above but with Shure SM85.

Model	Type	Pattern(s)	dB, + -dB Response,	Impedance, ohms	Sensitivity, I kHz, -dBm	Dimensions, L, D, W	Weight, oz.	Finish	Connector	Price, \$	Features	
HT-20/87	cond super card	20-15k 3	-	-	-	-	-	ABS	xlr + 1/4"	1450.00	As above with Shure SM87.	
HT-20/58	dyn card	20-15k 3	-	-	-	-	-	ABS	1/4"	575.00	Uses Shure SM58, crystal-controlled single channel receiver.	
HT-20/1		20-15k 3	-	-	-	-	-	ABS	1/4"	475.00	Uses Ibanez mic, similar to HT-20/58.	
Sennheiser												
MD 421 U	dyn card	30-17k	200	-	-	18	-	black plastic	xlr	332.00	High resistance to overload, bass rolloff filter.	
MD 409 U	dyn card	50-15k	200	-	-	6.3	2.2 1.3 5.3	black/gold metal	xlr	249.00	Large shockmounted transducer, gold plated inlet basket.	
MD 441 U	super dyn card	30-20k	200	-	-	16	10.6 1.4 1.3	brush alum	xlr	469.00	Shockmounted element, high feedback resistance, brilliance switch, bass rolloff switch, humbucking coil.	
MD 431 U	super dyn card	30-20k	200	-	-	10	-	black metal	xlr	355.00	Built-in eq for feedback control, shock mounted element, humbucking coil, silent on/off reed switch.	
MD 918 U	dyn card	50-15k	200	-	-	4.3	-	black plastic	xlr	139.00	Warm vocalists mic with full frequency response.	
Shure												
SM81	cond card	20-20k	150	65	135 0.5	8.0	8.34 0.94	champagne steel	xlr	336.75	Wide range, flat frequency response, with selectable low-freq. rolloff, backplate structure maximizes s/n ratio, low harmonic distortion, rugged.	
SM91	cond hemi-card	20-20k	150	69	141 0.1	-	0.63 3.75 5.38	matte black	xlr	300.00	Unidirectional low-profile surface-mount, minimum comb filtering, uses separate (included) power supply.	

Model
Type
Pattern (s)
dB, +, -dB
Frequency Response,
Impedance, ohms
Sensitivity, 1 kHz, -dBm
Sound Pressure Level at
Dimensions, L, D, W
Weight, oz.
Finish
Connector
Price, \$
Features

Model	Type	Pattern (s)	dB, +, -dB	Frequency Response,	Impedance, ohms	Sensitivity, 1 kHz, -dBm	Sound Pressure Level at	Dimensions, L, D, W	Weight, oz.	Finish	Connector	Price, \$	Features
SM98	cond card	40-20k	150	78	153	0.1	1.25	-	matte black	xlr	250.00	Small high-performance condenser for instrument miking, low distortion, mounting flexibility, separate (included) power supply.	
SM87	cond super card	50-15k	150	74	142	0.5	7.57 1.94	6.3	gray steel	xlr	329.00	Specially-tailored freq. response results in high gain before feedback, low noise,	
Sony													
C-48	cond	ad just	150	-	114	0.2	2.1 1.57 9.0	19.4	-	xlr	795.00	Adjustable from omni to bi-directional and unidyne.	
C-76	cond	unidir	250	-	114	0.2	1.0 26.6	14.6	-	xlr	795.00	Shotgun mic.	
C-74	cond	unidir	250	-	114	0.2	1.0 16.8	12.5	-	xlr	710.00	Shotgun mic.	
C-35P/36P	cond	unidir	100	-	114	0.15	0.8 5.3	4.2	-	xlr	395.00		
ECM-23f	elect cond	unidir	250	-	114	0.3	1.1 7.5	6.7	-	xlr	120.00		
ECM33F	elect cond	unidir	250	-	114	0.15	1.1 7.0	6.5	-	xlr	195.00		
ECM-775/B	elect cond	omni	150	-	-	-	0.22 0.5	0.05	-	xlr	-	Lavalier mic.	
ECM66S/B	elect cond	unidir	150	-	-	-	0.42 1.0	.0.25	-	xlr	-	Lavalier mic.	

Telex	Type	Pattern(s)	Frequency Response, dB, +, - dB	Impedance, ohms	Sensitivity, I kHz, -dBm	Dimensions L, D, W	Weight, oz.	Finish	Connector	Price's	Features
TE10	elect. card cond	30-20k	200 75	-	6.5 1.75	7.4	black metal	-		233.00	Shock mounted element, patented isolation system keeps element on three "fingers."
TD-1	dyn card	50-16k	200 77	-	6.75 2.25	9.2	black metal	-		208.00	Designed for high sound pressure levels.
TD13	dyn card	50-16k	200 77	-	6.5 1.75	9.2	black metal	-		208.00	As DT1 above.

List of Manufacturers

- | | |
|---|---|
| AKG Acoustics
77 Selleck Street
Stamford, CT 06902 | Multivox
80 Trade Zone Ct.
Ronkonkoma, NY 11779 |
| Audio-Technica U.S., Inc.
1221 Commerce Drive
Stow, Ohio 44224 | Nady Systems, Inc.
1145 65th Street
Oakland, CA 94608 |
| Beyer Dynamic, Inc.
5-05 Burns Avenue
Hicksville, NY 11801 | Neumann-see Gotham Audio |
| Bruel & Kjaer Instrs., Inc.
185 Forest Street
Marlborough, MA 01752 | Peavey Electronics
711 A Street
Meridian, MS 39301 |
| Countryman Associates Inc.
417 Stamford Avenue
Redwood City, CA 94063 | Philips Products
77 Selleck Street
Stamford, CT 06902 |
| Crown International
1718 W. Mishawaka Road
Elkhart, IN 46517 | Samson
124 Fulton Avenue
Hempstead, NY 11550 |
| Electro-Voice, Inc.
600 Cecil Street
Buchanan, MI 49107 | Sennheiser Electronic
48 W. 38th Street
New York, NY 10018 |
| Fender Music Instruments
1300 E. Valencia Drive
Fullerton, CA 92631 | Shure Brothers, Inc.
222 Hartrey Avenue
Evanston, IL 60204 |
| Gotham Audio Corp.
741 Washington Avenue
New York, NY 10014 | Sony Corp.
Sony Drive
Park Ridge, NJ 07656 |
| Fostex Corp. of America
15431 Blackburn Avenue
Norwalk, CA 90650 | Telex Communications, Inc.
7600 Aldrich Ave. South
Minneapolis, MN 55420 |
| HM Electronics, Inc.
9675 Business Pk. Avenue
San Diego, CA 92131 | Write directly to these manufacturers for further information. Please say you saw it in Modern Recording & Music. |

Richard Thompson Yet To be Commercial

jimmy guterman



During one particularly ugly performance of Fairport Convention's first American tour in 1970, someone pressed against the stage at a long-forgotten dive in LA and interrupted one of the band's doomy visions with a scream of "Boogie! Play some rock n' roll!"

"This is rock n' roll," snapped the band's guitarist, Richard Thompson. "*British rock n' roll!*"

It suffices to say that Richard Thompson has no American hit singles. With Fairport, a band committed to an inspired fusion of British roots music and Chuck Berry stylings, and with ex-wife Linda, Thompson has remained true to his muse and the market be damned. Thompson's Sufi fatalism and tasteful guitar complement the other, making for inspired if not particularly commercial music. His last LP with Linda, 1982's *Shoot Out the Lights* (Hannibal), fit into few AOR playlists, but the stubborn and ill-fated cries for fidelity, marital and otherwise that pervaded the disc cut far deeper than almost anything else released that year.

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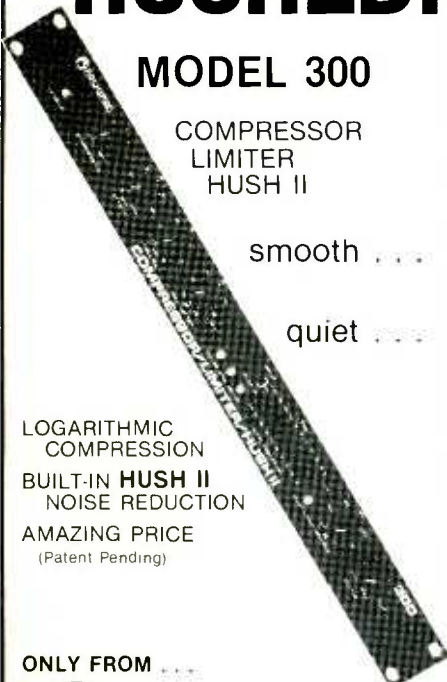
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Since the break, Richard's music has made tentative moves toward the mainstream. His LP, *Hand of Kindness* (Hannibal, 1983) yielded a single, the reggae-styled "The Wrong Heartbeat." The "Big Band" tour that followed saw Thompson accompanied by a horn section that often took up more space than there was on the stage, playing new songs, Fairport songs, and throwing such bizarre covers as "Danny Boy" and "Pennsylvania 6-5000" into the set when it seemed as if the shows had become predictable.

The new *Across the Crowded Room* (Polygram) solidifies Thompson's cult and may be the closest he can come to making a commercial breakthrough. Sacrificing little of the intensity of *Shoot Out the Lights*, Thompson has found a satisfying way to broaden his base and find an audience at the same time. And maybe then the masses will find out from whom Mark Knopfler got his guitar sound. Fronting a band featuring singer Christine Collister and Any Trouble's guitarist Clive Gregson, Thompson is making believers across America.

Modern Recording & Music: What equipment are you using?

Richard Thompson: I'm only using one guitar: a Fender Stratocaster. On this tour, I'm renting MusicMan 410 amps. For mics, we use whatever the house provides, usually Shures.

MR&M: "Guitar heroes" such as yourself sometimes change their guitars often during a set. You seem comfortable using just the Strat.

RT: Well, I've only got one guitar.

I'm an impoverished rock star. It's really the only one I have at the moment.

MR&M: You must be kidding.

RT: I'm totally serious. If I break a string, Clive has to sing while I change strings.

MR&M: You're back on a major label for the first time in half a decade. How is working with a major label different from working with an indie?

RT: On Hannibal, it's hand-to-mouth, and it's fun making records that way. You also have control over everything and do the best you can with regard to distribution, publicity, and the like. On a major label, it's a larger machine. It's able to make a dent on commercial radio, whereas on an independent that's almost impossible. It's certainly much easier to chart on *Billboard*. On a larger label, you can potentially lose artistic control. On Polygram, that hasn't happened.

MR&M: In recording *Across a Crowded Room*, was there a conscious effort made to justify Polygram's investment?

RT: I thought in those terms around 1976. We were on Chrysalis and they wanted a "different" record, a commercial record. I had to try and make it.

MR&M: *First Light* (Chrysalis, 1978). Wasn't it [commercial]?

RT: No it wasn't—that was the trouble. It tried to lean in that direction, but that's not an area in which I have any skill. It was a mess. These days, I write for myself. If people like it, so much the better.

On a major label, it's a larger machine. It's able to make a dent on commercial radio, whereas on an independent that's almost impossible. It's certainly much easier to chart on Billboard. On a larger label, you can potentially lose artistic control. On Polygram, that hasn't happened.

MR&M: Is there a satisfactory middle road between the commercial and the artistic?

RT: There definitely is, but the first thing is to be able to look in the mirror and like what you see.

MR&M: The band you have on this tour is much smaller than the one you had last tour. Why?

RT: Probably economics more than anything else. I'm tired of losing money on the road. On this tour, I'm determined to break even. Having a five-piece makes that possible. Also, this kind of line-up is better able to play the new album.

MR&M: Much of the writing about both your new LP and Linda's *One Clear Moment* has dwelt on your break-up. How does it feel to have all this in public?

RT: It's a real bore. It's a shame the records were released at the same time, because that emphasized some aspects on the records that really shouldn't have been. Discussing our relationship puts what's on the record out of perspective and makes people look for things that really aren't there and to miss things that are there.

MR&M: What's been missed?

RT: A lot of songs have been misinterpreted quite drastically, which is a shame. Certain aspects of the record that I hoped people would pick up on have been overlooked.

MR&M: Such as?

RT: Without getting too finicky about it, "Love in a Faithless Country." It's been reviewed as a song of personal venom and personal tragedy. It's really a song about murder. It was written about two murderers in Britain in the 1960's. They teamed up and killed people. If any song on the record needs elucidation, it's that one. The others are self-explanatory.

MR&M: Do you feel that adding a female singer with a voice similar to Linda's to your band is begging comparison?

RT: It's definitely asking for trouble. That's not the reason I did it—Chrissie is a great singer. She's fantastic. Having her in the band means we can do a song like "You Don't Say," which otherwise would have been very hard to perform. Chrissie makes the band very strong vocally. So does Clive, who's also a great singer. Having a woman in the band is asking for trouble, but fifty percent of the world's population are women. One musician in three is a woman. They're hard to avoid.

MR&M: You opened this tour

strangely, opening for an indifferent Jean Luc-Ponty audience at the Tower in Philadelphia. Why?

RT: Why is a good question. The money was good, the routing was good. Everyone had just gotten off the plane the night before.

MR&M: Did you just want to open with a low-pressure gig?

RT: That was the idea. It was probably a mistake. We got a five-minute sound check, we were tired, we couldn't hear each other. In that theater, you have to set up each monitor very carefully, or you won't hear anyone else in the band. We didn't have time for that. It was just a first show.

MR&M: On this tour, you revived *Pour Down Like Silver's* "For Shame of Doing Wrong," which you haven't played in a long time.

RT: Right, we haven't done it for a few years. Sandy Denny did a version of it—the version we're playing now is half Sandy Denny's and half ours.

MR&M: What are you listening to now that excites you?

RT: I'm listening to the air conditioning at the moment.

MR&M: Anything else?

RT: The Bobs are very good. Christine Collister is great, she's one of the best singers I've heard, and so is Clive Gregson, who's a great singer and songwriter. I'm working with the people that excite me. It's a good situation. What I listen to on record tends to be old stuff. I like dead people. If you're dead, you're good. I like Charlie Parker, Edith Piaf, and Billie Holiday. It's a shame that there isn't room in the market for a great ballad singer like Edith Piaf.

MR&M: How have your goals changed since your Fairport days?

RT: They're basically the same. Each record is a project, an experiment, toward that goal.

MR&M: Do the critical praises put extra pressure on you?

RT: I don't take that stuff too seriously. It's great if they say you're good, but it doesn't do you any good. It's not a reason to live or die. You have to make music for your own reasons. You have to be successful on your own terms. You have to be personally satisfied with your work before you do anything else. If other people like you, that's good, but that isn't what matters.

MR&M: Can you make a living with that attitude?

RT: I have so far. I've always survived. If things change, I'll let you know.

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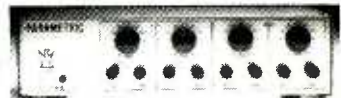
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& MUSIC...



GEORGE BENSON: 20/20. [Produced by Russ Titelman with two tracks by Michael Masser, engineered by Jim Boyer, Lee Herschberg, Gary Ladinsky, Michael Macini, Elliot Scheiner, Russell Schmitt, and Thom Wilson, recorded at A&R Recording Studios, New York; A&M Recording Studios, Hollywood; Amigo Studios Inc., North Hollywood; Atlantic Studios, New York; Automated Sound Studios, New York; Bossa Nova Hotel, San Fernando, California; Clinton Recording Studio, New York; Devonshire Sound Studios, North Hollywood; Grand Slam Studio, West Orange, New Jersey; Hit Factory, New York; House of Music, West Orange, New Jersey; Power Station, New York; The Review Room, New York; Rosebud Recording Studio, Inc., New York; Stigma Sound Studios, New York; and Village Recorder, West Los Angeles.] Warner Brothers 9 25178-4.



Performance: **Recorded in 17 studios**
Recording: **Lots of painstaking care**

20/20 marks George Benson's rise as a vocalist as he recorded only one instrumental track, "Stand Up," and even used scat-like voices for a fuller atmosphere. Whereas in the past, Benson's mixing of vocal tracks and instrumentals used to heighten his singing, *20/20* comes across as an ordinary album without too much variety.

Benson was a perfectionist on *20/20* by working in 17 studios with seven engineers and many more assistant engineers. He also em-

ployed a variety of backing instrumentalists on both coasts including Dave Grusin, Ralph MacDonald, Richard Tee, Michael Sembello, and vocalists Patti Austin, Roberta Flack, James Taylor (Of Kool & the Gang) and Cecil & Linda Womack. However, Benson does not sing a duet with anyone even though "You Are the Love of My Life" calls for one.

With his crystalline production, Benson has removed all raw edges. Unfortunately, too many things sound too good. He fares best on his silky love songs ("Nothing Gonna

Change My Love For You") and smooth ballads ("New Day"). Two vocal sings do stand out though. "I Just Wanna Hang Around You" has a Steely Dan feel while "Beyond the Sea (La Mer)" revivifies Bobby Darin's 1960 hit.

"Hindsight is 20/20 vision" sings Benson, and obviously he feels that most people would rather hear him sing than play lyrical guitar. I, for one, would rather have more of a mixture, much more guitar and a less produced album.

—bob grossweiner

MODERN RECORDING & MUSIC

RUBY BRAFF & DICK HYMAN: *America, the Beautiful*. [Produced by Dick Hyman, Ruby Braff & the Pittsburgh Area Theatre Organ Society, engineered by Paul Engle; recorded at Keystone Oaks High School, Dormont, Pennsylvania.] Concord Jazz GW 3003.

Performance: **Hyman & Braff, amongst America's most beautiful & talented**

Recording: **Live...in concert... clean and up close**

If we'd been there this is just about what we'd have heard... Ruby Braff—a cornetist in the lineage of Louis Armstrong & Bobby Hackett... Dick Hyman—a jazz keyboard virtuoso who can actually make the pipe organ swing or stomp at will, his will. These two virtuosos live in concert wrapping their chops around ten tunes that go all the way from the almost traditional *High Society* to the nearly contemporary *This Is All I Ask*. However, there is a third star to this recording. The PATOS Wurlitzer organ was born in 1927 and served these many years in the Prospect Theatre in Brooklyn, N.Y. accompanying silent moving pictures, providing intermission music, backing up the sing-alongs as the audience followed the bouncing ball through the words on the screen and just generally adding to the enjoyment of all the patrons. This two manual, ten rank mighty Wurlitzer along with assorted drums, bells and cymbals was uprooted from its natural habitat and brought to Dormont by the Pittsburgh Area Theatre Organ Society where restored and re-installed—it awaited the artistry of a Dick Hyman and a Ruby Braff. The pipe organ has seldom been heard in a jazz context in collective improvisation with other instruments. The reason for this is that it is a difficult instrument rhythmically. The pipe organ has a built-in time lag between the time a key is touched and the note sounds. As if this weren't problem enough different instruments have different time delays and the difficulty of playing such an instrument in tempo would be enough by itself without having to make it swing or get it in sync with other sports arena rather than to the area of making music. Once again I can only observe that it doesn't have to be an either/or situation. There are certain concert performances which I cherish and

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there are certain studio made recordings which I cherish. So long as I may have both there is no need for me to choose. Yet it is, at the very least, informative to know what goes into the performer's art on the stage or in the studio and this book has given us a guarded look (because typewriters have erasers too) at the real Glenn Gould.

The bonus disk interview with Tim Page is even more instructive because, while tape editing in the interview is not outside the realm of possibility, Tim Page seems too much the servant of history here to put up with much doctoring of his documentary. Also there are things said by Gould in this interview which, had the tape been edited, he probably would have preferred to have left unsaid.

Yet the music speaks for itself and quite eloquently too. We have been privileged to hear one of THE masterpieces of the keyboard literature in the hands of a supreme artist of the keyboard... not once but twice. And had Glenn Gould given us a third version from his death chamber there would have been further changes, further revisions, and further considerations. What we have is a conception of a given work at two different points in time separated by something like 25 years of study, practice, concerts, recording sessions, thought and re-thought.

Although Glenn Gould tells Tim Page that he much prefers his 1981 recording of *The Goldberg Variations* to his 1955 recording, at the risk of repeating myself, I can only observe that one may possess both versions, one can enjoy both versions, here is one three disk LP box set... so there's no need to choose. And I'm glad that I don't need to.

—joe klee

BRYAN ADAMS: *Reckless*. [Produced by Bryan Adams and Bob Clearmountain; engineered by Bob Clearmountain; unknown recording site.] A&M SP-5013.

Performance: **Reckless**
Recording: **Flawless**

It boggles the mind to think how Bryan Adams, a Canadian-born rocker with a gruff, rough, hoarse, harsh, throaty, raspy, sandpapered voice, has reached the pinnacle in rock and roll that he has. True,

history is filled with singers whose voices sound as if their diet consists of scotch, gin and vodka. Just listen to Joe Cocker or Rod Stewart. Adams brandishes the guitar as his musical weapon and makes it sound coarse and crude yet it rings like the enthusiasm felt in a hot rockin' garage band on a Saturday night. And for the kicker, his songwriting is ordinary and at times, even a bit forced. However, even with these three strikes against him, Adams has put together an album that is extraordinary and a total knockout as each cut is powerful and can stand by itself.

This is Adams' fourth album and third under the direction of Bob Clearmountain. Adams and crew recorded material for the record in six weeks, took a break, and returned to the studio to record one more song and re-record two other tracks. The Adams style is one of simple power chords fueled with crisp, throbbing percussion, both complementing his vocals. The songs are not well-orchestrated, nor should they be. Adams uses the basic guitar, bass, drum and keyboards and perhaps that is where his appeal lies. Perhaps without modern synthesizers, Adams' music takes on a more traditional, free-spirited rock and roll approach. His love for the music can be heard and felt.

The ominous, lurching guitar in "Run To You" makes it a haunting cut. A slight echo on the singer's voice has him sounding distant which adds to the mood of the tune. Adams collaborates with the goddess of rhythm and blues, Tina Turner, on a duet called "It's Only Love." Turner's no-holds-barred screaming fits in perfectly with the jarring vocals coming from Adams. Getting away from his straightahead style, Adams shows his talented touch on the ballad, "Heaven." There a soft keyboard plays with Adams' gravel-like voice. The song is punctuated with bursting guitars and percussion, allowing a warmth to permeate through the composition.

The album begins with crunching guitar hooks in "One Night Love Affair," a prime example of Adams' basic yet powerful way of playing. A short guitar solo in the song rings with tremendous clarity, no doubt due to Clearmountain's expertise in production. The harmonica in "Long Gone" picks up the beat and rips through the guitars, spicing the song with a funky condiment. "Ain't Gonna Cry" is nothing but wild and

"Kids Wanna Rock" is ballsy, bluesy, hard and mean. These last two songs are representative of Adams' sometimes mundane lyrical skills. Yet this record is a pleasant surprise cutting through the air like a knife.

—martin basch

LAURIE ANDERSON: *United States Live*. [Produced by Roma Baran and Laurie Anderson; recording engineer: Bob Bielecki; mixing engineers: Richard Kaye and Dominick Maita; recorded live at the Brooklyn Academy of Music, New York City, February 7-10, 1983.] Warner Brothers 9-25191-1 (5 LPs; 4 cassettes).

Performance: **Warm and surprisingly accessible**

Recording: **Real live**

Laurie Anderson's *United States Live* is kinda like *Who's Last*. No, really. Both are essentially audience souvenirs, momentos that are somewhat unintelligible and hence useless for those who weren't at the show. For a full appreciation of this epic (in both scope and length) complex work, one must not only have sat through her seven-hour full performance, but one must also have Anderson's published 230-page libretto available for reference. This gets expensive. Tickets for the two-day event were \$35 (in the cheap seats, where I sat); the book is \$20; the record lists for \$30. An \$85 price tag is pretty hefty for a piece of performance art, never mind the time investment. But, for the most part, it's worth it.

Laurie Anderson is that rare avant garde figure who uses her heart as much as her head. Most "serious" artists who attract a rock 'n' roll audience are stodgy and humorless, far more interested in making Big Statements than insuring that their audience has any use for their pronouncements. A deadpan monologue deep in Part 3 of *United States* makes clear that she wants nothing to do with that:

"Well I was out in L.A. recently on music business, and I was just sitting there in the office filling them in on some of my goals.

"And I said: 'Listen, I've got a vision. I see myself as part of a long tradition of American humor. You know—Bugs Bunny, Daffy Duck, Porky Pig, Elmer Fudd, Roadrunner, Yosemite Sam.'

"And they said: 'Well actually, we had something a little more adult in mind.'

"And I said: 'OK! OK! Listen, I can adapt!'"

Not all of *United States* is that transcendent—no one except maybe the Firesign Theater at their peak could sustain *that* for seven hours. Sometimes what Anderson wants to say takes a back seat to how she says it and this occasional victory of form over content makes for a flawed but major work.

On the recording side, *United States Live* is an extremely authentic live disc, a relative rarity. (Compare this with the recent Talking Heads "live" album which lists two studios that were used for additional recording.) For the first time, a Synclavier sounds like it is being played, not programmed. The Brooklyn Academy of Music is as much an instrument here as anything Anderson and her band play. A tangible spaciousness envelops the performance, making for a document that enhances the work in addition to merely recording it.

United States Live is difficult, but it justifies itself. At the least, it's more fun than *Who's Last*.

—jimmy guterman

DENNIS EDWARDS: *Don't Look Any Further*. [Dennis Lambert, producer; Jeremy Smith, chief engineer; David Marquette, Robert Feist, Jeff Silver, Paul Ericksen, and Ralph Sutton, associate engineers; recorded at Soundcastle and The Music Grinder Studios, Los Angeles, California; mixed at Motown/Hitsville U.S.A. Recording Studios, Los Angeles, California.] Gordy 6057GL.

Performance: **Solid gold**

Recording: **Fine tuned**

Listening to *Don't Look Any Further*, Dennis Edwards's first solo album. I couldn't help but make a connection between him and Teddy Pendergrass. Like Pendergrass, Edwards is a soul man who seems always to be in control of his ladies. A marked contrast to Luther Vandross, another soul man, you wouldn't find him begging, pleading or bargaining for love. He is matter-of-fact about his feelings and wants, voicing them with a most reassured confidence.

In the title cut, a liltingly lovely

mid-tempo rocker with a captivating melody, he meets a woman that tickles his fancy, and instead of engaging in the usual first meeting small talk, immediately declares: "What you need is a lover/a man to take over/don't look any further." The music and recording here (as on the rest of the album) is as refreshing as a blast of cool air in a hot, funk-ed-up nightclub. Above a deep, fluid bass, and a gutsy, thudding/thundering kick drum, an airy snare taps with a crisp, heavy-handed prominence, and various percussion instruments, keyboards, and stereo guitars display sharp presence and clean timbral detail. When you least expect it, a timbale jumps out at you from the left speaker, rousing your consciousness.

Equally compelling is "(You're My) Aphrodisiac," a ballad in which Edwards casts aside his macho toughness, and showers his woman with enough flattery to keep her happy for a few days (or nights). On this one, Edwards's singing, which alternates between his usual rawly sensual growl and a soft, sweet croon, cuts through the mix—which is as dense and alive as an army of ants on a forgotten picnic lunch—with lines like: "When it comes to getting down you're a specialist," and "All I need is you and you alone."

But do you think Edwards, soul music's latest ladies' man, means it? Hell no. The third cut on side two finds him in an affair that got out of hand. There he is involved with two women—a dilemma he deals with in "Another Place In Time"—so he breaks it off with the other woman by giving her comfort in the fact that had he not been in love with someone already...

And on "Just Like You," the album's best ballad, Bill Reichenbach's saxophone attempts to battle Edwards's voice for dominance. But by definition, it's no match for Edwards's powerful, raw verve as he describes how his life has changed since making the acquaintance of some delightful, new female.

Edwards, who fronted the Temptations for more than a decade, left them recently "strictly out of boredom," after he felt his input to the group was not being credited. As a solo performer, he hopes to grow as an artist and to explore new creative paths. If *Don't Look Any Further* is any indication, those paths should lead straight to the top.

havelock nelson

MODERN RECORDING & MUSIC

MAHALIA JACKSON: Newport 1958. [No producer identified; no engineer identified; recorded live at the 1958 Newport Jazz Festival.] Columbia JCS 8071.

Performance: **Timelessly uplifting**
Recording: **Strong on vocals, weak on instruments**

Mahalia Jackson was a fascinating example of someone who translated the idioms of New Orleans jazz into a completely different genre. That genre, a musical bag still largely identified with her name, is gospel. This was a remarkable act of musical translation since New Orleans jazz from its inception was sensual, gritty, slurry—in short, quite the opposite of the lilting and transcendental sound which became gospel. Jackson found the way to steal the fire of a Bessie Smith and package it for Sunday consumption at the local Baptist church.

This obvious mapping of her musical career was sometimes ignored by her record companies. At various points in her career Columbia attempted to package her as a pop singer, folk singer, etc. She was, of course, nothing of the sort. She suffered overproduced albums with pop orchestras drowning out her soaring contralto. She often deserved a better fate in the recording studio.

Newport 1958 may be one of the finest albums of her recorded career since she is backed *only* by a piano (unidentified...was it Mildred Falls?) and bass (equally unidentified). Rather than relying upon a plenitude of hymns sung in dirge-time, she caters to the jazz crowd by singing a hefty assortment of uptempo numbers revealing how her gospel sensibility was still heavily informed by all that jazz.

There's a sultry edge in her voice on "It Don't Cost Very Much." There's a strutting, striding, ecstatically swinging tone to "Walk Over God's Heaven." She positively glides through a rocking, muscular version of "Didn't It Rain" and seduces us sinners with her throaty vibrato on "He's Got The Whole World In His Hands." My favorite number has to be "I'm Going to Live the Life I Sing About In My Songs" because that phrase sums up the spiritual essence of Jackson's music. Only two cuts disappoint: "An Evening Prayer" and "The Lord's Prayer" simply go on too long without an energetic forward movement and it's interesting to hear

the increase of crowd noise during her performance of the latter.

The recorded sound does justice to Jackson's vocals and captures them crisply and brightly. I wish the piano and bass had been taped at a higher recording level because they sound, at times, murky and fuzzy beyond recognition. A small caveat; Jackson's voice is what this recording is about.

Better liner notes with some technical and program information would also have been welcome.

But the wise are advised to pick this album up, particularly the younger generation who identify much of gospel with redneck hokum. This was gospel's finest hour.

norman weinstein

KIP HANRAHAN: *Conjure*: Music For The Texts Of Ishmael Reed. [Produced by Kip Hanrahan; engineered by David Rodriguez; recorded at Latin/Eurosound Studios, New York, N.Y.] American Clave AMCL-1006.

Performance: **A convocation of spirits representing jazz, rock, blues, Latin**
Recording: **Immediate and visceral**

Novelists since the birth of this nation have labored to grasp and then preserve on paper the substance of the American Dream. Kip Hanrahan, a Jewish-Irish Bronx native in his late 20s who now lives on the Lower East Side of New York, is equally intent on capturing and preserving on tape the American Clave, or American Rhythm.

Books about records are nothing new, but *Conjure* is a record about a book—or, if you prefer, a record made from a book. Under the direction of media mixmaster Hanrahan, six composers fashioned songs around the words of Reed's book *Conjure*. Much as Hanrahan, a filmmaker by his own description, has "directed" his own "solo" albums—five-star masterpieces of collaboration called *Coup De Tete* and *Desire Develops An Edge*—where he acts as an "editor." Individually co-composers David Murray (tenor sax), Allen Toussaint (piano), Taj Mahal (guitar), Steve Swallow (electric bass), Lester Bowie (trumpet) and Carla Bley not only wrote the music but performed it, all under the supervision of "producer" Hanrahan.

The music (two of the 10 offerings are unaccompanied narrations by

Reed) is as diversified as the musicians who wrote it and the soloists who interpret it. *Conjure* is a convocation of spirits representing jazz, blues, rock and Latin music; and, as always with Hanrahan, representation requires participation. The musician on a Hanrahan date will be nudged out of his comfort zone and forced to reorient himself to the producer's pan-global time zone. A guitarist from Haiti, for instance, might work alongside a rock guitarist from New York. Cliche's, musical and conversational, prompt head shaking and upturned palms between two such players.

Yet time is but one component of rhythms for Hanrahan, who frequently employs a trap drummer (Billy Hart here, often situated in an isolation booth) surrounded by a raft of ethnic percussionists (usually Cuban and Haitian congeros). For Hanrahan the sound of rhythm is palpable; he not only hears it, he *feels* it. His mic'ing techniques (including underside placements) bring out all the percussion and re-percussion, the rhythmic volleys inducing hypnotic powers.

This is intelligent new music—a literate, communal effort—but there's nothing scholarly or abstruse about it. Humor abounds (dig Bowie's jive-ass whimsy on "Fool-Ology") and many solos will astound (especially those by cornetist Olu Dara on "Dualism I" and the bluesy dirge "Oakland Blues"). Hanrahan and Reed's inspired concept, however, loses a little something in execution. Mahal's molasses voice falters in the lower register, usually at the end of lines, on Murray's "Jes' Grew"; the overdubbed vocal chorus of "Mumble, jumble, baby" doesn't distract the listener from Mahal's vocal shortcoming. And though the limitations of time/space confront every producer/novelist, the withdrawal of Toussaint's snappy, uptempo version of "The Wardrobe Master Of Paradise" is unfortunate. Bley and Toussaint apparently wrote different versions of the same tune, unbeknownst to each other, and while both versions were recorded, Toussaint's was dropped in postproduction.

All in all, these are minor criticisms. Hanrahan is a brilliant musical matchmaker, and these 10 short stories in sound (anecdotal, metaphorical songbooks), taken singly or together, are required listening/reading.

—gene kalbacher

STUDIO TRACKS

At NYC's Unique Recording Studios: **Cheap Trick** is working on their new Epic LP with producer Jack Douglas. Guitarist Rick Neilson is using a Roland GR700 guitar synthesizer with the "MIDI Thruway." **Devo** has been recording synth tracks and mixing with producer Ivan Ivan for their upcoming single, "We Are Here To Go" for Warner Brothers Records. Producers Mark Liggett and Chris Barbosa are cutting tracks for the upcoming **Spinners** LP on Atlantic Records. **Rick Springfield** is mixing his next release for RCA records with Mark Kamins and Jay Burnett producing. Burnett is also engineering with Roey Shamir assisting. Producer **Ian McDonald** (Foreigner and King Crimson) is mixing tracks for Steve Taylor's debut release. Chris Lord Alge is engineering the mix with Kennan Keating assisting. **Chaka Kahn's** sister, Taka Boom, is recording and mixing her new LP for Mirage/Atlantic Records with Billy Rush producing. Tom Lord Alge is engineering with Cathy Gazzo assisting. New equipment includes: Quantec QRS Room Simulator, three Yamaha TX816 racks (8 DX-7s in each), two Casio CZ-101s with Cz-rider onscreen editor and disc storage, and a Sony PCM Digital 2-track for CD mastering... At Criteria Studios in Miami: **Bob Seger** is in doing overdubs for an upcoming album with Dave Cole engineering and Bob Castle and Dave Axlebaum assisting. Producer Peter Solley is in with the Romantics cutting tracks for their next LP on Nemperor Records. At the board is Gordon Fordyce with Stan Lambert assisting. **Maurice Gibb** has teamed up with producer Tom Dowd and engineer Dennis Hetzendorfer to cut tracks for brother Robin Gibb's new solo album... At Bearsville Studios in New York: Producer/engineer Max Norman has just completed two new LPs, one with Savatage, one with Trash, for Atlantic Records. Assisting was Ken Lonas. Upcoming projects include: **Blue Oyster Cult** for CBS Records with Sandy Pearlman producing and Toby Scott engineering, and **Icon** for Capitol Records with Eddie Kramer producing and engineering... At New York's Skyline Studios: recent activities included Lou Reed's *New Sensations* album, Grand Master Flash's *They Said It Couldn't Be Done*, Steps Ahead's *Modern Times* LP, the new **Shannon** album produced by Mark Liggett, and **Bronski Beat's** *Age of Consent*—their debut LP...

MISCELLANY

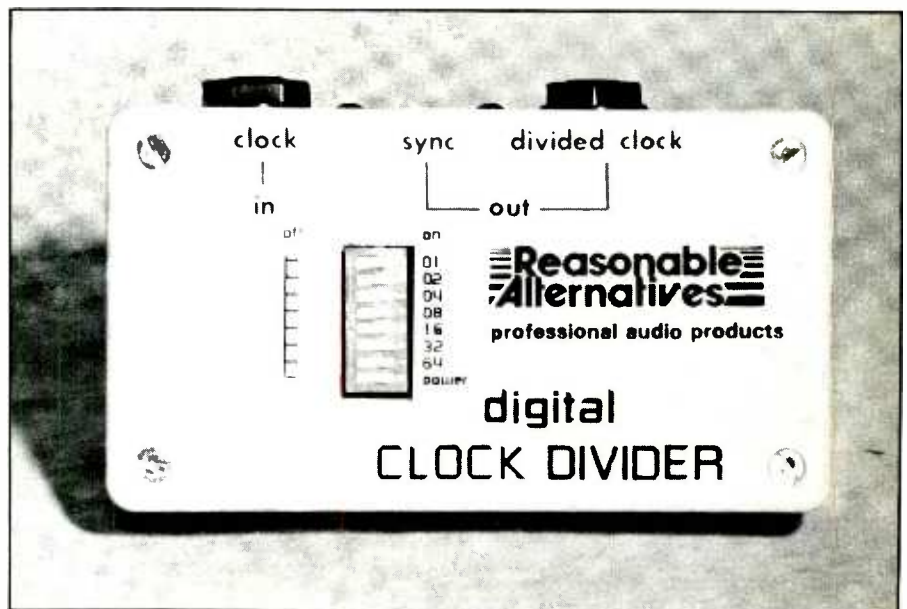
A new superstar group, dubbed **Willie and the Poor Boys**, has recorded a studio album and video of vintage rock n' roll material to continue the charity fundraising of the Ronnie Lane Appeal for A.R.M.S. (Action Research into Multiple Sclerosis) that began in 1983. The Poor Boys are Rolling Stones' **Bill Wyman** (bass and vocals), **Charlie Watts** (drummer), **Andy Fairweather Low** (rhythm guitar and vocals), **Geraint Watkins** (keyboards and vocals), and **Micky Gee** (lead guitar and vocals). Guests on the LP include Jimmy Page (guitar), Paul Rodgers (vocals), Ray Cooper (percussion), Kenney Jones (drums), Terry Williams (drums), Henry Spinetti (drums), Chris Rea (vocals), Steve Gregory (sax) and Willie Garnett (sax). Bill Wyman organized the project as well as produced the album... Members of the rock group Dio have organized still another fundraising effort for USA for Africa. Calling themselves Hear 'N Aid, Dio members Jimmy Bain and Vivian Campbell, have already received commitments for participation in the record from some of the genre's top artists. The song, called "Stars," was written by Bain and Campbell along with Ronnie James Dio. Among the artists scheduled to appear on the record are: Lita Ford and members of Judas Priest, the Scorpions, Iron Maiden, Quiet Riot, Dokken, Ratt, Y&T, Bon Jovi, Night Ranger, Black Sabbath, Queensryche and Spinal Tap. The project will also include a video on the making of the record to be released on the home video market.

The Market Place

what's new in sound and music

REASONABLE ALTERNATIVE'S NEW DIGITAL CLOCK DIVIDER

Reasonable Alternative's new digital clock divider will take an incoming clock signal from any source and divide it by 1, 2, 4, 8, 16, 32, or 64. This allows any two previously incompatible units to suddenly become totally compatible. If the unit that you wish to sync to is a Roland product, an output is also provided that is identical to the Roland "Sync" DIN jack, and will supply the +5V RUN/STOP voltage that Roland devices require. Since all companies are not standardized on their clock rates, the Reasonable Alternative's Digital Clock Divider will be a boon to all owners and users of drum machines, sequencers, and synchronizers made by different manufacturers. Therefore, brand names such as Linn, Oberheim, Emu, Sequential Circuits, Yamaha, Roland, Lexicon, and even Fairlight and Synclavier can all function in total harmony. A unique feature of the Digital Clock Divider is the "divide by 1" mode. In this position, a unit with a clock rate of 24 pulses per quarter note can run a Roland product, (which also wants to "see" 24 pulses per quarter note), but needs a RUN/STOP voltage of +5. By using "divide by 1," the clock rate will not be changed, and the +5 RUN/STOP voltage will be provided at the DIN output. Some other more exotic uses for the unit would be, for example,



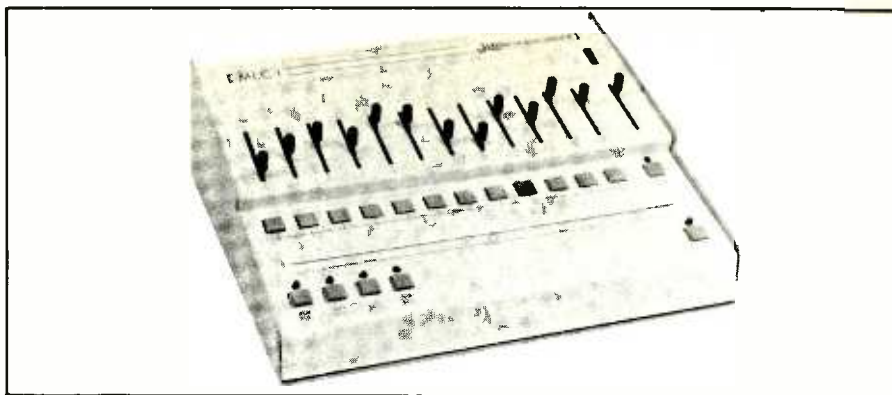
dividing the clock frequency of the Fairlight Synthesizer, (which is 384 pulses per quarter note), to control any drum machine (ie: a LinnDrum would run at its normal 48 pulses per quarter note when divided by 8). On a digital delay line with an external clock input, such as the Lexicon PCM 42, the delay can be made to repeat "in time" to a sync track or drum machine when the clock rates are synchronized by Reasonable Alternative's product. The unit is housed in an attractive light gray 2½-inch by 4½-inch ABS plastic box, with an eight position external DIP switch

for selection of the factors of division. The clock input is a female ¼-in. jack. The outputs are a divided clock ¼-in. female jack, and a 5 pin Roland type "Sync" jack (with a +5 RUN/STOP voltage). The unit is powered by a 9 volt battery with a life expectancy of several years. An optional accessory cable is also available that plugs into the socket normally used for the Dip switch, making all the clock divisions accessible simultaneously. The unit retails for \$89.00.

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J.L. COOPER MIDI LIGHTING CONTROLLER

J.L. Cooper Electronics of California recently announced a new MIDI lighting controller, the MLC-1. This compact 12-in. by 9-in. by 3-in. unit solves the problem of synchronizing lights to music when using a MIDI sequencer as part of the act. Via front panel fader controls, light commands can be "taught" to a sequencer. On playback, note on/off commands for the MLC-1's channel (settable to any of the sixteen possible) are translated into control voltages compatible with several brands of dimmer packs. Normally the MLC-1 may control up to 12 lighting channels, but can be expanded up to 24 channels. Four on/off outputs are



provided (expandable to eight) to allow synchronizing of special effects such as flash pots. The MLC-1 occupies a single MIDI channel, and can synchronize down to the six-

teenth note every time. The retail price is \$895.

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LINN ELECTRONICS DRUM MACHINE/MIDI SEQUENCER

Linn Electronics' new Linn 9000, is the first product to integrate a MIDI-compatible keyboard recorder and digital drum machine in one unit, with programming parameters identical for both. This design allows compositional flexibility said to exceed the capability of other comparable systems available at present. The Linn 9000 keyboard recorder (also known as a sequencer) precisely memorizes every aspect of performance—dynamics, pitch bends, modulation and synth patches simultaneously for as many as 16 MIDI-equipped polyphonic synthesizers (with a maximum of 32 tracks). The Linn 9000 digital drums embody all current technology for such devices (including the popular LinnDrum), while introducing many exclusive features designed to establish a new standard for performance, according to Linn. Among the many innovations: 1) velocity-sensitive front panel keypads (or rear panel inputs for electronic drum pads) for entirely spontaneous dynamics; 2) programmable hi-hat decay that permits highly accurate simulation of drummer's variable foot pressure; 3) built-in mixer with separate sliders assigned to each sound for selective memorization of volume, pan and tuning; 4) Repeat function—providing quick programming of rolls,



constant sixteenth notes, etc.; 5) versatile tempo programming via count-off Tap or numeric entry (including tenths of a beat); 6) 18 drum and percussion sounds with the highest quality digital sampling rates—two crash and two ride cymbals, four toms, two congas, bass, snare, hi-hat, sidestick, cowbell, tambourine, cabasa and handclaps. Recording and editing functions are conceived to simulate the familiar operation of a multitrack tape machine, with record, play, fast forward, and rewind buttons, among many others

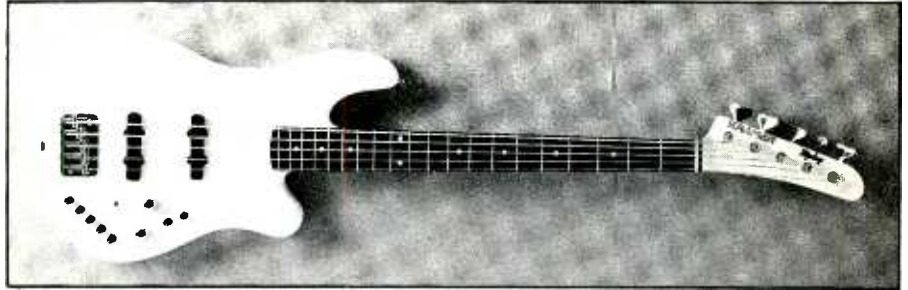
provided for easy to learn, efficient operation. Retrofittable options soon available include: 1) a plug-in audio input circuit board for sampling one's own sounds; 2) a 3.5 disc drive to augment present cassette capability to load or store drum and synth programs, as well as drum sound samples; 3) an additional plug-in circuit board to implement SMPTE interlock. The Linn 9000 carries a suggested list price of \$4990.00.

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MODERN RECORDING & MUSIC

NEW STEREO GUITAR AND BASS

Kramer Music Products of Neptune, NJ, recently announced production of the new Kramer-Ripley Stereo Guitar and Bass. Designed by veteran guitarist Steve Ripley, the guitar features a six channel stereo mix with a pan pot for each string. The pickup assembly houses six separate high-output humbucking pickups. The lead wire from each pickup connects directly to its own electronic tuning network and low-noise operational amplifier. The two output channels from the mixer section leave the guitar via dual control volume and tone pots and a standard ¼-in. stereo phone jack. A stereo cord connects the guitar to a passive splitter box which splits the signal into two mono signals. A Floyd Rose Tremolo System and Schaller Strap Locks are standard equipment and the price is \$1,349. The five



string bass also has Schaller Strap Locks and retails for \$1,399.

Circle 34 on Reader Service Card

GAINES AUDIO PATCH BAY



Gaines Audio has introduced the Model PB-16 Patch Bay, a 16 position, two row bay with ¼-inch phone jacks on both the front and rear panels. Available in both balanced and unbalanced versions, the PB-16 eliminates the time consuming installation and high cost of conventional patch bays. Outboard equipment simply plugs in to the rear of the unit and is then available at the front panel for patching. In addition, the top row jacks are internally normalled to the bottom row, which means that most normal routing is accomplished without patch cords. If necessary, these normals can be disconnected and re-connected easily by the user. Patching is done with any standard ¼-inch phone plug. The PB-16 was created with small studios, sound reinforcement companies, and keyboardists in mind. The aluminum front panel has a lightly textured black finish and is silk screened with legend blocks for easy labelling. Dimensions are 1.75-in. by 19-in. (standard rack mount), 3.5-in. deep. The suggested list price for the model PB-16 is \$179 for the balanced version, and \$164 unbalanced.

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JUNE 1985

NEW WASHBURN PEDAL BOARD

With specialized electronic effects increasingly becoming standard gig bag equipment, Washburn International had guitarists in mind when they developed their new pedal board. The board, which comes self-contained in its own hardshell case, offers players a clean, organized, and accessible method of effects selection and convenient 110V AC operation. Any combination of up to six Washburn pedal effects—which include the Stack In A Box, Chorus, Flanger, Compressor, EQ, Analog Delay,

Distortion, and Phaser—can be used individually or in conjunction with each other on the pedal board. Pre-wired and designed to eliminate the hassles of battery drain and own maintenance, the pedal board features a line driver that cancels any potential battery hum or other unwanted noise. The board also allows players to preset the levels of individual effects and selectively engage them or override them with the push of a by-pass switch. The suggested retail price of the Effects Pedal Case is \$160.

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HAFLER PROFESSIONAL POWER AMPLIFIER

Hafler's new P125 professional power amplifier is designed specifically for a variety of commercial recording studios, hotels and discotheques. Mechanically and electrically designed for reliability and continuous use, the P125 has a conservative power rating of 60 watts-per-channel into 8 ohms, with less than 0.009% total harmonic distortion over the frequency range from 20 Hz to 20 kHz. The P125 utilizes two metal oxide semiconductor field effect transistors (or MOSFETS) per channel. The MOSFETS provide built-in thermal stability, precluding the need for complex, expensive and sonically degrading protection circuitry. MOSFETS also require less drive current, allowing for simpler, more reliable circuit topology. The P125 employs rear panel



output fuses for load protection, as well as thermal circuit breakers mounted to the heat sinks. The thermal breakers will shut the amplifier down in the event that it should overheat. Key features of the P125 include: rear panel input level controls, a stereo/mono switch, and a switch to isolate circuit and chassis grounds to minimize hum in multi-amplifier installations. Designed for

standard rack mount, the P125 is 19-in. wide, 5¼-in. high, and 10¼-in. deep. It is finished in black and available either fully or partially assembled. The list prices are \$400 and \$350 respectively.

Circle 37 on Reader Service Card

JBL COMPACT BI-RADIAL STUDIO MONITOR

Using their successful Bi-Radial horn design for constant vertical and horizontal polar coverage, JBL Inc. has introduced a compact studio monitor, Model 4425, for small studio and audio production facilities. The 4425 utilizes similar designing features found in the 4430 and 4435 Bi-Radial Studio Monitors. Extended frequency response is achieved by incorporating JBL's titanium diaphragm assembly. The 4425's high frequency transducer features a titanium diaphragm compression driver with an edge-wound, aluminum-ribbon voice coil, copper-plated pole piece and patented diamond surround. In addition to frequency division, the crossover network in the 4425 provides power response compensation for the high frequency driver. The low frequency transducer features a new 12-in. (300mm) driver with edge-wound cooper-ribbon voice coil. The newly designed loudspeaker driver, model 2214H, incorporates JBL's symmetrical field geometry (SFG) magnetic structure for low distortion. The 4425's Bi-Radial horn delivers a 90 by 90 degree coverage pattern from a 1200 Hz crossover frequency up to 16 kHz. The system boasts smooth power response from frequencies up to 1200 Hz and flat power response above 1200 Hz. The system also provides smooth axial



response and ensures a color-free, reflected sound field in the control room by combining the axial response with controlled power. The 4425 handles power inputs of 200 watts, exceeding the high acoustical levels demanded for critical listening of state-of-the-art digital recordings. The system has a smooth accurate response from 40 Hz to 16 kHz (± 3 dB) and a sensitivity level of 91 dB SPL, 1W/1m. The crossover frequency is

1.2 kHz and there is a nominal impedance of 8 ohms. The dispersion angle, included by 6 dB down-points averaged between 1.25 and 16 kHz, achieves a range of 100 degrees horizontal and 100 degrees vertical. A maximum of 120 dB is provided from a stereo pair for continuous program monitoring.

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