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AUGUST 1985
VOL. 11 NO. 8 \$2.25



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MODERN RECORDING & MUSIC

AUGUST 1985
VOL. 11 NO. 8

FEATURES

20 HOWARD JONES

by Rita Wolcott and Sammy Caine

Howard Jones has put his dreams into action. His career as a songwriting synthesist has elevated to dizzying heights in the past year alone. Howard's new album, *Dream Into Action*, has even hit the top ten in both the US and the UK. Needless to say, his one man show has expanded quite a bit.

28 GREG PHILLINGANES: PULSENSATIONS

by Havelock Nelson

Greg Phillinganes played piano on some of the biggest selling records of the late 70's and early 80's including Stevie Wonder's *Songs In The Key Of Life*, Lionel Richie's *Can't Slow Down*, and Michael Jackson's *Thriller*. Now he's gone for a second solo album with *Pulse* produced by Richard Perry. Yet he still insists that he'll lend a hand or two to the others.

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This month Brian takes a look at the technical requirements necessary for your studio to get involved in producing commercials.

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by Bob Grossweiner

Recording studios have undergone a change in the way they do business in the last five years. It has become increasingly competitive for an engineer to get work these days. So *MR&M* decided to follow one engineer, Sam Ginsberg, who mainly works for the Record Plant in N.Y. This gave us a good idea about how a career in engineering could blossom in such a difficult time.



Cover and spread photos courtesy of Elektra Records

SOUND IDEAS

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by Tom Sheldon

This month Tom discusses different computer features. This is sure to help in any decision in regard to making computer or software selection.

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Bob discusses keeping your recordings as clean as possible.

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by Sammy Caine

Two years ago when the compact disc was introduced, some said that it was a passing fad. Others saw it as a major development that would change the face of consumer and professional audio. Now we know that reality lies someplace in between.

PRODUCT PROFILE: ROLAND MPU-401 34

by Sammy Caine

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Poor Recorders Applaud

I read "The Poor Recorder's Almanac—Part I" (Bob Buontempo), and I loved it (June 1985). After reading this article I subscribed to *Modern Recording & Music*. I'm studying music and own a Tascam Porta-One 4-track. Audio engineering is my goal. Your magazine helps me to decide what equipment to use. Well, I would also just like to say that your magazine has encouraged me to study audio engineering. I have quite a bit of knowledge in recording because of *MR&M*. Thank you on behalf of my band and I! Keep on humming!

—John Amorelli
Hawthorne, NJ

Well, John, we always become incredibly excited when we see someone with your enthusiasm for the field. We wish you all the best in your endeavors! And we'd just like to add that we always welcome reader response...

We received the following letter for Bob Buontempo...

Dear Bob,

I'm writing to express how favorable your June article was! "The Poor Recorder's Almanac" was long overdue. Having a small 8-track studio in the house, with a Yamaha RM1608 board, Fostex LR8 machine, two Yamaha Digital Reverbs, JBL 4312 monitors (close field set-up), assorted synths and guitars, and drum machines, I've been constantly trying to compete with the 24-track boys in making demos for record companies.

The Aphex Aural Exciter Type B has helped in bringing out some type of presence, quality, etc. One area that never has been covered in any article is a hearing contest with an engineer telling the difference for a recording on a 2-in., ½-in. or ¼-in. track makes to their ears. I've heard stuff done on a ½-in. 16-track Fostex or a ¼-in. 8-track for that matter that sounded as well as if not better than an MCI or a Studer, may sound crazy but I have!! Any help to us guys down in the boon-docks would be much appreciated. Keep up the good work.

—Burt Teague
Granby, CT.

Editor's Note:

The Soundcraft console pictured on page 30 of the May 1985 issue was incorrectly labelled as the TS 120. The correct model number is TS 24.

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Talk Back

Honolulu 4-Track

Craig Anderton's original issue of "Home Recording For Musicians" guided me through the turbulent waters of early 4-track recording. His name has come up in so many publications that I wonder where he finds time to do all that writing and reviewing.

I run a small studio out here in paradise that functions as a production facility for a business that provides music for film and television use. Equipment-wise, I am seeking to upgrade my operation soon. Craig could really help me by answering a couple of questions.

1. Would you consider the AKAI-1212 to be competition for, let's say a TASCAM 16-track and a board? Or even more fair, you, for the same money, pick

the AKAI over the FOSTEX B16? Have you bench-tested the unit for MR&M? If so, which issue?

2. Is there a book or publication that explains synth-MIDI-sequencer interface? I am picking up several synths and understand how to plug one into another, but do not understand all this digital overdubbing, etc.
3. Which synth in the low end \$700 to \$2500 has the best and most programming written for it by the pros, especially in the area of good orchestral instrument sounds for music scoring and arrangement?
4. I am setting up a studio and wonder if there is a publication that compares new developments in recording gear in the same way as Car & Driver tests cars?

Any information Craig could send me will be greatly appreciated. Paradise is lacking in being real current with the state-of-the-art.

—Judson Haskins
SOUNDSORE
Honolulu, Hi.

We received this reply from Craig Anderton:

1. I have not tested any of the above-mentioned units, however, their main differences seem to be in design philosophy, not quality. The TASCAM 16 track uses 1-inch tape, which gives it a bit of a theoretical advantage in terms of fidelity over a unit using narrower width tape, and it is also a very solidly constructed recorder. However, as you might expect this costs the most of the three decks you mention. The B16 is remarkably cost-effective, and I personally know several happy B16 owners. It also has the advantage of compatibility with ½-in. eight-track tapes (Fostex makes an eight track retrofit head assembly available for this purpose). If you're upgrading from ½-in. eight-track, this is a logical choice. The MG1212 is very

slick, but the tape cartridges are only available from Akai and running time is limited. But it is extremely convenient to use and features some nice tricks, such as automated muting, and you don't have to invest in a mixer. Your choice will depend on your anticipated requirements, and only you can gauge that.

2. Yes, but it hasn't been published yet...I'm working on it right now, and expect it to be out by the end of the year. I haven't felt so excited about working on a book since I wrote "Home Recording for Musicians"; this whole MIDI thing really is exciting. Meanwhile, check out my article on the "MIDI Studio" in the August issue of *Musician* magazine, which should answer some of your questions.

3. Probably Yamaha's DX7 is the best supported synthesizer in that price range. Personally, though, I feel you need both a good analog and digital synth if you want to cover all the timbral bases.


4. You're reading it. The reason why cars get a lot more coverage is that everybody owns a car; very few people own 16-track tape recorders. Until the market expands, media coverage of the pro audio field will remain relatively limited.

Craig would also like to add the following:

In my review of the Oberheim Xpander in the June 1985 issue, there is a typesetting error. The second sentence in the second column should read "Both modes, which are not mutually exclusive..." instead of "Both models..." I hope this didn't confuse anybody.

Ed. note:

Craig Anderton has just finished his latest book, entitled "The Digital Delay Handbook." It is chock-full of information on, you guessed it, understanding and using digital delays. It's published by Amsco Publications and is available from Music Sales Corp., P.O. Box 572, Chester, N.Y. 10918, phone 914-469-2271, for \$9.95.

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Computers, Midi, and Recording

In the last issue several advantages of using a computer in a recording studio were covered. They ranged all the way from multitrack sequencing to music score printing to studio accounting applications. Because the computer is so versatile, you'll want to consider all of these applications in your buying decision. For those of you out there who are familiar with computers, much of what follows may seem like old hat. Assuming that many people have made some sort of decision to purchase a computer and put together a MIDI recording system, I need to digress a little and discuss computer features. This will prepare many of you to make a decision regarding both computer and software selection.

Many of the devices we interact with on a daily basis contain computers, or at least microprocessors (if you have no idea what a microprocessor is, please go back to your cave). Microwave ovens, video tape players, synthesizers and BMW's all use some form of built in microprocessor.

A personal computer, however, is quite a different machine. It is designed to perform many different tasks for many different people. As a result, you will find yourself face to face with computer technology when you sit down to use one. It literally sits there waiting for you to tell it what to do. The adding machine has been the closest exposure that many people have had with them. Often, it is these same people who are placed in front of a computer and asked to do the office accounting. Fortunately, this computer fear is diminishing because an increasing number of software developers are going overboard to make their programs easy to use and understand.

This is certainly the case with most of the MIDI recording software I have seen. Software is analogous to the records and tapes you buy for your stereo system. A software package is purchased off the shelf at computer stores and performs a particular task, like recording MIDI signals from synthesizers or control-

ling a light show. Your computer will perform different tasks, depending on the software packages you buy.

Before covering software any further, you'll need to know a little about the hardware it runs on. A typical computer system consists of a keyboard, video display screen and a CPU (Central Processing Unit). The CPU contains the microprocessor, which is the brains of the whole operation. When choosing a computer, as opposed to buying other microprocessor controlled devices, it is usually important to have some idea of the size and power of the microprocessor the system uses. Most people could care less what chip their DX-7 is using internally for control—they buy the unit for its external features and sound quality. With a computer, however, the microprocessor is directly related to how much you can do, how fast you can do it, and, incidentally, how long your system will be a viable product.

Currently, computers fall into about three categories, depending on the microprocessor they use. There are the 8 bit machines like the Ataris, Commodores and Apples, the 16 bit machines like the IBM PC and Compaq, and the 32 bit machines like the Apple Macintosh, IBM PC AT and Atari Amiga. The larger the bit size, the faster and more sophisticated is the machine. That is not the only advantage, though. The newer, state-of-the-art 16 and 32 bit machines, although more expensive, are also able to handle larger amounts of memory than their predecessors. The benefit to you as a recording engineer is the ability to record more tracks and longer scores at one time.

It is a fact of life that 8 bit machines are old technology, even though there are still many fine machines available such as the Apple IIe, Commodore 64 and the Atari 800XL that use them. In fact, current technology is beginning to surpass even the industry standard machines like the 16 bit IBM PC and Compaq portable computers. In their place are the new 32 bit machines. But this is not to say that you should buy only the latest

technology. There is still a lot of power to be had in both the 8 and 16 bit machines—and at a very good price, as we'll see in a minute.

My personal recommendation is the IBM PC or Compaq computer for the medium size recording studio. Not only is there a variety of good music software available, but you'll also find a wide variety of other software as well. Another important reason to select one of these machines is that they are widely supported around the country. You can go into just about any computer store and find one, along with a decent software selection. A machine that is popular and well supported is likely to be owned by a lot of other people in your area, possibly even other musicians and engineers, with whom you can share not only ideas, but programs and music on disk, as well. If you live in a metropolitan area, chances are you'll also find a users group full of people willing to share public domain software and ideas. Don't forget that new people mean new contacts. Getting into computers will bring you into contact with a whole new group of people, people who may need the service you offer.

One of the most important things you should do before picking out a system is to determine what software you want to use. For the purposes of this article we'll take a brief look at a few of the available packages and then look at the kind of hardware you'll need to run them. This is important because some software will only work with a particular hardware setup. You can refer to the January issue of *MR&M* for a more complete description of the available music software programs. The July issue also includes an update/supplement to the January listing.

Let's start out with the low budget machines like the Commodore 64 and the Atari 800XL. These machines are excellent for the beginner or the experimenter on a budget. Although neither machine is being made anymore, there are so many of them out there in computerland that

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software developers are still making plenty of programs. You can probably purchase one at a K-Mart for around \$100 to \$200 or you might find one in your neighbor's closet or at a garage sale. If you do find a cheap one or a free one, grab it, because the MIDI software is excellent—for the price. Along with each unit, you'll need a special plug to make it MIDI compatible. Cherry Lane Technologies, located in Port Chester, New York, sells a MIDI interface for the Commodore 64. Cherry Lane also has a software package for the Commodore called JMS that functions as a 12-track recording system. You can list and edit any measure in any track and record a total of up to 7600 notes.

The Atari XL is another cheap machine that you can probably find used at a good price. You might even try running an ad to locate a machine that some kid has grown out of. Once again, either the Commodore or the Atari are both excellent machines, for their price and the software that is available make them one of the best deals around. If you purchase the Atari, you'll need the MIDI-Track interface available from Hybrid Arts, located in Los Angeles. While you're at it, you may as well purchase their MIDI-Track II software package. I hear it's one of the best and allows up to 16-tracks of MIDI recording.

By combining the Atari or Commodore machines with inexpensive synthesizers like the Casio CZ-101 or the Sequential Circuits MAX, you can put together a decent MIDI recording system. The Casio will play back 4 channels monophonically and the MAX will play back 6. Both machines are so inexpensive that you might want to get one of each. Roland, Korg and Sequential Circuits are a few of the keyboard manufacturers that have developed their own software for the Commodore.

The next logical computer you might want to consider is the Apple II+ or IIe. Once again, you will want to base your decision on the type of software you think you'll need. The Apple has a fair amount of music software available, as well as hundreds of other software packages. The Apple is also still in production and well supported by the manufacturer. One company in particular, Passport Design, has developed a full line of software around this computer. Cherry Lane, Korg, and Roland have also developed software. Roland's MPU-APL and MPU-401 MIDI

interface and processing are required to connect the Apple to the music world, unless you decide to go with Passport, which has designed its own interface. At this time, there should be a number of Apple II+ and IIe available as used machines and at a good price.

Next, we come to the IBM and compatible systems. Compatible systems are computers made by other manufacturers that use the same software designed to run on an IBM. If you're familiar with the popularity of the Yamaha DX-7 synthesizer, then you already know the story behind the IBM PC. When it was first introduced in 1982, many software manufacturers finally saw a machine they believed might become an industry standard. More and more software developers jumped on the bandwagon and then compatible computers came into the market. Today, the IBM PC and compatible computers are one of the "safest" purchases you can make. Software in all categories will, no doubt, still be developed for years to come. Prices have dropped to an almost stable position and many good deals can be found by people who are moving up to faster versions of the same machine they have. Roland's MIF-IPC and MPU-401 interface and MIDI processing unit provide the link to MIDI. In fact, the MPU-401 may itself become an industry standard in MIDI processing units.

Currently, about five to six software programs are designed around the IBM PC and the Roland MPU-401. These programs start at around \$200 and are available from Cherry Lane, Roland, Jim Miller and Octave-Plateau with a few other companies still developing. Cherry Lane's Texture program was written by Roger Powell, a synthesist, composer and programmer who has played with Todd Rundgren, David Bowie and Utopia. Texture is, so far, the most inexpensive of the IBM recording programs at \$200. The feature that it does not have that most of the others do is music printing. It does, however, support a unique "Modular Recording" program structure that enables easy editing and manipulation of musical material. Roger describes his program as a "professional studio editing tool for MIDI, that is not so much concerned with getting notes on paper but more with the creation of music in a recording environment." The program supports 8-track recording and extensive editing features.

Most of the other IBM packages will print out the final musical score. Roland's Music Processing System features a conductor's page that graphically shows all 8 tracks as horizontal rows of boxes. Each box represents one bar that is filled in if music has been recorded there. You can easily see where music is, where you want to bounce it to and where you want to start or end recording. The package sells for around \$500.

Deciding on the right program should be based not only on your budget, but on the limits of the available software and anything else you might want to do with the computer you eventually buy. Contact your local music store or the software manufacturers to obtain detailed descriptions of the software you are considering. Then determine what computer and accessories will be required to put your system together. Once you've done this homework, you'll be ready to go into the computer store and talk about computers.

One of the first things that will happen when you walk into a computer store is that you will be qualified by the salesperson. He wants to know whether you are a

serious buyer before he spends a lot of time answering your questions, which is actually true of most sales situations. Don't expect a salesperson to give you a lot of free info because he knows that you could very well go down the street and get a lower price from another dealer after he's given you an education. Know a little bit about what you're talking about and tell the salesperson exactly what you want to do, pulling out the brochures and software descriptions you have collected. You'll find yourself being treated as a professional if the salesperson realizes that you have some direction with a purchase in mind. Otherwise, he may just point you to the book rack and you'll end up feeling discouraged. Most salespeople will want to know what your budget is and whether you are really going to buy the day you enter the store. They will also try to get some commitment before giving you any information. You have to keep in mind that the guy does this with all of his customers in order to avoid wasting time on lookers.

One of the best tips I can give you is to find a salesperson who is also interested in music. If you can get him interested in what you are doing,

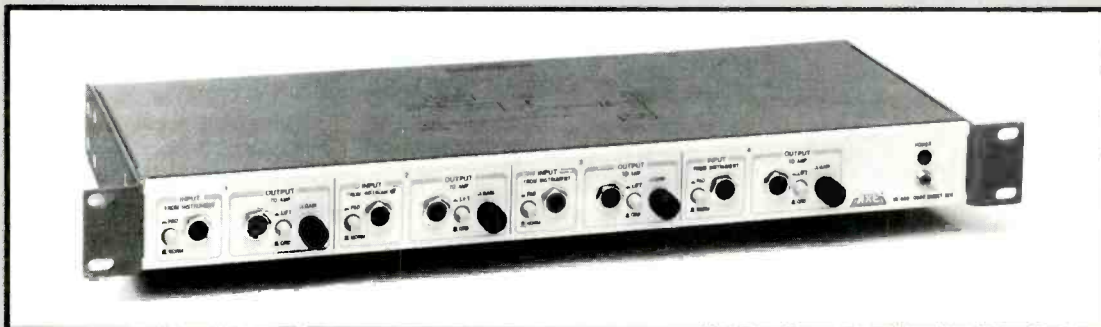
then he will break out of his sales "mode" and be more willing to help you. Chances are good that a salesperson who is also a musician will be more than willing to work with you because he may be as interested in what you are doing as much as you are. This is especially advantageous after the sale when you will need support in getting your system set up.

If you're new to computers, don't shop for the lowest price. If you drive a salesperson down in price, they will probably ignore you when you go back to the store for help, or worse yet, charge you exorbitant consulting fees. Sometimes the best price isn't necessarily the best deal. On the other hand, if you do want a good price and good service, one trick is to find one or two friends who are also looking for computers and buy together. The sales person will more than likely give you a good deal to make all three sales and give you good service to boot.



Next time around we'll put a system together and lay down a few tracks. Then we'll look at different ways a MIDI interfaced system can be put together.

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They say cleanliness is next to Godliness. Well, it's definitely next to good recordliness, because no matter how nasty or dirty you want your tapes or records to sound, they should be recorded as clean as possible; then you can dirty them up!!

And being clean yourself isn't a bad habit. NEVER touch any equipment or instruments, or for that matter, let ANYONE ELSE touch your equipment or instruments after they have eaten, (especially something really greasy, like finger-licking good fried chicken), unless they have WASHED THEIR HANDS THOROUGHLY!!! I know all you followers of Freud out there will immediately mention some "Guilt of Sex" thing, but if you don't believe me, try editing your ¼" masters (of course, the ONLY irreplaceable copy you have) with olive-oil fingers and see how inaudible the splice sounds.

In fact, just as an experiment, with what you consider clean hands, take a piece of virgin ¼" tape, touch the oxide side, (the side that goes over the heads), and look at all the lovely fingerprints you've created. Then wash your hands, do the same thing, and SURPRISE!, they are still there!!

Speaking of tape heads, make sure they are cleaned and demagnetized regularly, as per manufacturer's directions, and keep the rest of your stuff nice, too!!

So, you really can't be TOO careful. In fact, I usually splice with a can of "Blue Shower" or a similar non-lubricant type cleaner (even isopropyl alcohol will do) by my side to clean the oil off the brand new single edge razor blade, (put there by the manufacturer to stop it from rusting and tarnishing), and to clean my fingers just prior to handling the tape. Sometimes this way, even if you do accidentally touch the tape oxide

surface, there will be almost NO fingerprints!!!

Besides, no musician wants knish on his keys or fettuccine on his frets. And I'm sure you don't want knock-wurst on your knobs or baloney on your buttons!!

So keep your Coke (liquid or powder) and your cigarettes (regular or funny) away from your board.

By the way, before you think I'm Felix Unger or something, I'm only saying this from experience, and I break all these rules (except for the hand washing) all the time. I have been a victim of the Pepsi syndrome on several occasions, and I still leave beverages near the board once in a while. The first time you take a console apart to mop up the spilled beer, you'll be in for an unpleasant surprise to see what that dried up liquid will corrode. ESPECIALLY if it's from a can of soda. Sugary syrup does wonders for faders, pots, ICs, and the once existent spaces between circuit traces.

Anyway, clean tracks are just as important.

A few months ago I had the "honor" (?) of working with an engineer, who considered himself a producer, (or at least some people did), and had worked with "some of the biggest names in the Record Industry."

The scene was my studio, vocal overdubs to previously recorded music, which he had done somewhere else; point being, he knew the tunes. The tape machine started running, and before the music had even begun, the track designated for the vocal was put into record.

"Gee," I thought, "isn't that unusual? Maybe he wants all that foot shuffling and throat clearing on the tape for a 'New Sound.' Or, more likely, it's to catch an unplanned vocal improvisation in the intro, solo, or something, not just the unnecessary headphone leakage that will occur in

spots that have no vocals planned. "Yeah," I thought, "that must be it. This guy has worked in the major studios in NYC. Those must be the reasons."

But I was wrong. There were no vocal improvisations or special effects on the throat clearing or foot tappings, not even during the solo! And when the singer took the headphones off in the intro to adjust her hair, he didn't even bother to flange the excessive headphone leakage that occurred!! Not to mention the finger snappin' and jewelry jingling that she did while dancing to the lead, to make sure everyone looking through the control room window got a good look at her figure, especially when she turned around and banged into the mic stand.

"Well," I thought once again, "now I got it. He's going to GATE the vocal track to get rid of all that extra crap—er...I mean extraneous sounds that have occurred, though this task may be rather difficult, since a few of them, (most noticeably the foot stomps, throat clearings, headphone hairfix squeals, and jewelry jingles were as loud, if not louder than some parts of the vocals, especially since it went down heavily compressed, and although noise gates are very good, they are a bit like computers: also very stupid. In other words: Garbage in—Garbage out!! How will it know if the sound it hears is a desired vocal phrase, or her head banging into the mic if they are both just as loud? And if the voice is mixed to be heard WELL above the track, (as it was), won't the bangs, stomps, squeals, and jingles, as well as the headphone tinny-middy leakage (headphone leakage, no matter how good the headphones or cue system—mine being Koss Pro 4A's, a Crown D-150, and a stereo ten band graphic EQ—always seem to be tinny and middy) be heard just as loud as the vocal?"

Well of course they will, and they will sound **EXTREMELY** nasty when they turn on during the middle of a solo, intro, or something. But when I ask the "producer" if he wanted a gate to get rid of some of that stuff, he said, "No, breath noises and that kind of thing usually bothers me, but I don't really hear it, so never mind."

Well I heard it!!

Then I figured he would mute the track, or erase the objectionable noises when they occurred, but again, no dice.

Anyway, to come to the moral of this story and this month's column: don't add mush to your tapes by recording unnecessary trash. To use the lead vocal as an example; if you know the song, keep the machine out of record until a few **MILLISECONDS** before the vocal comes in. Then, as soon as the vocal rests for a while, punch out of record. Do the same through the whole song: punch into record for vocals; out of record between verses. Into record for vocals on the chorus; out of record for the guitar solo. What you are then basically doing is manually gating the track; having it in record only when necessary.



Of course you can do this for every instrument; don't have the buzzy guitar's track recording through the whole song awaiting his solo and licks. If you know when these occur, put the machine into record **ONLY** at these sections, and take it out immediately afterwards.

This may seem like common sense, but how many of you do it? I'm not talking about stopping the machine now; only about taking it in and out of record, while it is running, but activating the record electronics only when necessary.

Reasonable Alternatives makes a box, **THE ELECTRONIC FOOT-SWITCH**, that does exactly this as one of its many functions. And what happens if you accidentally record some garbage on the track?

Well you can mute (turn off) the track at that point, erase that information using the machines' number counter, (not very safe, as far as most counters go), or do what we will get into in the next column; backwards hand erasing.

Stay clean till then!!!

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A Look Into The Future: Digital Recording and The Compact Disc

Two years ago, when the Compact Disc Digital Audio System was introduced to us here in the US, some thought it was only a passing fad. Then there were those who saw it as a major development in consumer audio that would yield *perfect* sonic qualities at a price *everyone* could afford. Well, after the two years that have probably changed the face of consumer and professional audio more than any other period since stereo recordings were introduced in the 1950s, we know that reality falls somewhere in between. When digital recording first became a viable alternative to the occasionally problem plagued analog recording about ten years ago, there was much resistance and it didn't really catch on. Now that consumer audio systems are starting to include the means of "bringing home" the sonic perfection that digital recording provides, more and more studios, producers and artists are turning to digital recording.

The Compact Disc (CD) offers surprisingly realistic and accurate sound, versatility, durability, compactness, and a host of other qualities at a price that is not much higher than an ordinary analog LP. But the CD also possesses some disadvantages

that are inherent to the theory of digital recording and playback. To understand the advantages and disadvantages of the CD and digital recording itself, a brief understanding of both digital and analog audio is first needed.

In one common analog system, tape, the signal is represented by constantly changing flux densities directly related to the *actual* constantly changing waveform of the program. Flux density is the density of magnetic particles lined up on the tape. The microscopic magnetic particles, which are binded to the tape backing, are actually tiny magnets which have both north and south poles. A magnetic field, related to the signal, emanates from the record head gap, and as the tape passes through this field, the particles become oriented in relation to the signal. The higher the signal level, the more particles get lined up. This continues until the level reaches the point where all the particles are lined up. At this point, any increase in signal level will only cause distortion since there are no more particles to be oriented. Tape also is plagued with an inherent noise floor that adversely adds to the recorded signal.

With vinyl records, other analog

problems manifest themselves. The audio signal which is reproduced as a needle or stylus, made of ceramic or an extremely small diamond, rides the sides of a groove, obviously causes a substantial amount of friction. This friction not only causes noise, it is also the main cause of record wear and it decreases the record's lifespan. The groove—with a width of only about 3/1000 of an inch (3 mils)—modulates from side to side, corresponding to the signal of the program. This side to side movement causes the stylus to modulate which in turn creates a signal that is *analogous* to the signal cut onto the record. Dynamic range on an average LP is about 50 dB and records are subject to scratches which can permanently destroy them. They also require constant care and cleaning.

With digital audio systems, the signal is represented by *discrete* numbers. The key difference is that analog is represented by something that is constantly and continually variable, whereas in digital it is a definite value. The numbers used to represent the signal in digital audio are based on the binary (base 2) system of counting. With binary, there are only two values, 1 and 0, or high and low, similar to our base 10



Sony PCM-3324 24-track recorder (r.) and Mitsubishi X800 32-track recorder (l.).

system of counting (10 values, 0 thru 9). Since there are only two values, storage becomes simple because you merely need two states—on and off, or high and low, or black and white, or whatever. So now that we know how we store digital signals, the question that remains is “How do we know what numbers we must store?”

In the digital recording process, the signal—which, of course, starts out as acoustic energy—passes through the first transducer, the microphone which changes the energy to an analog electrical signal. This is identical to analog recording. But this is where any similarities end. The signal is then passed through an analog to digital converter (A/D converter). This converter samples the signal 44,100 times per second, and then converts these samples into binary numbers (strings of 1s and 0s). The sampling rate must be at least twice the frequency of the highest frequency signal that you wish to sample. Since, in audio, the highest frequency is about 20 kHz, a sampling rate of at least 40 kHz is required. If the sampling rate is too low, new signals caused by *heterodyning* will be introduced into the audio signal path. This heterodyning will

cause signals made up of the sum and differences of the original and the sampling frequency to enter into the signal.

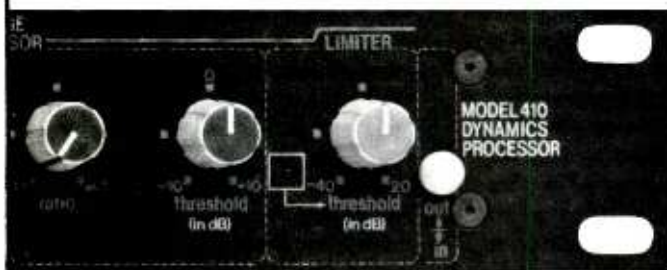
With digital recording onto tape, a signal can merely be represented as high and low flux densities. Thus, the binary 1011 can be represented as high, low, high, high. For editing, an electronic digital editor is necessary. In the CD system, the 0s and 1s are represented by pits and flats in the surface of a hard plastic disc. These pits and flats are read by a laser beam that tracks across the four and three quarter inch disc as it spins at between 200 and 500 RPM. These little discs are played on a CD player, priced at between \$250 and \$1500. The player easily hooks up to your present stereo system by simply plugging into your ‘AUX’ jack on your receiver/amplifier. But that’s not the only place you can find a CD player. Companies like Sony and Pioneer have already released combination AM/FM receiver/CD players for automobiles. Sony has also introduced the Discman, the world’s first portable, personal CD player. It’s about the same size as the cassette walkman and it sounds remarkable. Unbelievably, it’s priced under \$300.

Each CD is capable of holding over 60 minutes of program material on its one side. There are no visible bands or markings on the disc—time and selection information is included in a ‘directory’ at the beginning of the disc that is read and memorized by the player. This feature provides the user with programmability. You can skip or repeat entire songs and pre-program any order of play on some players.

Sound on a properly manufactured and mastered disc will be an exact duplicate of the original performance—it will reveal every nuance and sound occurring at the time of recording. Now, while this means the system is totally “transparent,” it also means any unwanted noise or bad edits will obviously stand out. It can reveal engineering mistakes or even a musician rustling papers or coughing. But it can also bring out instruments and passages that were totally inaudible on the analog record. Sometimes analog tape hiss which is inaudible on the LP becomes slightly inaudible on the disc.

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you can get to 'the best seat in the house' at Carnegie Hall. Most CD players have a virtually flat frequency response and a sound so crisp and so realistic that it is almost unbelievable. The sound is so clear and sharp, some say it's sometimes "harsh" and unnatural.

CDs also have their own elaborate error correction systems to virtually eliminate any disc defects or damage. These systems use mathematically redundant data to keep most data loss and scratches inaudible. The most severe damage will usually only cause a slight and minute signal dropout that is sometimes too small to even be audible. Extremely serious damage will cause mistracking in some cases on some machines.

But the CD is not always superior in sound to an LP. Firstly, digitally recorded and mastered vinyl records sometimes offer CDs a run for the

money. Secondly, the many stages used in the recording and production process of the disc create a wide range of disc qualities. The Society of Professional Audio Recording Studios (SPARS) recently proposed a code to help determine the quality of a disc. The three-letter code—still only used by a small handful of record companies—represents the three main stages of the recording process. Each letter—either A or D—indicates the type of system used for each category. An 'A' stands for analog, a 'D' stands for digital. The first letter in the code represents the recording process used in the initial recording session. At present, it is most common to find an 'A' in this category, since the majority of recording sessions are being done onto analog multitracks. In the few occasions where the sessions are being done digitally—onto a digital multitrack such as the

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Sony PCM-3324 or the Mitsubishi X-800—the mixdown will also be performed digitally—onto a digital master recorder such as the Studer D820—so the code will be ‘DDD.’

The second letter represents the mixdown onto 2-track, whether onto an analog or digital machine. Finally, the third letter represents the final mastering, which in this case will determine our format. Although a vinyl LP can be digitally mastered, it is still an analog storage and reproduction medium. Therefore, an ‘A’ will represent a record, while a ‘D’ will prove to be a CD.

Obviously, a code consisting of ‘DDD’ would generally indicate a high quality CD. Conversely, a disc with a code of ‘AAD’ will usually indicate a lower quality CD, although the average disc with this code will still be superior in sound to an analog vinyl LP. New disc production technologies will cause the overall quality of the CD product itself to rise. Furthermore, as more and more engineers and producers turn to digital recording, the overall sound quality will also rise. This will affect both records and CDs, but in the long run the difference will be more audible on the CD.

Along with the Compact Disc’s aesthetically superior sound qualities, CDs are also very flexible and versatile. The discs can be used as a ROM (Read Only Memory) or DRAW (Direct Read After Write) computer storage medium with a capacity exceeding that of about 500 personal computer floppy discs. Even video signals can be synchronized to the music on a CD. That’s right, in the future videos or lyrics will be right

there on the CD and you’ll be able to see all this with only a video display terminal. New players are already coming equipped with video output jacks to utilize these features.

Now, you might have heard a lot of good and bad about CDs, some true, some false. One that is somewhat true, is the rumor of limited availability of discs. Compared with the hundreds of thousands of titles available on vinyl, this relatively new medium boosts an availability of only around 5000 titles. This increases by about 100 titles per month and although there is somewhat of a production shortage, experts agree that in the near future, discs will become more readily available.

Other problems, such as delayed CD releases of new albums, shopping convenience, and high price—about \$10-\$16—will probably soon solve themselves as there becomes more and more demand for the small silver discs. Some record companies are beginning to simultaneously release LPs, CDs and cassettes, but, since CDs are not being produced as quickly as LPs, this will take a while until it’s standard practice. Last year, an estimated 300 million records were sold, compared to only about 4.5 million disc. This year’s disc sales are expected to top 40 million. Also, new stores selling only CDs and their big brothers, the video laser disc, and related accessories are opening around the country. These new stores will certainly make finding a particular CD much easier.

Some industry professionals say that within 10 years, CD sales will surpass record sales, and eventually, records will disappear entirely.

Some say this will never happen, but they said that about 78 RPM records also, remember?

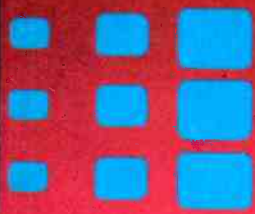
Of course, all this doesn’t mean you should sell your turntable and record collection to your 13 year old nephew if you decide to buy a CD player and a collection of software (compact discs). The system is not intended to replace anything you are currently listening to. With only approximately 400,000 players in use in this country—compared to the millions of turntables—it would be a silly thought. It is actually meant to enhance your listening pleasure and go side by side with a turntable and cassette deck. Plus, since most discs do not wear out, your discs will last a lifetime, and can be passed on from generation to generation.

If you plan to buy a player, you will be well advised to shop around first. Basically, all players will sound about the same (there are some sonic differences), and the only real differences will be in the actual quality and the included features. Currently, you can pick up a low feature player for under \$300 at a discount outlet. Players with more features will obviously cost more. Available features include wireless remote control, full programmability, variable level headphone output, and even variable pitch control.

As far as disc purchases go, try to stick with new releases, since they will usually sound better. Older releases will sometimes have a lot of noise and other degradations, but occasionally the disc will be “digitally remastered.” Often, this will be an improvement over the original LP. But look out, this could merely be a ripoff. Shopping around for discs at your local discount record outlet will certainly yield more listening pleasure for the dollar.

Although defective discs are very rare, if your player mistracks, or a disc seems defective, it should be returned to the purchase place. If for some reason they will not accept the return, you should write a letter to the appropriate record company. This is the one way to insure future quality control.

If you have never heard a CD/CD player combination, I strongly recommend listening to one as soon as possible. Just about any hi-fi audio equipment dealer will have at least one player and disc ready for demonstration. But beware, once you listen to the compact disc system, your ears just might talk you into buying one.



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Howard Jones

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Not that it's been easy. Born in Southampton, England, thirty years ago, Jones has played the piano since he was seven. At 19, he attended the Royal Northern School of Music in Manchester which he absolutely abhorred due to pompous people and their attitude towards the supposedly elevated status of classical music. The experience was actually enough to persuade Jones to ostracize himself from the recording field.

For a few years he gave piano lessons and operated a produce business with his wife Jan. Ironically, it was a near-tragic accident that led Jones back to his recording career. Jan suffered three crushed vertebrae from an auto accident which brought the couple £3,000 in compensation funds. In 1981 the money was invested in synthesizers and Jones began to put his plans into action.

After making up his mind to expand his career, Jones was fraught with failure for three years before being picked up by Britain's WEA Records. At the time he was playing three gigs a week in any club he could get into. In his words, "That's where I learned to perform. You can't just expect it to last without substance." He also performed every night on Manchester's Piccadilly commercial radio station playing the piano under name of John Howard. In 1983 he opened for China Crisis on tour in Britain. And then came what he considers to be his first big break. He made his debut television appearance on London's Channel 4 Loose Talk program. Unfortunately, his equipment broke down smack in the middle of the broadcast! Jones considers it to be the turning point in his career because he was obviously well known after that.

And well known he now is. The music he has created has its roots in new wave-synth foundations, but he brings a fresh and unpretentious approach to it. His first album, *Human's Lib*, was a one man show which possessed the two hits, "What Is Love" and "New Song" which went platinum in Britain and hit the top 40 charts in the US. His second LP, *Dream Into Action*, was a natural progression from the first with its hit single, "Things Can Only Get Better," which shot to the top 10 of pop charts. For the new work, Jones brought in

brass sounds courtesy of TKO Horns, an acoustic cello, and back-up vocals by Afrodiziak. He has also teamed up with Trevor Morais on drums and his brother, Martin, on bass. In effect, his one man show has expanded quite a bit creating an interesting situation. The band is now imitating synthesizers using real instruments while the rest of the world is still trying to master just the opposite. His audience has obviously noticed these new efforts because the album went top 10 in both the US and the UK.

MR&M caught up with Howard Jones in the midst of his current American tour.

Modern Recording & Music: How did you get started as a synthesist?

Howard Jones: Well, I've been playing the piano since I was seven. I've always played the piano so it's a natural thing. I can play any kind of keyboard really. I fooled with my first synthesizer about three or four years ago.

MR&M: Do you have a home studio?

HJ: No, I'm just working on one at the moment. I've got a room which I have plans for.

MR&M: And what kind of equipment do you plan on using?

HJ: Well, I'll just sort of use it to write. I've got an Akai 12-track. And I've also got JBL monitors. It's just going to be for recording demos.

MR&M: So what kind of synthesizers and equipment do you own?

HJ: We've got two AMS units that we take on the road with us. And we've got noise gates and compressors.

MR&M: Is this generally what you're taking on the road?

HJ: That's right; we always take everything.

MR&M: How does it differ from what you're using in the studio?

HJ: Well, it doesn't really.

MR&M: So you're using the same equipment...

HJ: Yeah, we do. I mean, obviously in the studio there's hundreds and hundreds of effects that you use.

MR&M: Do you have anything you prefer in the way of mics or amps or speakers in the studio?

HJ: Well no, because everything I do is DI'ed except the vocals. There's hardly anything mic'ed at all.

MR&M: In comparison to the first album how did you approach and prepare for the second album?

HJ: Well, I had the songs for the first album for over three years. But for the second album everything was

gotten together during the year after I'd done the first. I'd come into the studio with about fourteen demos which were fairly advanced. So I was very prepared. For each song, I'd spend about two days just writing the rhythm tracks before anything touched tape. I hadn't done that the first time.

MR&M: The vocals were a lot clearer and brighter on the new album. Is this something you strived for?

HJ: Yes, it was. We wanted the vocals to be much more up front and lyrically much more clear. So we did that. We aimed for that very much.

MR&M: How did you go about doing it?

HJ: Well it starts off when I'm actually singing the track. I really go for a lot of diction and make sure that every word is clear as can be without losing the feel of the track. And in the mix I just give the vocal a

nice clear area of frequency free from other things.

MR&M: What were the sessions like?

HJ: Well, to start off I programmed all the drum machine parts, all the bass lines and a rhythm part. That was all done using sequencers. So everything was arranged before anything hit tape. And everything was then built up, using overdubs, on top of that later. But we always work on the songs one at a time. We don't like to finish one and then go on to the next one. Each song is built up and we keep coming back to that. So you can have a kind of perspective on what you've done the previous week. Each track is built up bit by bit.

MR&M: So you did each song totally separately? You didn't do rough tracks on everything and then go back and do overdubs. You did everything to the completed thing short of the mixdown?

HJ: Yes.

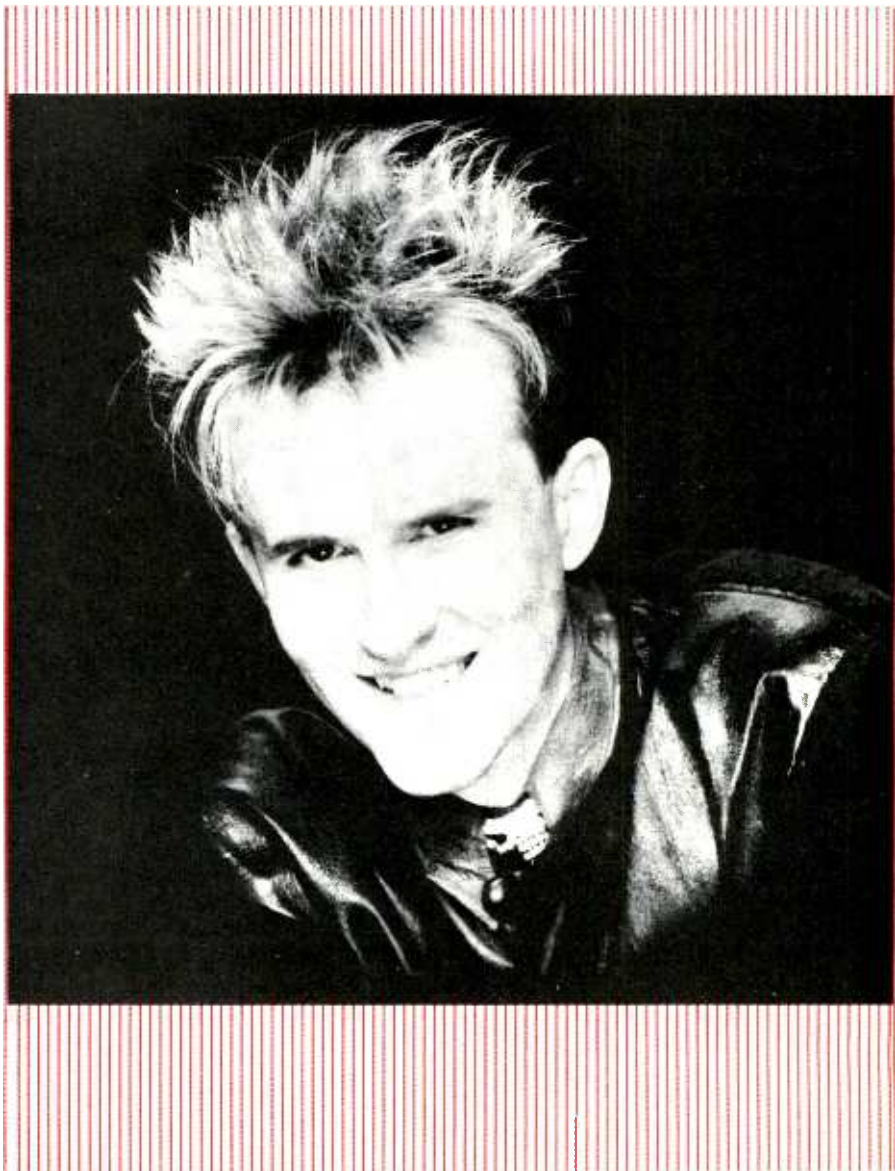


Photo courtesy of Elektra Records



MR&M: Is it true that about 60 percent of everything you did was recorded on the first tape run?

HJ: Yes, it was...on the first run.

MR&M: How did you accomplish that—with a lot of MIDI sequencing?

HJ: On this album...yes. It's done by programming all the cuts. I use MSQs [Roland MSQ-700] a lot. And because you can have different lines going on different MIDI channels, you can have a huge amount of things running at the same time. And some of the track, about 60 percent of the track, was done with a press of a button. Obviously, there was a tremendous amount of work that went in before that.

MR&M: Did you have a basic setup that you used for all the tracks?

HJ: No, I always vary it so I avoid being stereotyped. I've got boxes that mean that anything could go to anywhere.

MR&M: Do you use any digital sampling equipment like the Emulator or the Fairlight?

HJ: Yes. I don't use the Fairlight. I use the Emulator. And the AMS, of course, to sample drum sounds.

MR&M: How much did you rely on sampling for the album opposed to actual synthesized sounds?

HJ: Well, I suppose a huge part of the album is sampled sound because all the drum machines are sampled. Then afterwards we often replaced a lot of the drum machine sounds with other sampled drum sounds and some combinations of sounds. And I used the Emulator a lot for the bass and voices and string instruments and I used sampled sounds in combination with other synthesizers via MIDI to make a unique blend between some of the samples and sounds.

MR&M: On the song, "Life In One Day," is the guitar intro analog—a regular guitar?

HJ: No, I played that.

MR&M: What did you play that on? It sounds remarkably natural.

HJ: I played it on the Emulator.

MR&M: Oh, so it was a sampled guitar.

HJ: Yes. It's really the way it's been played...because I spent a lot of time making sure that I was thinking like a guitarist, and the actual voicing

and the actual part were just extremely realistic. I was really happy; I was really pleased with it.

MR&M: Is there anything on the new album that is not synthesized or sampled?

HJ: Oh yes, there are quite a few things. There's the cello part on "Elegy." I started off with a sampled cello, but it wasn't nice enough so then I just asked the celloist to play the part for me. It worked out well...and the horns are real.

MR&M: Do you find any difficulty in having Martin [Jones, bass player] or Trevor [Morais, drummer] doing songs that were written on synthesizers or originally sampled?

HJ: One of the things with Martin is that I sometimes use notes in my bass parts that go lower than the lowest string on the bass guitar. So what's happened is we've had special strings made (laughs) so that he can play a low C. I think that's good because the bass guitar is capable of handling that quite well, and so that's an interesting way, you know, me using sampled things in respect to the real instruments.

MR&M: So you're taking it the opposite way now by making real instruments do what synthesizers did when it's normally the other way around.

HJ: Yes, that's right. It's actually funny. And then with Trevor there isn't really much of a problem at all because he just loves to be able to copy any kind of part that I've written. He takes it as a real challenge, and he finds it great because often things that I've programmed, you know, he would never have played under normal circumstances. So he feels it's great to play those parts because they sort of stretch him.

MR&M: Are you an advocate of digital technology in recording or do you like to stick with analog?

HJ: Anything is fine as long as it sounds reasonable. I do like the sound of digital recordings. They do seem to have that extra sparkle, and I'm sure that's the way it's going to go. I suspect in the next few years everyone's going to be recording digitally...once they sort out the equipment.

MR&M: How do you feel about the compact disc?

HJ: Oh, I think it revolutionizes the way you can listen to music. I think it's absolutely wonderful. And it's about time. I mean, the actual vinyl record is such an archaic thing. You know, a piece of rock being dragged around some plastic grooves. It's so

**Everything should have its place
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should be there to be heard and not
buried under a million other
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I do get a tremendous thrill out of writing songs that a huge cross section of people could enjoy.

barbaric, really. When you think of how much time and care people spend making records to make sure there's no noise and everything's recorded beautifully and then you have to release it on this incredibly useless piece of plastic. It's terrible. I'm a real fan of CD.

MR&M: I've read that you had some apprehensions about working with other musicians live. How is it working out?

HJ: Well, it's working out very, very well. The only reason I was apprehensive was that the one man band had gone very well and I didn't want to lose the intimacy that the one man show had. But as soon as we started doing it, that wasn't the case at all. It worked very well. And I've got three ladies on backing vocals now as well on the American tour. So there's quite a large output now.

MR&M: You now primarily consider yourself a singer/songwriter and secondly, a keyboardist. What

prompted you to put more of your efforts into songwriting?

HJ: Well, I think that happened quite a long time ago. Obviously when I was younger I put all my efforts into keyboard playing and trying to be very, very fast and very clever and all that stuff. I soon realized that that was a silly kind of pursuit really. If you have no good songs or no good vehicles for your playing then it isn't worth spending all that time trying to be super flashy or something. So I started concentrating on song writing and I enjoy that.

MR&M: So you're trying to eliminate the flashy synthesizer parts.

HJ: Well, I just don't go for them. I could play them, but I don't put solos on my albums.

MR&M: So what you're mainly trying to do is let people hear what the music is trying to say.

HJ: Exactly.

MR&M: Obviously some of the

subtle qualities of your songs will be lost when played live. How do you go about arranging songs for a live performance to minimize this?

HJ: Well, for a start, everything is DI'ed except my vocals and the girls' vocals—even all the drums—because we use all sampled sounds on the drums by triggering Trevor's drums. So I've got one main brain which gives everything its timing clock, which is usually the [Roland] MSQ-700. And that's got one kind of sequenced line written into it which is a part that can't actually be played by a person. It's one of those ridiculous machine type things. And then the MSQ gives a click track to Trevor which Trevor plays to. And everything else is then played on top of that. So that's the basic way that it's arranged technically.

MR&M: What synthesizers do you take on the road?

HJ: Well, I've got a Prophet T-8. I use it as a keyboard. I don't use it for sounds. I just use it as a MIDI controller. And I've got that routed mainly to the Emulator, but sometimes to a pair of DX-7s, and sometimes to the Yamaha TX-8 unit which has six or eight boards in it, which is mixed down into stereo. And I can actually combine all these things together as well to have one very big sound. And then I've got a Jupiter 8, a Juno 60, a Pro 1, a Prodigy and a Yamaha grand piano.

MR&M: How much pre-programming is done on the road?

HJ: Every song has a floppy disk for the Emulator and I split different sounds over the length of the keyboard and I've got orchestral sounds down one end, brass in the middle, and string sounds at the top. So there's usually one or two disks for each song.

MR&M: Is there one lyrical theme throughout the album? Each song seems to have a very strong meaning.

HJ: Yes, yes. Well, that's my prime reason for doing all this, to try and say something that provokes some kind of thought.

MR&M: Do you have any favorites among your own work?

HJ: I like "Hide and Seek" on the first album and "Life In One Day" on this album. I think that's the best kind of pop song that I've ever written.

MR&M: How did you choose Rupert Hine as your producer?

HJ: Well, we met, and we got along extremely well as people. I mean it was really a personal thing. I didn't

know anything about producers at all when I started out. I suppose I do now, but I just wanted to work with somebody that I liked at the time. And he also turned out to be, you know, one of the best producers in the world. So I count myself very lucky to be working with him.

MR&M: Who retains the final say during your recording sessions?

HJ: We very much work together. Because I write everything myself and most of my time I've been doing a one man scene it's the one time I get to bounce my ideas off of somebody and also have input from somebody else. We don't think of it as whose got the final say; we just both work towards what is going to be the best thing. And if one of us has got a very strong idea about something then it's up to us to convince the other one that it's the best thing to do. So you know we've never had a confrontation with that. It's always worked itself out.

MR&M: When do you feel that something is over-produced? Did you ever feel that way about anything you've ever done with Rupert?

HJ: No, I don't think so. I think we try and be very careful about that. And we'd rather take things out than put things in. I mean, that's one thing that Rupert is very strong about. Everything should have its place and anything you put into a record should be there to be heard and not buried under a million other things we decided to put on later. We'd rather take things out. I think that's a really good policy.

MR&M: Are you going to use Rupert again?

HJ: Yes, definitely.

MR&M: Do you feel that in the future you might be interested in getting involved in actual producing and engineering?

HJ: Yes, I do. I mean, I produced my own B side, and, in fact, one of the tracks on the album, "Bounce Right Back." I want to get a lot more experience before I consider producing myself, but I'm going to carry on doing B sides and whatever to gain experience.

MR&M: Who are some of your musical influences?

HJ: Well, when I was younger the Beatles were, I suppose. [Then] Blood, Sweat & Tears, and Chicago, Stevie Wonder, Little Feat... those kind of people really.

MR&M: Do you feel that there's anyone right now who is doing as innovative work as you are?

HJ: Well, that's a very nice compli-

ment. I don't know—I mean there's lots of things I like. I just made up a tape that we play before the concert, and I'll tell you all the artists that are on it so you'll get an idea who are the kind of people that I like. It's got Depeche Mode on it, and Phil Collins, Stravinsky, Donald Fagen, Tears For Fears, the Talking Heads, Kool and the Gang, the Eurythmics... you know, those are the kind of people that I like.

MR&M: How much outboard equipment did you use?



Photo by Paul Rider

HJ: We use a lot all the time. We use the AMSs a lot and the Bell DDL. We use the Lexicon on the mixdown. I mean, it's just about everything that everyone else uses.

MR&M: Do you feel that the record companies are exploiting the buying public by adding tracks to the cassette version of a release?

HJ: Well, there are lots of ways to look at it. If you want a good level cut on an album, you can only really have ten tracks. We managed to get twelve on it, but we had to really push it. And I think we lost about one or two dB. So if you've got extra tracks left over it's nice to put them on the cassette because there is room. So I think if people are doing it for those reasons then that's good, but if they're not, then I don't agree with it. If they're doing it just to try to sell an album and a cassette then I don't agree with it. But we put 14 tracks on the CD, and that's just because there's plenty of room and it's good to make the CD as good a value as possible.

MR&M: How about multiple releases like a 7-inch single, a 12-inch single, an extended single and a remix all of the same song?

HJ: Well, I don't like the idea of releasing loads of different versions. I like the idea of one 12-inch mix. I particularly enjoy them because I go in and do extra recording for them and I love the idea of really extrapolating songs—make it last about ten minutes—and I find it to be a very creative thing. But I don't like it when people just keep releasing, you know, hundreds of different mixes. I just think it gets out of hand. It gets a bit ridiculous. I do believe in the 12-inch though. It's when you can be a little bit more crazy. I like it.

MR&M: How important do you feel video is to music now?

HJ: I think it's very important, and I think that if you are going to be doing this kind of thing that you have to consider video, and you have to realize that video is one of your tools just like records and record sleeves are. And I think it's a great opportunity to have a visual way of getting your ideas across as well. The only thing is that everyone is very new to video. They've probably been musicians for all their lives, but they've only been making videos for about ten minutes. So it's just a very young medium. People don't really know how to use it properly yet, but I think people will.

MR&M: Have you ever written with video in mind?

HJ: No, but I don't think that's a necessarily bad thing to do because sometimes I have written with a stage production of a song in mind.

MR&M: What are your plans for after this tour?

HJ: Well, I'm going to Australia and Japan after America. And then I'm taking two months off to write. I'll do the next album probably in the beginning of next year.

MR&M: One last question Howard—do you consciously try to stay commercial?

HJ: Well, that's a very big question because if you want your music to be heard and you want your ideas to get through I suppose you have to decide how many people you'd like to reach. You see, because I've played all kinds of music all my life so I feel that I can go in any kind of direction. But I do get a tremendous thrill out of writing songs that a huge cross section of people could enjoy. And that also means that I get my ideas over to a lot of people so it worked out really well.

Greg Phillinganes is a good candidate for one of those American Express commercials. He played on some of the biggest selling and most influential records of the late '70s and '80s (including Stevie Wonder's *Songs In The Key Of Life*, Donald Fagen's *The Nightfly*, Lionel Richie's *Can't Slow Down*, Michael Jackson's *Thriller* and "We Are The World"). Yet no one, (outside of music industry), seems to know him. If, however, your idea of a good read includes album credits you've seen his name countless times.

Phillinganes, a versatile piano master (boppin' one session, then rockin' the next), is a Detroit native; he began playing at the age of two; classical training started at twelve. During high school, he quit formal studies and gigged with various local bands. His last affiliation lit the fuse to his explosive professional career. As he tells it, when that outfit's drummer decided in 1975 to try out for Stevie Wonder's group, he prepared a tape of Wonder's most famous tunes ("just the way Stevie would play 'em," he laughs) and sent it along. Within a week he was called out to New York, and became a member of Wonderlove, playing extensively on *Songs In The Key Of Life* and touring with Wonder.

PULSATIONS





It's not about recognition for the musicians or the artists; it's about recognition of the fact that there are people dying over in Ethiopia.

After leaving Stevie's band, in addition to globetrotting with the likes of George Benson, he began doing session work—lots of it. A first attempt at a solo album was a tremendous bomb, but his second, *Pulse*, produced by white hot Richard Perry (Pointer Sisters, Debarge, Julio Iglesias), is a *hit*. "Behind The Mask (Who Do You Love)," written by Michael Jackson, was a Top Ten Dance smash. The musician's session player career commenced by sheer happenstance; he really wanted to be a performer. But when word of Stevie's *serious* keyboard player got around, folks from left and right, east and west, demanded he play on their record. Even if his solo career blasts off with *Pulse*, Phillinganes will continue playing on other people's albums. Says he, "There are some people I'll always do it for."

Modern Recording & Music: *Pulse* is very electric, yet it doesn't

sound it. How do you explain this?

Greg Phillinganes: I think it's the way it's mixed. There's a *lot* of electronic stuff going on there.

MR&M: Who was the engineer?

GP: We had a cast of thousands. Among them were John Guess, Mike Brooks and Bill Schnee.

MR&M: What keyboards did you use?

GP: A Synclavier, (Yamaha) DX's and a GS-1, a mini Moog and a Grand Piano.

MR&M: What about effects on your voice and the keyboards?

GP: (laughs) I'm not telling you; these are trade secrets here... Really, just very basic stuff, some AMS stuff and a harmonizer; we really didn't use that many effects.

MR&M: Seeing you've been around so many great and important producers, including Quincy (Jones), why didn't you produce *Pulse* yourself?

GP: I produced my first album and it didn't take long to bomb at all! I just felt I needed an objective ear. I'm not saying that I couldn't have produced it myself, but when you're producing yourself you tend to get too myopic... and producing, after all, is about total objectivity. I just needed a more objective ear.

MR&M: How'd you go about choosing Richard Perry?

GP: (laughs) I said "Hey Rich!"

MR&M: Did you ask anyone else?

GP: I asked a few others. They weren't able to do it for one reason or another. Rich was one of the people I asked.

MR&M: Did you ask Quincy?

GP: Yeah, he wasn't able to do it.

MR&M: Speaking of Quincy, how is he to work with in the studio?

GP: Oh!, he's a drag, a total drag.

MR&M: (laughs) What?

GP: No, he's very easy going. It's like you're working and you don't

know you're working. He always brings out the best in everyone. He's a very lovable person.

MR&M: When you work with him, do you bring in ideas and bounce it off of him, or does he just give you sheet music and say, "Play it, Greg"?

GP: No, it's always a cooperative effort. We listen to demos together, and try to go for the feeling that works best.

MR&M: Do you ever do jingles?

GP: Yeah, I've done some. *They* just give you sheet music and say "play it."

MR&M: What type of board was *Pulse* recorded on?

GP: I don't remember. It was at Studio 55. It was mixed on a Neve, though.

MR&M: Since the sound of your album comprises mostly synthesizers, was it recorded mostly in the control room?

GP: Yeah.

MR&M: That's happening a lot these days, huh?

GP: Sure.

MR&M: Do you own a home studio?

GP: I'd like one, but I don't have

Find A Way" from *Can't Slow Down*.

MR&M: How'd you write them? Did you or Lionel initiate the collaboration?

GP: I was over at (Lionel's) house one day and he turned on his tape recorder and went to the bathroom. I started playing a bunch of things and when he came back he said "Hey, I like that."

MR&M: How does he write? What does he start with?

GP: He tried to start with a melody (he's very melody conscious) and he just basically moves on from there.

MR&M: What about Michael Jackson, who co-wrote a song on your album ("Behind The Mask")?

GP: He's the same.

MR&M: How's Donald Fagen in the recording studio?

GP: Very precise.

MR&M: Can you elaborate?

GP: Well, he has all of his ideas written down, knowing pretty much what he wants to do. So with him, it's just a matter of doing it.

MR&M: Just the opposite of Quincy.

GP: Right.

MR&M: What about a new Fagen album? Gary Katz had mentioned the

When it's done, I'll come back to New York and complete it—probably some time this year.

MR&M: Have you run into Roger Nichols since he moved back to LA?

GP: No, I haven't seen him since we did *The Nightfly*.

MR&M: Having been around so many top producers, what do you see them doing differently now to mold hit records?

GP: Because of technology, the quality's better. They are trying, I think, to be more creative and technology is helping them expand their creative horizons.

MR&M: How do you go about choosing the projects you play on? Do you sit down in January and plan the whole year out?

GP: I just sit around and watch the basketball games, and they call me on the phone.

MR&M: How does a guy get into a position like that? You're a very in-demand session player.

GP: Yeah. There's no set thing; there's no—I did this, fill out an application, and go do that. It's not like applying for McDonalds. My story is very unique, very different. If you were to get ten other (session players) in here, they'll have ten *other* stories. Nothing is regular. I had a built-in thing with Stevie. When we all moved to LA, I'd meet a lot of people in the business who would ask me what I do, and I'd say "I'm Stevie Wonder's keyboard player." That generated a lot of interest and the sessions just started from there.

I started doing sessions with Dick Griffey and Don Cornelious who knew Stevie. The very first record I played on (away from Stevie) though, was "Everybody Loves The Sunshine" by Roy Aires. It just went on from there. I didn't have to go around passing out calling cards. (My session playing career) just happened through word of mouth. It was really amazing to me.

MR&M: If this hadn't all happened, what do you think you'd be doing?

GP: I'd probably be a manager of McDonalds.

MR&M: Seriously?

GP: ...I don't know; I really don't.

MR&M: Would you have concentrated *more* on being an artist?

GP: Well, my initial goal *was* to be an artist. But, I really don't know what I would've been doing. If my hands got cut off tomorrow, I'd *probably* be in radio, I'd probably be a D.J.



Photo by Darius Anthony

one yet. When I get one I don't want a huge thing, just something best suited for doing demos. I'll get one eventually.

MR&M: You wrote some tunes with Lionel Richie...

GP: A couple. "Serves You Right" from the first album and "Love Will

project nearly one and a half years ago. What's up? I know they're perfectionists, but...

GP: (laughs) I started the album with them...

MR&M: How far are they on it?

GP: Not very far at all. They are in the process of building a studio.

MR&M: Who have you toured with (other than Stevie)?

GP: Lionel (Richie) and George Benson. I've always done a few local things with Freddie Hubbard.

MR&M: What equipment do you carry on the road?

GP: Whatever they give me!

MR&M: Do you tell them what you would *like* to use?

GP: Of course I tell 'em what I like. On Lionel's tour, for instance, I used a Yamaha DX-7 and GS-1 and a Jupiter.

played keyboards on it. But it's about the babies and getting some food over there to help them, and setting up long term programs to help them. It's the least we as artists could've done.

MR&M: Were you there when the night of the vocalists laid their parts?

GP: Yeah. I stopped by for a very short time. They had these monitors showing them in the studio.

MR&M: Although it's been much talked about, how did you perceive the atmosphere that night?

GP: It was warm, almost festive. I

MR&M: Since it was a pioneering digital effort, were there any extra special equipment related kinks involved?

GP: There were some malfunctions, but nothing out of the ordinary.

MR&M: Did Gary Katz and Fagen audition any other keyboard players? I heard sometime back that on one of Steely Dan's records they recorded a multitude of keyboardists, and selected one at the mixdown session.

GP: The way I got on the album is I just happened to bump into Gary at

There's no set thing; there's no—I did this, fill out an application, and go do that. It's not like applying for McDonalds. My story is very unique, very different.

MR&M: Do you carry anything extra in case something cracks up, or do you rent it from a local shop?

GP: Usually the artist's organization will take care of that. Fortunately, I haven't had to deal with any breakdowns on the road.

MR&M: What projects are in the racks?

GP: I started projects with Stevie Nicks, Jack Wagner and Morris Day.

MR&M: Morris Day, huh? Have you heard all of the stuff that'll be on his record?

GP: All I heard was the one thing I worked on; it's a hit. I think it's the single.

MR&M: Greg, you worked on "We Are The World." How long did it take to record the tracks for that?

GP: We did it in about five or six hours.

MR&M: The *whole* thing?

GP: No, no. John Robinson (drummer), Louis Johnson (bass) and myself did the basic tracks about a week before the artists came in. That's what we did then. Later, Quincy brought in other keyboardists—Mike Boddicker, John Baird and Michael Omartian—come in and do more overdubs.

MR&M: Do you feel the musicians should have gotten more recognition for their part in the project?

GP: It's not about recognition for the musicians *or* the artists; it's about recognition of the fact that there are people dying over in Ethiopia. We were just trying to help get them some food. I don't care that I wasn't mentioned. Yes, I'm glad you brought "We Are The World" up, and yes, I

was there when Bob Geldof came in and made a speech to everyone at the session; it was fiery. He made the point you can't forget why you're here. It was a good feeling.

MR&M: About your album... Did you have any concept in mind when you began it?

GP: There are certain types of songs that I wanted on the album; I sat down and arranged them. Basically though, it's just an album of good songs.

MR&M: There's one song that I'm particularly curious about—"I Have Dreamed." Why'd you choose that?

GP: Because I *like* it. I was raised on Rodgers and Hammerstein, and I remember that song from *The King and I* in particular. I thought it was already a hit.

MR&M: On the album, you sing. Why haven't you exploited your voice a bit more in your session work?

GP: Because I was scared (laugh)!

MR&M: Would you now?

GP: I think so. I feel better about that now. You know what? I sang backup vocals on "Something's Happening," a song on Eric Clapton's latest record. I also play keyboards.

MR&M: You've worked in a lot of studios. Do you have a favorite one?

GP: I don't wanna start naming names. There are some that are good, some not so good. Most are pretty much the same.

MR&M: What do you think of digital audio?

GP: I like it; it seems to be growing. My album isn't digital though.

MR&M: Was Fagen's album your first *completely* digital project?

GP: I think so.

Warner Brothers, and some buddies of mine suggested that he use me on the album. He and I ended up hitting it off real well. There is one funny situation though. On one song, "Ruby Baby," Michael Omartian played the left hand keys, and I played the right hand; I ended up doing the solo.

MR&M: Donald Fagen wrote "Lazy Nina" on *Pulse*. Who suggested that—you or he?

GP: I asked him if he would write a song and he said "Yeah." That was great because he doesn't write for a lot of people. He was quite a gentleman about it. He called me every day to update me on how it was going.

MR&M: Are you going to tour?

GP: Not soon. Though I'm very anxious to tour, I'll wait maybe 'til my next album.

MR&M: What was your first synthesizer?

GP: Fortunately for you, I remember. It was an ARP Odyssey. I got it right after I graduated from high school in 1974. A friend had loaned it to me for the whole summer and I just went crazy. I learned a lot about programming synths that year. It all stems from that.

MR&M: Do you do all of your own programming now?

GP: I can. But when it's something heavy duty, I usually let someone else (an expert) do it.

MR&M: Do you like all of the albums you played on?

GP: Of course not. There's been situations where I didn't. But, you know, you're not always anxious to get up and go to work and I suppose it's the same thing. Fortunately, I like *most* of the stuff I play on.

Brian Battle's Ad Ventures

In July we took a quick peek at the possibility of using your recording facility to earn money by producing radio commercials. Each month *Ad Ventures* examines a different aspect of this scheme so that you can see where (and if) you fit in. Right now, let's have a look at your studio to determine the technical requirements.

You need a tape recorder, microphones, and a place to record. A perfectly acceptable and effective advertisement can be put together using a two-track tape deck and a pair of decent mics. Of course, any additional equipment will be helpful, and if you plan to cut a large number of superior quality spots it's nice to have a professional multitrack reel-to-reel machine or two, fancy mixing console, full complement of microphones, headphones, noise reduction and special effects gadgets, and so forth. Any recording setup normally used for your daily musical projects is probably more than adequate for commercials. In my career I've been the production director at a couple of large metropolitan-market radio stations, and in the course of my struggles I came in contact with literally thousands of commercials. (This doesn't include the zillions of spots we slapped together ourselves.) Commercial tapes sent to radio stations by advertisers range from super slick LA and Madison Avenue big budget audio spectaculars featuring top notch musicians and singers to cassettes of sponsors' children lisping a minute of foolishness about Daddy's hi-fi store while a Close 'n' Play phonograph blares "background music." The latter are usually rejected by begging the station's account executive to risk losing a commission by angering the client in tactfully explaining that our disc jockeys could probably do a better job (which was sometimes true).

Perspective is very important. You should understand that the types of clients you're going to approach as you begin doing commercials will be local businesses that can't afford ads involving the talents of the Jacksons or Quincy Jones (or even Pat Boone), so don't worry about being too small or limited in capabilities to even get started. Commercials are made simply to draw attention to a product or service. Assuming the content of the script and the suitability of the music are appropriate, technical quality need not go beyond "reasonable." That means tapes shouldn't be excessively muddy, hissy, or distorted;

voices must be clear and fully intelligible; instrumentation cannot be distracting or complex. Although most FM and many AM and TV stations offer excellent to moderately good audio, few people pay close attention to the fidelity of the advertisements. The exceptions are sponsors, being hypercritical and wary of you ripping them off while in the process of bringing them consumers to rip off. Unless an ad is very noticeably poor, most listeners and station managers won't fuss.

There is, of course, a reason for producing the best commercials you can. Good spots are part of your demo tape to be used when going after bigger clients, and eventually advertising agencies. But let's not get too far ahead. First you're going to try to pick up work from local businesses that already do some radio advertising, but are currently letting the stations cut their spots. Since you're reading *Modern Recording and Music* you likely work with, or have access to, a multitrack recording studio. That puts you several steps ahead of the majority of radio stations regarding production facilities.

The voice of a commercial, whether it's sung, spoken, shouted, chanted, whispered, lisped, or belched, must be the dominant feature. The cleverest arrangement of the catchiest little jingle won't be worth its weight in the air it travels through if the message is unclear. Obviously then, you have to put the emphasis on the voices used, and whatever background music there is will be necessarily secondary. A well-written tune with a not very striking mix usually affords better results than an effects-ridden "wall of sound," because when the listener becomes too absorbed in the instrumental performances the message may be ignored. The object is not to showcase your talent and production capabilities, but to highlight your client. As a matter of fact, your final tape need not even be mixed in stereo.

We see that the production of radio commercials is not as consumptive of actual studio time as may be many of your other bookings. The real work entails composing, arranging, hiring talent, and mainly getting clients (selling!).

Fast forward to this column next month to learn how to identify the prospects who are out there praying for someone like you to come along and offer your services.

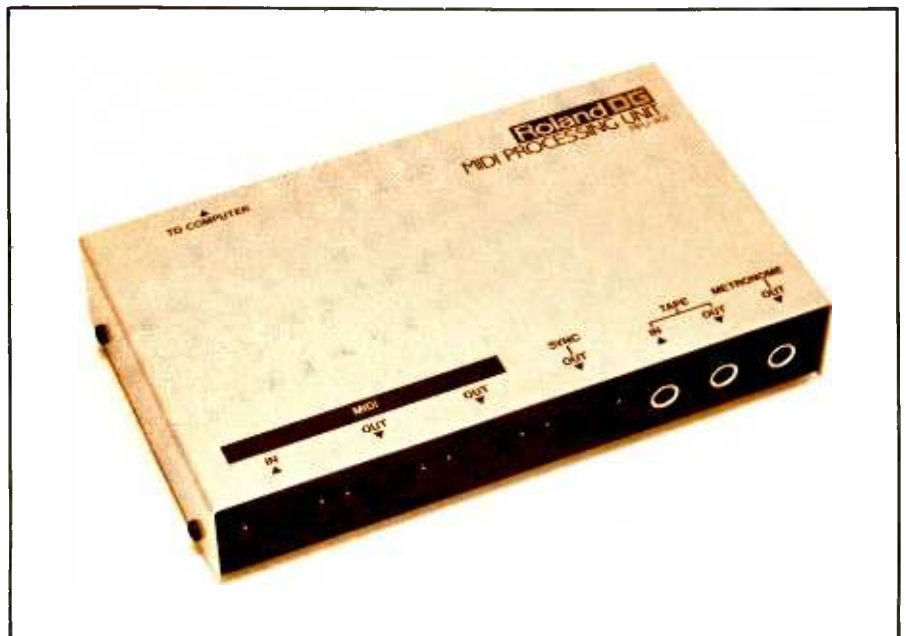


Product Profile

The Roland MPU-401

The Roland MPU-401 is an interface unit for connecting MIDI-based instruments to most popular home computers. The hardware of the 401 consists of a box housing the interface circuitry, a cable, and a slot card that plugs into the computer. Specific Interface Kit and Software is used depending on the computer one is planning to use. The interface kits are currently being produced for the Apple II+ and IIe, and the IBM PC (and other PC compatible units). An interface for the Commodore 64 will be available soon. The special software contained in the 401's microprocessor assist the microcomputer in handling large amounts of MIDI data with great accuracy and no delays.

The state-of-the-art MPU-401 MIDI interface may become an industry standard. Using advanced technology internal 1 MHz 6801 microprocessor—which is a full 8-bit computer—and special LSI (large scale integrated circuit) firmware, the MPU-401 is becoming widely used in studios and live performances.



Using the MPU-401 requires a circuit board to be mounted into the computer. The now internal board attaches to the processing unit via the

supplied cable. The actual mounting is fairly simple and straightforward, and can probably be done by any mechanically oriented person.

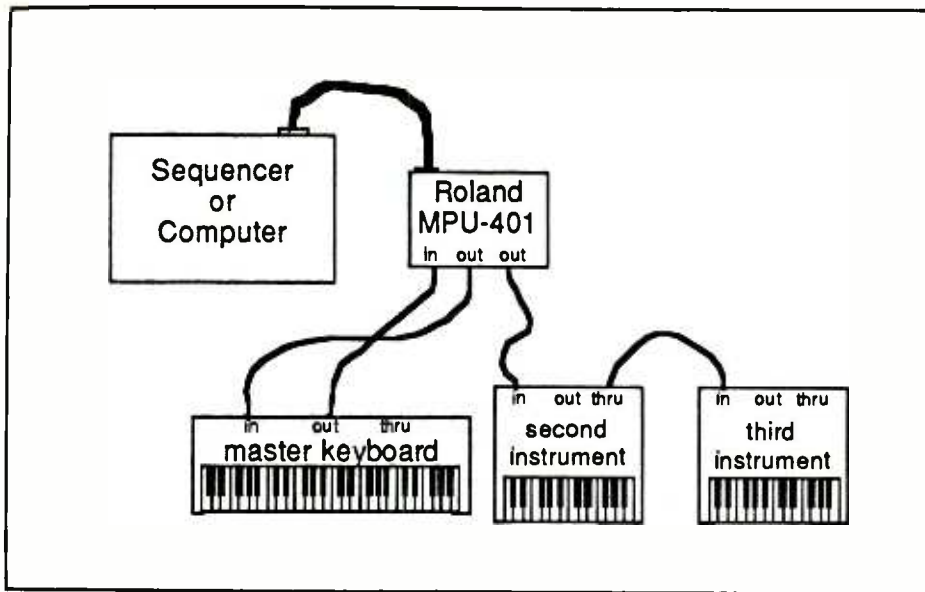


Figure 1. Typical connections of synthesizers to a computer through the MIDI interface, MPU-401.

The 401 is capable of timing and recording up to 8-tracks of MIDI information. Special interfaces can be developed for using multiple MPU-401s if more tracks are necessary. A ninth timer is also provided for expansion to other non-MIDI events. It has the ability of MIDI Sync. DIN Sync Out (SYNC 24) and Tape Sync IN/OUT jacks are also provided, allowing synchronization with other devices, which do not have MIDI sync. An audio metronome with both an internal speaker and an audio output is provided to aid in synchronizing musicians and tracks and to also allow use as a sequencer. The metronome can be set to accent any meter or time signature.

Other features of the unit include easy programming, little use of the interfaced computer's time (freeing it for other jobs), accurate playback of large volumes of MIDI information, overdubbing capability, tape and rhythm machine synchronization, and verification of correct MIDI data transmission to avoid problems such as keyboard lock-up or 'hanging' notes.

A typical set-up using the MPU-401 as a synthesizer controller would be connecting the 401 to the MIDI OUT of your master keyboard. This would then connect to the MIDI IN on the 401. A second and third instrument can then be connected using their MIDI IN and MIDI through connectors as shown in *Figure 1*. The

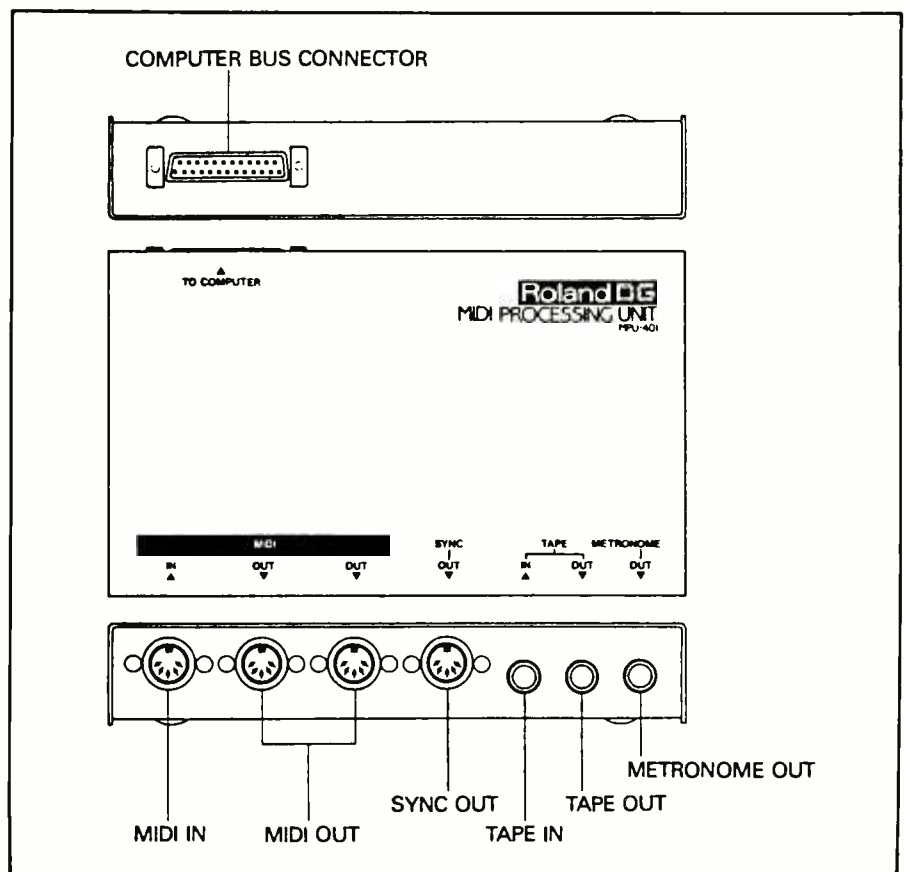


Figure 2. Layout of connections on the Roland MPU-401.

Computer Bus Connector would be connected to your sequencer or computer.

Front panel connections are MIDI IN, (2) MIDI OUT (programmable as through), SYNC OUT (Roland Sync 24), TAPE SYNC IN, TAPE SYNC

OUT, and METRONOME OUT. A rear Computer Bus Connector is also provided.

Power consumption is 5V DC. The dimensions are 7 $\frac{3}{8}$ -in. (width) x 1 $\frac{1}{2}$ -in. (height) x 4 $\frac{1}{2}$ -in. (depth). The weight is 1 lb, 7 oz.

Directory:
Drum Synthesizers

MODERN RECORDING & MUSIC

JULY 1982 VOL. 11 NO. 7 \$2.25

47947

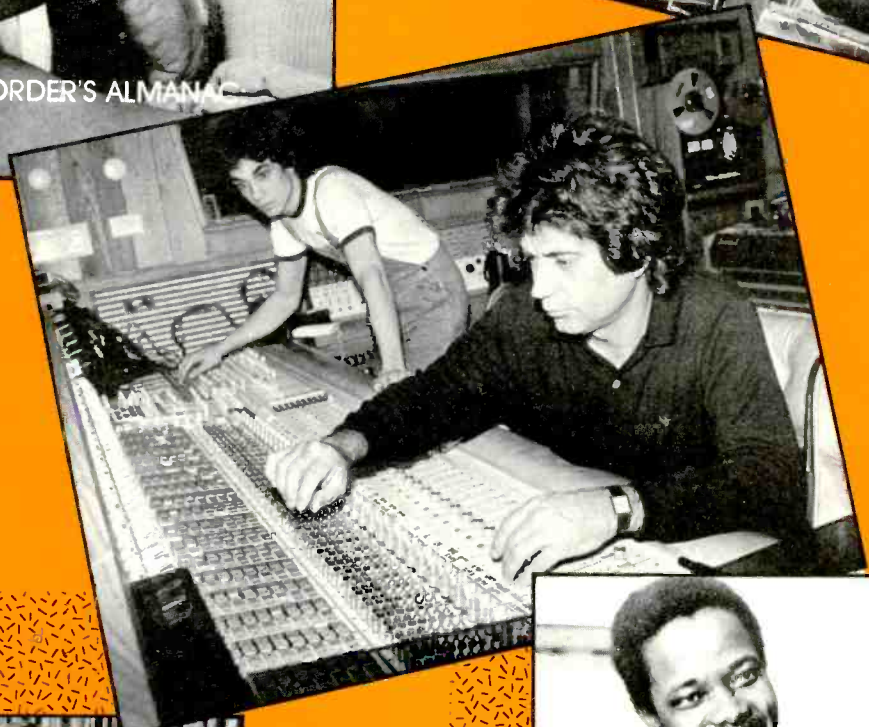
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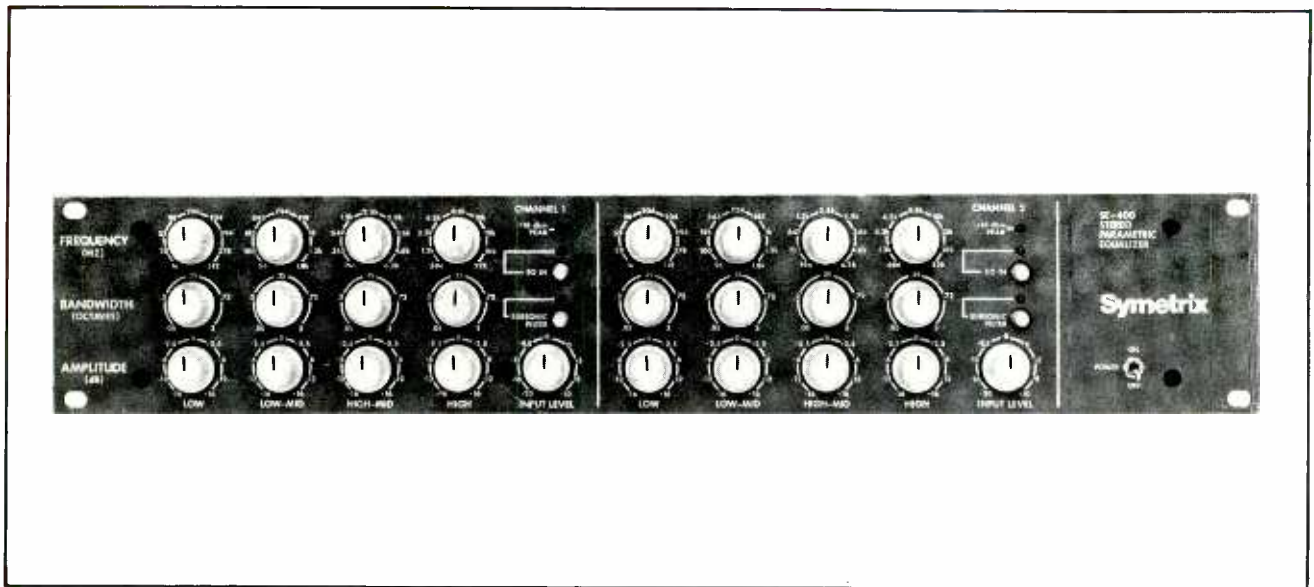
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MODERN **RECORDING** & MUSIC

Looks At

Equalizers



DIRECTORY OF EQUALIZERS

The directory that follows is listed alphabetically by manufacturer. All the information was supplied by the manufacturers. We asked for pricing on all products, but if it is not there, it is because we were not given it.

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

ALTEC LANSING SO PRODUCTS

1650B

The 1650B features a one-third octave filter set, cut only, 0-15 dB, 31.5 Hz-1.6 kHz, with gain control, frequency-adjustable high and low pass and detented slide controls. \$1764.

1651A

The 1651A features an octave filter set, boost and cut, ± 12 dB, 31.5 Hz - 1.6 kHz, with frequency-adjustable high pass and peak indicator. \$832.

1652A

The 1652A features a two-channel octave filter set, with the same features as the 1651A, above. \$1168.

1653A

The 1653A features a one-third octave filter set with the same features as the 1651A, above, except a frequency bandwidth of 25 Hz - 1.6 kHz. \$1268.

APHEX SYSTEMS LT

EQF-2

The EQF-2 parametric EQ/filter features tunable peak/shelf EQ, tunable high and low pass filters, modular 15 pin edge connector, and a full bandwidth of 20 Hz-20 kHz.

ARIA MUSIC

SQ-520

The SQ-520 is a rack-mountable, 2-channel, 10-band graphic equalizer with a 10-point spectrum analyzer. Features include pink noise generator available for line in and tape in jacks for each individual signal. \$389.

EQ-522

The EQ-522 is a rackmountable 2-channel, 10-band graphic equalizer. Features LED output level indicator, line in-line out, tape in, record-out jack. Equipped with high pass filter. \$199.

PE-10

The PE-10 is a parametric EQ pedal. Function switch provides you a choice to select a range of gain. \$85.



ART- APPLIED RESEARCH & TECHNOLOGY

ART-171

The 171 is a two-third octave dual 15-band EQ with switchable 18 dB/octave, 40 Hz high pass filter, signal presence LED indicators on each channel, balanced inputs, single ended outputs, and 1/4-inch phone jacks. \$375.

ART-172

The 172 is a 31-band one-third octave EQ with switchable 18 dB/octave low cut filter at 40 or 80 Hz, signal presence LED indicators, balanced inputs and single ended outputs, 1/4-in. phone jacks and XLR connectors. \$400.



ASHLY AUDIO

GQ215

The GQ215 is a stereo 15-band graphic equalizer with two-third ISO center frequencies, viscous-damped smooth action faders with all-metal actuator and detented centers. \$649.

GQ131

The 131 is a mono, 31-band graphic EQ with one-third octave ISO center frequencies with up to 15 dB of boost/cut, switchable to 6 dB. \$649.

GQ231

The 231 is a stereo 31-band graphic EQ with constant-Q active filters with minimum phase shift. Other features are tunable 18 dB/octave high pass filter, variable between 8 Hz and 200 Hz. \$995.

PQ63

The 63 is a mono 3-band parametric EQ featuring center frequency controls that are tunable over a 5.6 octave range and adjustable bandwidth from 1/20th octave up to 3 and 1/3rd octaves. \$439.

PQ66

The 66 is a stereo 4-band parametric equalizer featuring over 20 dB of headroom. \$725.

PQ68

The 68 is a parametric notch filter offering 8 individual filter circuits with 30 dB of cut-only EQ on each band. Includes setup system to aid in tuning a room for maximum gain. \$689.

AUDIO+DESIGN CALREC

E900-RS

The E900-RS is a dual channel sweep EQ with four overlapping independent sweep frequency bands. Amplitude controls offer a 40 dB control range. \$790.

Scamp S03

The S03 sweep equalizer module is a 3-band version of the E900-RS, above. \$350.

Scamp S04

The S04 is a parametric EQ module with 3 independent sections with overlapping frequencies. Bandwidth is variable from one-fifth to five octaves wide. \$475.

Scamp S07

The S07 is a ten section octave EQ operating at the standard frequencies of 31.5, 62.5, 125, 250, 500 Hz, 1, 2, 4, 8, and 16 kHz with 24 dB control range and optimum modulation indicator. \$350.



AUDIO CONTROL

C01

The C101 EQ/LED is a spectrum analyzer features 101 LED segment display with peak reading, SPL, slow/fast modes, 10 bands, calibrated mic and pink noise generator. \$429.

Ten Plus

The Ten Plus is a 10-band stereo EQ/Analyzer with LED sliders, video sound inputs, warble tone analyzer, SPL meter, calibrated mic, and 18 dB/octave subsonic filter. \$329.

Richter Scale

The Richter Scale EQ/Analyzer features 5-band half octave bass EQ, switchable 100/800 Hz electronic crossover, warble tone analyzer, calibrated mic and SPL meter. \$259.

Octave Plus

The Octave Plus EQ/Analyzer features 10-band octave equalizer, warble tone analyzer, calibrated mic, and SPL meter. \$239.

Phase Coupled Activator

The Phase Coupled Activator digitally reconstructs fundamental musical frequencies attenuated in the recording process, proprietary logic circuits, adds depth and impact, programmable electronic crossover, adjustable subwoofer output. \$259.

Ten Equalizer

The Ten Equalizer is a 10-band stereo graphic, with LED sliders, video sound inputs, flashing LED tape EQ indicator and a THD of .005%. \$229.

Octave Equalizer

The Octave Equalizer is a 10-band octave EQ with paired slider controls, 18 dB/octave subsonic filter, a S/N of 118 dB and a THD of .008%. \$159.

BIAMP SYSTEMS

EQ/220

The 220 features independent channels of 10-band, octave equalization with ± 15 dB filter ranges. Master level controls of ± 10 dB. Peak indicators and EQ bypass switches are also included.

EQ/230

The 230 features two independent channels of 15-band, two-third octave equalization, ± 12 dB filters, master level controls of ± 10 dB, ten segment level display, tape monitoring functions and EQ bypass.

EQ/290

The 290 is a 29-band, one-third octave EQ with same features as the 230, above, including high and low pass filter switches and ground isolation.

EQ/140

The 140 is a 4-band, parametric EQ with ± 16 dB filters, notching/shelving capabilities, overlapping filters, peak indicators and bypass switches.



CARVIN CORP

EQ229

The EQ2029s is a one-third-octave graphic EQ with a frequency response of 20 Hz-20 kHz, 15 dB boost/cut per band. Precision filters allow cut-off slopes of 18 dB per octave. \$279.

EQ2020

The EQ2020 is a professional dual ten-band stereo EQ utilizing octave frequency bands and sweepable high and low filters, with EQ in/out switch. \$259.



CONNECTRONICS

Accessit Dual Sweep EQ

Quasi-parametric unit allowing dual sweep of mono signal. Each sweep is in two ranges, 60 Hz to 5 kHz, and 1 kHz to 16 kHz, ± 12 dB. If used with stereo signal, then the normalling is broken to allow a single sweep on each channel.



dbx

Model 10/20

The 10/20 is a computeized 10-band unit that automatically equalizes speakers to room. RTA, uncorrelated pink noise, SPL meter, 10 memories with averaging, calibrated mic, 1 dB accuracy of filters and display. \$1200.

905

The 905 is a precision parametric module for dbx powered frame has three overlapping bands with adjustable centers, Q, boost/cut. Low/high bands switchable into high pass/lowpass filters as well. \$379.

DOD ELECTRONICS

R830B

The R830B is a stereo 15-band, two-third octave, rack-mountable unit featuring in/out switch, low cut switch, level control, and bar graph level indicator. 12 dB cut/boost.

R430

The R430 is a single rack space unit with the same specifications as the R830B.

R831B

The R831B is a 31-band, one-third octave, rack-mountable EQ. Features are the same as the R830B, above.

R431

The R431 is a single rack space EQ with the same specifications as the R831B.

R815B

The R815B is a 15-band, two-third octave, rack-mountable unit featuring a in/out switch, low cut switch, level control and bar graph level indicator. 12 dB cut/boost.



ELECTRO-VOICE

EVT 2210

The 2210 is a stereo full octave unit with two separate 10-band channels, each adjustable with 12 dB boost/cut. The unit has separate output level controls, LED indicators, and an EQ in/out switch.

EVT 2230

The 2230 is a single channel, one-third octave EQ with 27 bands and 12 dB boost/cut. Other features include, switchable low cut and high cut filters, EQ in/out switch, LED indicators, and rack-mountability.



FOSTEX

3030

The 3030 is a two-channel graphic EQ with 12 dB/octave boost/cut at 31.5, 63, 125, 250, 500 (Hz), 1.2, 4, 8, and 16 (kHz). Other features include, overload indicator, in/out switch and input volume control.



FURMAN SOUND

PQ3

The PQ-3 is a 3-band, parametric equalizer featuring +20 dB to infinity range, an integral amplifier, a bypass switch, ground lift switch, and an overload indicator. \$321.

PQ-6

The PQ-6 is a stereo version of the PQ-3, above. \$535.

S6-10

The S6-10 is a sweep graphic equalizer combining the features of both the parametric and graphic types. Each of its 10 bands can be tuned over a 4-octave range. Bandwidth is two-third octave. \$505.

GOTHAM AUDIO

Nemann W495B

The W495B is a 3-filter, switchable bandwidth EQ with stepped settings: shelving ± 15 dB for 40, 60, 100 Hz, 7, 10, 14 kHz; band filter ± 10 dB for 175 Hz-5.6 kHz. \$690

Neumann W495STB

Same as the W495B, above, except stereo unit with separate bypass switching. \$1365.

Neumann AME 591

The 591 is an automated EQ system with 1 to 64 channels, 10 preset memories and a 3 band, 2 shelve system. \$12,470.

Neumann W491A

The W491A is a 3-band, switchable bandwidth EQ with stepped settings of ± 18 dB for 1.5-15 kHz, 0.3-3 kHz, and 45-450 Hz; overload and indicators. \$690

Klein + Hummel (K+H) UE 400

The UE 400 is a stereo parametric EQ with shelving, ± 10 dB at 10 kHz, shelving ± 10 dB at 60 Hz, three band filters, each, ± 12 db for 15 Hz-20 kHz. \$1815.

NTP Programmable Disk Mastering EQ

The NTP EQ is programmable, 4-channel, 14 band, two-third, fixed ISO frequencies, ± 7 dB in 1 dB steps, selectable shelving and remote control panel. \$11,500

IBANEZ (HOSHINO)

GE1502

The 1502 is a two-third octave, two-channel, 15-band graphic EQ featuring minimum phase shift filters, two 40 Hz, 3-pole high pass filters, peak LED's, and switchable boost/cut ranges. \$325.

GE3101

The 3101 is a one-third octave, 31-band graphic EQ with the same features as the GE1502. \$325.

JBL INC

UREI 565T

The 565T "Little Dipper" filter set is two continuously variable end filters covering the 20 Hz-20 kHz range and two continuously variable notch filters covering 20 Hz-20 kHz. \$1196.

UREI 539

The 539 room equalization filter set is a 27-band cut only filter with minimum phase true LC networks for smooth combining response. It has a 12 dB/octave high pass and 6 or 12 dB/octave low pass band-end filters. \$1046.

UREI 537

The 537 is a one-third octave graphic EQ with 27-band boost and cut LC circuit filters with 12 dB of boost/cut on ISO center frequencies. Provides up to 20 dB of gain. Overload LED and EQ bypass switch. \$896.

UREI 546

The 546 is a dual parametric EQ with two independent, four-band parametric EQ channels, switchable to provide one 8-band channel. Reciprocal response curve in boost/cut. Filter sections have overlapping ranges. \$746.

UREI 535

The 535 is a dual graphic EQ with two independent channels and ten ISO octave centered frequency bands from 31.5 Hz to 16 kHz with linear controls calibrated in dB. The gain is variable from -10 dB to +20 dB. \$496.

UREI 533

The 533 is half of the 535, above. \$366

UREI 5547,5549

The 5547 and 5549 have linear self-tracking input and output slide faders that automatically maintain unity gain while adjusting input and output levels to optimize system S/N ratio and provide parametric frequency high and low pass filters to further system flexibility, power efficiency and driver protection. 5547-\$789. 5549-\$849.

KLARK-TEKNIK ELECTRONICS

DN300

The DN300 is a mono one-third octave 30 band graphic EQ including high and low pass filters, bypass relay, ground lift switch, +-12 dB boost/cut, and THD (.01%). \$975

DN301

Same as the DN300 except it is a cut only (15 dB) format. \$995.

DN332

The DN332 is a dual channel two-third octave, 16-band graphic EQ including subsonic filter, ground lift switch, +-12 dB boost/cut and a THD of 0 .01%. \$1095.

DN360

The DN360 is a dual channel one-third octave, 30-band graphic includes subsonic filter, ground lift switch, bypass relay, range switch +-6 dB or +-12 dB boost/cut, and a THD of .01%. \$1575.

LT SOUND

PEQ-2

The PEQ-2 dual-band parametric equalizer with selectable peak/dip or shelving response on upper or lower bands. Frequency coverage is from 20-20,000 Hz, and the bandwidth is variable from 0.15 octaves to 2 octaves. \$595.

PEQ-1

The PEQ-1 is the same as the PEQ-2, above, except it is a single channel version. \$349.



MODULAR AUDIO PRODUCTS

MAP 3550

The 3550 is a parametric EQ with three ranges, 21 frequencies, reciprocal boost/cut to 12 dB, peak/shelving, selectable audio band-pass filter, in/out LED indicator, and transformer coupled output. \$443.



NEI

DAX 2800

The 2800 is a computer controlled 28-band, one-third octave graphic EQ/RTA. Features include storage and immediate recall of 16 digital EQ or RTA memory settings and instantaneous auto EQ and RTA averaging. \$2495.

DAX EQ POD

The POD is a dedicated one-third octave equalizer for permanent sound system installations. Programmed by the DAX 2800 to any equalization curve. \$495.

2711

The 2711 is a +/-12 dB boost/cut on each of 27 ISO centered, one-third octave bands. Smooth action, oil-damped slide controls on each band with center detent. Balanced and unbalanced inputs/outputs. Gain control and peak LED indicator. \$549.

2712

The 2712 is a +/-12 dB boost/cut on each of 27 ISO centered, one-third octave bands. Unbalanced 1/4-in. phone connectors input/outputs. \$449.

1021

The 1021 has two completely independent channels with +/-12 dB boost/cut on each of 10 ISO centered octave bands. Other features are similar to the model 2711, above. \$435.

341, 342

The 341 and 342 are parametric EQs with 4 equalization sections with frequency, bandwidth, and level controls on each section. In/out switching and peak LED indicator on each section. The 341 is single channel. \$359. The 342 is dual channel. \$595.

ORBAN ASSOCIATES

622B

The 622B parametric EQ is a two-channel unit with continuous, non-interacting control over center frequency, bandwidth, and amount of peak boost or cut. Four peaking bands per channel provide -40 dB notching capability; individual channel and band in/out switches. \$879.

672A

The 672A is a single channel quasi-parametric unit with continuous control over center frequency, bandwidth, and amount of peak or dip. Convenient graphic style EQ controls provide reciprocal EQ in eight bands. \$689.

674A

The 674A is a two-channel version of the 672A. Each channel is identical to the 672A, including all controls and overload indicator, with the exception that the electronic crossover outputs are arranged as 'main/lowpass' and 'highpass'. \$1299.

PEAVEY ELECTRONICS

Stereo Graphic

The stereo graphic is designed using all active elements for optimum dynamic range and minimum noise operation. There are two identical filter/equalizer sections, each with ten bands of equalization.

EQ-27

The EQ-27 features balanced inputs as well as balanced outputs and contains no adjustments whatsoever in order to provide long-term stability and continuous performance to specification under high vibration field conditions.

ROLAND

SEQ-315

The 315 two-third-octave stereo EQ with 15 bands per channel, a boost/cut of 12 dB, and high and low inputs/outputs. \$550

SEQ-331

The SEQ-331 is a rack mount 31-band graphic EQ with one-third octave centers from 20 Hz to 20 kHz. Each band can be boost/cut 12 dB and the unit has balanced and unbalanced inputs/output. \$495.

Boss GE-10

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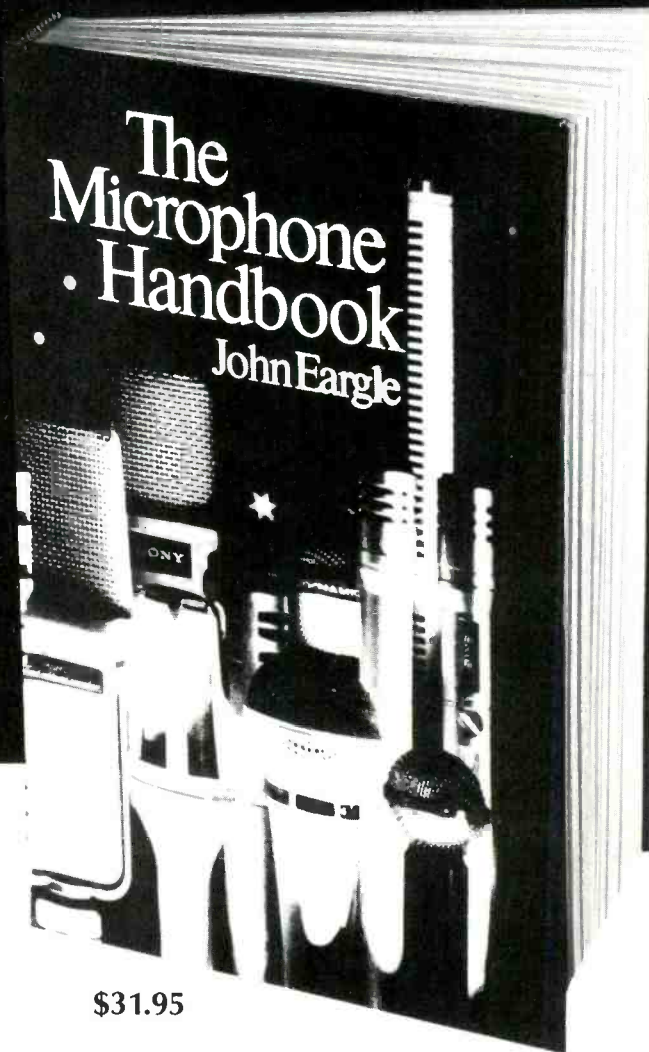
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SAM GINSBERG -

COMPETITION

AT THE BOARD

Recording studios have undergone a metamorphosis since the beginning of the decade. While an artist or producer formerly rented a studio and worked with the house engineer, engineers are now freelancing as well.

Today artists are seeking out producers and engineers and then finding an appropriate recording studio or they are hiring producers who then search for an engineer. Engineers now also have managers too. Thus, for the engineer, it has become a very competitive marketplace just in order to get work. No longer do studios come to engineers with a work schedule. Studios still retain engineers. But generally they are second or assistant engineers hired to help out the freelance engineers.

Once engineers were in demand and started working at various studios depending upon the project, it became too costly for most studios to retain house engineers—second engineers are much cheaper. The super star engineers didn't lose work, but the new engineers were trapped in a situation where they needed managers or had to negotiate by themselves. Along with the decreased amount of records being made over the past few years, the engineering market began to tighten up. Record engineers were forced to take more commercial dates (or anything else they could).

MR&M decided to follow Sam Ginsberg, one engineer whose career started to blossom as a house engineer at the Record Plant in New York just when the industry change came about. He progressed from second engineer at A&R Studios in New York to engineer at the Record Plant and built up a nice list of credentials. Today, at the age of 30, Ginsberg is a producer/engineer doing records, jingles, and soundtracks. In addition, he's trying to find a new group to work on in his spare time so that if the record hits, he will become more marketable.

Ginsberg also engineered Yoko Ono's "Walking on Thin Ice" in 1981, the last session John Lennon attended before his death. "I worked on pre-production with Yoko while John was in Bermuda," recalls Ginsberg. "I engineered between 20 and 30 hours worth of material in a weekend session. We did about 20 demos, most of which eventually wound up on Double Fantasy, which were rock but are now more reggae. We got along well, and after Double Fantasy was released we went back into the studio to work on 'Walking on Thin Ice.'"

More recently, Ginsberg engineered a CBS television special "How To Be A Man" on which John Denver, Rick Derringer, Melba Moore, and Rex Smith recorded. He has also engineered two Billy Idol concerts, a Girlschool concert, and others, for the King Biscuit Flower Hour as well as engineering commercials for Miller Beer, Lowenbrau, McDonalds, Coca-Cola, etc.

MR&M conducted this interview in Record Plant's Studio A which is Ginsberg's favorite studio. Although he does do freelance work at various others, he considers Studio A to be his home away from home.

Modern Recording & Music: How did you get into the music business?

Sam Ginsberg: When I got out of high school, I started working in a bank, but I knew I didn't want to stay in a bank forever. I had always loved music. I walked by the National Recording Studios one day, and I met an engineer who invited me in to watch a recording session. I thought it was interesting work.

MR&M: Did you have any background in music?

SG: No.

MR&M: How did you get your first job in the music industry?

SG: I went to the manager at National Recording Studios and

asked for a job. I started as a messenger there in 1973. A lot of people who are now engineers or producers and even artists started by sweeping floors, which I also did. As a bank teller, which I couldn't stand, I was making \$150 a week, and from there I went to being a messenger at \$60 a week, 70 to 80 hours a week. My mother and father thought I was crazy, but I didn't want to go through life working at something I was not happy with.

From National, I went to Super Dupe, which made high speed duplications—300 to 400 copies were made to be sent to radio stations. It was an important step in learning how to handle tape. I then made applications for jobs at various recording studios, and it took a lot of persistence. Even if you have an application at a studio, if someone else walks in the day there is an opening, that person usually gets the job. So I used to stop by the studios as often as possible to see if there was an opening.

I finally got a job at A&R Studios in New York in 1974 as a messenger again, but within a month, there was an opening as an assistant engineer (second engineer), and I got that position. Phil Ramone, who ran A&R at the time, called it an associate engineer. It was a very hard, yet responsible job. I started off as an assistant to the associate. Three months later I became a second engineer. Don Hahn, now the chief engineer at A&M Studios in Los Angeles, saw my energy and wanted me to second on his dates.

MR&M: Did you ever take any engineering courses?

SG: No. I learned everything I could possibly learn by watching the engineers at A&R. This is not a business where you can be taught sound. You can't be taught sound balance. Everybody balances sound to their own ear. It's like playing guitar. The board looks complicated, but it's really not.

MR&M: What did you learn by watching?

SG: I learned how to set up a room, mic'ing wise, and various techniques. At A&R I sat behind some amazing engineers, like Don Hahn. I was his second engineer for two years. He was very strict and in a control situation, everything comes down on the engineer. Even though I didn't have all the technical abilities, he liked my desire to try different things.

You can't really have the board

explained to you. Learning sound comes from experience and from doing it yourself. I could tell you a 100 cycles and that you can boost it two-or-four-or-six-or-eight dBs, but that wouldn't mean anything to you. I used to watch the engineers and see them put an equalizer in on a track. They would equalize a track and add or subtract a frequency. I would listen and see what he did and try to understand why he did it.

MR&M: Did the engineers ever explain what they were doing?

SG: Not very much. Not Don Hahn.

MR&M: Did you take notes?

SG: Yes, for the patch bay, which is the responsibility of the second engineer. The second engineer is really the engineer of the studio, but he doesn't work the board. The engineer's responsibility is to record and mix; his assistant has different responsibilities. If the engineer is the house engineer, he may also do a lot of his assistant's work, like the patch bay, running the tape machine, and other tasks.

After a couple of months, I became in demand, and most of the engineers wanted me to second on their dates at A&R. I did a lot of jingles at A&R, and a few records, including David Sanborn's first album *Taking Off*. I stayed at A&R for almost two years.

MR&M: Why did you leave?

SG: I was their top assistant. I wanted a raise and more recognition, and I got the raise I wanted and the recognition at the Record Plant. I came to the Record Plant as a second engineer, where recording records was different. At the Record Plant, albums took three or six or twelve months. They spent a day getting the drum sound. At A&R, they spend only an hour getting the drum sound and finished albums much faster, sometimes in a week. It was a whole different ball game at the Record Plant.

MR&M: How did you progress at Record Plant?

SG: They put me in with another second engineer for a couple of weeks, which confused me at first. I was depressed because it took so long to do a record—two days for a guitar to sound right.

I then met Jack Douglas and Jay Messina (Douglas is the famous producer and Messina was his main engineer) and worked with them for two years as a second engineer, starting out with Aerosmith, then Patti Smith, Rick Derringer, Cheap Trick and others—a string of great

rock albums. I wanted to work on rock albums and that was the key that kept me at Record Plant. At A&R, Phil Ramone was into Phoebe Snow and Paul Simon. I also did a lot of jingles at A&R.

MR&M: What is it like to jump from second engineer to engineer?

SG: The transition from second engineer to engineer is so dramatic. I wanted to engineer. One day, Roy Cicala, the owner of Record Plant, called me. He was producing Orleans and wanted me to engineer it for him. This was their first album without John Hall, and they had a Top 10 single with "Love Takes Time." That was my first engineering job. Then Roy produced Garland Jeffrey's *American Boy and Girl*, which I engineered. Then I engineered Richie Havens' *Connections* for Elektra.

The record industry, for some reason, then went into a lull, and it became very hard to get engineering gigs. The only engineers who were getting gigs were the ones with well known names or ones who had managers. Now just getting work is a job in itself. The industry is so competitive that you need a manager to survive. So here I was a beginning engineer without a lot of credits behind me. There was a lot of competition plus the record business was slow. I took the skills I acquired from A&R Studios—lots of commercials—and I brought a lot of commercials into Record Plant.

MR&M: Is there a vast difference in recording records and jingles?

SG: Jingles are amazing. The first 45-minutes would be the rhythm section, then a 20-30 piece orchestra would come in, then the singers, and it would be mixed all in three to four hours. It was bang, bang—right on the head kind of situation.

MR&M: As an employee of Record Plant, were you required to bring in new accounts?

SG: No. If I did though it was to my benefit financially and for my reputation.

MR&M: If you did not, would you still have had a job?

SG: Yes, but I would have had to work a lot harder and longer to make good money. The salary was not very high even though I was making a good living. So I started to do a lot more jingles, and out of the frustration of wanting to do records, came the Hellcats. I did two Starz albums with Jack Douglas. Rich Ranno was in Starz, and he was one of my favorite guitarists. I bumped into

him on the street, and he wasn't doing anything. We got Michael Smith, Rex Smith's brother, to see if we had any tunes. I took a shot with Record Plant and got spec time for off time—Saturdays and late nights. If we got a record deal, we would pay the studio back. There was no loss for the studio.

I don't consider what I do as demos; I consider them as masters. We did five songs, which turned out to be the Hellcats' EP on Radio Records, distributed by Atlantic Records, in 1982. It went Top Five in England but never made it in America. Radio Records folded shortly after the release of the record.

MR&M: Did you sell the master to the record company?

SG: No. The group's manager sold it to Radio Records. The studio then got paid, and I ultimately got paid. This was my first production.

MR&M: What's the difference between producing and engineering?

SG: A producer makes the decision on songs and in the songs, the parts that are to be used, and the arrange-

SG: I went back to my bread and butter living—jingles and movies, B-movies. There was no such position as a staff engineer any more. Clients would bring their own engineers to the studio, any studio. A staff engineer is really a second engineer in a studio.

MR&M: Why?

SG: Because it was financially better off for the studio to work it that way. Producers were booking studios and bringing in their own engineers. Studios were not going to say to producers that they had to use the studio engineers.

MR&M: So in essence, you were kind of forced to go independent.

SG: I went independent because of desire and the changing state of the industry. It was a career move. I wasn't doing as many albums as I would like. There's a small click of managers who manage a handful of producer/engineers, who get a lot of the work.

MR&M: So why don't you sign up with a manager?



I learned everything I could possibly learn by watching the engineers at A&R. This is not a business where you can be taught sound. You can't be taught sound balance. Everybody balances sound to their own ear. It's like playing guitar. The board looks complicated, but it's really not.



ments. An engineer works with a producer translating the producer's sounds and ideas. When you produce and engineer at the same time, it's a unique situation.

MR&M: Is it hard to do both at the same time?

SG: No. After you establish the sound, you can work out the parts of the performance.

MR&M: Let's get back to when you left Record Plant.

SG: There are not too many managers managing producer/engineers—it's a new field. It's a new career for managers to manage producer/engineers. There are only two-or-three really good managers.

MR&M: Why haven't you found a manager to remain competitive or are the managers not interested in clients unless they have extensive track records?

MR&M: The two or three man-

agers I would want to work with probably feel that I don't have enough of a background, and I might not be worth it to them. Also, they are pretty well booked and don't want to take on any more new clients. On the other hand, the managers that would be interested, I'm not interested in them because they don't have the needed clout.

MR&M: It seems like a Catch-22. So what do you do?

SG: The two or three managers I would want to work with have five or six clients and don't want any more. I respect them for that. I keep doing my work. My name keeps getting around. I have a very good reputation in New York City. Every chance I get, I try to do things on my own like produce records like the Hellcats and more recently Julie Farbolin. She is a background singer, primarily a blender in sessions, who stood out. She sounded like a young Janis Joplin. Her voice has a personality, and I thought I could create something with her. I look for these kinds of situations while I make my living doing my day to day work.

MR&M: What did you do with Julie Farbolin?

SG: For Julie, I got some spec time from studio musicians, and we recorded a version of the Lovin' Spoonfuls' "Summer in the City." The co-producer/co-arranger paid for the studio time. If we get a recording contract, I will pay the studio musicians double out of the respect for the tremendous favor they did for me. We spent about 30 hours working on the song. I don't try to sell it, the co-producer does, but I know a lot of A&R people at record companies, and I've played it for some of them.

MR&M: So what are your affiliations now?

SG: I freelance primarily out of the Record Plant, and also the Power Station, Big Apple (the old Hit Factory), and Mayfair (a heavy jingles studio), amongst others.

MR&M: How do you determine which studio to pick?

SG: It depends on the client. If a client wants to spend only a certain amount per hour, I would try to work out a deal with the Record Plant, which is my first choice, or then I would go to another studio.

MR&M: As a freelancer, is it easy for you to work with the various boards in the different studios?

SG: If it's my first time at a studio, I go in a day early and check out the board with a master tape that I bring along since I know the tape very well. I listen to the monitors and discuss the room with the second engineer. I then check out the board with a set of speakers I'm familiar with since I use a tape I'm familiar with. I get a feel for the board and room this way. Then the next day, I can do the session and feel comfortable.

MR&M: What is your favorite board?

SG: Oddly enough, my favorite board is a Neve, which Record Plant does not have. I like the Neve for its natural and smooth equalization among other features. The construction of the board is convenient for mixing and recording.

Each studio customizes its board to the consensus of the house engineers, especially when engineers worked out of one studio.

MR&M: What kind of boards are in Record Plant?

SG: Record Plant has four boards—two A.P.I.'s, one Trident, which was just automated with a Massenburg computer, and a Spectra Sonic. I prefer the A.P.I. console in Record

Sam Ginsberg Selective Discography

Year	Artist	Title	Label	Producer	Engineer
As Second Engineer					
1975	David Sanborn	<i>Taking Off</i>	Warner Bros.	John Court	Don Hahn
1975	Ronnie Foster	<i>Cheshire Cat</i>	Blue Note	George Benson	Don Hahn
1975	Horace Silver	<i>Silver & Brass</i>	Blue Note	George Butler	Don Hahn
1975	Kate & Anna McGarrigle	<i>Kate & Anna McGarrigle</i>	Warner Bros.	Joe Boyd	John Wood
1975	Geoff Muldaur	<i>Geoff Muldaur Is Having A Wonderful Time</i>	Warner Bros.	Joe Boyd	John Wood
1976	Derringer	<i>Derringer</i>	Blue Sky	Jack Douglas	Jay Messina
1976	Aerosmith	<i>Rocks</i>	Columbia	Jack Douglas	Jay Messina
1976	Patti Smith	<i>Radio Ethiopia</i>	Arista	Jack Douglas	Jay Messina
1976	Starz	<i>Starz</i>	Capitol	Jack Douglas	Jay Messina
1977	Aerosmith	<i>Draw the Line</i>	Columbia	Jack Douglas	Jay Messina
1977	Starz	<i>Violation</i>	Capitol	Jack Douglas	Jay Messina
1977	Cheap Trick	<i>Cheap Trick</i>	Epic	Jack Douglas	Jay Messina
As Engineer					
1979	Orleans	<i>Forever</i>	Infinity	Roy Cicala	
1979	Garland Jeffreys	<i>American Boy & Girl</i>	A&M	Roy Cicala	
1979	Machine	<i>Machine</i>	RCA	August Darnell	
1980	Richie Havens	<i>Connections</i>	Elektra	Charles Calello	
1980	Roy Buchanan	<i>My Babe</i>	Waterhouse	Roy Buchanan	
As Producer and Engineer					
1981	Hooks	<i>No Deposit, No Return</i>	independent		
1982	Hellcats	<i>Hellcats</i>	Radio Rec.		
1985	Julie Farbolin	"Summer in the City"			
Mixed And Recorded Overdubs					
1981	Yoko Ono	"Walking on Thin Ice"	Geffin		



Plant's Studio C for mixing because of its EQ and the sound of the board. It is also convenient for mixing and recording and has a good monitoring system.

MR&M: What about for recording?

SG: My favorite recording studio at Record Plant is Studio A, which has the Spectra Sonic, a ten year old board, with nothing special outside bare essentials. I like this studio for its live and dead sounds—it's variable. However, the board is not modern enough for mixing. Mixing is now more intricate than when the board was built. You don't need these intricacies for recording sessions.

MR&M: Let's go back to jingles. These seem to be your bread and butter living. What are they like to do in the studio?

SG: Jingles are precision. They're like clockwork and have to be done within a certain amount of time—one session. I did all the Miller Beer commercials last year. We started at 10:00 AM, with the rhythm section—bass, drums, guitar and piano. Between 10:45 and 11:00, both the 30 second and 60 second spots are finished as far as the rhythm goes. Then comes the strings and horn sections—sometimes 20 people—come in for an hour. Then comes the background singers for 30 to 45 minutes. Then the lead singer. It is all mixed by 2:00 PM. It is then transferred to a mag and sent to a house where they mix the sound to film, or if it's for radio, it is sent to a dub house.

A lot of engineers don't want to do

jingles because they are intense with 30 to 40 musicians out there, a producer pacing like crazy, the arranger in the room, and the people from the advertising agency, who are like ten producers. The pressure is intense. It costs thousands of dollars per hour. All the time in a jingle, I'm selling a product, not a tune, which leaves me quite frustrated because there are things that I hear that I know could be done better, but it really doesn't mean anything in this case because it's advertising. I got so involved with Miller last year because they wanted more of a record sound than a commercial sound, and that's why they came to me and that's why we did it at Record Plant.

MR&M: What is the difference in engineering for a live record vs. a studio record?

SG: The engineer in the truck is mainly interested in getting the show on tape. It's a one shot thing. In the studio, you go for a particular balance and sound, and you can retake and retake. Live, the engineer has just one take and gets it on the tape full level, and when he remixes it later, he wants to capture the *feel*—not just the level of the guitar or the bass—of the concert so he has to reach for it.

MR&M: Do you like to record live in the studio or layer your rhythm section?

SG: The full rhythm section is important live. It's a better feel. A lot of things are done mechanically, like drums. Then you add bass and guitar. Sometimes, it sounds good, but most of the time, it feels musically better when the whole band is out there.

MR&M: What advice do you have for new engineers?

SG: I always tell my seconds to watch and listen and see why I put up a mic and patch an equalizer and limiter on it. I tell them to listen to the changes. That way they see why I did it and can hear the differences in sound. That's the way I learned.

MR&M: One last question. You started out with many people, some of whom are better known than you are, some of whom are not. How do you feel when someone else gets the engineering job, yet you know deep down that you are a better engineer?

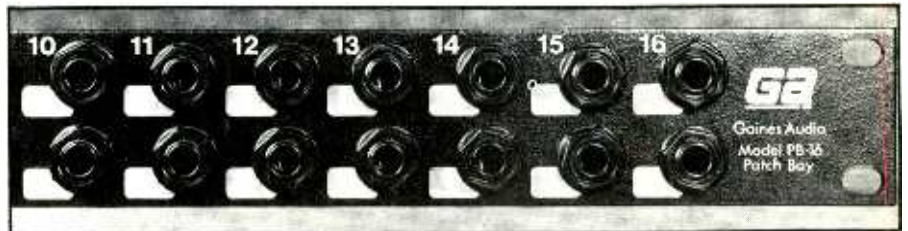
SG: Essentially it hurts because I know I could have done it better, and he probably got it because of better connections. But it's a small industry, and it comes back to the person when he does a good job.

The Market Place

what's new in sound and music

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.

Circle 57 on Reader Service Card

NEW AKG MUSIC MICROPHONE

AKG Acoustics recently introduced the new D-321 Entertainer's Microphone. The features of this new dynamic microphone appear to put an end to the problem which has long plagued performing artists, recording engineers and producers. Whenever most other microphones are shifted from hand-to-hand or clapped-in-hand, "handling noise" could be distinctly heard at both recording and amplified sound levels. The problem was first solved by AKG with the introduction of their D-300 Series Entertainer's Microphones which, besides providing Superior studio quality sound, were designed to withstand the rough and tumble vigors of road shows. The new D-321 is said to be totally free of handling noise due to a newly patented exclusive noise cancelling system in which the microphone magnet is flexibly suspended so that the diaphragm and the magnet vibrate simultaneously or, in phase. Any surface noise on the body of the microphone thus becomes self-cancelling and no annoying electrical output signal is created. Neither a strong impact, light tapping or scratching will excite the transducer. The microphone is also equipped



with a hum compensation coil which protects its function against stray magnetic fields. Besides the no-noise handling feature, the D-321 transducer diaphragm has been designed and frequency-tuned to provide natural reproduction of the human voice with clear retention of every individual subtlety and variation in

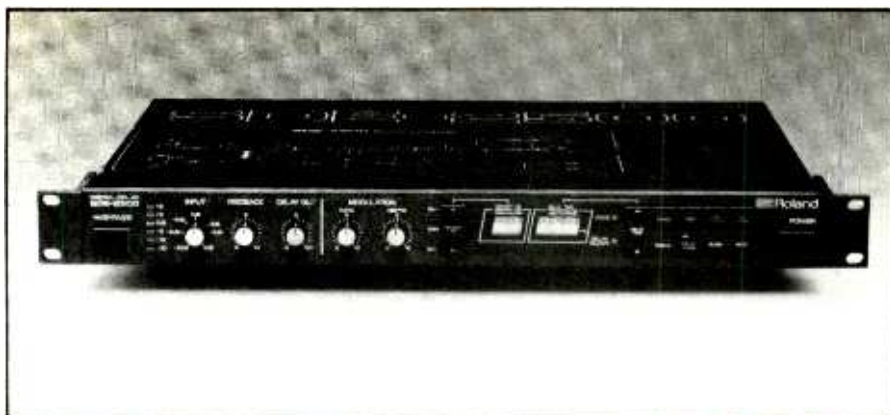
expression. The D-321 "anti-feedback" hypercardioid dynamic transducer has a frequency range of 40 to 20,000 Hz. Sensitivity at 1,000 Hz is 1.4 mV/Pa. Electrical impedance at 1,000 Hz is 3,000 ohms. The D-321 weighs 330 grams (11.75 oz.). Suggested retail price is \$170.

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MODERN RECORDING & MUSIC

MIDI-COMPATIBLE DIGITAL DELAY

The SDE-2500 Digital Delay from Roland is the first delay with MIDI (Musical Instrument Digital Interface) compatibility that will meet all the demands of musicians and engineers. The SDE-2500 produces delay of up to 750 ms., and up to 64 front panel programs can be assigned to any of 128 MIDI program locations (input attenuator excluded). The frequency response is from 10 Hz to 17 kHz at delay times up to 375 ms. Between 0 and 10 ms, delay time is set in increments of 0.1 ms.; delay increments are 1 ms. Any effects, such as flanging, chorus, doubling, and echo can be accurately produced. The SDE-2500 features the digital compounding PCM system equivalent to a 15-bit A/D/A converter to



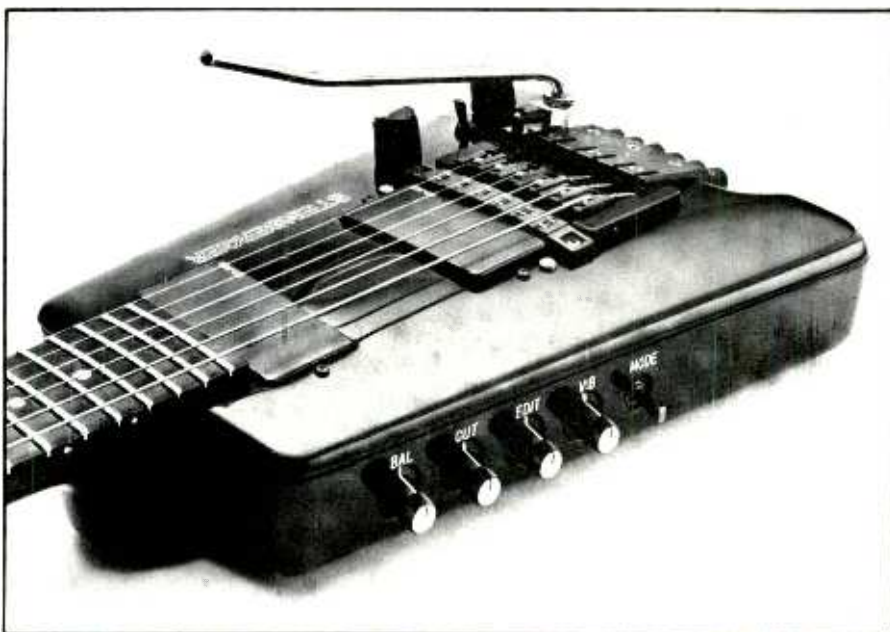
achieve a dynamic range of 96 dB, THD of 0.05% and S/N ratio of 84 dB. All analog circuits are constructed with discrete amplifiers to ensure exceedingly clear, pure sounds. MIDI in and thru jack are provided, as well as control jacks for such functions as

delay, hold, playback, preset shift and modulation CV. Two output jacks are provided, one for the mixed delay and direct signal, and one for the delay signal alone. Suggested retail price is \$795.

Circle 59 on Reader Service Card

STEINBERGER-ROLAND CONTROLLER

The Steinberger Sound Corp. has begun production on the Steinberger GL-2/GR and GL-2T/GR (with Transposing Tremolo) series guitar controllers for the Roland GR-700 guitar synthesizer module. The Steinberger Guitar will become available with onboard electronic circuitry, designed and built by Roland expressly for Steinberger, which interfaces with Roland's GR-700 synthesizer. Musicians will now be able to turn the unobtrusive black Steinberger into anything from a string quartet to a french horn to a UFO. Steinberger-Roland guitars will feature a 24-pin connector (and a standard 1/4-in. phone jack) for interfacing with the Roland GR-700, and all controlling circuitry from Roland will be compactly structured using printed circuit boards and high quality electronic components for reliability. This not only means that the design of the Steinberger guitar will remain virtually unchanged, but also ensures accurate treatment of the signals from the Roland hexaphonic pickup and filter related control signals. With the addition of Roland's pickup to the Steinberger's standard EMGs,



each string on the guitar actually has its own separate pickup, through which string vibration is picked up and processed by the GR-700 module. Both guitars are supplied with attachable leg rest, padded nylon case, strap, and cord, and are offered

with a lifetime "limited" warranty. The Steinberger GL-2/GR carries a suggested price of \$2,150, and the GL-2T/GR carries a suggested price of \$2,450.

Circle 60 on Reader Service Card

CASIO FULL-SIZE PROGRAMMABLE SYNTH

The Casio CZ-5000 is a 61-key, full-size programmable synthesizer that utilizes Casio's unique phase distortion sound generating technology. The CZ-5000 is a 16-note polyphonic keyboard when using a single line of sound generators and is 8-note polyphonic when combining two lines. It has 32 presets, 32 internal memory locations, and can store sounds on optional RAM cartridges or on conventional cassette tape. Its many features include: programmable key split, tone layering, sustain pedal, modulation wheel and stereo chorus. The CZ-5000 also has an onboard 8-track MIDI sequencer that has a 3,500 note capacity, real time or step entry, and can drive external MIDI products for extended performances.



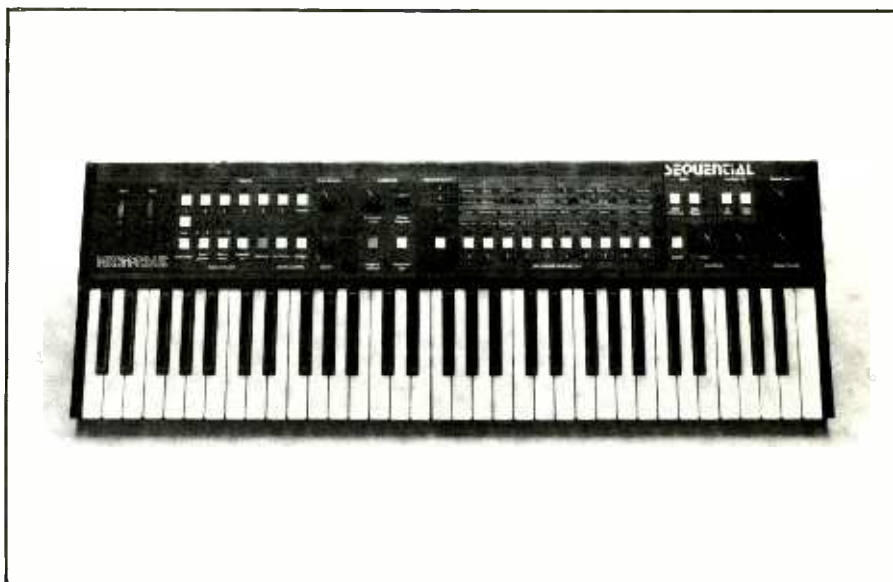
The keyboard has full MIDI features and is also up to 8 channel multi-timbral which is selectable, allowing the player to perform live on the keyboard while it is being driven

from an external sequencer or computer. Suggested retail price is \$1,399.

Circle 61 on Reader Service Card

SEQUENTIAL CIRCUITS 6-VOICE SYNTH

The Sequential Multi-Trak is a unique and powerful 6-voice synthesizer, combining state-of-the-art synthesizer and digital recording technology. With Sequential's Multi-Trak, you can play six completely different instrument sounds at the same time, and you can do so in three ways: One way is by layering several sounds on top of each other and then playing them from the Multi-Trak keyboard. They call this multi-layered sound technique, "SuperStak" mode. Superstak mode allows you to assign the Multi-Trak's six voices to play six sounds in unison, to play two keys at a time with three sounds on each, or to play three keys at a time with two sounds each. A second way of playing the Multi-Trak, as a multi-timbral "ensemble," is by recording different instrument parts using Multi-Trak on-board digital recorder. Four separate sequence locations are provided, with a total memory capacity of 1,600 notes. Once recorded your sequences can be linked together in any order to create complex songs. To keep your music on the beat, the Multi-Trak provides a built-in metronome and five different resolutions of auto-correction to correct any minor timing imperfections. A third method for creating complex multi-part music on the Multi-Trak is by combining the live playing capabilities of the instru-



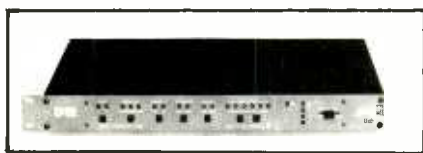
ment with its multitrack recording feature. For instance, you might record a bass drum part on track #1, a snare drum on track #2, bass on track #3, and a bass line on track #4. You could then use the two remaining voices to play along "live" on the keyboard during playback of your pre-recorded music. The Multi-Trak features a five octave velocity keyboard. You can use the keyboard velocity to control loudness, brightness, or modulation amount. A built-

in stereo chorus provides a programmable on/off chorusing as well as additional controls to vary rate and depth. Add ambience to your sound without the need of external effects. The Multi-Trak also features a latchable arpeggiator. (You can latch or release the notes from the front panel or with an optional footswitch.) Other professional features include easy transpose and a cassette dump. Retail price is \$1,499.

Circle 62 on Reader Service Card

MODERN RECORDING & MUSIC

NEW DIGITAL REVERB SYSTEM



Applied Research & Technology, Inc. recently introduced the new digital reverberation system—DR2. The DR2 is a true digital signal processor and is microcomputer controlled. This allows simple user commands to produce complex changes in the digital processing necessary to create reverberation. The system features a wide variety of user adjustable parameters. These include user presets, multiple room choices (plate, medium sized room, large hall), various pre-delay settings (0, 25msec, 50msec, and 75msec), adjustable high frequency damping, different room positions and multiple settings of decay time per room. It also features a front panel 'kill' which mutes the units output. In addition to the balanced mono input and stereo output facilities, the DR2 has a mono mixed output with a front panel reverb level control. The unit is packaged in a sturdy single high rack and includes a one year limited warranty. Manufacturer's retail price is \$1,095.

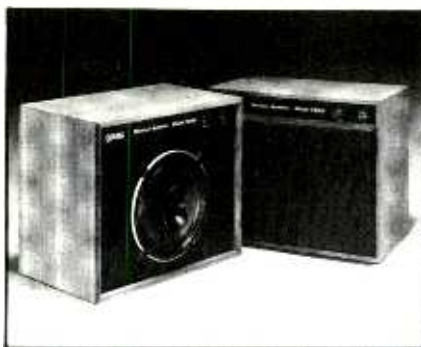
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PEAVEY POWER AMP

The new Peavy CS-1200 power amp features the large Continuous Duty power transformers of a new semitoroidal type, and the entire unit is designed to meet rigid European electronic and heat dissipation specifications. The CS-1200 is not a warmed over high power amp, but is designed for continuous high power operation. It has two separate channels and its two massive power supplies are complemented by a large number of rugged silicon output transistors in a unique "tunnel-like" dissipation tube that maximizes heat dissipation. It is rated 600 watts RMS continuous per channel into 4 ohms and 1200 watts RMS continuous into 8 ohms in bridge mode. Peavey's patented DDT compression is also standard in the CS-1200 as well as the CS-400 and CS-800. The CS-1200 features Peavey's new "back porch" accessory plug-in patch panel for balanced input transformers and crossover/special function modules. It is available in a 19-in. rack mount configuration. Specifications include:

AUGUST 1985

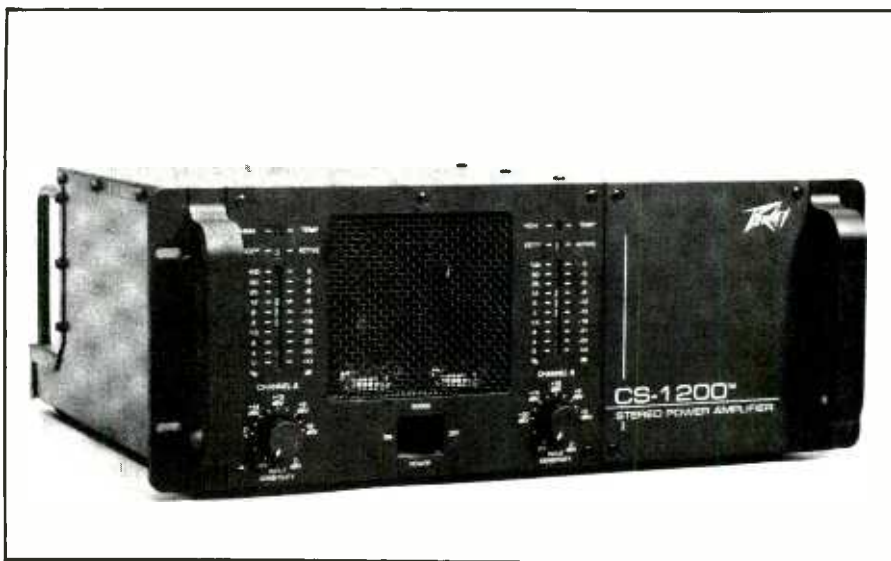
GAUSS 200 WATT COAXIAL MONITOR SYSTEM



Cetec Gauss' new single point source studio monitor does not need any time compensation. The new Model 7258 uses the company's 200 watt coaxial loudspeaker which uses proprietary design parameters to place both drivers virtually in the same acoustic plane, well within the Blauert and Laws criteria. The monitor features a conservative power rating of 200 watts RMS with metric sensitivity of 95 dB. Fre-

quency response is 35 Hz-18,000 Hz with a 30°H x 30°V pattern at 2 kHz. The built-in crossover features a high frequency balance control with a range of +3 dB to off. A rolloff control adjusts the high frequency from 6 kHz to 15 kHz from 0 to -12 dB. Crossover is at 1200 Hz, 12 dB/octave. The walnut enclosure features a symmetrical design with the coaxial speaker in the center between left and right ducted ports. This design provides superior stereo imaging at the listening position without the need for special matched pairs. Cabinet dimensions are 24-in. x 19½-in. x 29-in. The computer designed Cosh horn of the coaxial speaker provides an extremely stable image, reduced second harmonic distortion and virtually no midrange shadowing. Manufacturer's suggested retail price is \$1495 each.

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a rated power of 350 W RMS/CH into 8 ohms, 600 W RMS/CH into 4 ohms, 600 W RMS/CH into 2 ohms (both channels driven), 1200 W RMS/CH into 8 ohms (Bridge Mode). Frequency response is: +0, -0.2 dB

600 W RMS/CH into 4 ohms, 20 Hz to 40 kHz. Power consumption is 1500 Watts, 120 VAC, 50/60 Hz. The suggested retail price is \$1199.50.

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1/4 Notes

MAKING TRACKS

Cub Koda was at Trod Nossel Recording Studios putting the finishing touches on his new LP. He also recently contributed some guitar tracks on the upcoming **Rebel Montez** and **Bob Mel** albums... **UTFO** was at Sound Heights in Brooklyn, NY, recording "Pick Up The Pace" produced by Full Force... They were also in doing a NYC spotlight for Virgin Atlantic Records. Vince Traina was at the board with Larry Anderson assisting... **Le Mobile Studio:** Heavy metal rockers **Y&T** were recorded live at the Keystone Club in Palo Alto for their A&M release. **Santana** was recorded for an NBC radio special. Producer Michael Masser was working on an upcoming **Stacy Lattisaw** LP for Atlantic. Also, Le Mobile was at the Marin Civic Auditorium to work on a forthcoming **Grateful Dead** video... Mastering engineer **Randy Kling** of Disc Mastering Inc. in Nashville, has been in working on an album for RCA featuring fourteen Number One country hits. Artists included on the album are: Dolly Parton, Waylon Jennings, Elvis Presley, Razy Bailey, Alabama, Earl Thomas Conley, and Charles Pride, among others... **Stevie Ray Vaughan** was in at Dallas Sound Lab in Texas mixing his new album for CBS records. Vaughan produced the album along with Richard Mullins who also engineered for the project. The album was recorded on Sony Digital PCM 3324 24-track and was mixed to Sony 1610 Digital 2-track. Ron Cote, of the Dallas Sound Lab, was the assisting engineer... **Joey Lynn Turner** former lead singer of Rainbow, was in at Bearsville Studios in New York recording his new debut album for Elektra Records. Veteran producer **Roy Thomas Baker** handled production chores, and the project was engineered by Ian Taylor with help from Ken Lonas. The new all-star band consists of Chuck Burgi on drums, Al Greenwood on keyboards, Bobbie Messano on guitar and bass, and Joey Lynn Turner doing vocals. Newly signed RCA recording artists, **Mass**, were also in recording their new album in Bearsville's studio complex. Tony Platt produced and engineered with help from Mark McKenna... **Irma Estel La Guerre** (co-star with Yul Brynner in the "King and I" and the "African Relief Project") was in at Planet Zero Studios in NY recording with 60's acts such as Brook Benton, the Coasters, the Dubs, Otis Blackwell, Dougie Royal, the Teenagers, Janice Harper among others. James Cannings was at the board with assistance from Steve Rosenthal and Fitz... **Don Felder** was at Mama Jo's in CA mixing a tune for the movie "Secret Admirer" Jack Joseph Puig engineering. Newly signed artist, **Twila Paris**, was doing overdubs for her album with producer/engineer Jonathan David Brown. Also at Mama Jo's was **Terry Talbot** mixing his new album for Sparrow Records with Win Kutz at the controls... At **Skyline Studios** in NY: Recent activity includes producer **Nile Rodgers** working on mixes for **Sister Sledge**, **Mick Jagger**, and **Teddy Pendergrass** with engineer James Farber and assistant Scott Ansell. Blue Note artist **Benny Wallace** was in recording his album digitally with help from musicians such as **Stevie Ray Vaughan**, Mac Rebennack, **John Scofield**, Jack DeJohnette, Bernard Purdie, Eddie Gomez and Ray Anderson... **The Thrasher Brothers** have been at Woodland Sound in Nashville with producer Jerry Gillespie, working on vocal tracks. Les Ladd was at the board... **Take 5** have been remixing their upcoming 12-inch EP at Excalibur Recording Studios in LA with **Steve Singer** producing... **Jimmy Dawkins** and **Phil Guy** were in at Soto Sound Studio in Evanston, recording albums for JSP Records... **Phillip Michael Thomas** (of "Miami Vice") was in at International Sound in North Miami Beach, mixing tracks for his debut album. Geoffrey Chong was at the board... **Bob Seger** was in at New River Studios in Ft. Lauderdale doing overdubs to his new album. **David Cole** engineered with help from Ted Stein. Also, the **Romantics** were in overdubbing and mixing their upcoming album. The LP is being co-produced by Pete Solley and Gordon Fordyce with help from Ted Stein... **Doc Holliday** was at Hidden Meaning Studios in Warner Robins, Ga, missing some new material. Local Acts K.I.T.T.E.N. and **Controversy** were also in with producer/engineer David Norman... **Anthrax** has mixed their second album at Pyramid Sound Studios in NY. Alex Perialis was at the board with Peter Bombar assisting. **Carl Canedy** produced the project...

& MUSIC...



ROBERT PLANT: *Shaken 'N Stirred*
[Produced by Robert Plant, Benji Lefevre and Tim Palmer, engineered by Tim Palmer and Benji Lefevre, no studio listed] Es Paranza 7 90265-1-E.

Performance: **Best since
Led Zeppelin**
Recording: **Immaculate production**



Shaken 'N Stirred is Robert Plant's third solo album, not including his salute to oldies with the Honeydrippers, and his most realized since the production uplifts Plant's vocal presence rather than drowns it out. "Little By Little" contains a memorable vocal and lyrics as Plant's voice overrides the instrumentation and implants the line "I Can Breathe Again" into the consciousness. Even with the dense chording in the beginning of the track, the instrumentation is precisely separated and tension is felt.

Plant records with his regular band, guitarist/synthesist Robbie Blunt, bassist/guitarist Paul Martinez, keyboardist Jezz Woodroffe plus new drummer, Ritchie Hayward, formerly of Little Feat. Hayward adds a Police-like aura on "Easily Lead" with its synthesized atmospheres which barrel along for an inspired upbeat conclusion. And singer Toni Holliday's backing vocals on "Doo Doo a Do Do" add an enticing flavor to Plant's normal macho singing.

"Too Loud" is perhaps the best sonically engineered song with re-

verb and echo effectively employed. There are numerous time changes in the song, synthesized splashes of sound, and an unusual bit of narration for extra spice.

Outside of the Honeydrippers, *Shaken* should be Plant's biggest commercial solo LP as he finally feels comfortable without Led Zeppelin.
bob grossweiner

PAPA DO RUN RUN: *California Project* [Produced by Paul Freeman and Robert Woods. Engineered by Paul Freeman and David Glover (assistant). Recorded at United Western Studios, Hollywood, CA.]

Performance: **Souped-Up 60s Sounds**
Recording: **Pure Digital**

When first listening to this compact disc, one gets the impression of old Beach Boys recordings souped-up for the very digital 1980s. But when you read the liner notes you'll realize you're not listening to the Beach Boys. The group is Papa Doo Run Run, a veteran California-sound group that has an impressive list of credits including national television appearances and concerts at the 1984 summer Olympics in Los Angeles.

Telarc's digital recording is recorded cleanly, without the use of compression or limiting and provides a sonic clarity unusual on Beach Boys tunes. This gives an esoteric feel of contradiction as one expects this type of music to have the ordinary 1960's analog degradations.

Papa Doo Run Run not only succeeded in emulating the Beach Boys, they succeeded in doing it with their own sound. This can be attributed to the fact that the recording was made digitally, and the instrumentation used was not originally created by the Beach Boys. The addition of saxes, cellos, toy pianos, Snoopy harps, and thumb clickers all contribute to the

unique sound of this California group.

The song list reads like a greatest hits list. "California Girls," with its unique and unusual (for this type of music) sax offers a clear and brilliant sound—typical for a true digital recording. The backup vocals throughout the recording are clear and concise with well panned and textured harmonies, similar to the originals.

The bass is tight and powerful, and the drums in some spots are well mixed and accent the melodies nicely. However, on some cuts the drums are much too heavy and almost ruin the sentiment of the cuts. Whether this is due to the transparency of the pure digital recording or poor engineering, it's especially obvious on "Good Vibrations" and "Surfin' USA" as the drums sound as if they are mixed much too strong and predominantly.

Another anomaly occurs on the tune "Fun, Fun, Fun," as a constantly irritating fret/string noise from the rhythm guitar is audible throughout the track.

The overall recording, though, is excellent. The well recorded cello on some cuts adds a flavor not known at the time these classics were originally recorded. The final cut is a great encore. The stronghold "Barbara Ann" closes the disc out well with its illusory multi-layered vocals and sax.

The recording was made on the Mitsubishi X-800 32-track digital machine and mixed down to the Sony 1610. All vocals were recorded using Neumann U-47 tube microphones and have that warm, well rounded feel that is characteristic of that mic.

The sonic qualities stand up to Telarc's usual high standards for their classical releases, and this marks the first time they have released a pop recording. California Project is also available on cassette and digitally mastered LP.

sammy caine

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