

The Producers

MODERN

# RECORDING

& MUSIC

JANUARY 1984 VOL. 10 NO. 1 \$1.95



## JOHN DENVER

rocky mountain *refferae*

### RECORDING TECHNIQUES

The PZM<sup>®</sup>  
Microphone

### REPORT:

Hafler P500  
Amplifier

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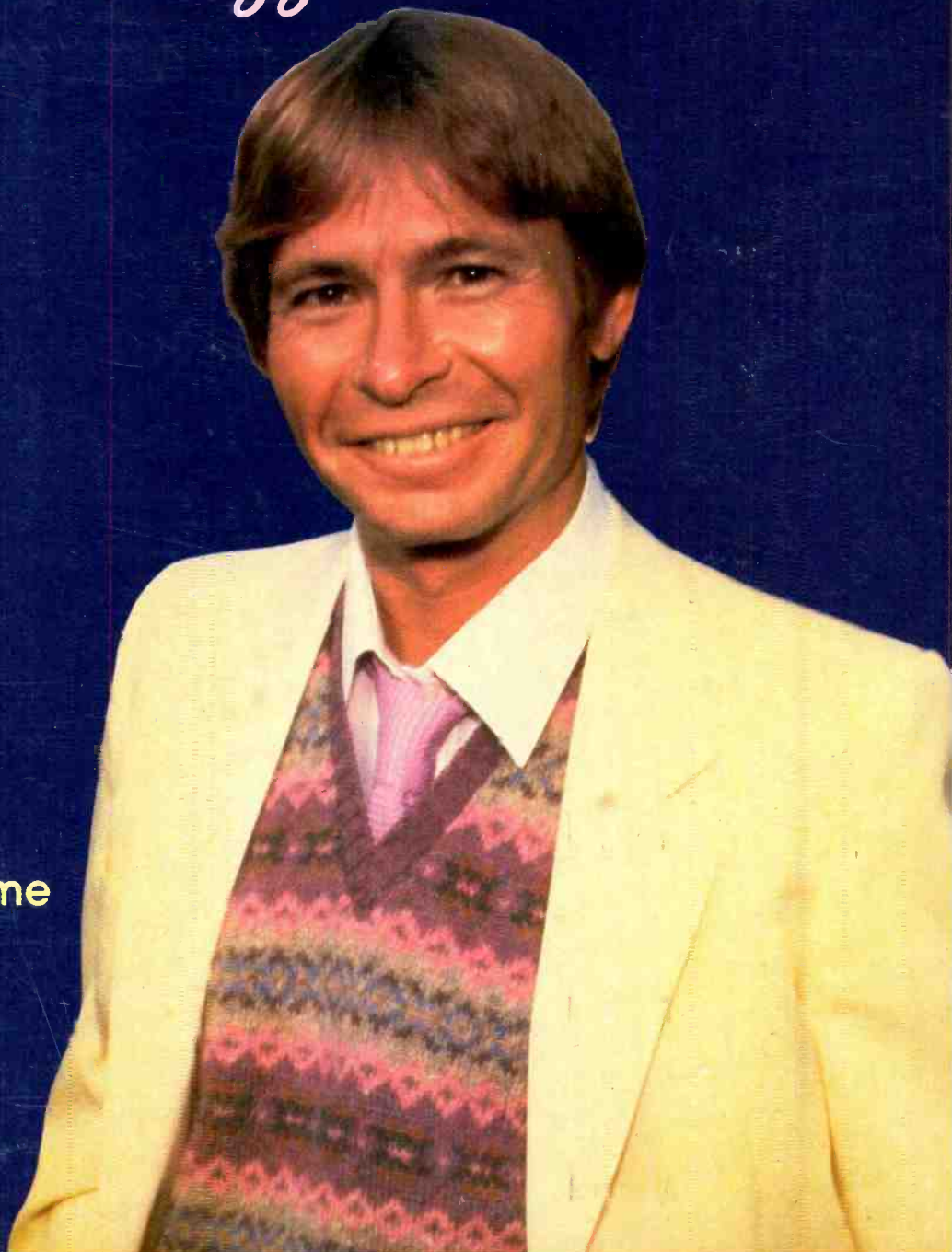
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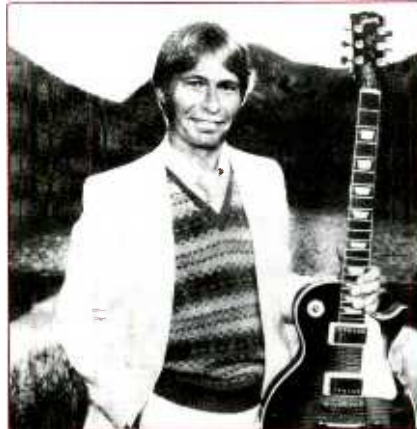
Music & Electronics . . . Naturally!

# MODERN RECORDING & MUSIC

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John Denver bw photos: Joan Balzarini  
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## Just Thought You'd Like to Know

Re: "The Beatles: Releases By Mobile Fidelity and Others" (September 1983). The non-release of the Beatles unreleased songs is a result of circumstances that are more complex than they appear to the casual observer. E.M.I. is apparently free to issue the unreleased Beatles recordings with one (very unfortunate) restriction: They cannot put any song on record that has *not* been published by a publishing company. Therein lies the problem. The Beatles were never the solo owners of Northern Songs and Maclen Music, the firms that own the songs that Lennon and McCartney wrote between 1962 and 1977, although at the start they were the largest individual stockholders in the company. Publisher Dick James (who later discovered Elton John) owned a big block of shares—almost as big as that owned by the group—and the remaining shares were apparently on the open stock market. ATV Ltd (owner of the second biggest television network in the U.K.) gradually bought all the shares that belonged at one time to the small stockholders. When Dick James decided to sell his shares, the Beatles were in financial turmoil (due to their faltering Apple Company) and could not get the backing of the London banking community to enable them to buy James's shares. Hence, ATV bought the shares and took control of Northern Songs.

Since then, the Beatles have sought unsuccessfully to buy the company back. If McCartney and the Lennon estate allowed the unpublished songs to be published, they would be contractually obligated to give the song rights to ATV (because they were under contract to Northern at the times the songs were written. Understandably, Paul McCartney and Yoko Ono don't want to give ATV any more songs than they already own.

It is out of respect for McCartney's and Ono's wishes that E.M.I. officials claim that "How Do You Do It" and "Leave My Kitten Alone" (both outside compositions) are the only unreleased Beatles recordings. E.M.I., McCartney, and Ono all worry (legitimately) that to reveal just how many unreleased Lennon-McCartney songs are "in the can" would hurt the purchase of Northern and ultimately an E.M.I. release of the recordings.

Concerning the *Get Back* L.P., it would be interesting to hear the complete "Dig It" and the original "Long And Winding Road" (minus the orchestra and choir added by Phil Spector). But as for the rest of the album, it consists of alternate mixes of cuts that sound only minimally different from the released versions, a sloppy rendition of "Teddy Bear," and three previously released cuts (the single versions of "Let It Be" and "Get Back" and the *Beatles Rarities* version of "Across The Universe".) Most fans would likely find the *Get Back* L.P. as disappointing as the group did.

I hope this sets Mr. Kozinn and your readers straight about why there are no L.P.s of new E.M.I. Beatles material.

—Phil Cohen  
Bay Harbor, Florida

# PHIL RAMONE ON FOSTEX

*Phil has produced such artists as: Paul Simon, Billy Joel and Barbra Streisand*

*"As a producer, the things I do are not predictable by the hour. I might just wake up in the middle of the night with an idea.*



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*the Director of a film or the President of a record company the very next day.*

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*in a hotel room or your living room allow you to record, edit and evaluate the material before going to the studio. That's the purpose of Fostex equipment and the reason I choose it.*

*"With the combination of products that Fostex offers and the deadlines we have, the writer's creative process is well-served with no apologies for the sound of the demo.*



*"Credentials which speak for themselves allow me to recommend Fostex equipment to songwriters and artists. The musicians and friends I work*

*with believe in the gear Fostex makes. It's designed for us!"*

A stylized, handwritten signature of Phil Ramone in black ink.

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*This insightful missive should go a long way towards clearing up some of the issues raised by Author Allan Kozinn in his September, '83 article.*

*Incidentally, Beatles aficionado Phil Cohen was not privy to any inside info. Rather, his information comes to us as a result of extensive research on his part. Thanks, Phil.*

## An Initial Appeal

I'm hoping you can offer me some assistance. I have been a subscriber to Modern Recording & Music for several years and always look forward to each new issue.

I read with great interest the article, "Making a Plate Reverb" in the May 1983 issue. Wishing to make the unit myself, I wrote to the address given at the end of the article asking for information vis a vis obtaining the Acoustic 2000 Driver. Instead of answering my request, I was sent a brochure from Reasonable Alternatives Audio Products, which are packaging the entire reverb unit and selling it for around \$700. By the time I would have paid for the American dollar exchange rate, the shipping cost, and the Canadian Customs duty, I'd be looking at a figure closer to \$1,000. Suddenly, the initial appeal of the unit had completely lost its appeal.

I feel I can build the unit for a few hundred dollars—if I can get the proper driver unit. Can you help me?

*Of course we can help! Here's the scoop. Due to the overwhelming response to Bob Buontempo's article, Home Grown Studios was swamped with requests for information and parts for assembling the Plate Reverb. This necessitated their setting up another company, Reasonable Alternatives, to handle that end of the business. So, you're asking, can I or can I not get the #?!?\* Acoustic 2000 Driver? Yes you can. Bob informs us that the Driver is available at a cost of \$85, including tuning tape and shipping charges, from Reasonable Alternatives, P.O. Box 733, Cranford, NJ 07016.*

*Good luck with the project.*

## Don't You Get Enough to Eat at Home?

I'd like to comment on the great articles each month. I really do learn from the magazine and devour each new issue. I've written for, and received information on, many products advertised and have made purchases based on that information.

I'm only involved occasionally in recording, but enjoy reading all about the studios, equipment and techniques. I find most useful the information that can be related to live sound reinforcement problems.

—Hugh Inglett  
Augusta, GA

*Thanks for the kind words—it's always nice to hear that someone likes what we're doing. And we're sure you'll be pleased to know that next month we plan to start a new column devoted solely to sound reinforcement.*

## Questions Answered

I wish to thank you for that excellent article/interview with Joan Jett and Kenny Laguna (October 1983). It cleared up a couple of questions I had about her band's instruments and recording techniques. I also found the article truly interesting with respect to Joan Jett's personality and character. That great love and drive she has for music! Your article is tops compared with all other rock magazines' "What Happened To The Runaways" stories.

—Gary Gilbert  
Springfield, MA

## Was This a Set-up?

I would like to know the proper procedure to follow in order to send a demo tape to a record company. Can you help me with this?

—Danny Perry  
Houston, Texas

*Well Danny, your question couldn't be better timed! As it so happens, we began a series in the November 1983 issue entitled "So You Wanna Be A Rock'N'Roll Star," and Part I covers producing and marketing a demo tape. It's been scheduled as a five part series (part II appeared in the December issue) so if you've missed any of it, you can contact MR&M for back issues.*

## Sorry, We Goofed

We didn't want to come right out and say it; we looked for a clever way of weasling out of it; but, alas, the sad fact can't be changed. We made a mistake. (Sounds kinda hard to believe, doesn't it?) Anyway, Ron Akiyama took the photos of Joan Jett for our October cover story, and we didn't give him the credit for it. Our sincerest apologies, Ron, and be assured, heads will roll (if we can find someone suitable to pin the slip-up on).



## Stay ahead of the crowd.

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For people with disabilities

# Talk Back

## So Coach, What's the Plan?

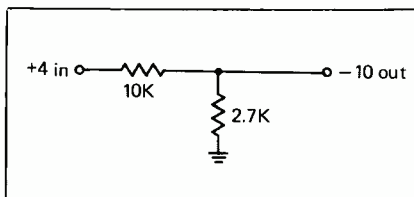
I have to build a line amplifier system to match +4 level in and out to -10 level in and out. Do you know where I can get some plans? Thank you.

—Bill Montella, Jr.  
Warwick, RI

*We received the following reply from Craig Anderton:*

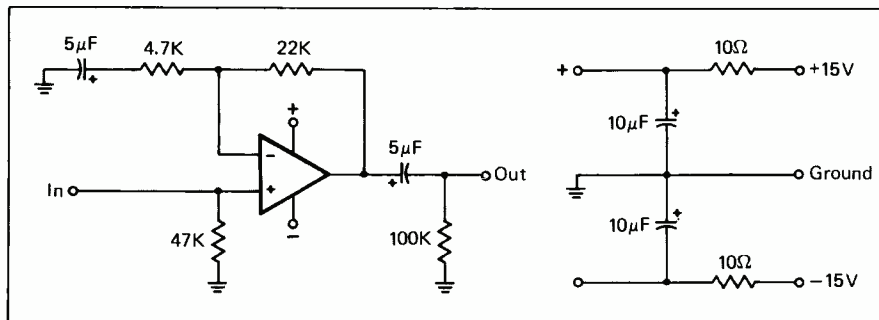
Since it is not clear from your letter whether you are dealing with a balanced or unbalanced system, we will assume the latter—since that makes things simpler.

To pad a +4 dB output down so that it can feed a -10 dB input, simply turn down either the +4 dB device's output control or the -10 dB input's input control. If there are no such controls, you can build a pad like the following:



Since 14 dB corresponds to a voltage ratio of about 5:1, these resistors form a "preset volume control" which reduces the strength of the signal to about 20 percent of its original value.

To boost a -10 dB output to drive a +4 dB input, we need a voltage pre-amp with a gain of 5, such as the following circuit:



The op amp can be virtually any compensated op amp, but the better the op amp, the better the performance. You can use a 5534 type op amp (one of the more popular audio types) since it is internally compensated for gains in excess of 3, but popular bi-fets and other op amps will also work. Note that this circuit needs a high quality  $\pm 15V$  power supply. You would need one of these circuits for each -10 dB output that you wanted to boost.

## How Much Time is Full-Time?

Presently, I own a home studio. And while I'm only 4 track, I've been building up my outboard gear and doing a lot of demos. I'd like to take my recording studio one step further and go into business, but before I do I want to go 8 track. I've been looking at a Fostex A-8. Do you think this machine is good enough and dependable enough to be used in a full-time studio situation? Any comment you have on this machine good or bad would be appreciated.

—Harold Cole  
Catlettsburg, KY

The Fostex A-8 seems ideal for what you describe. While there is some question in our minds as to how long it would hold up if it were operated eighteen hours a day, seven days a week, we assume that is not what you mean by "full-time." In a typical home-studio operation, we think an A-8 should give many years of trouble-free service.



# Recording Techniques

bruce bartlett

## Everything You Wanted to Know About the PZM<sup>®</sup>

**What does PZM<sup>®1</sup> stand for?**  
Pressure Zone Microphone™.

### So what's a Pressure Zone Microphone?

It's a new type of microphone designed for use on surfaces such as tables, floors, hard baffles, and piano lids. It has a miniature condenser microphone cartridge mounted face-down next to a sound-reflecting plate or boundary. The microphone diaphragm is arranged parallel with and very close to the reflecting surface (as in *Figure 1*). This arrange-

ment provides several benefits: a wide, smooth frequency response free of phase interference between direct and reflected sound; excellent

### Why is it made that way?

clarity and "reach," and little or no off-axis coloration. To explain the reasons behind the construction, a little background is helpful.

In many recording and reinforcement applications, the sound engineer is forced to place microphones near hard reflective surfaces. Some situations where this might occur include recording an instrument surrounded by reflective baffles, reinforcing drama or opera with the

from the sound source to the microphone via two paths: directly from the source to the microphone, and reflected off the surface (as in *Figure 2A*). Note that the reflected sound travels a longer path than the direct sound, so the reflected sound is *delayed* relative to the direct sound. The direct and delayed sounds combine at the microphone diaphragm, resulting in phase cancellations of various frequencies. A series of peaks and dips is created in the net frequency response called a "comb-filter effect" so named because the response looks like the teeth of a comb (*Figure 2B*). This colors the tone quality, giving an unnatural sound.

### What causes the phase cancellations?

All frequencies in the reflected sound are delayed by the same time. Having the same *time* delay for all frequencies creates different *phase* delays for each frequency, because different frequencies have different wavelengths. For example, a time delay of 1 millisecond causes a 360 degree phase shift for a 1000 Hz wave, but only a 180 degree phase shift for a 500 Hz wave. *Figure 3* illustrates this point.

At frequencies where the direct and delayed sounds are in-phase (coherent), the signals add together, doubling the pressure and boosting the amplitude 6 dB. At frequencies where the direct and delayed sounds are out-of-phase, the signals cancel each other, creating in the net fre-

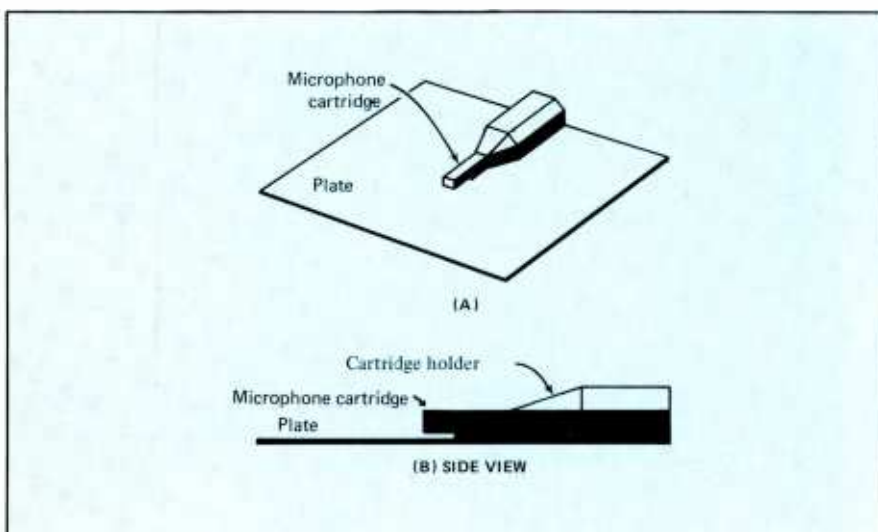
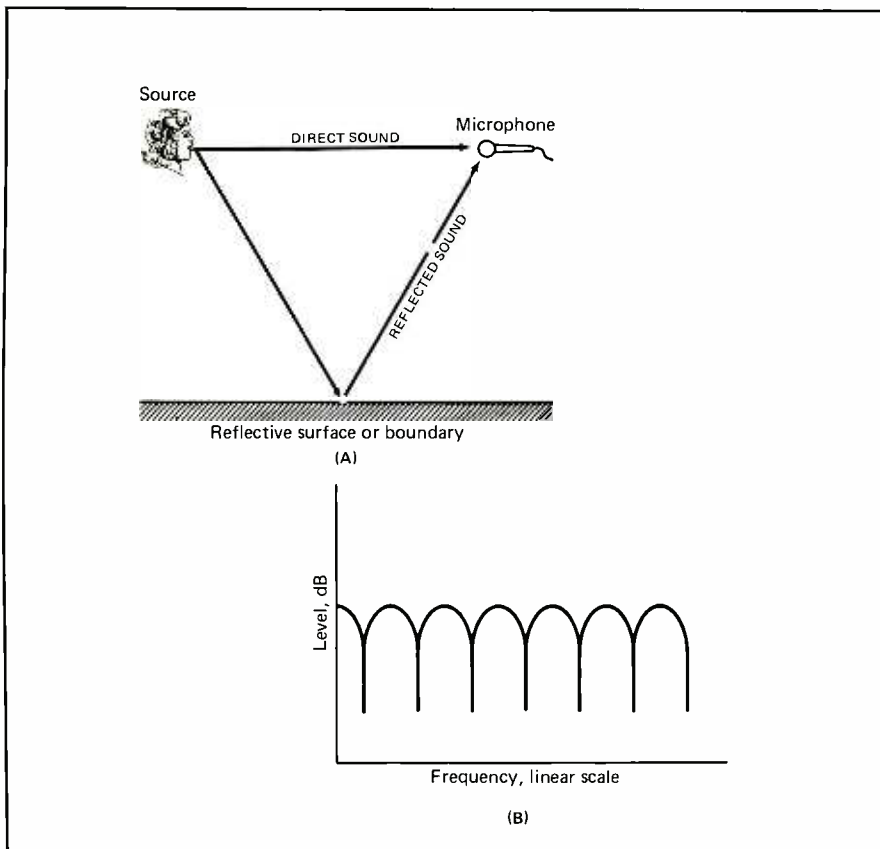


Figure 1. Typical PZM construction.

ment provides several benefits: a wide, smooth frequency response free of phase interference between direct and reflected sound; excellent

microphones near the stage floor, or recording a piano with the microphone close to the open lid.

In these situations, sound travels



**Figure 2. Microphone receiving direct sound and delayed reflected sound from a sound source (A) and resulting frequency response (the comb filter effect) (B).**

placed as close to the surface as desired. Then the direct and reflected waves arrive simultaneously at the microphone. This eliminates phase cancellations, resulting in a smooth frequency response.

### Can't I just place a regular microphone on the floor and get the same results?

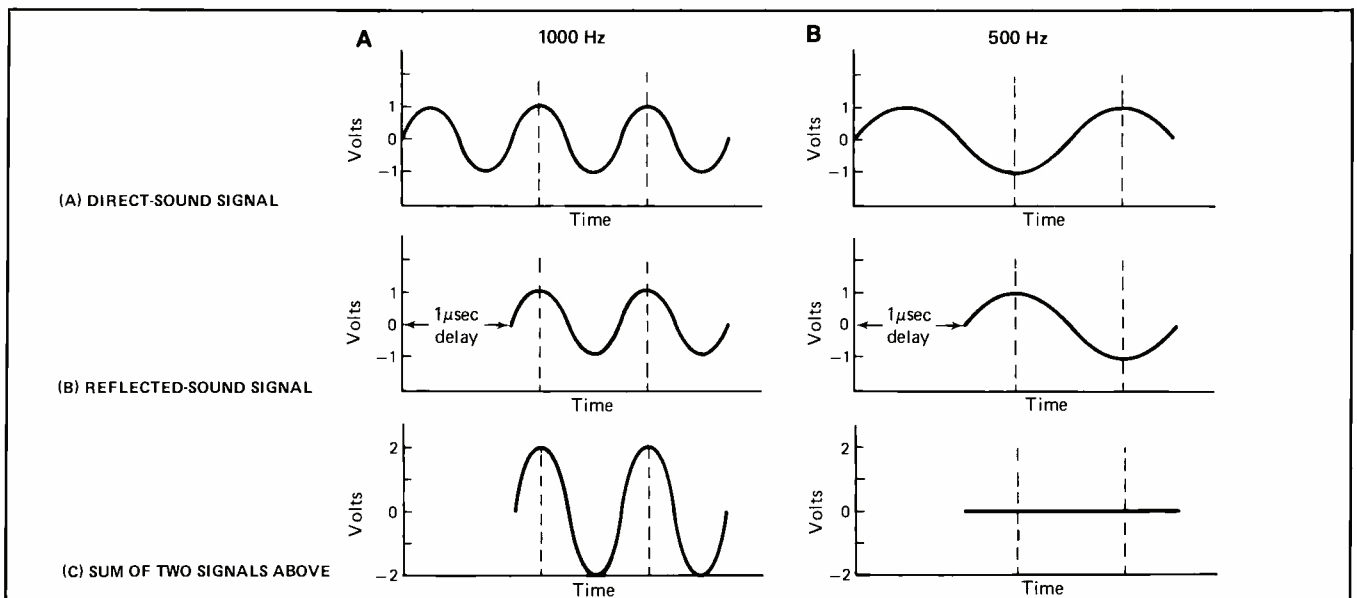
No. If a conventional microphone is placed on the reflective surface (as in *Figure 5*), there is still a short delay in the reflected sound because the center of the microphone diaphragm (where the two sound paths combine) is slightly above the surface. Consequently, the high frequencies may be cancelled, giving a dull sound quality. There may be off-axis coloration, too.

### Is the PZM some kind of 'plate pickup'?

No. The plate is not a transducer—it does not convert sound into an electrical signal. The plate serves as a hard surface to reflect sound into the microphone diaphragm, which is mounted in the "Pressure Zone"® just above the surface.

### What is the Pressure Zone®?

The Pressure Zone is the region next to the boundary where the direct



**Figure 3. Example of wave addition and cancellation at two different frequencies.**

quency response—a comb-filter effect (*Figure 2B*).

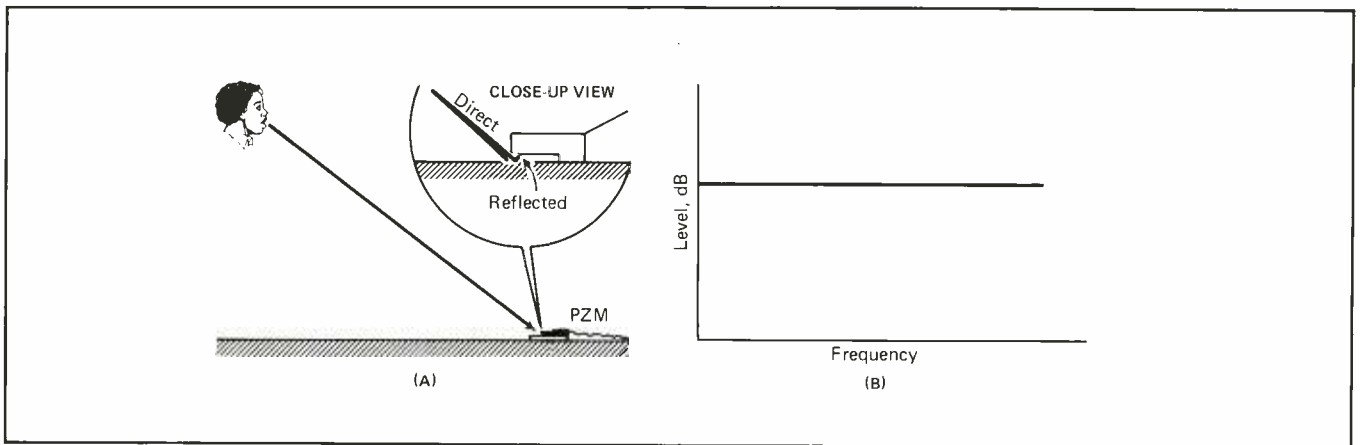
This bumpy frequency response colors the tonal reproduction and yields an unnatural sound. To solve this problem, we need to shorten the

delay of the reflected sound so that it arrives at the microphone at the same time the direct sound does.

By orienting the diaphragm *parallel* with the surface, as in a PZM (see *Figure 4*), the diaphragm can be

and reflected waves add in-phase (or nearly so). Defined another way: The Pressure Zone is the distance from the boundary that the microphone diaphragm must be placed to achieve the desired frequency re-





**Figure 4. PZM receiving direct sound and reflected sound simultaneously (A) and resulting frequency response (B).**

sponse. The closer the diaphragm is placed to the boundary plate (up to a point), the more extended the high frequency response. Typical mic-to-plate spacings are .050-to .020-inch.

#### Who invented the PZM?

The technique of mounting a microphone as just described is called the *Pressure Recording Process*<sup>®2</sup> (invented by Ed Long and Ron Wickersham). They developed the first microphone to use that principle. The first manufactured product built that way was the Pressure Zone Microphone (developed by Ken Wahrenbrock). PZMs are now manufactured by Crown International, the only company licensed to build microphones using the Pressure Recording Process.

#### Are there any other benefits of making a microphone this way?

There are several:

- *High sensitivity.* When the direct and reflected waves add together in phase, the sound pressure doubles, giving a 6 dB increase in acoustic level at the microphone. Thus the effective microphone sensitivity increases 6 dB, and the signal-to-noise ratio also improves by 6 dB.

- *Consistent tonal reproduction independent of source height.* The microphone placements shown in *Figures 2 and 5* cause another problem in addition to rough response. As the sound source moves up or down relative to the surface, the reflected path length changes, which varies the comb-filter notch frequencies. Consequently, the effective frequency response changes as the source moves.

But with the PZM, the reflected path length stays equal to the direct path length—regardless of the sound-source position. There is no change in tone quality as the source moves.

- *Lack of off-axis coloration.* While a microphone may have a flat response to sounds arriving from straight ahead (on-axis), it often has

a rolled-off or colored response to sounds arriving from other directions (off-axis).

That fault is mainly due to the size of the microphone and its forward orientation. When sound strikes the microphone diaphragm on-axis, a pressure boost occurs at frequencies where the wavelength is comparable

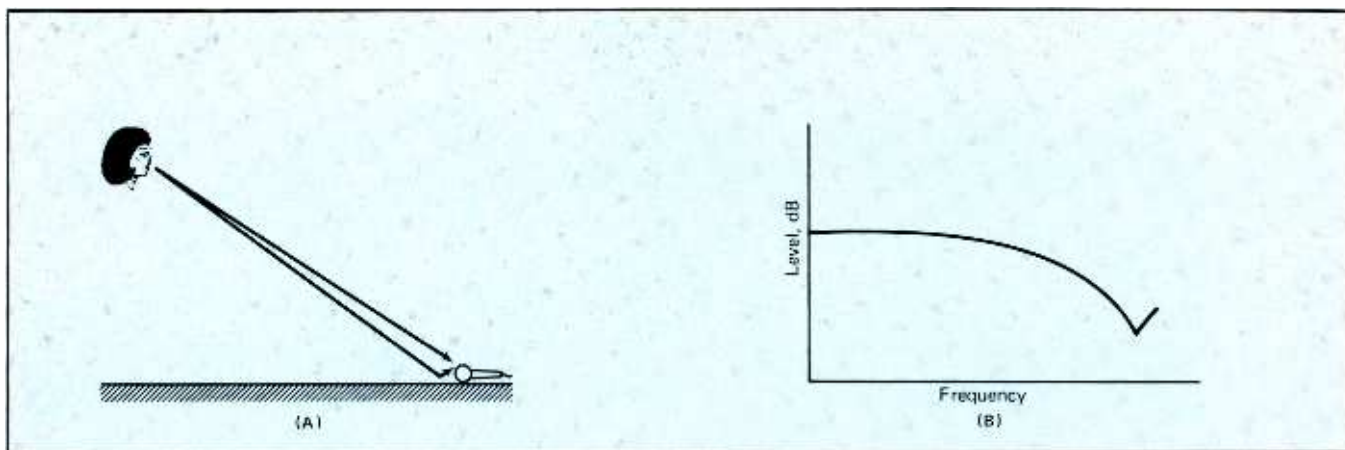
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**Figure 5. Conventional microphone on floor receiving direct sound and slightly delayed reflected sound (A) and the resulting frequency response (B).**

to the microphone diameter (usually above 10 kHz). Sounds approaching the microphone from the sides or rear, however, do not experience a pressure boost at high frequencies. Consequently, the high frequency response is greater on-axis than off-axis. The frequency response varies with the position of the sound source.

Since the PZM cartridge is very small, and because all sound enters the cartridge through a tiny radially symmetric slit, the response stays constant regardless of the angle at which sound approaches the microphone. The effective frequency response is the same for sounds from the front as it is for sounds from other directions. In other words, there is little or no off-axis coloration with the PZM. The reproduced tone quality doesn't change when the sound source moves.

Note that off-axis coloration can also affect the reproduction of room ambience or reverberation. Reverberation is sound reflected off the walls, ceiling, and floor of the recording environment. Most of it arrives at the microphone off-axis.

With conventional microphones, the response to reverberant sound (room ambience) is rolled off in the high frequencies compared to the response to direct sound. The direct sound may be reproduced accurately, but the reproduced reverberation may sound duller than in real life.

This fact leads to some problems in recording classical music with the microphones placed far enough away

to pick up concert-hall ambience. As the microphones are placed farther from the musical ensemble, the sound pickup becomes more reverberant—and duller-sounding.

The PZM, however, has an identical frequency response for reverberant sound (room ambience) as it has for direct sound. So the recorded tone quality stays about the same regardless of the mic-to-source distance. The response to ambient sound (reverberation) is just as accurate as the response to the direct sound from the source. As a result, the total reproduction is brighter and clearer.

- *Reach.* "Reach" is the ability to pick up quiet distant sounds clearly. "Clearly" means with a high signal-to-noise ratio, a wide, smooth frequency response, and a high ratio of direct sound to reverberant sound.

As described earlier, the PZM has several performance attributes that contribute to excellent reach. The signal-to-noise ratio is high because the cartridge is inherently quiet and because the signal sensitivity is boosted 6 dB by the on-surface mounting. The frequency response is wide and smooth because comb filtering is eliminated and because reverberant sound is picked up with a full high frequency response. The direct-to-reverberant sound ratio is high because the direct sound is boosted 6 dB near the surface, while the reverberant sound, being incoherent, is boosted only 3 dB. In other words, distant sources sound closer and clearer with the PZM than they do

with a conventional omnidirectional microphone.

- *Low vibration sensitivity.* The low mass and high damping of the PZM diaphragm make it relatively insensitive to mechanical vibrations such as table and floor thumps and clothing noise. The only pickup of these sounds is acoustic pickup through the air, not mechanical pickup through the microphone housing. This means that PZMs can be placed on conference tables without shock mounting and still reduce table thumps.

- *Small size.* In addition to the acoustic benefits of the PZM, there are psychological benefits related to its low-profile design. Its inconspicuous appearance reduces mic fright. Since the PZM does not "point" at the performers, they may feel a psychological release in not having to aim their instruments at the microphone.

PZMs can be hidden in theatre sets. In TV-studio applications, the PZM practically disappears on-camera. PZMs reduce clutter on conference tables and lecterns, giving the feeling that no microphones are in use.

### **How is a PZM used?**

It's usually placed on a large hard surface near the sound source, such as a table, wall, hard baffle, or floor.

### **How can a mic sound good on the floor? I never listen to music with my ear on the floor!**

You never listen to music 14 feet up in the air, either; but that's where



microphones are commonly placed to pick up orchestras and other large ensembles. If you can tolerate putting the mic 10 feet above ear height, you can tolerate putting them four feet below ear height (on the floor).

### What happens if I put a PZM on a mic stand at ear height?

Then you lose some low frequency response. The response of the PZM depends on the size of the surface it's mounted on. The larger the surface, the more extended is the low-frequency response. If you put a PZM on a mic stand, the small plate included with the microphone will allow the low frequency response to shelve down 6 dB at 377 Hz. This response may be desirable in some instances. A PZM mounted on a 2- × 2-ft. panel (a PZM A240) will have a response shelving down 6 dB at 83 to 124 Hz (depending on the panel angle), which is useful for many applications. In general, the response shelves down 6 dB at the frequency where the wavelength is about six times the boundary dimension.

For best bass and flattest response, place the PZM on a large hard

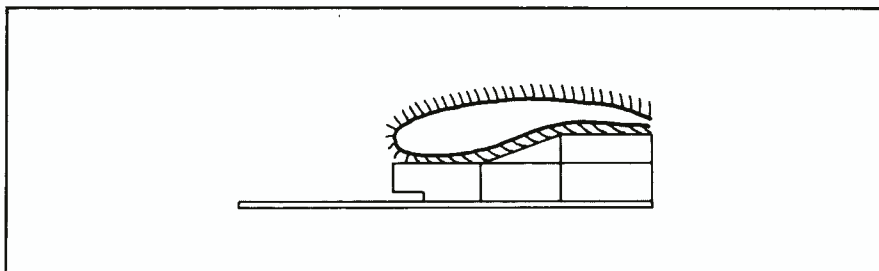


Figure 6. Side view of PZM with carpet added for directionality.

boundary such as a floor, wall, table, or baffle at least 4-ft × 4-ft. This baffle or panel can be made of ¼-in. plywood, masonite, or clear plastic. To reduce bass response, use the PZM with its own plate well away from other reflecting surfaces. Note that when a suspended PZM/plate is placed very close to its sound source, the full bass response returns.

### What kind of polar pattern does the PZM have?

Hemispherical. The microphone is equally sensitive to sounds coming from any direction above the surface plane.

### So the PZM picks up sound equally well in all directions. How can I make it reject sounds from the rear?

(1) Take a 4- × 2-ft. piece of thick carpeting and fold it in half, fuzzy side out. Lay the carpet on the PZM, placing the fold just behind the PZM capsule or microphone element (as in Figure 6). Rejection of sounds from the rear increases as frequency increases.

(2) Place a 1- × 2-ft or 2- × 2-ft sheet of Sonex™<sup>3</sup> acoustic foam just behind the microphone. Again, high-frequency sounds are rejected better than low-frequency sounds.



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(3) For best results, use a PZM designed for directional pickup, such as the PZM-2.5. In this microphone, the cartridge is mounted in the corner of three reflective surfaces. Sounds from the front are emphasized (especially in the speech range of frequencies) while sounds from the rear are rejected.

A boom-mounted or suspended PZM can be made directional by taping the mic to the center of a 2- x 2-ft. or 4- x 4-ft. panel, 1/4-in. thick (A 2- x 2-ft. plexiglass panel and stand adapter are available from Crown). Place the microphone 4 inches off-center for a smoother frequency response.

Sounds approaching the front side or microphone side of the panel from any direction are picked up; sounds approaching the rear of the panel are rejected. High frequencies are rejected better than low frequencies.

A panel made of plexiglass (acrylic plastic) is nearly invisible from a distance. If the edges pick up light, tape or paint them black. Polycarbonate sheet material is twice as expensive as acrylic plastic and is more visible, but it will not crack and is much lighter.

Place the panel in front of or slightly above the performer, with the microphone side of the panel toward the performer. Other possibilities are to place the panel on the floor, tilted up to aim at the performer, or over an instrumental section within a large ensemble.

For stereo pickup, mount two PZMs on opposite sides of a 2- x 2-ft. or 4- x 4-ft. panel. This forms a *Bipolar PZM*. Aim the edge of the panel at the center of the sound source (as in *Figure 7*). The Bipolar PZM acoustically combines low frequencies to mono, eliminating the need for this step when records are mastered from Bipolar-PZM tapes.

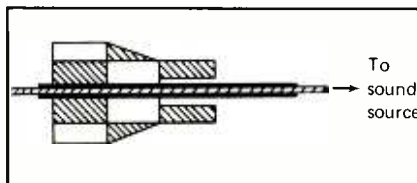


Figure 7. Bipolar PZM (edge view).

### Can a PZM be used for sound reinforcement?

Yes, as long as you take the usual precautions against feedback: mic close and make the microphone directional.

### Are there any special considerations regarding PZM placement?

PZMs are placed much the same as conventional microphones, except that the PZM is used on a surface. Place the PZM a few feet from the sound source and monitor the results. If you hear too much pickup of room acoustics, leakage from other instruments, background noise, or feedback, move the PZM closer to the sound source. Doing this may require mounting the PZM on a microphone stand and adding a panel. Move the PZM farther from the source to add ambience or "artistic leakage" to the recording.

### Can you give some specific examples of microphone techniques using PZMs?

As with conventional microphones, there are no set rules regarding placement. You put the PZM in a spot where you monitor a sound that pleases your ears.

#### Grand piano.

- Tape a PZM to the underside of the lid in the middle. Put the lid on

the long stick for best sound quality. To reduce leakage and feedback, put the lid on the short stick or close the lid and cover the piano with a heavy blanket.

- For stereo, use two PZMs taped under the lid—one over the treble strings near the hammers, one over the bass strings well away from the hammers. Microphone placement close to the hammers emphasizes attack; placement far from the hammers yields more tone.

- Tape two PZMs to the inside front edge of the piano (the audience side). Put one microphone near the treble strings and one near the tail.

- To pick up the piano and some room ambience with a single microphone, place a PZM on a panel about six to eight feet from the piano, four feet high. Put the lid on the long stick, and face the panel at the piano with the panel parallel to the lid. For stereo, use a Bipolar PZM placed four to eight feet high.

- Another way to add ambience is to mic the piano up close as described earlier, and mix in separate ambience microphones placed on the walls far away from the piano.

#### Drum set.

- Place a PZM on a panel or hard gobo, one to two feet in front of the set, just above the level of the tom toms. Use two microphones three feet apart for stereo. The drummer can balance the sound of the set as he or she plays. Also place a PZM in the kick drum against the shell, with a pillow or blanket pressing against the beater head. The high sound pressure level will not cause distortion in the PZM's signal.

#### Horns.


- Mount a PZM on a wall, on the control-room window, or on a hard-surfaced gobo (A gobo, short for gobetween, is a movable wall or baffle used in studios to isolate instruments acoustically). The performers play to the wall or gobo a few feet away. Since their sound bounces off the wall back to them, they can hear each other well enough to produce a natural acoustic balance. Also try a clip-on PZM on a music stand between every two players.


#### Drama, theatre, opera.

- Try one to five PZMs across the front edge of the stage, about one foot from the edge of the stage. One or two PZMs are usually sufficient for small stages, and they clearly pick up stage action for dressing-room cues. To reject sounds from the audience and

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orchestra pit, use a PZM-2.5, which has built-in baffles.

- For maximum clarity and maximum gain before feedback, turn up only the microphone nearest the person talking.

- The excellent reach of the PZM provides clear pickup of rear-stage action in most cases. But if you need extra reinforcement, place PZMs on the rear wall, on panels overhead, on a table, behind posts, under eaves, or on movable scenery (plugged into a wireless transmitter).

- Opera singers can be picked up realistically with a PZM on the floor or on a panel on the floor angled up toward the performer.

#### Orchestras, bands, choirs.

- Place a Bipolar PZM (two PZMs back-to-back on a panel) five to 20 feet behind the conductor, 14 feet high. The farther from the ensemble the microphones are placed, the greater the pickup of hall reverberation or ambience. Adjust the microphone-to-source distance for the desired effect. The closer to the ensemble the Bipolar PZM is placed, the wider the stereo spread.

- Place two panel-mounted PZMs about six to 20 feet apart, 14 feet high, and five to 20 feet from the first row of musicians. Place the microphones farther apart to widen the stereo spread; closer together to narrow the spread.

- Place two PZMs on the floor about 10 feet apart, 10 to 20 feet from the first row of players. If the stereo spread is exaggerated, add a center-fill microphone midway between the other pair, and mix its output to both channels. This is an inconspicuous arrangement for live concerts.

#### Ambience.

- One or two PZMs on the wall give an uncolored sound. They also can be used for clear, realistic pickup of audience reaction.

#### Conferences, group discussions, interviews.

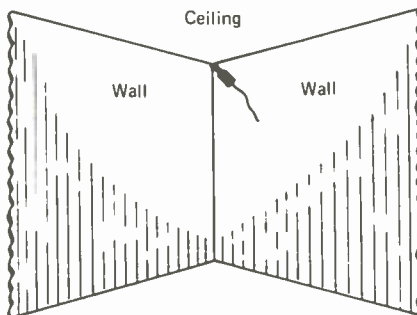
- For maximum clarity, hold the conference in an acoustically "dead" room with carpeting, acoustic-tile ceiling, and drapes.

- Lay a single PZM on the conference table in the center.

- For more control and less pickup of room reverberation, use one PZM on the table for every four to six people. No person should be more than three feet from the microphone.

- If table placement is undesirable, remove the capsule and its holder by removing the screws on the underside of the plate. Install the capsule/

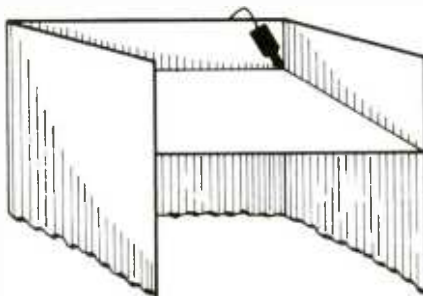
holder in an upper corner of the room as in *Figure 8*. This arrangement increases microphone output by 12 dB and gives surprisingly clear reproduction by such a distant placement.



**Figure 8. Corner placement for conference pickup.**

#### Lectern.

- Use a PZM lavalier clipped to the talker's tie or shirt. If feedback is not a serious problem, lay a PZM on the edge of the lectern away from the talker. This arrangement allows the talker to wander somewhat without getting off-mic. For lecterns with raised edges, remove the capsule holder and mount it in the corner of the recess, with the holder pointing



**Figure 9. Corner placement for lecterns.**

into the corner (as in *Figure 9*). This configuration makes the pickup more directional but allows less talker wandering.

#### Is a PZM the ideal microphone for every application?

No, but it is a valuable new tool in the sound engineer's bag of tricks—especially in situations where the microphones must be placed near reflective surfaces.

#### Is there more than one model of the PZM?

Yes. There are various models having different tonal characteristics (frequency responses), so you can select a unit based on the tonal

balance you want in a particular application. Some models have a permanently attached cable; others have a detachable cable. One is designed for permanent flush-mounting. There are even some lavalier models.

#### Being a condenser mic, do the PZM require external powering?

Yes. Power supplies are available with built-in batteries and with adapters for phantom-power supplies.

#### Where can I learn more about the PZM?

Product literature and an application guide are available from Crown International, 1718 W. Mishawaka Rd., Elkhart, Indiana 46517.

#### FOOTNOTES

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# So You Wanna Be a Rock'n'Roll Star: Part III

In these next two installments I'd like to run you step by step through the making of an actual demo tape. This particular demo was recorded in a makeshift basement studio on a TEAC 80-8. We used the band's PA mixer—a Tapco C-12—and a couple of basic outboard effects from their stage set-up. Our only piece of “professional” recording equipment was a Neumann U-87 microphone. We monitored and mixed through an average home stereo system at one end of the band's untreated rehearsal room.

The final product had its technical shortcomings, but it served its intended purpose—it won the band a half-million dollar recording contract with Geffen Records. You know them now as Quarterflash, but at the time they were just another unknown bar band hoping to catch some busy A&R person's attention with a homemade demo entitled “Harden My Heart.”

You *don't* need a million bucks' worth of equipment to make a successful demo tape. You *do* need strong commercial material, the desire to study and work hard, and a good working knowledge of practical recording techniques. In this article we'll focus on home recording. We'll explore proven methods for getting a platinum sound on an aluminum-foil budget—at home, now.

We'll begin by laying out our recording plan. The idea here is to figure out which parts we're going to record on which tracks, and in what order. In our home demo we'll be working with a limited number of tracks. We'll have to do some doubling up and put more than one part on some of the tracks. We want to plan for this in advance so we don't work ourselves into a corner.

We'll make a list of all the instruments and parts we'll need to record for each song. Here are the parts for the “Harden My Heart” demo:

<b>Kick Drum</b>	<b>Lead Guitar</b>
<b>Toms</b>	<b>Lead Vocal</b>
<b>Snare</b>	<b>Sax</b>
<b>Hi-Hat</b>	<b>Effects Sax</b>
<b>Cymbals</b>	<b>Violin Part A</b>
<b>Bass</b>	<b>Violin Part B</b>
<b>Rhythm Guitar</b>	<b>Violin Part C</b>

We want to avoid doubling up essential tracks like the lead vocal and basic tracks. We'll try to keep them isolated on their own tracks so we can have maximum control over them in the final mix. Also, if we have to “ping-pong” them (that is, transfer them from one



track to another) we'll lose a generation, and their sound quality will suffer accordingly. It makes more sense to double up less essential parts which play the same functional role in the song, and confine our ping-ponging to background parts where the generation loss will be less noticeable.

The background string parts are an obvious place to start doubling up. If we had three violinists, we could simply set them up around a microphone and record them all together on the same track. We might also opt to use a synthesizer for our “string section.” In this case, however, we have only one very real violinist. We'll have to record him playing each part alone on its own track, then ping-pong these three tracks over to a single non-adjacent track. This will cost us a generation in the strings, but it shouldn't be too noticeable in the final mix. (Remember, the record company will be listening for hit songs, not 3 dB more or less signal-to-noise ratio in the background violin parts!)

We can also combine all the drums onto just two tracks. We don't need to ping-pong to do this; we can combine the drum channels in the mixer as they're being played and route them directly onto the tape.

This gets us down to nine parts, but we still have only eight tracks to work with. We could combine the guitars, but we'd lose the ability to set up a really lush stereo ambience between the two guitar tracks in the final mix. It turns out we have a better option. We can fit Rindy's sax parts onto the same track as her lead vocal without ping-ponging. There's a split-second gap



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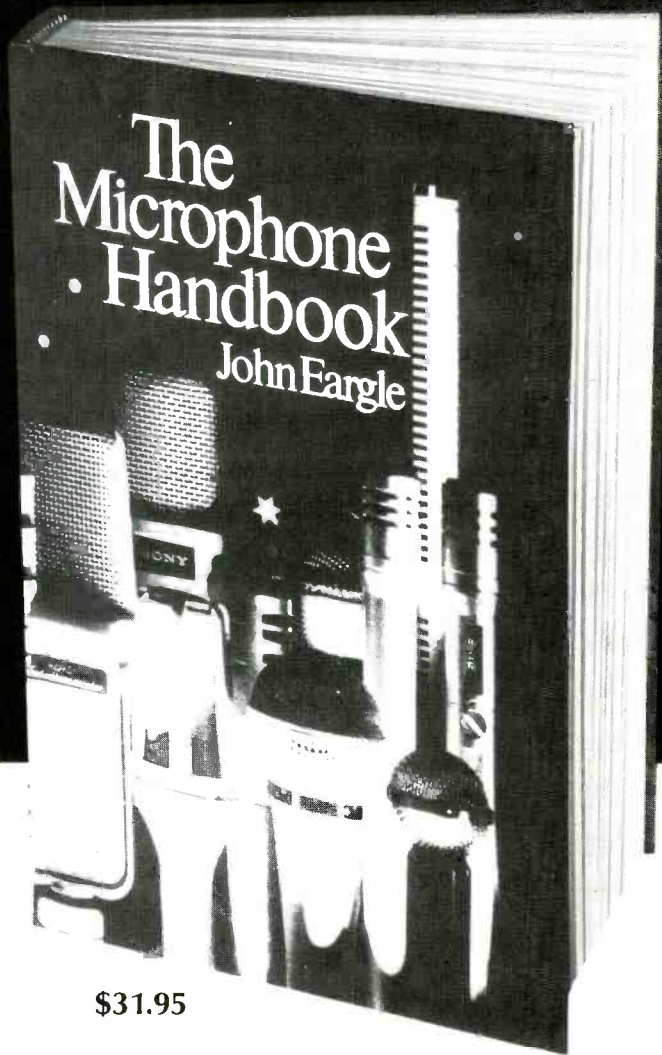
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between the end of the sax intro and the beginning of the vocal, when she's pulling the sax aside and taking a breath. In that split second we can punch out the sax part and punch in the lead vocal. She could just record both, straight through, the way she performs the song onstage, but we still want to be able to overdub the sax and vocal separately. This will enable us to concentrate on getting the optimum sound and a perfect take for each part.

Okay, we've managed to combine enough of our parts so that we can eventually get everything down onto just eight tracks. The next step is to make the actual track assignments and plan out our ping-ponging strategy.

The key point to remember when laying out this strategy is: *you can't ping-pong to an adjacent track*. That is, if you have a violin part recorded on track 3, you can't ping-pong it to either track 2 or track 4. If you try, you'll get a feedback loop between the two adjacent tracks on the record/sync-playback head. This causes a horrendous squeal and a big adrenaline rush for anyone wearing headphones at the time (not recommended).

Here's the strategy we used for "Harden My Heart." You may be able to figure out a specific strategy that works better for your particular needs and instrumentation, but the basic principles will be the same.

### STEP ONE: Record basic tracks

TRACK	TRACK
1. —	5. —
2. Kick & Toms	6. Snare
3. Rhythm Guitar	7. —
4. Bass	8. —

We'll use tracks 2, 3, 4, and 6 for our basic tracks. This will leave four empty tracks available for ping-ponging.

### STEP TWO: Record background sweetening (strings)

TRACK	TRACK
1. —	5. Violin Part A
2. Kick & Toms	6. Snare
3. Rhythm Guitar	7. Violin Part B
4. Bass	8. Violin Part C



We'll record each violin part separately on tracks 5, 7, and 8. (We could just as easily record background vocals, a horn section, a wall of guitars, or a bagpipe ensemble in place of strings—the principle remains the same.) In any case, our next step will be to ping-pong tracks 5, 7, and 8 over to the empty track 1:

### STEP THREE: Ping-pong backgrounds

TRACK	TRACK
1. Strings (A, B, C)	5. Erasable Violin
2. Kick & Toms	6. Snare
3. Rhythm Guitar	7. Erasable Violin
4. Bass	8. Erasable Violin

Tracks 5, 7, and 8 will then be reusable for more overdubs. (If we needed to, we could record two more parts on 7 and 8, then ping-pong them to track 5 and overdub a final two parts on 7 and 8 again. In this case, however, we only have three more parts to record.) We'll put the lead guitar on track 5; then we'll add the sax and lead vocal on track 7. The effects sax will be recorded on track 8 at the same time we record the regular sax part (more about this in Part IV.) Our final track sheet will end up looking like this:

### STEP FOUR: Record final overdubs

TRACK	TRACK
1. Strings	5. Lead Guitar
2. Kick & Toms	6. Snare
3. Rhythm Guitar	7. Sax/Lead Vocal
4. Bass	8. Effects Sax

That's the plan. Now let's set up to record our basic tracks. We'll discuss each instrument in turn.

### Drums

For an eight-track demo we can only afford to assign two tracks to the drums. There are two ways we can go about this, and each will require some compromises.

The most common approach is the "drums left/drum right" set-up. With this method you mix all the drum mics into a simulated stereo image of the total drum kit and record it on your two drum tracks. The drawback to this approach is that you're forced to give up much of your control over the individual drum sounds at the earliest stage of your recording. If you decide later that you need a fatter snare sound, or that you want the snare louder or softer in relation to the kick, you're limited to the level and equalization controls for the entire drum kit as a unit.

The alternative approach is to keep the snare drum on its own track. The other drums are combined on the other drum track. This enables you to zero in on the snare and keep control of the critical snare-kick balance right up until the final mix. We opted for this approach with the "Harden My Heart" demo because we wanted maximum control over the kick-snare "heartbeat" of the song. The drawback here is that you lose some stereo imaging on the drums. You can pan the kick channel slightly to the left and the snare channel slightly to the right of center; this combined with cymbal leakage in both channels will give you a usable "stereo" image, but if you love the effect of a bombing-run tom roll sweeping across the stereo landscape, you should stick with the standard drums left/drum right configuration. Take the approach that best puts *your* song across.

We used the band's PA mics to record the drums—

Shure SM-57s for the snare and each pair of toms—plus a borrowed Electro-Voice RE-20 for the kick. For home recording, as onstage, it's generally best to use a few drum mics as you can get away with. We didn't use overhead mics because we lost too much control over the individual tom sounds. Besides, we were getting plenty of cymbals leaking into the snare and tom mics anyway. We got all the hi-hat we needed through the snare mic—sometimes too much; in fact, we had to rig up a miniature gobo between the snare and the hi-hat. We were able to cover the drums with just four mics—kick, snare, and two pairs of toms. I wouldn't recommend recording a commercial album this way, but for our home recording it turned out to be the best solution.

### Rhythm Guitar

For rhythm guitar we used Marv's basic stage set-up at the time—a clean out-of-phase Strat sound run through an MXR limiter to a small 100-watt Music Man amp. We saved the Neumann U-87 to mic the guitar amp. It would have also made a nice overhead mic for drums, but we felt it was more important to have as good a guitar sound as possible. We used the mic's cardioid pickup pattern and mic'ed the cabinet up close to eliminate as much leakage from the drums as we could.

### Bass

The bass is generally recorded directly through the mixing board. This gives you good control over the sound and eliminates any leakage of bass into the guitar and drum mics. We ran our bass through a Yamaha preamp, then straight through the board to the tape. We punched up the bass channel on the monitors to set up the sound we wanted, then cut the speakers and kept all the bass in the headphones once we began laying down tracks.

By recording the bass direct, putting the drums in an adjacent carpeted room, and keeping the guitar volume fairly low, we can get better isolation of each instrument on the basic tracks. Why all this fuss about isolation and eliminating leakage? Because it's essential if we want a clean, professional-sounding tape. Recording studios are painstakingly designed to provide for isolated control of sound—basements and living rooms are not. We'll have to go to greater lengths to get a clean, dynamic recording at home. We may be recording in a basement, but we don't want our tape to *sound* like it was recorded in a basement. At each stage of the recording, then, we'll be doing everything we can to keep this isolated control—it's the key to getting the cleanest possible sound on tape. This is our primary concern when setting up for the basic tracks, and the main reason we'll be recording all the subsequent parts in separate overdubs with the Neumann.

Since it usually takes a couple of hours to set up for a basic track session, we'll set everything up and make our initial adjustments the night before. We'll run down a take or two just to get the bugs out, get everyone's headphone mix set up, and fine-tune our equalization and level adjustments. Then the next day we can just walk in, strap it on, flip the switch and go for it, straight away.

In Part IV we'll do just that.





# Music and the Law

## Copyrights

As part of our ongoing attempt to provide information useful to you, our readers, we are presenting a series of articles on Music and the Law. This series, written by Eric Berman, an attorney specializing in Entertainment Law, is designed to discuss and offer solutions to musicians' legal and business problems, and provide a practical understanding of these aspects of the music industry.

Copyright is one of the best known and least understood areas in music. Most composers know something about the function of copyrighting, but there are many myths about the nature of Copyright, when a Copyright is necessary, and how to obtain one. Two questions I am often asked are: "If I write my song down, seal it in an envelope and mail it to myself, aren't I protected?" and, "Why should I bother to copyright my song at all?"

The answer to the first question is yes—with limitations. "Copyright" literally means the right to copy. The term has come to mean that body of exclusive rights granted to authors for protection of their writings. Ownership of a copyright is distinct from ownership of any material object in which the work is embodied. Composers do receive copyrights from the time they write their song down or record it ("fix it in a tangible medium"). The law governing copyrights is Title Seventeen of the United States, which provides the holder of the copyright with the exclusive right to make and sell copies of the work, to perform the work publicly, to make and sell the first recording of the work, and to prepare derivative works (different arrangements or orchestrations) based on the original. The holder is entitled to obtain an injunction to stop the infringement, distribution and illegal use of his/her song, to have the copies impounded and destroyed, and to recover his own actual damages and the profits of the infringer. He has these rights whether or not the song is registered, so long as it is fixed in some medium. Mailing a copy to yourself does establish that the work is fixed in a medium, but the Courts do not accept this procedure for validating the date of creation without additional corroboration. It is too easy to falsify such a mailing. Registering the song is the accepted legal method and should be used.

Federal copyright protection is not provided if the song is performed from memory or improvised and has never been written down or recorded. The composer must look to his own state for a remedy, the most common being unjust enrichment. The infringer becomes unjustly enriched when he uses the song without permission, makes money from it, and does not pay the composer for that use. The composer must be able to prove that the infringer had access to the song, copied it, and then profited from that use. This can be quite difficult to do, particularly if the infringer has formally registered the song as being his own.

### Recovering Damages

This brings us to the second question, which actually is, "Why should I bother to register my song?" Registration is *not* required to validate a copyright, but it *is* required in order to bring a lawsuit for infringement. In other words, you can have a valid claim but it cannot be enforced until the work is registered. Federal Courts have held that:

in order to prove infringement of copyright, the plaintiff must show ownership by valid Copyright and copying by defendant. The Certificate of Copyright Registration constitutes prima facie evidence of ownership and validity of copyright, and the Court must presume that the ownership and validity requirements are satisfied in absence of contrary evidence.

In addition, the remedies of statutory damages and reimbursement of attorney's fees are not available unless the work is registered. These remedies are unavailable for acts of infringement prior to registration of an *unpublished* work, but apply to infringements of a *published* work prior to registration, if that registration is made within three months of the initial publication. The burden of proof then falls on the party challenging the registration who must prove that the registration is illegal or contains false information. If the registrant wins, he is entitled to attorney's fees as well as statutory damages, or actual damages and the additional profits of the infringer, whichever is greater.

The date of registration serves as the dividing line for damages. The copyright holder is entitled only to actual damages and the infringer's profits for any infringement occurring prior to registration (except for the three month provision for published works). An infringement after registration triggers statutory damages ranging from one hundred to fifty thousand dollars for each infringement. Infringer's profits or actual damages need not be shown. All that has to be shown is that the work was copied. This point is very important. If there were no lost profits or actual damages prior to registration, then the copyright owner would receive nothing for that infringement. (He could, of course, stop further infringement and have the copies confiscated.) He would also have to pay his own attorney's fees, which can be substantial in a

copyright action. If the infringement occurs or continues after registration, the copyright holder can pursue the infringer to the fullest extent of the law.

## Whether to Register

But, is registering your copyright really necessary? Not always. Are your songs played only in your studio or at family gatherings? Are they so personal that no one else could possibly perform them? Are they any good? If the answers to these questions are, respectively, yes, yes, and no, registering is probably a waste of time.

If, however, you are a known songwriter, or people always ask you for copies of your songs, or you plan to try to sell them to recording artists or publishing companies (topic of a later column), then the answer is yes, you should register. No one really knows what makes a hit song or which one will be the next great success. Several publishers are still kicking themselves for rejecting a sentimental song about an expression of enduring love for a soldier returning from Vietnam. That song, "Tie A Yellow Ribbon Round the Old Oak Tree," became one of the biggest hits in the history of pop music. Could your tune be the next?

## Forms

Once you have decided that you need this protection, you must file with the Copyright Office the appropriate form, a copy of your unpublished work (or two copies if published) with proper notice, together with a ten dollar certified check or money order. What you are doing is securing the rights stated above. If you wish to protect the music and lyrics, you should file Form PA (performing arts), shown in *Figure 1*. If it is the actual performance that needs protection, you should record

**FORM PA**  
DO NOT WRITE ABOVE THIS LINE. IF YOU NEED MORE SPACE, USE A SEPARATE CONTINUATION SHEET.

**1** TITLE OF THIS WORK

**2** PREVIOUS OR ALTERNATIVE TITLES

NATURE OF THIS WORK

**2** NAME OF AUTHOR DATES OF BIRTH AND DEATH  
 Was this contribution to the work... AUTHOR'S NATIONALITY OR DOMICILE... WAS THIS AUTHOR'S CONTRIBUTION TO THE WORK...  
 NATURE OF AUTHORSHIP

**3** YEAR IN WHICH CREATION OF THIS WORK WAS COMPLETED DATE AND NATION OF FIRST PUBLICATION OF THIS PARTICULAR WORK

**4** COPYRIGHT CLAIMANT(S) NAME AND ADDRESS TO BE GIVEN BY THE CLAIMANT IN THE CASE OF THE AUTHOR'S DEATH

TRANSFER If the claimant(s) named here is (are) not different from the author(s) named in section 2, give a brief statement of how the claimant(s) obtained ownership of the copyright.

Figure 1. Form PA (performing artists).

prose or poetry that has not yet been put to music. For these purposes, Form TX (non-dramatic literary works), shown in *Figure 3* should be used.

## Is an Attorney Necessary?

This process is much less complicated than it may appear. One person registering his own work need not consult an attorney. Legal advice is not absolutely necessary when there are two or more authors or holders—if each author is the author of a specific or distinct contribution (i.e., music or lyrics), and so long

# BASIC INFORMATION

**When to Use This Form:** Use Form PA for registration of published or unpublished works of the performing arts. This class includes works prepared for the purpose of being "performed" directly before an audience or indirectly "by means of any device or process." Works of the performing arts include: (1) musical works, including any accompanying words; (2) dramatic works, including any accompanying music; (3) pantomimes and choreographic works; and (4) motion pictures and other audiovisual works.

**Deposit to Accompany Application:** An application for copyright registration must be accompanied by a deposit consisting of copies or phonorecords representing the entire work for which registration is to be made. The following are the general deposit requirements as set forth in the statute:

**Unpublished Work:** Deposit one complete copy (or phonorecord).

**Published Work:** Deposit two complete copies (or phonorecords) of the best edition.

**Work First Published Outside the United States:** Deposit one complete copy (or phonorecord) of the first foreign edition.

**Contribution to a Collective Work:** Deposit one complete copy (or phonorecord) of the best edition of the collective work.

**Motion Pictures:** Deposit both of the following: (1) a separate written description of the contents of the motion picture; and (2) for a published work, one complete copy of the best edition of the motion picture; or, for an unpublished work, one complete copy of the motion picture or identifying material. Identifying material may be either an audiorecording of the entire soundtrack or one frame enlargement or similar visual print from each 10-minute segment.

**The Copyright Notice:** For published works, the law provides that a copyright notice in a specified form "shall be placed on all publicly distributed copies from which the work can be visually perceived." Use of the copyright notice is the responsibility of the copyright owner and does not require advance permission from the Copyright Office. The required form of the notice for copies generally consists of three elements: (1) the symbol "©", or the word "Copyright," or the abbreviation "Copr."; (2) the year of first publication; and (3) the name of the owner of copyright. For example: "© 1981 Constance Porter." The notice is to be affixed to the copies "in such manner and location as to give reasonable notice of the claim of copyright."

For further information about copyright registration, notice, or special questions relating to copyright problems, write:

Information and Publications Section, LM-455  
 Copyright Office  
 Library of Congress  
 Washington, D.C. 20559

**PRIVACY ACT ADVISORY STATEMENT Required by the Privacy Act of 1974 (PL. 93-579)**

The authority for requesting this information is title 17, U.S.C., secs. 409 and 410. Furnishing the requested information is voluntary. But if the information is not furnished, it may be necessary to delay or refuse registration and you may not be entitled to certain relief, remedies, and benefits provided in chapters 4 and 5 of title 17, U.S.C.

The principal uses of the requested information are the establishment and maintenance of a public record and the examination of the application for compliance with legal requirements.

Other routine uses include public inspection and copying, preparation of public indexes, preparation of public catalogs of copyright registrations, and preparation of search reports upon request.

NOTE: No other advisory statement will be given in connection with this application. Please keep this statement and refer to it if we communicate with you regarding this application.

it and send in one copy (two if published) with Form SR (sound recording) as seen in *Figure 2*. If it is the music, lyrics and performance that you are protecting, a copy of the recording with Form SR will suffice. In some instances, a lyricist might want to protect the lyrics independently of the music, or he might wish to protect

as the particular contribution is clearly spelled out on the Copyright Form. Each author will then retain the rights to his individual contribution and may capitalize on that contribution without the permission of the other authors. Each is granted a property right in the contribution and may sell, license, or assign it,



**FORM SR**  
DO NOT WRITE ABOVE THIS LINE. IF YOU NEED MORE SPACE, USE A SEPARATE CONTINUATION SHEET.

**1** TITLE OF THIS WORK

PREVIOUS OR ALTERNATIVE TITLES

NATURE OF MATERIAL RECORDED  
 Musical  
 Musical Dramatic  
 Dramatic  
 Literary  
 Other

**2 a** NAME OF AUTHOR  
 Was this contribution to the work "work made for hire"?  
 Yes  
 No  
 OR  
 Co-author of  
 Discussed in

**NOTE**  
Under the law, the author of a work made for hire is generally the employer or the person for whom the work was prepared, not the individual who actually created the work. If you are an individual who has created a work made for hire, you should not use this form to claim copyright in the work.

**b** NATURE OF AUTHORSHIP  
 Briefly describe nature of the material created by the author in which copyright is claimed.

**c** NAME OF AUTHOR  
 Was this contribution to the work "work made for hire"?  
 Yes  
 No  
 OR  
 Co-author of  
 Discussed in

**d** NATURE OF AUTHORSHIP  
 Briefly describe nature of the material created by the author in which copyright is claimed.

**e** NAME OF AUTHOR  
 Was this contribution to the work "work made for hire"?  
 Yes  
 No  
 OR  
 Co-author of  
 Discussed in

**f** NATURE OF AUTHORSHIP  
 Briefly describe nature of the material created by the author in which copyright is claimed.

**3** YEAR IN WHICH CREATION OF THIS WORK WAS COMPLETED  
 This information must be given if the work was published.

**4** DATE AND NATION OF FIRST PUBLICATION OF THIS PARTICULAR WORK  
 This information must be given if the work was published.

**4** COPYRIGHT CLAIMANT(S)  
 Name and address must be given even if the claimant is the author or the author's grant in § 107.

**4** APPLICATION RECEIVED  
 YES  
 NO

**4** TWO DEPOSITS RECEIVED  
 YES  
 NO

**4** REFERENCE NUMBER AND DATE

TRANSFER If the claimant(s) named here is/are different from the author(s) named in space 2, give a brief statement of how the claimant(s) obtained ownership of the copyright.

Figure 2. Form SR (sound recording).

**FORM TX**  
DO NOT WRITE ABOVE THIS LINE. IF YOU NEED MORE SPACE, USE A SEPARATE CONTINUATION SHEET.

**1** TITLE OF THIS WORK

PREVIOUS OR ALTERNATIVE TITLES

PUBLICATION AS A CONTRIBUTION  
 If this work was published as a contribution to a periodical, serial or collection, give information about the collective work in which the contribution appeared.

If published in a periodical or serial give: Volume # Number # Issue Date # On Page #

**2 a** NAME OF AUTHOR  
 Was this contribution to the work "work made for hire"?  
 Yes  
 No  
 OR  
 Co-author of  
 Discussed in

**NOTE**  
Under the law, the author of a work made for hire is generally the employer or the person for whom the work was prepared, not the individual who actually created the work. If you are an individual who has created a work made for hire, you should not use this form to claim copyright in the work.

**b** NATURE OF AUTHORSHIP  
 Briefly describe nature of the material created by the author in which copyright is claimed.

**c** NAME OF AUTHOR  
 Was this contribution to the work "work made for hire"?  
 Yes  
 No  
 OR  
 Co-author of  
 Discussed in

**d** NATURE OF AUTHORSHIP  
 Briefly describe nature of the material created by the author in which copyright is claimed.

**e** NAME OF AUTHOR  
 Was this contribution to the work "work made for hire"?  
 Yes  
 No  
 OR  
 Co-author of  
 Discussed in

**f** NATURE OF AUTHORSHIP  
 Briefly describe nature of the material created by the author in which copyright is claimed.

**3** YEAR IN WHICH CREATION OF THIS WORK WAS COMPLETED  
 This information must be given if the work was published.

**4** DATE AND NATION OF FIRST PUBLICATION OF THIS PARTICULAR WORK  
 This information must be given if the work was published.

**4** COPYRIGHT CLAIMANT(S)  
 Name and address must be given even if the claimant is the author or the author's grant in § 107.

**4** APPLICATION RECEIVED  
 YES  
 NO

**4** TWO DEPOSITS RECEIVED  
 YES  
 NO

**4** REFERENCE NUMBER AND DATE

TRANSFER If the claimant(s) named here is/are different from the author(s) named in space 2, give a brief statement of how the claimant(s) obtained ownership of the copyright.

Figure 3. Form TX (non-dramatic literary works).

and pass title in it by will. It is his and his alone, absent any agreement to the contrary.

If, however, the authors contributed to both the music and lyrics, then their contributions may merge into joint authorship. Joint authorship is defined as a collaboration of two or more authors, each author preparing his contribution with the knowledge and intent that it will be merged with the contributions of the other authors, and that the contributions will be inseparable or interdependent parts of the whole. Under the Copyright Law, each holder automatically receives an undivided share in the whole work. For example, if the music is sold for use in a commercial without the lyrics, both composer and lyricist still share equally in the profits. Each holder has the right to use the work as he desires, to sell it for any reason and at any price. Prior approval from the other holders

is not necessary. The only requirement is that each holder must share equally in the profits. If the aforementioned is not desired but there was some cross-collaboration, then each author should take credit on the Copyright Form for the major part of work he contributed. This is the industry practice, and separate credit should be taken unless the contributions really do merge into each other.

When there are joint authors, it is wise to have an attorney draw a collaboration agreement that will spell out the rights each holder has in the joint work and restrictions on its sale and use. Such an agreement, properly drawn, will protect the work and its holders from the diminution of the work's value, and will provide them with means for settling disputes concerning the work. It is common practice in the music industry for a recording artist to make minimal changes in the music or words of a song he is recording, and then demand credit and a share in the copyright of the song. A collaboration agreement may not be able to stop this practice, but it can minimize the damage. It can also stop one holder from giving away a greater share than he owns. If the collaborators do not have a collaboration agreement but have specified each individual's contribution to the Copyright Form, they will have protection if such changes do occur.

Another area of concern is your right to the copyright itself. Once the work is written down or recorded, you have copyrights in it. If, however, the author is employed to write the work or an arrangement of the work, and it is written within the scope of employment, then it may be a "work made for hire." The employer rather than the author will own the rights in it, and the employer's name will appear on the Copyright Form. The author will be entitled only to his salary. If the work is specially ordered or commissioned, it can be a "work made for hire" only if it is commissioned for use as a contribution in a collective work, as part of a motion picture or other audio-visual work, or as a supplementary work (an arrangement), and if the parties expressly agree in a written signed contract that the work shall be considered a work made for hire. Freelance writers normally do not have to worry about this problem, but they should read each songwriting agreement carefully to ensure that they are not obligating themselves in this capacity.

### Preparing the Application

When preparing the copyright application, it is important to follow the instructions carefully. Proper notice must be placed on each copy of your copyrighted material. This notice consists of three elements, all of which must be present. They are the symbol ©, the year of publication (or the year of creation if unpublished), and the name of the copyright owner. If it is a sound recording, then the symbol p should be used in place of the ©. This information must be placed on all copies of your work, published or not. If the recording is of songs that have their own copyright separate from the recording, then both notices should appear. An extra protection, though not required, is to add the phrase, "All rights reserved."

For example:

**Sheet music:** © 1983 Eric Berman. All rights reserved.  
**Recording:** p 1983 Eric Berman. All rights reserved.





## MORE INFORMATION

**"Works":** "Works" are the basic subject matter of copyright; they are what authors create and copyright protects. The statute draws a sharp distinction between the "work" and "any material object in which the work is embodied."

**"Copies" and "Phonorecords":** These are the two types of material objects in which "works" are embodied. In general, "copies" are objects from which a work can be read or visually perceived, directly or with the aid of a machine or device, such as manuscripts, books, sheet music, film, and videotape. "Phonorecords" are objects embodying fixations of sounds, such as audio tapes and phonograph disks. For example, a song (the "work") can be reproduced in sheet music ("copies") or phonograph disks ("phonorecords"), or both.

**"Sound Recordings":** These are "works," not "copies" or "phonorecords." "Sound recordings" are "works that result from the fixation of a series of musical, spoken, or other sounds, but not including the sounds accompanying a motion picture or other audiovisual work." Example: When a record company issues a new release, the release will typically involve two distinct "works": the "musical work" that has been recorded, and the "sound recording" as a separate work in itself. The material objects that the record com-

pany sends out are "phonorecords": physical reproductions of both the "musical work" and the "sound recording."

**Should You File More Than One Application?** If your work consists of a recorded musical, dramatic, or literary work, and both that "work," and the sound recording as a separate "work," are eligible for registration, the application form you should file depends on the following:

**File Only Form SR if:** The copyright claimant is the same for both the musical, dramatic, or literary work and for the sound recording, and you are seeking a single registration to cover both of these "works."

**File Only Form PA (or Form TX) if:** You are seeking to register only the musical, dramatic, or literary work, not the sound recording. Form PA is appropriate for works of the performing arts; Form TX is for nondramatic literary works.

**Separate Applications Should Be Filed on Form PA (or Form TX) and on Form SR if:** (1) The copyright claimant for the musical, dramatic, or literary work is different from the copyright claimant for the sound recording; or (2) You prefer to have separate registrations for the musical, dramatic, or literary work and for the sound recording.

Once the work is recorded for public distribution it does become subject to compulsory licensing. To avoid having to meet the stringent requirements for accounting and paying royalties, most artists or their recording companies will obtain a "mechanical license" to record their version of the work. This license is available through several organizations which serve as clearing houses for most major publishers. Standardized forms and terms are used and payment is required to be made quarterly rather than monthly.

### Choosing the Proper Form

The forms used by the Copyright Office are clear and concise with definitions given in the "More Information" section.

To choose the proper form, use the following guidelines:

1. If you want to protect the song itself use Form PA (*Figure 1*). Use the © form of notice on the sheet music or recording.
2. If you want to protect *your performance* of the song, record it and use Form SR (*Form 2*). Put the P form of notice on the label.
3. If you are both the author and performer of the song and you wish to protect the song and the performance, record it and use Form SR. Use the P notice.
4. If you recorded someone else's song or someone else recorded your song, the songwriter should use Form PA and the performer should use Form SR. The songwriter has the option to use a leadsheet or a recording of the song as the deposit required by the Copyright Office. It must be marked with the © form of notice. The performer must send in a recording or phonorecord of the song marked with the P form of notice.
5. If you have any questions regarding the use of the correct form, or the ownership or uses of the

Copyright, consult an attorney versed in copyright law.

When filling out the forms take care to ensure that they are accurate, that the information is exactly as it appears on your deposit. If you want to save money when you register your work, it is possible to copyright a collection of songs, rather than doing so one at a time. This option should be used only if all the materials are original and have not been copyrighted or published previously. Give the collection a name, e.g., "Smiles, A Collection of Songs by Hugo White," and put that full name and each song title on the deposit and form. If you wish to sell a particular song from the collection at a later time, you can register that song individually prior to the date of sale. In addition, make sure you include one deposit if unpublished and two if published. Each deposit must be properly labelled with the name of the work, the authors' names with contributions, and the proper notice. Mail the form, deposit and check to: The Register of Copyrights, Library of Congress, Washington, D.C. 20559. In four to eight weeks you will receive a copy of your registration.

The work is registered from the day the Copyright Office receives and files your application. The best way to send it is by certified mail return receipt requested, so that you will know when the Register has received it. If you do not get your return receipt back within 10 to 15 days, you can have the Postal Service put a tracer on it.

I hope that you will now be able to fill out and file your own copyrights. Forms are available by writing to the United States Copyrights Office, Library of Congress, Washington, D.C. 20559, at some post offices or local Federal buildings, or by calling and leaving an order at (202) 287-9100. The Copyright Office will provide additional information if you write to them or call (202) 287-8700.

# THE PRODUCERS

## **jim williamson & bob clearmountain**

erin morris

**I**n 1959, Jim Williamson, a native of Asheville, North Carolina, left a budding career in aviation electronics and hit Nashville's music industry with full force. His first position in the industry was at a hi-fi house selling and servicing professional and semi-professional audio equipment. Eventually, Williamson was commissioned to design and build an audio console for a studio. He found that he enjoyed being in studios more than repairing the equipment.

At that point, Williamson invested in Music City Recorders, a studio in Nashville. His partner was Scotty Moore, who at that time was Elvis Presley's lead guitarist.

CBS caught wind of Williamson's expertise and hired him in 1963 as a technician and maintenance man. Within a week he saw his first professional recording session and became interested in becoming an engineer. Williamson wasn't discouraged when he was informed that it would take three to four years to become an engineer, for within three weeks he was engineering his first session!

In 1969, Williamson joined Decca Records as assistant to the legendary Owen Bradley. From there he went on to engineer at Woodland Sound Studios for one year before joining the staff of Jack Clement Recording Studios in 1972. He was soon promoted to general manager.

In 1980, following the purchase of Clement Studios by producer Larry Butler and artist Roy Clark and the re-naming of the facility to Sound Emporium, Williamson was named president of the newly-formed Sound Emporium Corporation. In February, 1983, Williamson, Roy Clark, and CAC Investments purchased Butler's share of the studio, which they now co-own.



Some of the number one songs that have been cut at Sound Emporium include: "Coward Of the County," "She Believes In Me" and "The Gambler" by Kenny Rogers; "Mamas, Don't Let Your Babies Grow Up To Be Cowboys" by Waylon Jennings and Willie Nelson; "I Believe In You" by Don Williams and "Fourteen Carat Mind" by Gene Watson.

**Modern Recording & Music:** Who are some of the people you have worked with as an engineer?

**Jim Williamson:** In 1964 I worked with the Pozo-Seco Singers, a trio comprised of Don Williams, Lofton Kline and Susan Taylor. That is how I got to know Don Williams. Don now works here with me at this studio and he has done everything with me.

I've also worked with Peter, Paul and Mary, Simon & Garfunkel, Bob Dylan, Marty Robbins, Johnny Cash, Kenny Rogers, Merle Haggard, Gene Watson. I did "Hello Darlin'" with Conway Twitty, "Coalminer's Daughter" with Loretta Lynn. I've recorded just about everyone on the Grand Ole

Opry at one time or another including Bill Anderson, Kitty Wells and Ernest Tubb.

**MR&M:** What projects are you currently working on?

**JW:** At present, Roy Clark and I are doing an album.

**MR&M:** Will you be producing the album?

**JW:** Nobody is really producing it.

**MR&M:** Who will get the production credit on the album cover?

**JW:** I don't think we are going to put a production credit on it. It is a unison effort. I think any production is a unison effort. I feel that the weakest link is just that, the weakest link. I believe engineer, leader musician, artist—all the musicians work together on a project and that is the beauty of Nashville. That is why Nashville has prospered. We have some of the most phenomenal musicians in the world here and that is why something like this can take place. I hire a musician because of his ability to play an instrument, but also I hire him for his creativity. And you don't want to stagnate that."

**MR&M:** So you let the musicians have some amount of input?

**JW:** Exactly. What they say is weighed and balanced and we all decide in unison, "Yes, that is a good lick and let's include it." So there isn't really one producer. Roy acts as a director for the project.

**MR&M:** "When and how did you meet up with Roy Clark?"

**JW:** "I met Roy in 1962. Every studio that I went to, Roy followed me there. I've been with him since that time. He is one fabulous human being and a very sincere man. I can't praise him highly enough, and not because he is my partner. As an entertainer he is incredible, but as a human being, he is even more incredible.

**MR&M:** Is this album going to be primarily instrumental or vocal and what label will it be released on?

**JW:** It will be an instrumental album for release on Churchill Records.

**MR&M:** Is Sound Emporium an analog or a digital studio?

**JW:** It is basically an analog studio

Jim Williamson (right) and Roy Clark manning the Harrison console at the Sound Emporium.





but is also capable of digital recordings.

**MR&M:** What will the Roy Clark album be recorded in?

**JW:** We are recording in analog. But we have done digital albums here. We did Sammy Davis, Jr.'s album in digital. As a matter of fact, we did it both in analog and digital. It was recorded in 32-track digital and 24-track analog.

**MR&M:** What was the purpose of recording it both ways?

**JW:** That is so the digital album could be offered at a higher price than the analog album.

**MR&M:** Are there certain pieces of equipment that you like to use particularly when you are recording Roy, or equipment that he prefers?

**JW:** As an engineer, I'm a purist. If I could eliminate the wire between the microphone and the console or the console and the tape machine, I would. In many instances, I will almost eliminate the console, with the exception of the fact that it is a gain producer to get the signal to the tape machine. I believe in attempting to use the right microphone for the instrument and/or vocalist that enhances that sound without using peripheral equipment.

**MR&M:** What kind of microphones do you use on Roy's guitars?

**JW:** He owns fifty or sixty guitars and every guitar has a different feel. They may be the same model, but they still play differently. I listen to

what is going on acoustically. I will go into the studio with an artist and musicians and listen to the sound they are developing. I try to use the microphone that will enhance that sound the most and make it fit into the blend with the other instruments the best. Hopefully, I won't have to use any board equalization.

**MR&M:** You don't use any equalization?

**JW:** I try not to. I try never to use board EQ, or use as little as I can.

**MR&M:** So what is all the equipment in the studio for?

**JW:** It is here for whomever would like to use it. We have Prime Time, digital and analog delay units, harmonizers, limiters, etc.

**MR&M:** Does Roy have the same theory as you do regarding purity of recordings?

**JW:** He's into his music. He leaves [the recording] totally up to me.

**MR&M:** I've heard some awfully interesting sounds out of the guitars that he plays. Are they coming directly from his guitar?

**JW:** Yes they are. We try to develop the sounds we want originally and not jive it with electronics. If we can develop it right in the studio, then why use anything else? I like the things guitarists can put on their axes before it gets to the board, but from time to time it is nice to hear just a guitar.

**MR&M:** Does Roy play both acoustic and electric guitar on this album?

**JW:** Yes.

**MR&M:** What microphone do you use on his acoustic guitar?

**JW:** It depends on the key, the tempo, what he's playing, whether he's playing on the low strings a lot or the high strings, what the melody line is asking the guitarist to play. That is how critical mic selection is. If you could take everyone's ear and stick it in that room so they could hear the guitar acoustically, that would satisfy the problem of mic'ing it. Since I can't do that, what I want to do is get the sound of that guitar without any extraneous enhancement. That is what Roy wants to play and that's the way he wants it to sound. If I can do that, I feel like I've done my job.

I just recorded a big band. I used old 1940 microphones. I own them personally. They are RCA 77DX and RCA 44 ribbon microphones. For me, there is not a better microphone for horns. And this big band is 19-pieces — trumpets, saxophones, piano, bass, drums and guitar. I recorded their album with no board EQ. The mic'ing was six feet or better from the instrument. It was recorded just like a big band. For half the album we didn't even use headphones. We got them all in the room at once. It was elbow to elbow, but it was a ball.

**MR&M:** How exactly was that session mic'ed?

**JW:** I had 2 mics on four trumpets, two mics on four trombones, two mics on four saxes, one mic on piano, three mics on the drums, one mic on the guitar and one mic on the bass...and that's it! It proves that you can do it. Most microphones are made not to be stuck in the bell of an instrument or against the grillcloth of an amplifier. You lose the harmonic content of what's being played. With the RCA 77DX on the trumpets, you've got the sound of the instruments. The blend is better because they played to the microphones rather than having me ram the mike up the bell and balancing it in the control room. I let the band balance it themselves.

**MR&M:** Who chose the studio musicians you are using on Roy's album project?

**JW:** Roy and myself; most of the musicians are his road band. All in all there was a banjo, steel, electric guitar, bass, drums, and we hired a keyboard player and an acoustic guitar player.

**MR&M:** Who have you worked with as a producer?



**JW:** Most of my productions have been independent, young and new artists. Jim Fogelsong at MCA has been kind enough to give me several artists on that label. I produce Jessie Burns for Churchill, a Canadian artist who now is the strongest label-affiliated artist I work with. I'm working with Bob Davis' Prime Time Band, which I just told you about, and also the Aldridge Sisters, who don't have a record label at this point.

**MR&M:** Now that you are part owner of the studio, do you do all your work here?

**JW:** Yes, I always have.

**MR&M:** When you are producing an artist, what do you do if they want to cut somewhere else?

**JW:** Most artists that I have produced come here and ask me to produce them. They accept the fact that this is where I work. I ask them if they have a preference. I would not hesitate to go to another room if that is what they want.

**MR&M:** When you are producing an artist, do you engineer also or do you hire another engineer to allow you to concentrate on the production?

**JW:** No, for the most part I engineer as well as produce. I think producers depend on the engineer to help them produce the dates anyway. So why not do them both? I'm closer to the product that way.

**MR&M:** You have Harrison consoles in both rooms as well as Studer tape machines. Is that a personal preference?

**JW:** Yes. I have yet to find a console that is designed as well as a Harrison that has the flexibility of a Harrison along with the critical technical aspects that are necessary for an audio console. Plus it sounds good, and that is the main thing.

Studer tape machines are reliable; they're flat; they are dependable; they are quality. They are well built and they don't treat my tape badly.

**MR&M:** What kind of recording tape do you usually use?

**JW:** 3M 250, because I've found through testing that it is the best tape on the market.

**MR&M:** Do you design boards anymore?

**JW:** Occasionally I will modify, but not for hire.

**MR&M:** What has brought outside artists like John Denver, Julie Andrews, Sammy Davis, Jr., and Andy Williams to Nashville and Sound Emporium to record?

**JW:** We've been very lucky. Primarily, it has been word of mouth. I just completed a project with a man named Pete Bennett. He's the man who brought the Rolling Stones to America for their first tour. He managed Apple Records, promoted the Beatles and was Nat King Cole's manager. He recently brought an album project to Nashville. He called me from New York simply because he had heard of the studio. He felt like he was calling a viable, quality recording studio and an engineer that had been involved in major projects. He was looking for the best. I hope he got it.

**MR&M:** How often do new musicians get into the Nashville session scene?

**JW:** More than in past times. We have a tremendous influx from Los Angeles of engineers and musicians. I think it is because business is down so much.

**MR&M:** Is business down less in Nashville than it is in other music centers?

**JW:** All I can say is that I had the best month in the history of the studio in April. And that is since 1969.

**MR&M:** How do you compare Nashville's studio musicians with those of New York and Los Angeles?

**JW:** I've worked Los Angeles, I've worked New York and I've worked Nashville. All three places, and many others, have excellent musicians, fabulous musicians. We do it a little differently in Nashville. My theory is that we should make records for the buying public, and not for record producers. I feel like Nashville musicians play from the heart. I'm not saying that nobody else does, but we allow them to play from the heart more than other places do. We don't play from a lead sheet. Sometimes we don't even use the numbers system. It is memorized.

**MR&M:** I never could understand why musicians were thought less of for memorizing music. It seems to me that it takes a lot of talent to memorize something.

**JW:** Oh, definitely. When you read a note from a written page, that note was written by somebody else—generally by one, maybe two people. So there is only one or two people's concept involved in that production. Here, more than anywhere else, the numbers system enables the musician to immediately learn the melodic content of the song; then they are free to position what they play around that melody. Tempo, of course,

is dictated by lyric content and how an artist feels the song. We develop the tempo basically for the feel, not because that is the way it should be and somebody else has dictated it. If the artist is rushed, we'll slow down. If they have too much time, we'll pick it up. Or we may insert a five-bar phrase to give the artist more time to phrase the lyric. Or we may cut it to a four and a half bar phrase or a three-bar phrase if the lyric requires that and ask that the melody be done that way. We are disciplined, but we do have our freedom. And I think that helps us make better music.

**MR&M:** When I sat in on a session here once, I was very impressed at how fast things got down on tape. I never saw the musicians get exhausted, because things were always changing and it didn't take 20 takes to get it right.

**JW:** What we try to do is establish a flow that doesn't offend anyone, but keeps the emotional value up. I believe in that very strongly. I like to find out the attitude of musicians before I start a session—where they are mentally when they are in the studio playing. If I know that, I know how much I can push them, how much I can ask of them. I know how much I can lean on them to help me



do my job. Because it is a unison effort. I'm playing an instrument just like they are. The difference is I have control. After 25 years, you learn musicians pretty well. You learn how to read them.

**MR&M:** You told me that you will be getting back into flying again this summer. Is there anything that transfers from flying to producing?

**JW:** There's a certain feeling you get when you hear a hit record coming over the speakers. You just know it and feel it. It's a feeling you can't explain. You get the same feeling when the wheels are pulled up into the body of a plane at takeoff.



## INSTRUMENTS

(available in all studios unless otherwise indicated)

Fender-Rhodes electric pianos (2)  
Wurlitzer electric pianos (2)  
Hammond B-3 and C-3 organs  
Clavinet  
Celeste  
Chickering grand piano (Studio A)  
Steinway grand piano (Studio B)  
Tack pianos (Studio A)  
Tympani  
Congas  
Vibes  
Marimba  
Orchestra bells  
Mini Moog  
Harpsichord

## EQUIPMENT

(same in both studios unless otherwise indicated)

### TAPE RECORDERS:

Studer A-80 VU II (24-track with 16-track capability)  
Studer A-80 RC (2-track, ½-inch) (Studio B)  
Studer B-67 (2-track)  
Ampex AG-440B (4-track) (Studio A)

### MIXING CONSOLES:

Harrison 3232AB (Studio A)  
Harrison 3232C (Studio B)

### MONITOR AMPLIFIERS:

Altec  
BGW  
Crown  
McIntosh  
Sony

### MONITOR SPEAKERS:

Westlake

### ECHO:

EMT 140 stereo plates (two per studio)  
Quad/Eight spring reverb  
Acoustic echo chambers (two 8' x 10' x 35' chambers with non-parallel walls)

### MICROPHONES:

AKG  
Electro-Voice  
Neumann  
PML  
PZM  
RCA  
Sennheiser  
Shure  
Sony  
Studer  
Superscope  
Wright



## rob patterson

**E**ngineer/producer/mixer extraordinaire Bob Clearmountain may be the best example of a new breed of recordists—studio technicians who, for all their electrical expertise in a hot-wired age, make records with an ear to the sound and an ear to the music. You can hear it in three of his most popular recent projects: mixing the Rolling Stones' *Tattoo You* and Roxy Music's *Avalon* LP, and recording and mixing David Bowie's *Let's Dance*, three of the best sounding records of this or any era.

Despite working with certified superstars, Clearmountain hardly fits the traditional description of a "hot name producer." When he strides into the lobby at the Power Station, one could easily mistake him for the studio go-fer and mailboy—which he was for half-a-day at Mediasound. Full of boyish enthusiasm and modesty, Clearmountain breaks just about all the molds. He will engineer, produce, co-produce or mix (or do all of that together), depending on the situation. A sampling of some recent projects—producing heartland rockers the Michael Stanley Band and then jetting to Australia to make an album with Kiwi new wavers Mi-Sex, amidst such side-efforts as helping friend Garland Jeffries produce an EP by local New Yorkers the Outsets or mixing a Japanese language single for that market—tells you just how varied the music Clearmountain works with is. One can easily see this talented yet almost unassuming young man being the calm eye of any studio hurricane.



"Bob is the best," declares Epic Records A&R staffer Dick Wingate, who's been involved with Clearmountain on projects for Jeffries and Lene Lovich. "When you tell him you like something he's done, he still has this reaction like (open eyes wide), 'You really like it? You really think it's good?' I don't think he really knows just how good he is. Maybe it's better he doesn't, because he's so good he would almost deserve to be conceited about it. Luckily, I know that will never happen with Bob."

*Modern Recording and Music's* Rob Patterson caught up with Clearmountain for two interviews at the Power Station, during one of which Clearmountain was able to demonstrate the studio's computerized Solid State Logic desk where he makes those acclaimed mixes, and even recreate the set-up for recording *Let's Dance*.

**Modern Recording & Music:** Every career has to start somewhere. How did you become interested and then involved in music and recording?

**Bob Clearmountain:** I was always a bit of a musician. Starting in seventh grade I was always in bands in Greenwich, Connecticut, where I grew up. I was a bass player. But finally I just got so fed up with it because I just couldn't keep bands

together. It was always a struggle. So I finally said—there's got to be something more stable. Around the same time, I was really into listening to records, and it finally dawned on me—somebody's sitting there putting these things together. Somebody's got the job of making things fly back and forth across the speakers, putting the echo on things, and making it sound nice. I thought—yeah—I'll do that. I just did. The last band I was in was doing a demo at Mediasound; once again, the band broke up. So I just started hanging around Mediasound until they hired me.

They hired me as a go-fer. I kept begging them. I kept saying, "Look, I'm gonna be good at this someday so you should hire me." They finally did because I hassled them so much, and the guy that hired me is the guy who owns this place (The Power Station, Clearmountain's home base), Bob Walters. They hired me as a go-fer, but by the time I started, what they really needed was an assistant. I did two deliveries and then they sent me into Studio A: "No, no—you're an assistant, go into Studio A." It was a Duke Ellington session! I was like 19 years old, I'd never met anyone famous. I was nervous as hell.

**MR&M:** What did you do that first day?

**BC:** Set up mics. I didn't know anything about what I was doing. Luckily, there was another guy there to show me what to do. But it was a pretty bizarre situation.

**MR&M:** But I imagine that starting out at the very bottom had its benefits in what you learned.

**BC:** It really helped a great deal. I think it's the best way to do it because you get familiar with everything. The best thing about it—especially at a place like Mediasound or Power Station—you work with a lot of different engineers and producers and you see a lot of different styles of recording. You can sort of weed it out, and see, well, when this guy does this, it works for him. Say, if he mics the tom tom with a Sennheiser 421, it sounds real good. If he uses another mic, it sounds lousy. You sort of learn how to engineer before you ever touch the board, just because you start to identify—this sounds good, this doesn't. So when you finally sit down and get a chance to do it, you have a whole bunch of ideas to start with, things you know will probably work.

**MR&M:** Were there any producers or engineers at that time who had a particular influence on you?

**BC:** Well, actually, the other guy that runs the Power Station, Tony

**Bob Clearmountain, looking quite at home behind the SSL board at the Power Station.**



Bongiovi. I learned quite a bit from, even though his style is sort of unorthodox to a lot of people. He's a genius, just brilliant, and the kind of records he makes, nobody can do it better. He's very fast, and he doesn't screw around with a lot of nonsense, and he knows how to make hit records. You take from a lot of people—Michael Delugg, I learned a lot from, and Jeffrey Lesser.

**MR&M:** When did you first start engineering?

**BC:** The first session I did was Kool and the Gang's record, *Holly-wood Swinging*. The engineer got sick or something... didn't show up, and I was the assistant on the date, so I just did it. It was really the first thing I ever recorded, and it ended up becoming a pretty big hit. They didn't know who I was! I was just some kid that was running the machine; I didn't get to mix it. But as all engineers who were once assistants will tell you, you do a session, then you assist for four months, then you do another session and assist for six months, depending on whether they have something for you to do and somebody who wants to work with you. People don't want to work with an assistant, they want to work with a real engineer—the best engineer in the place. They let you do voice-overs, and demos and things like that, but all that stuff's really good for you—Jingles in particular. It got to the point where I was really good at that and at doing things like radio spots. You really learn how to edit and work real fast. And it helps quite a bit. A lot of engineers today really dread doing that stuff because it's really tedious and... thankless, really, because nobody cares what it sounds like except on rare occasions. But if you do that, later on, when you start making records, those skills come in handy.

**MR&M:** When did you graduate to engineer with a capital "E"?

**BC:** The first rock'n'roll album I did was the Climax Blues Band *Stamp* album. Up until then, Mediasound was basically jingles and r&b sessions like Kool and the Gang, Ben E. King, Marlena Shaw, Sister Sledge. But the Climax Blues Band album was a good time because my roots are rock, and I finally got to do something I understood. The r&b stuff was nice and fun, and it was good to learn on, but as much as I enjoyed it, it wasn't really my music.

I'll tell you one thing that did help me quite a bit. A couple of the engi-

neers at Mediasound—Harvey Goldberg, who just produced the Marri-  
anne Faithfull album, Godfrey  
Diamond, Michael Barbiero and I—  
formed a band. Harvey played guitar,  
I played bass, Michael played key-  
boards and Godfrey played drums;  
we all wrote songs. We'd go in Friday  
night after the last session, they  
weren't all that busy on the week-  
ends, and we'd come out Monday  
morning (chuckles). We'd just record  
all weekend, and it was a great  
producer's workshop. We called the  
band the Bats. We were just terrible;  
it was awful. But it was great be-  
cause you could punch in on the  
wrong track, screw things up and  
erase things and try ridiculous tricks  
that you'd never go out on a limb with  
on a real paying session, and get it all  
out of your system. It's unusual to get  
an opportunity to do that. I know that  
the guys here [Power Station] don't  
get the chance to do that because it's  
booked all the time. And that's a  
shame, because you really learn how  
to produce that way.

**MR&M:** It was during your stint  
at Mediasound you did become a full-  
fledged engineer though, right?

**BC:** By the time I left there I was  
getting pretty popular, but the thing  
that bothered me about it was that it  
was for doing records like Englebert  
Humperdinek and Al Martino and  
things like that. Not to put them  
down or anything, but that wasn't  
what I was trying to do. Somebody  
started calling me "Casino-mountain."  
Then Tony Bongiovi came up to me  
and said, "Hey, I'm building a new  
studio. Why don't you come be an  
engineer with me. It can be anything  
you want it to be. I just want it to  
be successful." And I said, "I just  
want to work in a rock'n'roll studio."  
And we did—turned it into a rock'n'roll  
studio. I helped lay it out. Tony was  
the brains behind the whole thing,  
but I got in my little comments—  
what kind of mics to get, things like  
making the control room a little  
bigger. Whatever. The first thing I  
did was the first Chic album. The  
first thing I produced was the Tuff  
Darts. I did that with Tony and his  
partner Lance [Quinn]. It didn't do  
much, but it was quite a good experi-  
ence. Ian Hunter came down and  
played on a few tracks, so I got to  
know him, and he soon came in to do  
his *You're Never Alone With A  
Schizophrenic* album, and that got us  
on the road to rock'n'roll. Then I did  
a couple of other albums.

**MR&M:** The David Werner album

is where I first remember noticing  
your name.

**BC:** That's actually one of my  
favorite records I ever worked on. I  
don't know—it got played a lot on  
radio when it first came out, but it  
didn't seem to last. But it really is a  
good record, and I'm still proud of it.  
Engineering the *Schizophrenic* al-  
bum by Hunter really helped my  
career—a lot of people liked how that  
sounded. They told me they thought  
it sounded "different." I didn't think  
it sounded different. It just sounded  
like it should to me. So I got some  
recognition from that and the Werner  
album, and then I got a phone call  
from Earl McGrath, who used to run  
Rolling Stones Records. They wanted  
an extended disco version of "Miss  
You." So I said, yeah, sure! They sent  
over the tape and I did the mix and  
they liked it. They said, hey, that  
sounds better than the single mix,  
why don't you do that, too? So I went  
back and did the single mix and it  
was a big hit and a lot of people heard  
about it.

**MR&M:** Any clue why they called  
you blind?

**BC:** As far as I know, Earl Mc-  
Grath was over at Atlantic, which  
was their parent company, and he  
was asking around if they knew  
anybody who could do a disco mix,  
and somebody, I don't know who,  
mentioned my name.

**MR&M:** Maybe from working  
with Chic?

**BC:** Probably. I had a great time  
with it. They just sent the tape over,  
and I mixed the single once, and I had  
just copied the edit they already did.  
It turned out that Mick really liked  
the mix, but he didn't like the edit  
they had, so he wanted me to redo it.  
He came over and just sort of hung  
out; he didn't say much. He just  
showed me where he wanted the edit.  
But he was real nice, real cool, and,  
of course, we've worked together a lot  
since then. (Clearmountain mixed  
*Tattoo You*.) He wanted me to do some  
work on *Undercover*, but that would  
have required me taking like six  
months in Paris working exclusively  
with them. I had so many things lined  
up that I wanted to do—in the mean-  
time I've done Bowie's record, mixed  
a new Huey Lewis record that's real  
good, and worked on the new Michael  
Stanley Band album.

**MR&M:** Is there a favorite album  
you've done?

**BC:** Probably Bryan Adams—both  
of 'em—*You Want It You Got It* and  
*Cuts Like A Knife*, which I think is



the better one. That record is the record I've wanted to make for a while now. Straight to the point, fun rock'n'roll. It's not heavily artistic, but it is artistic. It doesn't get hung up in that...it doesn't get hung up in anything. It's just a fun album to listen to, and it was a really fun record to make. My two favorites are that and the Werner album.

**MR&M:** One interesting thing about your career is that you've engineered, produced, mixed, and done all those with other people, too. Is this part of any conscious production philosophy?

**BC:** One of my philosophies is to do as many types of things as I can. I even did a Kiss album, and I did that totally because—well, first of all, the money was really good... but also because I never do anything that weird or off the wall, so I figured, this should be interesting...I only mixed it. I wouldn't have produced it; they probably wouldn't have wanted me to. I produced a record by Jim Carroll, and that was really different, and I co-produced two Narada Michael Walden albums, and that's real different for me, real disco/r&b. Although I've engineered stuff like that, I haven't produced it, but Narada's a real good friend of mine and an excellent drummer.

**MR&M:** Are there any specific production techniques you carry across the large range of projects?

**BC:** Yeah, there are certain things I do. Certain mic'ing techniques... I'm not really into such specifics, but I generally use the same mics. I use Sennheiser 421s on the tom-toms, and AKG 451s on the cymbals. But I'll always change snare drum mics around; I'll always change bass mics. But certain things always seem to work. That's not to say that I won't change someday. For years I've hated using Neumanns on tom-toms, and used 421s, but I'm sure someday I'll use Neumanns on tom-toms just because I'll get sick of what I'm doing. Eventually I get tired, even if something's working, and try something else. I don't think there's any right way to do anything. There's always room for experimentation or trying something new. I remember for years it was, "Well, you shouldn't use echo on the bass drum." I soon learned that's a lot of nonsense. A lot of times it's nice to have echo on the bass drum. There's no standard way of doing things; no right or wrong way to record and mix.

**MR&M:** What for you are the

important components in a finished record?

**BC:** First of all, is it enjoyable to listen to? The sound and the mix have to be complementary to the music. It's very important that you just don't have your basic sound, and you don't just stick that sound on whatever electrons happen to come floating through the console. You have to mix and record for the music and the artist. You form the sound around that. I hear a lot of records that sound good, technically, but don't complement the music. I think that's wrong.

**MR&M:** What current producers do you admire?

**BC:** Hugh Padgham—I think he's incredible. He's got a great drum sound, but more. He's really got an interesting way of mixing his perspectives that really makes me listen. Neil Dorfsman—who did the last Dire Straits album—I think he's really great.

*It's no surprise that Clearmountain feels most at home in Power Station's Studio B, a room that's both technically and acoustically at the cutting edge of recording facilities. First, there's the computerized SSL board, but there's also the room itself, or rather rooms. From the mixing board, one looks out into a large, high-ceilinged main studio room with two adjacent annexes—one at the room's end that can be fully opened or baffled (with a window in the wall, no less!), and another off to the right that's lower, longer and less open to the main room. Along the right side wall are two different isolation chambers—one relatively live in its acoustics, the other totally dead. A quick walk through them while clapping your hands reveals unimagined variations on the theme of the echo.*

*But there's also the suspicious hint here of crude but effective technical tricks: What are those little speakers doing with paper towel taped over the tweeters? There are even some lighthearted gremlins programmed into the computerized board. Even while working with the state of the art, Bob Clearmountain clearly still enjoys doing things just a bit differently.*

**MR&M:** I imagine the computerized board makes mixing much easier?

**BC:** It's great. You can do endless numbers of mixes and just adjust little things. Also, the computer remembers every control on the console—every button, all the echo sends, equalization, panning. It doesn't reset it, but it displays what it was.

It also has a random-insult generator, so if you type in a command that's a mistake, it'll reply with something rude.

(Clearmountain types in a gibberish command, and the computer screen spits back such broadsides as: "You stupid troglodyte!" "You spotty, spotty twerp—do you realize you're raving?")

**MR&M:** Here's one for the scientific community. What the heck are those tweeters on the speakers taped over with paper towel for?

**BC:** Those speakers are the Yamaha I mix with, and they're just a little bright for me. When I started using them, my mixes were coming out a little duller than I wanted them. So I did that [paper towel]. But the obvious question is, why not use the speaker grill? Well, I really like to watch the speaker. If the speaker's working really hard and it's not that loud, it means something in the mix is wrong. That means the stylus is going to have to work harder. So if I can get it real loud without the speaker working too hard—and I can see it, so I know it'll be pretty loud on disk—I've got a better mix. It's a crude method, not very scientific, but it works. I don't use the big monitors because they're deceptive—and they hurt my ears!

**MR&M:** This is where you recorded the Bowie album. Do you think you could set it up for us again—the way you recorded it?

**BC:** Those were incredible sessions. We finished the entire LP, mix and all, in 20 days. It was over too quickly—before I knew what hit me. Of course, there was a lot of pre-production involved. For a start, I put the drums out there in the big room. I used a lot of mics. Two on the snare drum—both on top, one sort of over the edge and one off the edge of the rim. It was two different-sounding kinds of mics. I think two different Shures, a condenser and a dynamic. Then on all the tom-toms I used two mics top and bottom, usually Sennheiser 421s. I used AKG 451s on the cymbals and hi-hat—but sometimes it's different; then, usually, a Sennheiser 421 on the bass drum. I also usually put up a Neumann on the ceiling, which I'll compress a lot. It makes the apparent size of the room bigger because it actually lengthens the audible decay...sustains it.

**MR&M:** Why do you use two mics from on top of the snare?

**BC:** I got into that because I had been switching between two differ-

ent kinds of mics—a Shure SM 81 condenser and a real full, rich sounding dynamic... a Shure SM 57 or 58 which had real great attack but was hard-sounding. One was too hard, the other not enough. So I thought I'd combine them and get something in the middle. I'll put the 57 or 58 off to the side to get that crack, and the 81 on top to get more depth. It usually works, but I don't always do it that way.

**MR&M:** Moving around the room, let's finish re-setting up the Bowie sessions.

**BC:** We had the keyboards in the room at the back to the left. The sound of that comes between the liveness of the big room and the deadness of the one to the right. The guitars were off in the room to the right; I had the bass amp in one of those small rooms to the right, and then David sang in that little booth over there, which is actually a sound lock.

**MR&M:** You also do all your mixes here, right?

**BC:** Yes. I don't work here that much when I produce an album, sometimes because a lot of the people I produce can't afford it! Also, there are other rooms that are just as good. Maybe not as easy, but great rooms: Bearsville, Boogie Hotel. With Bryan Adams I used a local Vancouver studio as well as Le Studio in Montreal. In fact, I mixed most of Bryan's last album there. I generally like to mix here, though. I know it so well—I'm home here.

**MR&M:** You've got such a name as an ace mixer that I was wondering if it had an effect on how people in the industry perceive you as a producer?

**BC:** I've gotten quite used to that, because about half of what I do is mixing stuff other people recorded. I really like to produce one or two records a year, and then just mix the rest of the time. I love mixing, and I have more fun doing that than anything else. I don't know why, it's just that I feel real good when I do it. I also get a lot of pleasure out of people telling me they like what I mixed.

Like the last Roxy album. I had an amazing time doing it. I just go off into space and there's so many nice things you can do with echo and delay—make it real spacious. I just get lost in that and lose track of time and where I am. I sit here enjoying myself for a few hours and before I know it I have a mix. I hear from people all the time who hear that record; they

tell me how they felt when they heard it, and it's similar to how I felt mixing it. In other words, I guess, what I feel in mixing comes through. It's usually there already, and I just try to enhance it and bring it out.

On the Roxy album I worked with Rhett Davies very closely. Most people who use me for mixing records bring it to me and hardly say anything. Then once I get the concept together and a basic sound happening, they'll say, "That's great—but a little more of this."

I think sometimes people come to me because they get so involved with a project. Sometimes I've wanted to give a project to someone else... "Here—you mix it." But I've got this reputation as a mixer, so people who hire me to produce are also hiring me to mix. The other problem is, I love mixing so much, it's hard to give it up. I have such a great time doing it I feel like I'd miss out on something.

**MR&M:** You were telling me you record your mixes on a Walkman Pro and then take them home to play. Tell me more about that.

**BC:** I use the Sony because I know that it'll be the same at home as it was here—the speed. You never know if two machines will be the same speed, because usually they aren't! Then I go home, where I have two stereos. One has one set of speakers, the other has three sets. I try to listen on as many different things as I can, especially when I'm mastering. On one of the stereos I have two identical Technics turntables medium-line, nothing special; I just went into Crazy Eddie's and asked the guy which turntable most people bought. On one turntable I'll put on the reference disk; on the other I'll put on records from this stack of the best records I've heard that others have done. Then I'll just compare the reference—see if it's as good or better.

**MR&M:** What's in your best-of pile?

**BC:** A lot of things—*Foreigner 4*, the Police's *Ghost In The Machine*, The Boomtown Rats' first album—that's the loudest record I ever heard, so for level I compare with that—*Damn The Torpedoes* by Tom Petty....

**MR&M:** How about the difference speakers?

**BC:** I have a different set of Yamaha's than I use here at home—three-ways. I have KLH 17s, which I used to mix on. Then I have a pair of these little cheap Radio Shack \$9.00 speakers, real cheap and

horrible sounding. Then I also have a whole bunch of headphones—the Sony MDR 50s that come with the Pro, some Audio Technica phones. Headphones are wierd. A lot of times something will sound great on headphones but not on speakers. You're so close—you hear a lot more—so you have to be careful about judging your mixes.

**MR&M:** After all you've done in your career, any ambitions or desires left?

**BC:** I hope maybe someday I'll have a day or two off. That would make my girlfriend happy. Of course, it's my own fault....



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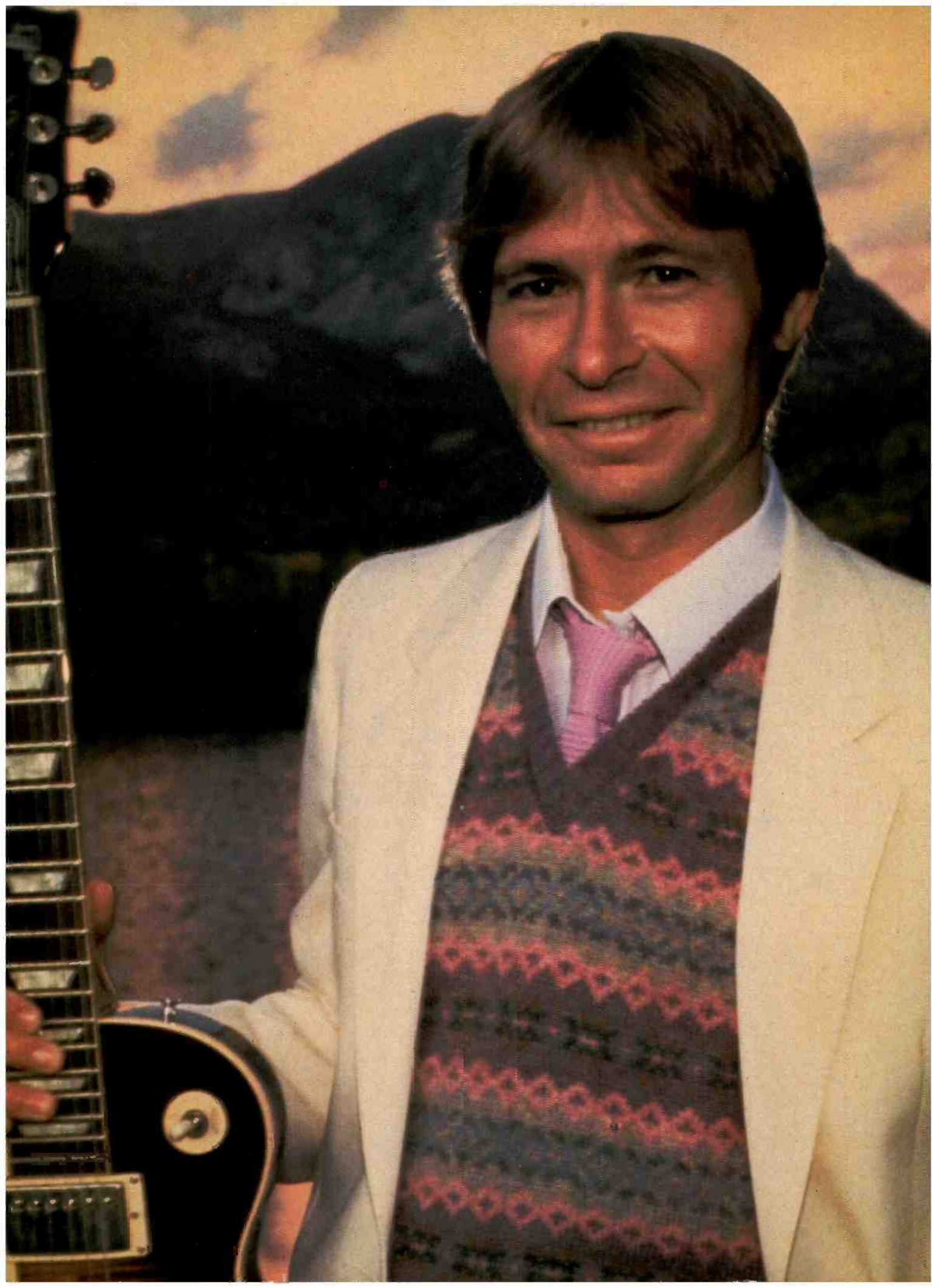
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# JOHN DENVER

COUNTRY

GOLD

**martin basch**

**S**o his image is as wholesome as the Blue Ridge Mountains and as pure as freshly fallen Alpine snow. But one can't deny John Denver's impact and achievements as a musician. *It's About Time*, Denver's September release, is the 22nd album for the Air Force brat, and all for the same company, RCA. To his credit, Denver has amassed 15 gold records and six platinum ones while picking up six gold record awards for his singles.

Added to his musical efforts, Denver has appeared in the movie *Oh God* with George Burns and has had a number of television appearances like "An Evening With John Denver," the Emmy Award-winning special of the 1974-75 season. And who could forget the country boy and Kermit the Frog in Denver's spot on "The Muppet Show"?

Denver is also known for his role on the Presidential Commission on World and Domestic Hunger which lasted from June, 1978, to June, 1980. Not to mention his first public photography exhibit in December, 1980, to benefit the organization he started, The Windstar Foundation.

But above all, it's Denver's music that is noticed. His bright acoustic guitar and soothing voice has allowed him two greatest hits albums and such melodies as "Rocky Mountain High," "Leaving On a Jet Plane," and "Take Me Home, Country Road."

With the release of *It's About Time*, Denver has entered a new realm of his folk/pop music. For the first time he uses synthesizers. Surprisingly, he invited Rita Marley and the Wailers into the studio to help him with "World Games," one of two reggae songs on the record. John Denver!? That's right, good ol' JD is finally branching out from the mountains and into the studio where he is taking more of a role in the production of his records. The results may have people saying, "What is going on here?," but Denver is still a force in his world and, who knows, if this album is successful, could there be a *John Denver Greatest Hits III*?

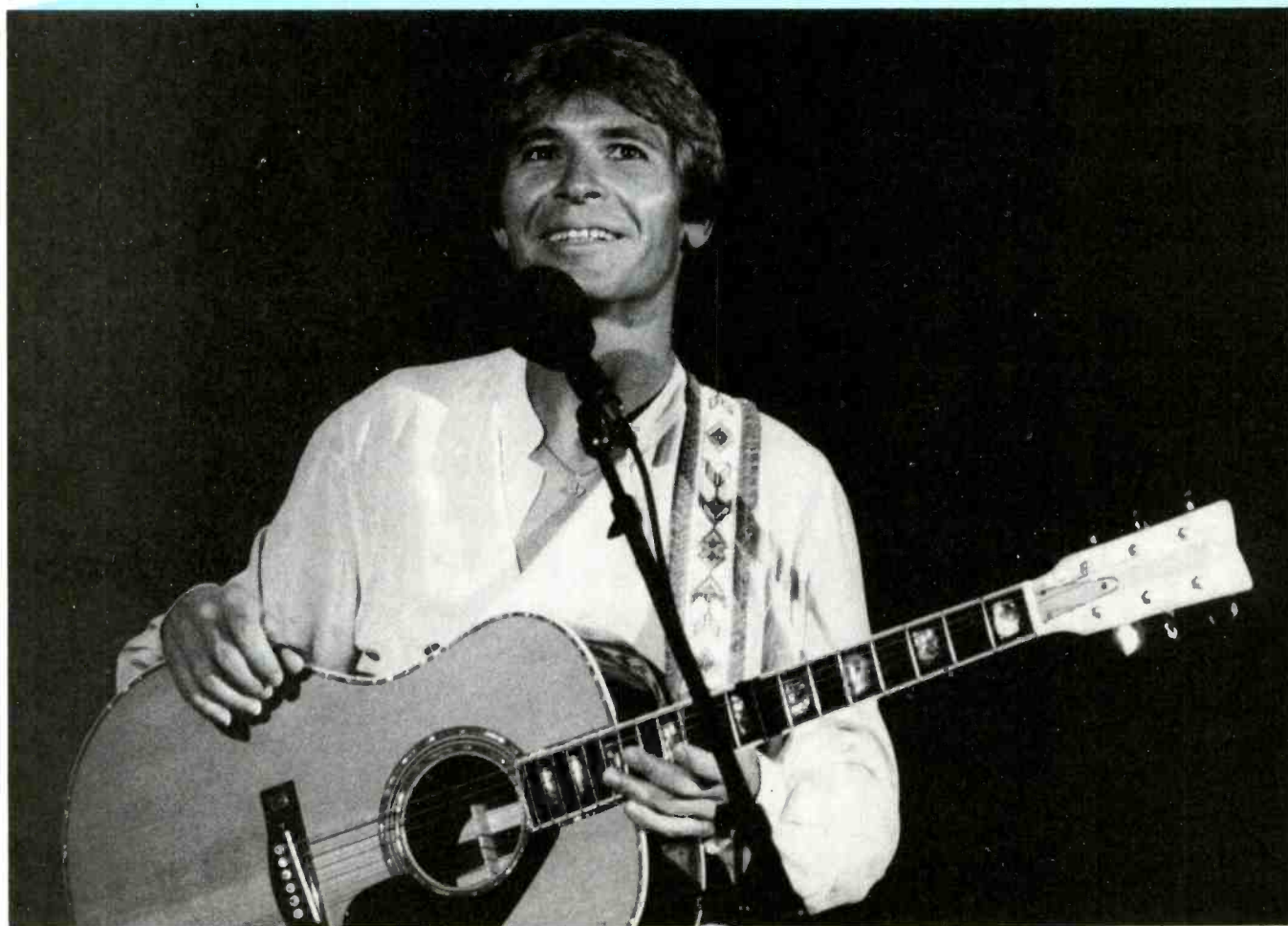
**Modern Recording & Music:** The public basically sees you as a singer, songwriter, actor, activist, but I noticed that you co-produced your last record. Is there a producer side to you?

**John Denver:** I think that I've

***I think most people react when they see the album, "Look at this, the Wailers on a John Denver record!" and don't know what to expect. I told them I wrote this song and it's a reggae song. I told them what I thought about reggae music and it got to those guys.***

always been involved in my records, though up until the last two, Milt Okun was really in charge of that [production]. He still maintains the role of executive producer—handling all the details, setting up the studio, dealing with all the paperwork, etc.

But more and more as I've gained experience in the studio, I've had the opportunity to really try and achieve the sound that I hear in my head and to take a much stronger role in getting those sounds in the studio—and make the arrangements to get it





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to work right and get what I want out of my musicians. Sometimes what it is, is to give them the space to do what they can do. You can't tell James Burton or Jim Horn a line to play, but you can give them a space within which they can just be free; you can let them know the emotion of the song. I think as a writer and performer it's obvious that you're going to want to produce also. I think it would be different for someone who has an A&R man find them the songs to play and says, "I want you to do these songs. Pick 10 out of these 15 songs and I'll do the tracks. You come in and sing." That's a different thing.

**MR&M:** When did you start feeling comfortable enough to get involved in production?

**JD:** *Seasons of the Heart*, the last album, was the first one with my name on the album as producer. The thing is, again, back from the very beginning it was mostly my suggestions about what I wanted to hear that Milt found the where with all to find for me. I still was saying what it was I was looking for and most of the initiative in regard to the arrangement for the songs was coming from me. Milt was getting it for me. Over the years what happened was Milt's role in the studios changed and I really needed to take a stronger hand in communicating with the musicians by myself as opposed to Milt and from Milt to these guys.

**MR&M:** How did you find Criteria Recording Studios in Miami?

**JD:** It's a great studio. I was real comfortable there. They have real good folks down there. It was a real enjoyable experience.

**MR&M:** How did you hear about the studio?

**JD:** Barney Wyckoff (co-producer) and Roger Nichols—specifically Roger, who's the engineer on the album. I was looking for a change. I had one recording experience in Nashville, which was O.K. I've done most of my recording in L.A. and New York. I just wanted to do it someplace else. I thought it would be good to do it in a new environment. Both of those cities [New York and L.A.] can be pretty depressing. So where's some other good studio? The suggestion was out there at Criteria. There were several we looked at and they gave us a real good deal. They wanted us to record there and I liked that. I want to work with people who want to work with me. So we went to Criteria.

**MR&M:** They have a Mitsubishi 32-track. Did you get your hands on that at all?

**JD:** That's what we used. The album was done digitally. The last two albums were both done completely digitally.

**MR&M:** I take it you like it that way.

**JD:** I love it. I'll never record any other way. Digital, it's the state of the art. The primary thing about it is that it is so incredibly clean. It's almost unbelievable. Once you hear it like that, you just don't want to hear it any other way. The thing about analog recording is the hiss. Basically, that's it. I'm sure that there are other subtle ways that it breaks down, but basically it's that tape hiss—no matter what you do. You go from recording one track to mixing down, it's one generation. Just a little more hiss. Then you go from that to cutting the mothers and the masters—another generation and more noise on there. The whole thing about digital and compact discs is that it's just bliss, no little cracks and pops, no tape hiss, no pre-echo. It's clean. You can hear somebody

talk in the studio. You know, if you're standing in the studio and it's coming out of the tape and you turn around and see where the guy is standing 'cause you expect to see him standing right there beside you. I mean it's that clean; that clear. You can hear the pedal on the piano. You really have to fine tune all of your instruments because you really *can* hear everything.

**MR&M:** Do you have any recording equipment at home?

**JD:** No.

**MR&M:** Are you thinking of getting any?

**JD:** Now let me take that back. Actually, I have a Teac 8-track that I got some time ago for the purpose of making tapes of my new songs to send out what I was hearing to my band—to get a little head start before we get into the studio. I haven't had much time to use that, but when I get home this winter, that's the first thing I'm going to do; set it up and start to use it. I want to learn more about the technical side of recording. I'm pretty enthralled with the whole thing, especially all these new processes.

## John Denver Discography (All on RCA)

ALBUM	RELEASE DATE
RHYMES AND REASONS	9/69
TAKE ME TO TOMORROW	3/70
WHOSE GARDEN WAS THIS?	9/70
POEMS, PRAYERS & PROMISES*	3/71
AERIE*	11/71
ROCKY MOUNTAIN HIGH*	9/72
FAREWELL ANDROMEDA*	5/73
GREATEST HITS**	11/73
BACK HOME AGAIN*	6/74
AN EVENING WITH JOHN DENVER*	2/75
WINDSONG*	9/75
ROCKY MOUNTAIN CHRISTMAS*	10/75
SPIRIT**	8/76
GREATEST HITS, VOL. 2**	2/77
I WANT TO LIVE**	11/77
JOHN DENVER*	1/79
A CHRISTMAS TOGETHER** (with the Muppets)	10/79
AUTOGRAPH	2/80
SOME DAYS ARE DIAMONDS*	5/81
SEASONS OF THE HEART*	4/82
IT'S ABOUT TIME	9/83

(\* denotes gold certification

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**MR&M:** Is there a particular studio that you consider your favorite?

**JD:** No. I'd just like to record in more places. I think it's great to go to a new environment, spend a month there, get to know a place a little bit and do an album that comes out of where you are.

**MR&M:** Have you or would you go overseas?

**JD:** I haven't done that, but I would consider it. The governing factor there, most specifically, that I have a great, great band and I really consider them my band. They're studio musicians primarily. I don't know if they would go out on the road with anybody else, but they do go with me and we've been working together for about seven years; they're just the best. The more we play together, the better I think we are together. I just learned so much from those guys and I think it shows in the music over the past several albums. I think, musically, that this album [*It's About Time*] is the best one I've ever done, and I want to keep working with my guys.

**MR&M:** On the average, how long are you in the studio?

**JD:** From start to end is about a month.

**MR&M:** Do you come in with a plan? Is all your music basically done already?

**JD:** I have the song and the basic idea for the form of the song. Most often I come in with most of the songs that I want on the album. On this album here, I only had four songs ready to record when we started the album. The rest of them were still in my head. While we were recording I was working everyday on finishing those songs. No, I had five songs when we started the album.

I come in with the band. When we did *Seasons of the Heart*, we came in and rehearsed for three days before we actually went into the studio. I was sitting down and working on the arrangements of the songs so that we would be a little ahead of ourselves before we got into the studio. It makes the recording process easier.

**MR&M:** I noticed that you used synthesizers on this album. Is this the first time?

**JD:** First time.

**MR&M:** Is it because of what you've been hearing on the radio?

**JD:** It seems to be so much a part of what popular music is now. I just didn't want to use it just to use it, but

if there was a place where it could fit, I thought that would be worthwhile. I didn't use it on any of the reggae numbers. I didn't use it on "Wild Montana Skies." "Falling Out of Love" really didn't call for it, but in some songs there was room for that sound. It's like, as you're exposed to that sound, it gets to be part of your consciousness. Pretty soon you start to use that. For instance, most people never heard of reggae till three or four years ago. All of a sudden that gets to be out there and then you're writing a song just like a reggae song. I certainly think I could adapt to it as many people have. The thing I like about reggae is that reggae music is more than just a rhythm and a feel—it's political and spiritual music. And that's in the two songs on *It's About Time*.

**MR&M:** You probably had a lot of fun bringing in Rita Marley and the Wailers.

**JD:** It was great. When they walked into the studio the day we recorded "World Game," I thought, "What are we doing here?" I think most people react when they see the album, "Look at this, the Wailers on a John Denver record!" and don't know what to expect. I told them I wrote this song and it's a reggae song. I told them what I thought about reggae music and it got to those guys. I said, "I want to do this song, but I can't play it reggae, so you're going to have to stretch yourselves to hear this song the way you would do it. If you don't like the song, we can all go home...." They totally got off on the song.

**MR&M:** You brought in Emmy Lou Harris for this record. Do you do anything differently when you invite people into the studio?

**JD:** Mostly, I do everything I can for them to be comfortable—and try to give them the fullest opportunity to do what they do. I don't want them to do it my way. If I have someone coming in like that, it's because they have a very specific thing to offer. So I don't want to color that or negate it or diminish it in any way or form. I want them to be able to give their full selves to whatever we're doing together.

**MR&M:** How do you get your acoustic guitars to sound so bright?

**JD:** That really goes to my engineer, Roger Nichols. Roger's been my engineer for the last three albums, I think, and it's one of the things I really strive for. I want that acoustic guitar sound to have a nice rich, ripe sound. I think we've gotten better,

but I really like the way James Taylor gets the sound out of his guitar on his albums. I have an acoustic guitar and I want it to sound acoustic.

**MR&M:** What guitars do you own?

**JD:** I own several, and I use a lot of different ones in the studio.

**MR&M:** Which are the top ones that you use?

**JD:** Let's see. On this last album I used a Yamaha with a pick-up in the bridge and what we did was take both a patch from the electric pick-up plus a mic on the guitar and used both of those sounds together and put it on one track. With the 12-string, it depends on what kind of song I'm doing. I have a 12-string, but I can't think of the name of it. Some little company in Illinois. It's a maple 12-string and has a light, clear sound. No overtones at all and I use it in the studio. I have a Gibson-Les Paul that I use. I have the new Gibson-Chet Atkins Classical Solid Body.

**MR&M:** What about on stage?

**JD:** On stage, I primarily use a Yamaha six- and 12-string. Also the Gibson-Chet Atkins Classical Solid Body guitar. Those are the three that I use.

**MR&M:** Did you remix any of the songs for your first greatest hits album?

**JD:** Yes, as a matter of fact we re-recorded some of them. I think I said in the liner notes of the album that some of the songs are not the way they sounded when I first recorded them. I just do them differently now. The ones that were hits, like "Take Me Home Country Road," we did the way they were, the way people [originally] heard them. But "Leaving on a Jet Plane" I re-recorded. That was on the first album I did. But I do it so totally different now and have a different band and sort of a different feeling for the song, so I did it that way.

**MR&M:** You've done a lot of concerts in the round. Are there any differences in your equipment when you do a show in the round as compared to a conventional stage?

**JD:** Yes. The primary thing is the sound. In big arenas the sound is much better when you are in the center and have four banks of speakers going out in all directions. The sound is much more direct for everybody. Both in terms of what the audience gets and what you get. We were one of the first groups to do concerts in big arenas, and it just works great.





# Studio Notebook

james rupert

**Editor's Note:** Still no definitive word from our boy Rupert on his exact whereabouts since his abduction by the entries in the "Design-A-Studio" contest. Not only has the collective personality of the combined contest entries taken on a will of their own, their ranks have been strengthened by last minute entries which the MR&M staff forwarded on to Rupert, unwittingly sealing his fate even further. The following manuscript was sent to us hidden inside a brochure from the Wax Lips Fidelity Insurance Company, an obvious ruse by Rupert to sneak this month's Studio Notebook installment past the ever-watchful eyes of his captors. In a brief note in the margin, Rupert remarked that this is an old Indian trick that he learned from his grandfather, who was a full blooded Sioux. Our surprised reaction could only be, "that's funny, you don't look Siouxish"!

**H**i friends, Ralph Farnsworth here and let's talk whole life. Wax Lips Fidelity is our name and insurance is our game. No matter what kind of coverage you need, we're willing to take your money while we've got you covered. For your auto, home, business or health—we've got the perfect policy for you. It'll even have your name on it! Don't worry about fine print; all of our policies are in easy to read language, particularly if you can read Swahili. Quick results, you ask? Why, just the other day a man phoned our office and told us that he'd lost a leg. Within 20 minutes we had a representative on the scene with a flashlight to help him look for it. Just remember our slogan, "If your old policy really sucked, switch to Wax Lips today!"

Whew! Okay, I can talk now. It's getting tougher and tougher to fool these contest entries. Jeez these guys are possessive! Every time I try to explain that I've got other stuff to write, they scream, "Write about us, write about us!" I'm glad the deadline for submitting entries is past so I can get this contest feature finished and maybe get outa here.

As long as we're on the subject of insurance, though, let's talk about the insurance needs of your future recording studio. Even before you open your doors is the time to consider what types of coverage are available for your protection. The number of options may surprise you.

The United States Small Business Administration recommends four basic steps necessary for good insurance management. First, recognize the risks to which you are exposed and the various ways in which you can suffer loss. A recording studio requires a specialized equipment inventory. Any lengthy down time without key pieces of equipment (whether due to accident, incident or natural cause), can shut you down flat. If this happens, it doesn't matter how many potential bookings you might have lined up. Without the necessary equipment to do the job, you're a dead tuna. You probably need to look into special policies covering loss or damage to the equipment and/or business interruption that results from the hardware's inavailability for use. Thinking that it can't happen to you will not lessen the possibility of disaster one iota.

(And it's those iotas that'll kill you, sometimes.) So why not explore all of the different kinds of coverage available?

How do you explore, you ask? Step number two, of course. Get professional advice on what is being offered. Insurance can be as complicated as taxes and perhaps even more expensive to those who do not have a grip on what they really need and want. A professionally qualified agent, consultant or broker can explain your options, recommend the best coverage for your situation, and help you avoid financial loss. Open the yellow pages to "Insurance" and you should be faced with a sea of choices; don't be afraid to shop around. Any agent you talk to will more than likely be eager to get your name on the dotted line before he leaves your living room or you leave his office, but don't bite until you've sampled all the bait. Try a few independent brokers that handle coverage from a variety of different companies as well as the big nationally known firms. Whatever you do, don't be intimidated or bullied into slapping down a premium payment until you are confident that this is the company and the people that you will be treated most fairly by.

Management of your insurance program to get A-1 coverage at the lowest possible cost means having a definite plan that outlines your business objectives and needs. Have a clear, written statement to lay on your prospective agent of what you expect insurance to do for your studio. Then have all of your business property and studio equipment appraised by an independent appraiser. This should be done regularly, but is of particular importance when getting that first coverage. An appraiser will keep you informed as to what your exposures are and will enable you to better prove what your actual losses would be if any occur. Otherwise you are just tossing around educated guesses as to the monetary or replacement values that should be placed on your policies. Some experts also claim that the smart businessperson should have only one agent handle all of his or her insurance. The logic is that more than one agent may spread and weaken responsibility if and when it comes time (God forbid,) to make a claim. Company A says, "That wasn't in our coverage,



go make a claim on Company B." Company B says, "No dice, that's Company C's responsibility." Company C says, "Not us pal, go dump it back on the boys in Company A," and so on. A single agent, even one representing multiple companies, can help allay such problems.

Another idea to help your insurance planning is to keep complete records of your policies, premiums paid, losses, and loss recoveries. Without thorough and accurate records, you have no reliable basis for comparison when the time comes again to assess your insurance needs and possible coverage improvements. Don't take the word of a form letter from your present insurer that they are doing a great job of protecting you and your studio. Start the shopping around cycle again and this time have hard, cold facts to compare with the competition.

When figuring your coverage, please don't try to save money by underinsuring or by not covering perils that could cause loss, even though the likelihood of their occurring is very small. Since the probability of loss is very small, the premium should likewise be minimal. If you live in Headcheese, Iowa, chances are you won't have much need for tidal wave insurance, but if it only adds two dollars a year, then what the hell.

Also try to consider the full implications of all types of perils and cover them accordingly. Several years ago I had a fire in a small production studio side room. The building's sprinkler system luckily put out the flames before anything serious could come of it, but the water damage from the sprinklers was staggering. Fortunately, the insurance I had previously purchased bailed me out (no pun intended,) or I would have had to kiss the facility goodbye. I say "fortunately" because I did not know enough about my insurance coverage to remember whether the water damage would be covered or not. (Instead of kissing the facility adios, I kissed my agent's feet when he handed me the check.) This is one more instance where the expertise of the agent will guide you towards making the right decision and formulating the ideal insurance plan for you.

Your agent should also be chock full of helpful tips and suggestions to keep your premiums frugally low. Supplying readily accessible fire extinguishers (and faithfully maintaining them) will not only keep local fire marshals happy, but will sometimes mean a tidy break on fire insurance rates. As a studio owner, you must do everything possible to prevent losses and to keep things that do occur as low as you reasonably can. Keep on submitting claim after claim and you'll be shocked at how your rates keep going up and up. If this happens, don't bother shopping around for better rates from other firms. An extremely high claim rate will mark you as a high risk insuree and you'll find the jig will be up with any company you apply for coverage with.

Let me stress again (I couldn't go a complete installment without the usual "Let me stress" paragraph) that insurance protection is just that. It's supposed to be there when you need it. I've heard innumerable businesspeople say that they are scared to make any claims on their insurance for fear that their rates will skyrocket. Nothing could be farther from the happy medium of the truth. When a claim is justified from a real peril covered by your policies, don't be afraid to pick up the phone and call that agent who was so friendly a few months back. Friends are people who

are there when you need them, also, and more often than not I'll bet you'll find your agent happy to give you the help you need. Just think of your agent as a professional helper, okay?

All of the last few paragraphs fit into the third step of having a sound insurance management program. The fourth and last step is to follow the guides for purchasing your insurance as economically as you can. Professional advice from your agent can be a big boost here also. Decide together what perils to insure against and how much loss you might suffer from each. Your agent will probably have extremely helpful checklists to aid you in considering everything that should be covered in your studio, including a few items that you otherwise might not remember to include. Sure your equipment is covered, but how about your tape and supplies inventory? How about client tape files which are virtually irreplaceable? Office furniture? Billing files? Accessories and software?

Cover your largest loss exposure first. This would probably be equipment losses due to fire, theft, vandalism, catastrophic weather conditions or any of a raft of other dangers. Try to shoot for direct replacement values on your gear and not a watered down sum that depreciates the value of your existing hardware over the years. This type of coverage often costs more, but it is absolutely vital to the peace of mind of any good and stable business.

If you can afford a higher deductible, go for it. Keep thinking in terms of losses you could not feasibly handle if push came to shove. Your studio might be able to afford a five hundred dollar loss with a little belt tightening. It's the five thousand dollar losses that make your socks go up and down. That's where insurance comes in. A higher deductible does not equate with poorer coverage. It might mean that you could afford a higher amount of total coverage for less dollars shoveled out. Sounds good, huh?

Buy in as large a unit as possible. There are many "Package Policies" that are fine for the small businesses they are designed to serve. Sometimes they are the only way for a small or beginning business to get really adequate protection.

Review that coverage regularly, perhaps once a year. Even if you opt to remain with the same insurer, you will know that your studio is receiving the best coverage and will continue to protect your growing business in the future. If you've expanded your studio or picked up additional equipment, make sure your agent has that information and your additional assets are included in your policy. This is no time to withhold anything from your agent about any conceivable exposures to loss. Believe it or not, if you trust a company enough to give them your hard-earned wampum, you should be able to believe in them enough to know they are on your side.

Next month I'll be trying to smuggle out a listing of the different kinds of insurance available for you to consider. That is, of course, assuming that my captors don't find out about the messages I've been sneaking out of here. They say that once I've finished the "Design-A-Studio" article, they'll let me go in a nice safe place, so I hope to be out of here soon. Maybe once they let me go, I can get some peace and quiet. Maybe even do some sightseeing!

I sure hope I can buy a map in Beirut.  
See you next time.

## High Density Digital Audio Recording

The history of magnetic tape recording is one that can be written in terms of the amount of tape needed to perform the recording task for a given amount of recording time. Thus, in the days of 15 ips reel-to-reel recording, the best we could do was to use almost 10 square meters per hour. Later on, as tape speeds were reduced, tape utilization decreased proportionately. The compact cassette, introduced by Philips in the early 1960s, represented a tremendous breakthrough in the economical use of tape because, at the standardized 1 $\frac{1}{8}$  ips tape speed and the narrow 0.15 width of this tape, tape consumption was reduced to well under one square meter per hour.

Somewhat later in the history of tape recording, at the beginning of the 1970s, Sony Corporation developed the U-Matic rotary head video tape recording format that is still in use today. Considering the bandwidth of a color video signal, it was nothing short of a miracle that U-Matic tape consumption actually turned out to be somewhat less than that of the first open-reel audio tape recorders. Beta I video recorders, introduced in 1975, reduced tape consumption for video recording dramatically, since it involved not only a reduction in tape width (from  $\frac{3}{4}$ -inch to  $\frac{1}{2}$ -inch) but also a reduction in horizontal speed of tape travel. Faced with the competition of VHS with its two-hour recording time capability, Beta I was soon superseded by Beta II and Beta III. Beta III tape consumption is actually not much greater in terms of square meters per hour than consumption in the compact cassette audio recording format! Now, with the standardization of an 8 millimeter video recording format well under way, it is expected that tape consumption in this mode of video recording will actually be as low as, or lower than, tape consumption

involved in audio recording on a compact cassette. The only currently available recording format that uses less tape than 8mm video recording is the lowly micro-cassette, which has not yet gained much favor as a serious high quality recording technique.

### Digital Audio Taping

While standardization of Compact Discs, or CDs, seems to have taken place with an unusual degree of smoothness and absence of conflicting, incompatible systems, that's not the case with digital tape recording. Every time you turn around, someone else has come up with a new format for consumer-type digital tape recording. The situation is almost as confusing in the world of professional audio recording, where a number of different tape widths, sampling rates, bit rates and head arrangements also exist.

About the only recognized standard in the digital tape recording race seems to be the one established by the EIAJ a few years ago for PCM recording, using an associated home VCR as the tape transport medium. This system, basically a 14-bit PCM approach, involves the use of a PCM processor, such as Sony's PCM-F1 or their PCM-701, Hitachi's PCM-V-300, Mitsubishi's D-102, or Sansui's new TriCode PC-X1 hooked up to any type of home VCR (Beta or VHS). Technics has been marketing their Model SV-P100 which, though completely self-contained (no external VCR is required), nevertheless adheres to this same 14-bit EIAJ PCM standard.

Once you leave this relatively well-established standard for PCM recording using a video signal, there seems to be an endless number of choices you can make. Over the last couple of years, several major Japanese manufacturers have shown prototypes of



cassette-like digital tape recorders, each of which utilizes a different standard that is totally incompatible with any other standard. For example, JVC showed (and continues to demonstrate, from time to time) a recorder that utilizes a multi-track stationary head, each track handling a small portion of the very wide frequency spectrum required for true PCM recording. Sampling rate in this system is reported to be just over 32 kHz, which automatically restricts the system's frequency response to a maximum of around 15 kHz. Technics demonstrated a similar system, but one which employs a higher sampling rate and hence permits shorter recording time on a standard sized audio tape cassette.

## **A Rotary Head Digital Recording Proposal**

Recently, Sony announced the development of a completely new format for a home PCM tape recorder—one that would involve a rotary head and would therefore offer potentially higher fidelity and, perhaps, better dynamic range than has been proposed by those favoring a stationary, multitrack record/play head. According to reports reaching us from Japan, Sony is reluctant to endorse any stationary-head standard for home digital tape recording for fear that to do so now might limit the quality of digitally taped audio to what we can achieve today, rather than allowing for improved technical capability in the future.

An experimental rotary head, high density digital audio tape recorder was described by Sony engineers in a recent AES paper. The guard-bandless azimuth digital recording method used in this experimental recorder achieves what Sony believes to be the world's highest area recording density: 120 megabits per square inch (= 186,000 Mbits/M<sup>2</sup>!—Ed.) Translated to tape consumption, that means that the cassette-like package for this recorder is half the size of a standard compact cassette, while tape consumption would be about one-quarter of that used in a standard compact cassette.

The experimental system, which Sony has not as yet proposed as a world standard for a consumer digital recording format (but may well do so in the near future), enables recording of a 2-channel, 16-bit PCM signal at 44.1 kHz sampling frequency. Tape speed would be 6 millimeters per second (approximately ¼ ips!), using tape that is 3.81mm (0.15 inches) wide. Using a cassette that is half the size of a standard compact cassette, such a system would allow for three hours of continuous recording or playback. In addition, a small drum (its diameter would be 30 millimeters) and a 90 degree tape wrap mechanism facilitate extremely fast random access for the system; at about 200 times normal tape speed during fast forward or fast rewind.

In developing the tape format and cassette size for this experimental system, many points had to be considered. Segment length and tape width play an important role in any rotary head mechanism. In theory, both of these parameters can be decided randomly. In practice, Sony had to consider the following points (among others):

1. Segment length had to be long enough, since it is proportional to error correction and concealment capabilities.

2. The longer the segment length, the more difficult the maintenance of track pattern linearity and interchangeability.

3. Segment length is inversely proportional to the number of revolutions per minute of the head drum.

4. Tape width is inversely proportional to tape running speed.

5. Tape width is proportional to the stage differences of the tape path; large stage differences hamper reduction of size of the mechanism.

6. Tape width is proportional to the correction/concealment performance of the system for errors generated in the direction of the running tape.

On the basis of these and other points, Sony elected to standardize a tape width of 3.81mm (the same as that of the standard compact cassette), a segment length of 23.5 millimeters, and a drum revolution rate of 1800 rpm (the same as that used in both popular VCR formats when they are used for the NTSC television system).

As mentioned earlier, the system wraps the tape onto a small rotating drum, using a wrapping angle of only 90 degrees, by compressing the time axis in half. This time-axis compression offers three advantages. It increases the transmission rate which in turn reduces the influence from low-frequency interruption of the rotary transformer and drum-jitter; it facilitates time multiplexing; it decreases wrap angle, which in turn facilitates tape loading while reducing the tape load and enabling high tape-running speed during the fast forward or fast rewind modes.

The Sony experimental system is, of course, intended as a standard for a consumer type of dedicated, digital audio recorder that would not require the use of any ancillary equipment such as a home or portable VCR. Meanwhile, digital technology on the professional level is moving so rapidly that the line between professional and consumer digital recording equipment may well be blurred. Consider, for example, the recent introduction, by dbx, Inc., of their Model 700 digital audio processor. It sells for a fraction of the cost of the professional digital PCM mastering processors which it is intended to replace, and may therefore find its way into consumer's systems. Unlike other digital audio processors that work in conjunction with video tape recorders, the Model 700 does not employ PCM (Pulse Code Modulation) at all. Rather, it uses an improved version of delta modulation (an alternative method of digitizing audio signals), plus a system of closed-loop companding. The total dynamic range of this system is more than 110 dB—some 20 dB higher than the dynamic range achieved by conventional 16-bit PCM professional or consumer digital systems. As with many other alternative approaches to digital tape recording, the dbx system is completely incompatible with any other system and, at the moment, makes standardization of a single home digital tape recording system seem even less likely.

One industry spokesman noted several reasons for the hesitancy of the industry to even attempt to agree upon a standard at this time. One reason is that many manufacturers believe that all present efforts should be directed towards the wide acceptance and use of compact discs. To standardize on a consumer digital tape system now might lead to a rash of new products based upon that system. That in turn might distract

the buying public from its present interest in compact discs and players. The same authority maintains that the reason why compact disc standards were so easily established was because Philips and Sony presented the disc as an accomplished fact that could either be accepted or rejected by the rest of the audio industry. The industry chose to accept it.

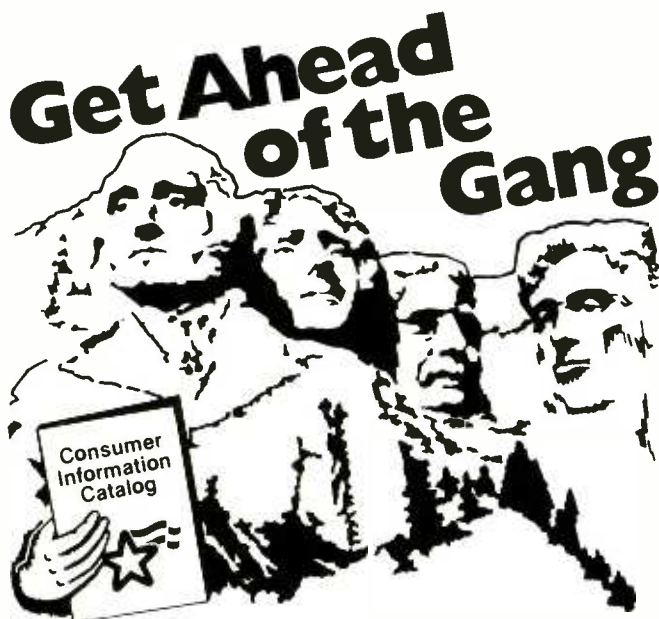
In the case of industry committees, such as one which might be formed to consider the question of home audio digital tape system standards, each participant is likely to have his own system to champion and such deliberations, if started, could go on for years. Deliberations which led to the adoption of 8mm standards for video, for example, involved well over 100 manufacturer-participants and went on for three years. Current deliberations involving TV multi-channel sound, sponsored by the EIA and the NAB, have involved only three system proponents and four or five companding system proponents but have been going on for more than five years.

Another possible reason for the industry's lackadaisical attitude towards consumer digital tape recorder standards may well be the conviction on the part of several companies that home digital tape recorders are not the type of product that the home audio enthusiast is eagerly waiting for. The aforementioned digital audio processors—those that work in conjunction with a VCR—have been available for more than two years and have not been walking off the shelves at consumer retail outlets. A majority of sales of these products has been to professional users,

such as radio stations, small recording studios, etc.

Initially, it was felt that price might be holding down sales. PCM processors cost nearly \$2000.00 when they were first introduced. Add to that the pre-discounted price of a good VCR and you were talking about an audio recording system costing around \$3000.00. That was also the price of the Technics all-in-one PCM recorder that contained its own video cassette transport mechanism. Now, excellent PCM processors such as Sony's PCM701 and Sansui's PC-X1 are available at suggested retail prices of around \$1000.00, and VCRs to go with them can be purchased for as little as \$300.00 or so. That makes a complete digital audio recorder package available for less than you would have to spend for a good quality reel-to-reel tape deck. Despite that, sales of PCM processors have not increased in the consumer sector to any noticeable degree.

All of this suggests that manufacturers will continue to dabble in digital tape recording research in the coming months and perhaps even years. A real digital tape standard that can gain universal acceptance is likely to come only if some company or several companies working together come up with a system that offers clear advantages from either a technical or cost point of view. Even Sony, at the conclusion of a discussion of their new system, suggested that "The development of this type of DAT (Digital Audio Tape) has just started, and it is expected that further improvements will be made as the development proceeds."



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# Lab Report

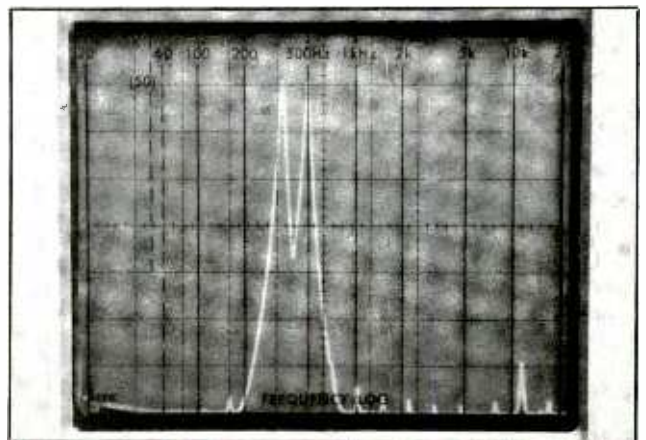
len feldman

## David Hafler P500 Power Amplifier



**General Description:** David Hafler's newest professional amplifier combines the best pro' audio gear with that of super-fidelity audiophile equipment. In fact, the internal circuitry of the P500 is not too unlike that of the company's Model DH-500A amp, which is intended for use in high-powered home audio installations. The differences between the two amplifiers lie mainly in the professional version's provision for a variety of input connections and options. Both balanced and unbalanced inputs can be accommodated without the need for accessory or external transformers. The professional amplifier's circuitry, which provides for a balanced input, includes additional gain in that mode, together with a slight reduction in bandwidth and signal-to-noise ratio.

Physically, three types of input connections are provided for this amplifier. Locking XLR connectors are wired for the IEC (International) Standard, which connects the #1 pin to the shield, or screen; the #2 pin as



**Figure 1.** Spectrum analysis of output of the Hafler P500 amplifier using twin-tone signals at 9 kHz and 10 kHz. Sweep is from 0 Hz to 20 kHz; vertical scale is 10 dB/division.

the signal "hot" side; and the #3 (center) pin as the signal return or "low" side. Each channel also provides a pair of 3-circuit non-shorting phone jack inputs. These are wired for a balanced input with the sleeve as ground (shield); the tip as the hot signal; and the ring as the low side of the signal. For an unbalanced signal input, a 2-circuit phone plug with its sleeve at ground and its tip connected to the high side of the input signal will work out correctly without any rewiring. A second pair of phone jacks is provided on the rear panel of the amplifier and offers a convenient means of "daisy chaining" inputs to other amplifiers using shielded jumper cables. The input impedance of the P500 is high enough so that connection of several P500 amplifier inputs in parallel will not materially affect performance.

The third means of connecting inputs to the P500 consists of a barrier strip that is also found on the rear panel and which may be used as an easy means of hard-wiring the inputs in fixed or permanent installations. In addition to providing three-terminal (balanced) or unbalanced input facilities, this barrier strip also provides tie points for chassis ground reference and for the audio signal ground of each channel. Normally, the two grounds are tied together with a jumper (as shipped from the factory), but the user has the option of easily removing this jumper or leaving it as is, depending upon relative hum levels when the overall system has been successfully interconnected.

In terms of its physical dimensions and weight, the designers of the Hafler P500 haven't skimped. There's no attempt to squeeze this much power output into a cubic volume that is likely to cause thermal problems. And high, reliable power output levels are what this amplifier is all about. While we were not provided with a final owner's manual, the preliminary operating instructions pamphlet tells us that the rated power of the P500 is 400 watts continuous, into 4 ohms. Its short-term continuous output is in excess of 500 watts per channel into 2 ohms. For really high power applications, the two channels of the P500 can be bridged to provide a single continuous output of 800 watts into 8 ohms. Such use would, of course, require two P500s, if two channel or stereo sound reinforcement or monitoring is what you're after.

In the chassis design, air is drawn in through foam filters on the sides of the unit and exhausted at the rear. An internal cooling fan is activated when thermal requirements demand ventilation beyond that which will naturally occur by convection. The front panel is designed to fit a standard 19-inch rack at 7-inch intervals. The feet may be unscrewed from the bottom to simplify rack installation. The front panel is sufficiently rigid to accommodate the weight of the amplifier, but rear mounting holes have also been provided on the side panels as an alternative means of securing the amplifier.

**Controls and Switches:** The front panel of the P500 is equipped with a power on/off switch, separate left and right channel input level controls, and indicator lights that tell you when signals are being fed to the amplifier (a green LED serves this function). The level controls are precision 31 step attenuators. In

the mono bridged mode, only the left-channel level input control determines the overall gain of the amplifier. A Ready light illuminates in red when the amp is first turned on. After a few seconds, this light turns to green (when the load has been connected to the amplifier's outputs, by means of relays). Above the Ready light is a red indicator that lights up in the event of thermal shutdown. Should this occur, the internal ventilating fan will continue to operate and, when temperatures have been reduced to safe limits, normal operation is automatically restored.

Separate Clip indicators above the Signal lights are activated by a comparator circuit that triggers when the output distortion level reaches approximately 3 percent. A hold circuit has been incorporated in the drive system for these overload indicators so that even brief bursts of overload will be visible to the operator—though they may not necessarily indicate that the amplifier is being substantially overdriven.

There are two fuse holders on the rear of the amplifier. These do not protect the amplifier itself but are there as protection for externally connected loads. The fuses supplied with the unit are rated at five amperes. As we learned, continuous duty full-power sine wave testing will quickly blow these fuses. For our tests, we had to install 10 ampere fuses, since the supplied 5-ampere fuses will allow only about 200 continuous watts into an 8-ohm load, or about 100 watts per channel into a 4-ohm load.

**Test Results:** Not too many published specifications were given in the preliminary pamphlet supplied with the P500. In fact, referring to our table of VITAL STATISTICS, you will note that some of the referenced specs listed under the "Manufacturer's Claim" column are, in fact, the specifications supplied by Hafler for the hi-fi "cousin" of the P500, the DH-500A. In any event, our own measurements revealed that the P500 is a hefty and reliable amplifier indeed. It delivered 307 watts per channel into 8-ohm loads before there was any evidence of overload clipping. At an output level of 255 watts per channel (with both channels driven), using the same 8-ohm loads, total harmonic distortion measured a negligible 0.004 percent. Even at the frequency extremes of 20 Hz and 20 kHz, harmonic distortion measured only 0.01 percent and 0.025 percent respectively. SMPTE-IM distortion measured only 0.007 percent while CCIR (twin tone) distortion was even lower, at 0.004 percent for an output level of 400 watts equivalent per channel.

Switching to 4-ohm loads, the P500 delivered 400 watts per channel with no more than 0.006 percent harmonic distortion. IHF-IM distortion (which sums the distortion components from in the audio band up to 20 kHz produced by the same twin-tone test signal used in the CCIR measurement) was a bit higher than the other distortion figures measured, but was still a low 0.07 percent. *Figure 1* is a 'scope photo of the spectrum analysis made to arrive at this distortion figure. Note the short spike at the extreme right, which was the major contributor to the IHF-IM distortion reading. It resulted when the two test frequencies (those represented by the two tall spikes



near the center of the display) were at 9 kHz and 10 kHz. While the *difference* frequency (1 kHz) was insignificant, a sum-frequency of 19 kHz was produced and it is this frequency which is represented by that spike at the right of the screen. The other IM components visible near the bottom of the display are much lower in amplitude and can be disregarded in calculating the value of IHF IM distortion for this amplifier.

We measured a very high damping factor of greater than 200. In order to take full advantage of that high damping factor, it's important to use fairly heavy gauge hook-up wire from the amplifier to the speaker loads, especially if you are going to have long runs of such cables. Hafler suggests a minimum wire size of #16 gauge when high power outputs are expected; larger wire sizes are suggested for longer runs or where the speaker impedance is less than 8 ohms. Other measured characteristics can be found in our usual VITAL STATISTICS chart at the end of this report.

**Comments:** The warranty supplied with this amplifier pretty much tells you how reliable it is likely to be in actual service. Hafler is offering a three-year warranty against defects in material and workmanship from the date of purchase. Judging by the construction of the amplifier and the quality of parts

used in it, I doubt that they will lose money because of that liberal policy. In our use tests, the ventilating fan went on after we had subjected the amplifier to some grueling bench tests involving continuous delivery of rated power output into eight and four ohm loads. When we used it for sound reinforcement of actual musical program material (even at fairly high playback levels), the fan "rested" and was not needed to keep things inside the amplifier cool and safe.

When an amplifier of such high power rating is going to be used in professional sound reinforcement applications, or even for studio monitoring, the more conservative its design the better. I don't think this amp is going to spend much of its life in a service shop, but if it should ever have to, the Hafler designers have made even that prospect less painful than it might have been. The heavy power transformer is connected to the rest of the circuitry in a manner that makes it easy to remove in the event that shipping for factory service should ever be required. This not only reduces the cost of shipping, but also reduces the risk of damage in transit.

In summary, you just can't beat an old-timer when it comes to the design of good, reliable audio equipment. For those of you who have never met Dave Hafler, I can tell you that he's one of the pioneers of the audio industry, having founded the well-known Dynaco company in the very earliest days of high-quality audio equipment. Dave Hafler designed some great amplifiers in those long-gone days of vacuum tubes, and it's quite obvious from looking at his new P500 that he—and his accessories—have not lost their touch!

#### DAVID HAFLER P500 POWER AMPLIFIER: Vital Statistics

SPECIFICATIONS	MANUFACTURER'S CLAIM	LAB MEASUREMENT
Continuous Power for Rated THD, W. (8 ohms, 1 kHz)	255 watts	307 watts
Continuous Power for Rated THD, W. (4 ohms, 1 kHz)	400 watts	400 watts
FTC Rated Power (20 Hz to 20 kHz), W.	N/A	N/A
THD at Rated Output, 1 kHz (8 ohms)	N/A	.004%
THD at Rated Output, 1 kHz (4 ohms)	*.025%	.006%
THD at Rated Output, 20 Hz (8 ohms)	*.025%	.01%
THD at Rated Output, 20 kHz (8 ohms)	*.025%	.025%
IM Distortion, Rated Output, SMPTE	N/A	.007%
IM Distortion, Rated Output, CCIR	N/A	.004
IM Distortion, Rated Output, IHF	N/A	.07%
Frequency Response, @1 W, Hz-kHz, for -1 dB	N/A	14-30k
S/N Re: 1 W, "A" Weighted, IHF, dB	N/A	76
S/N Re: Rated Output, "A" Weighted dB	N/A	101
Dynamic Headroom, IHF, dB	*15 dB	1.2 dB
Damping Factor, @ 50 Hz	N/A	201
IHF Input Sensitivity, Volts	*145 mV	.09%
Input Sensitivity Re: Rated Output, Volts	N/A	1.44%
Slew Rate (Volts/Microsecond)	*45	N/A
Power Consumption (Watts) Idling	N/A	240
Power Consumption, Max. (Watts)	N/A	1025
Dimensions (W" x H" x D")		19 x 7 1/8 x 12 3/4
New Weight (Pounds)		48+
Suggested Price:	\$950.00 Assembled, \$800.00 Partially Assembled	
*Published Specifications for Hafler DH-500A		

Circle 33 on Reader Service Card



# The Market Place

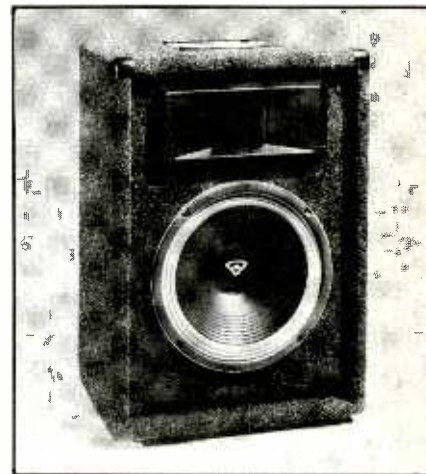
what's new in sound and music

## CERWIN-VEGA SOUND REINFORCEMENT SYSTEM

Cerwin Vega's V-19 is an ultra-compact vocal sound reinforcement speaker that utilizes a 12-inch woofer and a high efficiency compression driver with a horn flare. It combines wide bandwidth, natural sound quality, and wide dispersion with a smooth off-axis response. The V-19 is easily transportable and is suited for moderate power keyboard monitoring as well as portable sound reinforcement applications—particularly vocals and acoustic instruments. The ER122 woofer used in the V-19 system is a high-performance low frequency loudspeaker with extended midrange bandwidth, low distortion, and excellent power handling capacity. The H-25 high-performance high frequency compression driver is characterized by a combination of substantial acoustic output, extended high frequency bandwidth, and low distortion. The device achieves high conversion efficiency without sacrificing power handling. The H-25 driver is coupled to an ABS horn flare specially de-

signed for wide and uniform horizontal audience coverage angles. It exhibits linear, peak-free response over a three octave range from the crossover at 2.5 kHz to beyond 16 kHz. The relatively high crossover frequency, nearly an octave above driver cutoff, increases power handling while maintaining reliability. The V-19 has a passive 2.5 kHz, 12 dB per octave high-pass filter that is optimally matched to the system components. The network was designed for low-loss, high-power handling, and low distortion under demanding input conditions. Adjustment of high frequency energy above 2.5 kHz is achieved by a control located on the crossover plate. The H-25 is protected by a self-resetting relay that senses long-term power and removes input to the driver before failure due to inadvertent overpowering occurs. In the unlikely event of driver failure, the voice-coil assembly is field-replaceable without special tools.

The fully portable V-19 system is made from heavily-braced ½- and ¾-inch plywood finished with a road-



proof indoor/outdoor carpet. The enclosure is fitted with metal corners for ruggedness, while the non-protruding horn flare eliminates a potential source of damage during transportation. The computer-designed enclosure provides the internal volume and porting necessary for an optimally flat (4th order Butterworth) bass response characteristic with a 3 dB down point at 60 Hz.

Circle 34 on Reader Service Card

## CRATE MICROPHONES

SLM Manufacturing's new Crate PSR (Professional Sound Reinforcement) series of microphones includes six new models: PSR 1, PSR 2, PSR 3, PSR 4, PSR 5, and PSR 6. To ensure reliability, these microphones are put through a series of tests including dropping, vibrating, cooking, and switching. The distortion created by the PSR microphones is imperceptible, allowing the microphones to handle very high volumes, and the frequency response for each model has been adjusted to best fulfill certain applications. The PSR 1 and 2

may be used for lead vocals in a live environment, for studio vocals, or as instrument microphones. The PSR 3, 4, and 6 are primarily suited for instrument reproduction (electric guitar, bass), and studio vocals. The PSR 5 instrument microphone is well suited for cymbals, snare drums, or tom-toms. All the Crate PSR microphone elements are field-replaceable—they unscrew, and two simple connections make part replacement easy. Custom sound tailoring is available through the use of several alternate elements.

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MODERN RECORDING & MUSIC



## ELECTRO-HARMONIX DIGITAL LOOPING RECORDER

Electro-Harmonix's 64 Second Digital Looping Recorder is a rack-mountable unit that has all of the functions of the company's 16 Second Digital Delay, including click-track, sound-on-sound recording with infinite hold, reverse playback, double or half speed capability, digital chorus, and flanging, as well as many new features. These include a maximum delay time of 64 seconds; minimum delay time of zero, giving the user the ability to set precise short slap-back echoes; four digit display of the total loop length reading from 8 seconds to 64 seconds, allowing time settings to be exactly duplicated or material to be transposed with mathematical precision; Echo Tap Control, providing for short echoes that are in time with the beats of a rhythm machine (these short echoes can be frozen in and made part of much longer echo loops that can be overlaid); a dual-purpose display of 10 LEDs that simultaneously shows the echo tap setting and the actual progress through the loop, and a Fast Erase button that records silence throughout the entire memory in four seconds so that new material can be quickly recorded (this feature is automatically acti-



vated when power is turned on). The clock of one recorder can control the clocks of several other units. This allows for parallel track recording on separate units. There is a low frequency sync input that allows an external source of pulses (such as most commercially available rhythm machines) to control the master clock of the Digital Looping Recorder. Front panel switches allow the user to make the total loop time an exact multiple of the external pulse rate, such as 8, 12, 16, 24, 32, 48, 64, or 96 pulses per measure. The Rhythm Unit Clock Out has a "flywheel" circuit that lets you sync up with

rhythm units having only a clock input. This will work with units that require 12, 16, 24, or 32 pulses per measure. An extra input allows you to mix in the output of a rhythm machine without recording it. Physical features of this composing tool include Power On switch and fuse, professional XLR-type connectors for main input and output, internal switch to accommodate either 110 or 220 VAC current supply, and a provision to use Electro-Harmonix's six-function remote foot controller. The unit is 19-inch rack-mountable in two standard rack spaces, and is priced at \$1,195.00.

*Circle 49 on Reader Service Card*

## WAVEFORM MUSIC- SOFTWARE PACKAGE

Waveform Corporation's new software package, called MusiCalc I, is designed to transform the Commodore 64 home computer into a musical instrument that anyone can play. The program allows users to play along with pre-programmed melodies, or to create and store their melodies for later playback. It turns the Commodore 64 into a three-voice synthesizer with fully interactive real-time sequencing, slide controls, modulators, and transposers. Users can hear their creations by attaching their microcomputer to a television set, stereo system, or professional-grade amplifier, using standard RCA patch cords. The suggested retail price for the MusiCalc software alone is \$74.95. The total system cost, including the Commodore 64, disk drive, and software, is \$600.00.



*Circle 50 on Reader Service Card*

## HAFLER POWER AMPLIFIER

The David Hafler Company's P225 professional power amplifier is conservatively rated at 175 watts-per-channel into 4 ohms with less than 0.03 percent THD over the frequency range of 20 Hz to 20 kHz. It uses a push-pull complementary symmetry circuit which employs MOSFET output devices and quality components throughout, eliminating the need for complex and sonically degrading current-limiting circuitry. Input connections are via ¼-inch phone jacks, while output connections are heavy-duty five-way binding posts, spaced on standard ¾-inch centers to accommodate dual or single banana plugs. The P225 employs rear panel output fuses for load protection as well as thermal circuit breakers mounted to heat sinks. The thermal breakers will shut the amplifier down in the unlikely event of overheating. The P225 can easily be con-



verted to a monophonic amplifier by its internal mono/stereo switch. In the mono mode, it delivers 350 watts into an 8-ohm load. Input gain controls on the amplifier's rear panel make level matching possible with a simple screw driver adjustment. Optional accessories include a 70-volt line transformer, a differential balanced/unbalanced input control

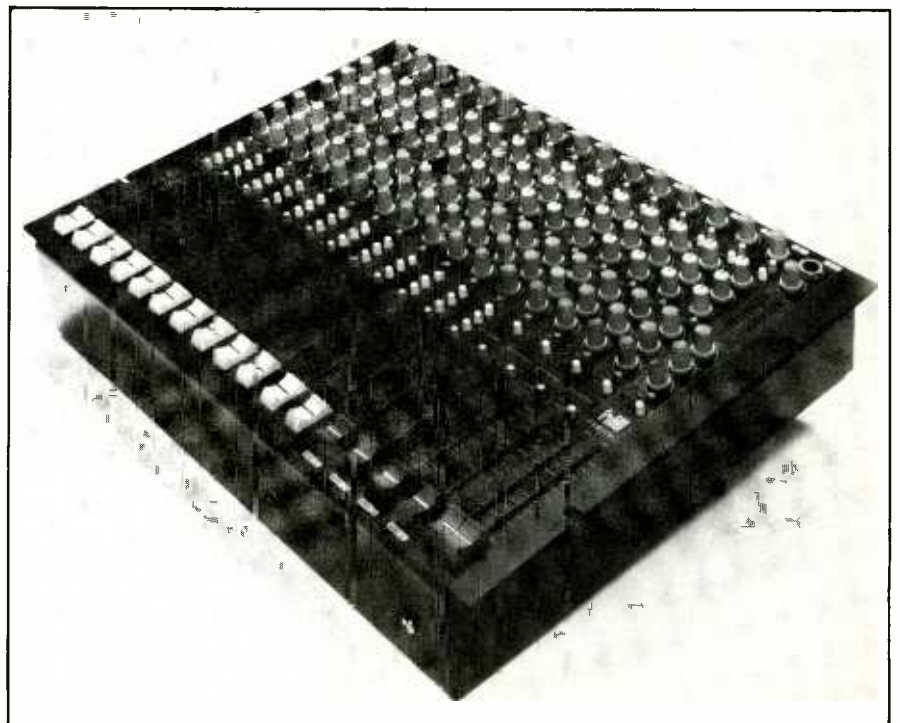
board, and a multi-voltage transformer. The amplifier in its standard configuration is capable of operating from a 120-volt, 60 Hz AC line, and is provided with a three-wire grounded AC power cord. Its dimensions are 19-in. wide, 5¼-in. high, and 10½-in. deep. It is finished in black and is available either fully or partially assembled.

*Circle 51 on Reader Service Card*

## HILL MIXING CONSOLE

Hill audio Inc.'s Multimix is a 19-inch rack-mountable, non-modular mixing console. Using a design feature that allows inputs to be used as subgroups or inputs, the Multimix can operate in 16:2:1, 12:4:2:1, and 16:4:2:1 configurations—all from the same console. Features include 90mm smooth action faders, 5532 op-amps throughout, ribbon cable connections, two auxiliary sends, individual phantom power on each input, mic/line inputs, RIAA equalized inputs, three band equalizer, and teak end cheeks for tabletop use. The suggested retail price of the Multimix is \$1599.00.

*Circle 52 on Reader Service Card*

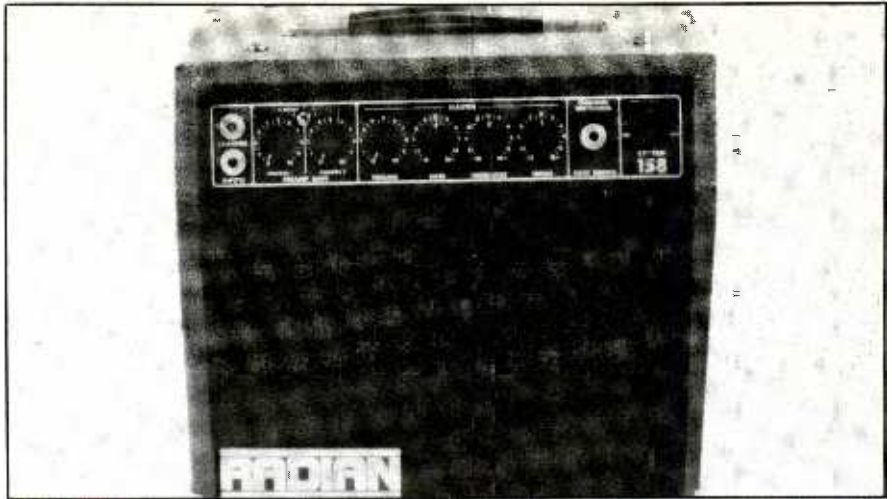




## RADIAN AMPLIFIER

The Radian 158 amplifier is a versatile practice amp for the beginning guitarist as well as for the more seasoned player. It has two separate channels with manual or footswitch-controllable channel switching, controllable overdrive on channel one, separate preamp channel gain controls, active bass, mid-range, and treble EQ controls, and a master volume control. It has a 15W RMS power handling capability with an eight-inch speaker. The Radian 158 can be used with either guitar or keyboard, and has a suggested retail price of \$159.95.

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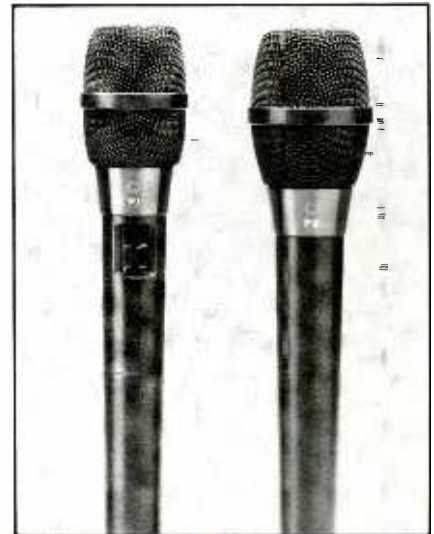


## FENDER CONDENSER MICS

Fender Pro Sound Division's new P-Series of microphones include two new mics which are said to provide the accurate response characteristics of high-performance recording microphones with the ruggedness and reliability usually associated with dynamic designs. Backing this claim is Fender's inclusion of a one year Road Hazard (TM) warranty with both models. The P-2 includes switchable low frequency rolloff that may be used to compensate for the excessive bass proximity effect encountered in some close-mic'ed vocal applica-

tions. The P-1 incorporates a presence lift switch that adds a gently rising high-frequency response for vocal applications and a high pass/low cut switch for controlling bass response when desired. Both models may be powered by internal batteries, while the P-1 may be phantom powered for additional headroom. The mics are finished in satin gunmetal cases with replaceable breath blast filters. The P-1 carried a suggested retail price of \$220.00, while the P-2 is priced at \$99.00, including case and swivel stand adapter.

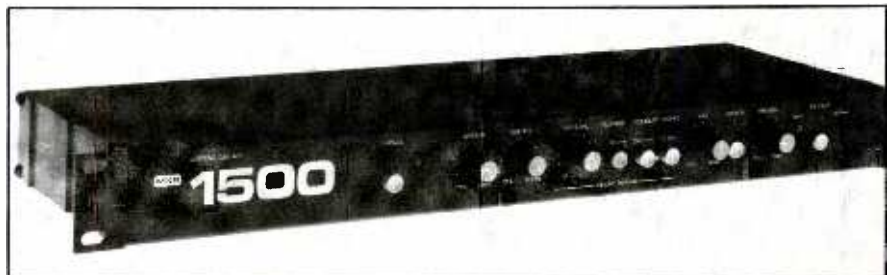
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## MXR DIGITAL DELAY

MXR Innovations' Model 1500 Digital Delay has been added to the company's line of Professional Products. The 1500 features a full 20 kHz bandwidth at 1.5 sec. delay along with a sweep ratio of 10:1. The capabilities of the delay range from a minimum of .1 ms to a maximum of 1500 ms, with the effects of Flange, Chorus, Double, and Echo. The 1500 Digital Delay measures 1¾-in. high by 6¾-in. deep, and is 19-inch EIA rack-mountable. It is covered by a full one year warranty and has a suggested retail price of \$500.00.

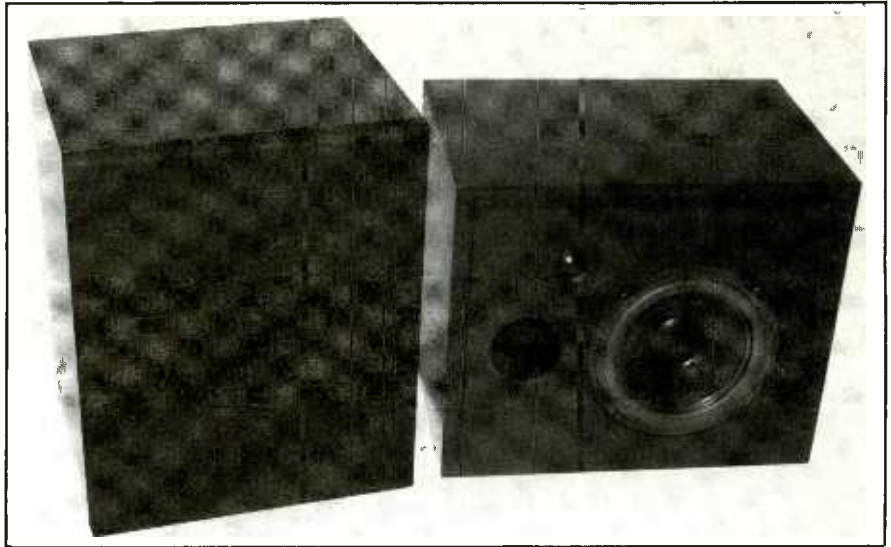
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## EAW COMPACT STUDIO REFERENCE MONITOR

Eastern Acoustic Works' MS-30 is designed primarily for reference monitoring in recording studios, and film-dubbing suites. However, it is also suited for distributed playback applications. The Model MS-30 tweeter uses a one-inch soft polymer dome diaphragm, ferrofluid filled 18,000 gauss gap, and minimum diffraction/phase ring mounting assembly, to provide excellent polar performance. Off-axis information over a 120-degree arc is well within  $\pm 2.5$  dB up to 20 kHz. To ensure proper interface at crossover, a third-order amplitude-compensated network is used. Effective acoustic slopes of 24 dB per octave are achieved by integrating driver acoustic response and filter electrical characteristics. The MS-30's power handling is conservatively rated at 70 watts continuous sine wave for 100 hours and 150 watts continuous IEC noise. Its high efficiency allows a practical maximum output of 110 dB SPL at one meter without over-stressing the drivers.

*Circle 60 on Reader Service Card*



## HARDY'S DRUM MIC HOLDER

Hardy Technology's Stand-Off II™ adjustable microphone holder features a two-piece Lexan® body that pivots left or right, a three-inch neoprene foam shock isolator, and a  $\frac{5}{8}$ -inch, 27-thread chrome pipe. The Stand-Off II™ fastens to any tension rod and can be installed or removed by tightening or loosening the knurled knob.

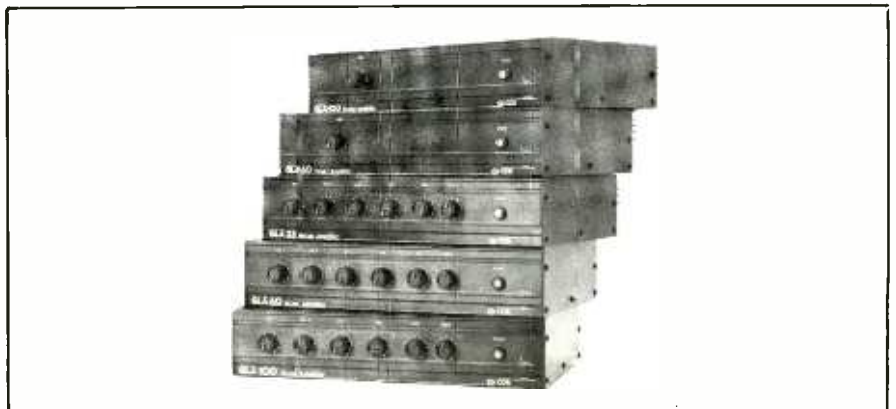
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## EDCOR AMPLIFIERS

Eddcor's GLA series is a newly released line of packaged mixer and power amplifiers. New circuit technology and a special digital sensing circuit is employed to make the units reliable. The new GLA (Great Little Amp) series has many features such as precedence control and voice gate operation. Full voice coil and constant voltage line outputs are standard.

*Circle 62 on Reader Service Card*







# 1/4 Notes

## MAKING TRACKS

**Island Records** released the first two albums from their Mini-LP series: *D'Ya Like Scratchin* by **Malcolm McLaren**, consisting of five songs, all special versions and mixes, and *Under A Blood Red Sky* by **U2**. The LP contains eight songs recorded live at various concert locations. It was produced by **Jimmy Iovine** and mixed by **Shelly Yakus**. . . Wrapping up their new album at **Criteria Recording Studios** is **CBS International** artist **Art In America**. The project is being produced by **Ron and Howard Albert** of **Fat Albert Productions**, and is being mixed to a Mitsubishi X-80 digital recorder. **Patrice Levinsohn** is the assistant engineer. . . **Westwood Recording Studios** was recently used for the 24-track mixdown and sweetening of a recent **Shawn Phillips** concert. The concert was also videotaped to be aired on **PBS** later this year. The remix engineer was **Bill Cashman**, who utilized Westwood's SMPTE interlock between the 24-track audio masters and the 1" video master. . . At **Nimbus Nine Recording**: **Randy Goodman** producing a **Hank Martin** single. **William Wittman** engineered and co-produced with **Ralph Schuckett** overdubs on **E Street Band** member **Clarence Clemons'** first solo album, *Rescue* for CBS Records. Wittman is also engineering for producer **Rick Chertoff** on a **Cyndi Lauper** project for **Portrait Records**. **Gene Cornish** and **Dino Danelli** (both from the now defunct **Rascals**) are producing two separate EPs with artists **Barbara Yeager** and **Julie Barker**. Cornish is playing guitar, Danelli is on drums and **Jean Beauvoir** (currently with **Miami Steve**) is playing bass. . . Recently at **Disc Mastering Inc.** was **RCA** recording artist **Guy Clark** working on a re-release of the old master "Texas Cookin." **Tony Brown** produced and **Randy Kling** engineered. Kling had worked with Clark on the original RCA release back in the early 70s. Also recently mastered, a **Jim Reeves** album of previously unreleased material, produced at different times and places by **David Briggs**, **Chet Atkins**, **Bill Walker**, and **Jerry Bradley**. This project was also engineered by Randy Kling for RCA. **Epic** artist **Joe Stampley** just completed an album with his new producer **Kent Lavoie**. Randy Kling mastered. . . Multi-instrumentalist **Steve Parry** and vocalist **Angela Bond** have joined forces to create "Violate The Video," a techno-pop tune that marks their Epic debut. Produced by N.Y. DJ **Ivan Ivan**, the song features the guitar work of long-time **David Bowie** collaborator **Carlos Alomar**. . . **Joan Armatrading** is at work in London compiling an LP tentatively titled *Track Record*. The album will include eleven previously released cuts, plus two new songs. Producer **Steve Lillywhite** worked with Armatrading on the final mix. . . At **Soundshop Recording Studios**: **Billy Sherrill** produced some more tracks on **Ray Charles** new album for **CBS**, with **Janie Fricke** singing a duet with him. **Ernie Winfrey** engineered. **George Richey** was in producing for **Billy Jo Spears**. Mixing on this project was Ernie Winfrey. . .

## ON THE ROAD

**The Police** once again displayed their talent for quick creative thinking when their opening act at a concert in Dortmund, Germany couldn't perform because of illness. Having watched their road crew play their instruments everyday while testing amplifiers and speakers, **Sting** decided to put the roadies on in the opening spot. The roadies took to the stage playing some old favorite rockers, and were rewarded with a standing ovation. . . **Clarence Clemons and The Red Rockers** have begun their first tour in support of the *Rescue* album. The tour began in Agora, Ohio and will conclude in New York City in mid-December. . . **Heart** and **Kansas** have joined forces for a tour of major arenas and coliseums across the country. Each performance has been planned as two concerts in one, with both headliners scheduled to perform their regular sets. . . At a New York press conference, promoter **Don King** announced that **Michael Jackson** will reunite with his brothers for a 40 city tour beginning in early 1984. . .

# & MUSIC...



## POPULAR

### ROLLING STONES: *Undercover*.

[Produced by the Glimmer Twins and Chris Kimsey; recorded at EMI Studios, Paris and Compass Point Studios, Nassau, Bahamas by Chris Kimsey for Wonderknob, Ltd.; mixed at the Hit Factory, New York City by Chris Kimsey, assisted by Brian McGee; assistant engineers: Rod Thear, Steve Lipson, John Davenport, Bobby Cohen, Benji Armbrister; mastered by George Marino for Sterling Sound.]

Performance: **Rock your socks off, leaves your feet cold**

Recording: **Conventional**

Once again the Rolling Stones have mixed the security of distilled nostalgia with several well-chosen gestures of immediacy. *Undercover* is an album that is as puzzling as it is reassuring. All the necessary ingredients are blended in the secret recipe that, copied by amateurs and analyzed by experts, consistently yields some essentially perfect rock'n'roll.

Utilizing the same chord progressions that have been mainstays for two decades, a few innovative elements are inserted among many trademark characteristics (bluesy distorted guitar lines, simple, in-the-pocket drumming, tough shudder vocals). With its funkily popped bass line and up front percussion, the title track dishes out the hard stuff. The bass drum is in the forefront but, evolving with the times, is not reinforced to a disco timbre. A bit of sleight-of-hand performed with echo and delay adds a sense of dynamics unusual to the



Stones work, while scat singing in the chorus provides a few neat ornaments.

In the mock reggae of "Feel On Baby" the crisp percussion is the most conspicuous Caribbean prop, and the right and left channel duet provides an unconventional, if excessive, element. The guitars are used in a more textural way, flanged and relaxed. Polyrhythmic and persuasive, "Too Much Blood" sports a Big Band horn section amid a tale of dissection and cannibalism. The insistent high hat competes with rototom fills for the key position.

Jagger is at his best flat out singing—and the rowdier, the better. His rapping sounds as awkward and unconvincing as Deborah Harry's, but his blues-rooted wail, especially on "Too Tough," makes it apparent that as a vocalist, no matter how rich or how old, the man in the spotlight can still get down.

What is questionable about this record is the sincerity of its lyrical

stance. For some time the Stones have been accepted as millionaire rock'n'rollers; their garage sensibility clothed with a sheen of chic, they have been pedestalled while retaining a pedestrian consciousness. On *Undercover* the stretch of the imagination required to believe in The Stones' ability to care about (or even imagine) the plight of the average listener has been pulled to the breaking point. It's too obvious that the group is portraying contrived conditions, caricatures of someone else's reality. When confronted with such patronization on a simple personal level, how can we believe that the Rolling Stones care about people "lost in jails in South America" or the "sex police"? It smacks suggestively of a boardroom mentality that, after gauging the market, decides the new album needs, hmm, lots of sex, a little S & M, a bit of political concern....

The beat goes on, and *Undercover*



will undoubtedly pave a platinum path. Fans will eagerly swallow every note, like starving baby birds, perhaps disregarding any doubts they have about the source of their nutrition.

susan borey

**X: *More Fun In The New World.***

[Produced by Ray Manzarek; engineered by Clay Rose; Brian Scheuble, assistant engineer; mixed by Clay Rose, Ray Manzarek and Brad Gilderman; recorded at Cherokee Studios.]

Performance: **Seriously fun-filled**

Recording: **Diversifies with moods**

Guitarist Billy Zoom's concise guitar work once again creates the framework for another ride on X's stream of consciousness musical skateboard. Innocent, impressionistic, Exene and John Doe present uncontrived slices of their psyches that believably monitor the American subconscious.

Wittily pessimistic, "The New World" is a depression-era remake of "Dancin' In The Streets," pointing out unfulfilled promises with fragments of street conversation. The rest of the album is shaded with various rationales accessible for continuing life in the midst of the despair. The songs surround these lyrical bases with a variety of recording attitudes.

Adhering to a Chuck Berry-ish rock format, many of the songs are pumped by an up front, guitar-dominated mix, with the vocals mixed close together in the center. Some of the faster songs, like the anthemic "Make The Music Go Bang" and the vehement "I See Red," have a very live feel.

On the most adventurous cut, "True Love, Part 2," the band steps away from the rock format to lean into an r & b mood with funkily scratched guitar and improvisationally scented vocals. Minor key renditions of a number of disparate songs, including "Skip To My Lou" and "D-I-V-O-R-C-E," provide a spooky medley interspersed with a series of inkblot impressions of love.

One outstanding cut on the album, "I Must Not Think Bad Thoughts," is a satirical reminder about positive thinking which closes the first side like an epilogue to the darkness the band has taken such pains to probe.

X's vocalists, John Doe and Exene



Cervenka, are two of the most complementarily paired duos in contemporary music. While each holds his/her own separately, when they sing together their voices fuse into a single yin/yang tool, perfectly matched

nuance for nuance, with more of a country western smoothness than a new wave harshness.

With *More Fun In The New World*, Mr. & Mrs. Doe and company present a thirteen song exhibition of their

## DIGITAL AUDIO ON TRIAL!

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talent. The colors in their paintbox are bold and stark, but when diluted, it's with sweat and tears.

susan borey

**LIONEL RICHIE: *Can't Slow Down.***

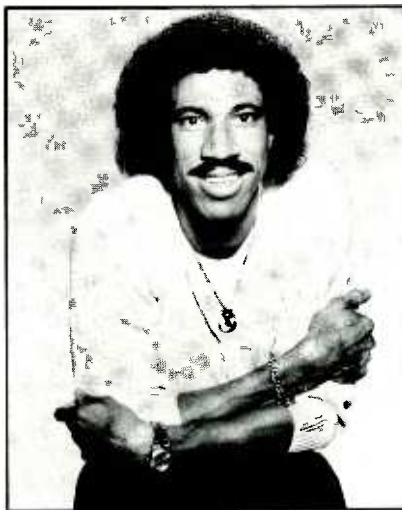
[Produced by Lionel Richie & James Anthony Carmichael, except "The Only One" by Richie and David Foster; recorded at Oceanway Recording Studios, Los Angeles, CA; engineered by Calvin Harris.] Motown 6059 ML.

Performance: **Methodically safe, except where noted**  
Recording: **Every hair in its place**

Lionel Richie is a fine songwriter, but you would only realize that from three or possibly four tracks on *Can't Slow Down*. Because Richie was in the Commodores for so many years, because he writes emotionally provocative songs, and because he gives the listener a high-gloss finish, he has accumulated a string of hugely successful hit songs. Through the mix of armies of guitars, strings and synthesizers, there is always the obviously commercial yet downright gut-felt melodic hook—the one line that makes the song irresistible to buyers of singles. Fact is, Richie's best releases *are* his singles. He is not the legendary album artist on the order of a Stevie Wonder or a Michael Jackson. His tunes on *Can't Slow Down* do not complement each other in all possible combinations the way those on a Wonder or Jackson album do. And while "Stuck on You" is a strong, catchy love song, Richie cannot crank out the signature ballads indefinitely. Interestingly, the tune that makes this album, "All Night Long," is neither a ballad or a love song. Musically and compositionally, Richie must map out some strategies to keep his projects more cohesive than this. Although many of these songs do not stand on their own foundations, technically speaking, they are all fastidiously tended to. Given the material and the obvious commercial goals, the mix apparently has no seams.

The title track, with directionless lyrics, boring melodic lines and nearly every instrumental voice synthesized, is a sadly anemic opener to the album—all electric current, no music. Alternately, "All Night Long" is a good time, high life piece heightened in its effects by creatively

conceived and expertly implemented production. In contrast to the conservative stylistic ploys on most other tracks on the album, the acoustic percussion, jubilant tropic island chants and truly *supportive* string section inserts are refreshing here.



"Penny Lover" and "Stuck on You" are both typical Richie songs. The first is a nod to the song structure and vocal backdrops of countless Motown recordings of the past, the second an exemplary incorporation of pop-country sensibilities a la Kenny Rogers, who recently struck gold with Richie's "Lady." "Stuck on You" and "Penny Lover" are drawn from widely disparate influences, but praise is nonetheless due Richie for two solid songs in mutually compatible arrangements. Recording and mixing engineer Calvin Harris skillfully creates an air-tight environment on both, and although the music emerging from such a process as this too often sounds overly slick, the expertise involved in getting it there is undeniable—that's middle of the road product.

"Running With the Night" gives this album a reason for a second side. The track is an admirable, headlong dive into a rock-rhythm & blues fusion, and the only song which gets some jet force from its instrumentalists. Studio veterans like drummer Jeff Porcaro and percussionist Paulinho DaCosta savvy up a storm while guitarist Steve Lukather's fine rock solos provide this album with its only rough edges. One detects the production influence here of Gary Katz, long-time Steely Dan producer and one-time Diana Ross producer. The vocal arrangements especially bear tell-tale marks.

Lionel Richie is trying to be many things with this album. Yet at the same time he has minimized his risk-taking through slick production and mixing. Although careful listening shows this record to be an indicator of Richie's budding musical diversity, the well-rooted production similarities among the tracks impede the general awareness of that fact. And for all of Richie's successes, that kind of obscured growth seems a shame.

michael fishman

**PAUL McCARTNEY: *Pipes Of Peace.***

[Produced by George Martin; engineered by Geoff Emerick with Jon Jacobs.] Columbia QC 39149.

Performance: **Familiar**  
Recording: **Excellent**

Paul McCartney doesn't make jarring records anymore, hasn't since *Jet* or maybe even *Abbey Road*. Instead, his post-Beatles career comprises calm, catchy compositions with mild political messages—in short, professional pop. On *Pipes Of Peace*, though, the lack of revelation in the songs is more than made up for by the production, because McCartney is once again working with that most professional of producers, George Martin.

Martin always manages to pull the true musician out of McCartney—flat-out singing, playing, and arranging without any room for self-indulgent gimmicks. (For instance, you won't hear Linda's voice channeled through a shoebox.) Martin gets every last bit of McCartney down, whether he sings in a falsetto or baritone, against a single guitar or layered orchestral track. Martin's production has always been slick and sparkling (yet never lifeless), and while the songs vary greatly in density, the overall purity and clarity of the recording forms an integrated whole.

Each cut has one or more outstanding sound achievements. On "The Man," one of two duets with Michael Jackson, each voice sings lead in a different key. Yet when they sing together, they meld perfectly. The melodic quirks in McCartney's voice on "The Other Me" never slip into self-parody, and the percussion bristles in the mix. On "Say Say Say," the other duet with Jackson, the corporate-funk structure of the song comes to life in the drumming (which,



thanks to the sparse credits, comes from either Ringo Starr or Steve Gadd), which gives the song a bottom that keeps building in intensity.

Several times throughout the album McCartney echoes Beatles songs. "Keep Under Cover" opens with a staccato string flourish straight from "Eleanor Rigby." Each note is crisp and sufficiently loud. A charging piano motif, similar to that of "Ob La Di, Ob La Da," propels "Average Person," and the piano, because it is mixed so low, comes across solely as a rhythmic device. Even on the most innovative of the cuts, "Tug Of Peace" (on which McCartney experiments with Linn drums), the musical is overshadowed by the technical—the electronic noises have a sharp, almost live sound.

Sometimes the consistency of the recording becomes maddening to the point where a murky bass line or distorted guitar might break things up. But the discretion of George Martin elevates what is at best an average collection of McCartney songs to state-of-the-art pop. In so doing, Martin continues to define the role of the record producer.

rob hoerburger

## JAZZ

**VARIOUS ARTISTS: *An Evening with Windham Hill LIVE.*** [Produced by William Ackerman, Alex deGrassi and Steven Miller; recorded at Berklee Performance Center, Boston, MA with the Fedco Audio Labs Remote Truck, October, 1982; engineered and mixed by Steven Miller.] Windham Hill WH-1026.

Performance: **Articulate, sensitive, soothing**

Recording: **Unsurpassed**

If you know the artists of Windham Hill Records, then you know all the big guns involved in this effort: pianists George Winston and Liz Story, and guitarists William Ackerman, Alex deGrassi and Michael Hedges. If you know their music, then you know the infectious, shimmering beauty that is nearly immune to labelling. It can best be described as an instrumental outgrowth of our prettiest folk melodies. But if you know the production values and the quality of vinyl that grace all of this label's mostly acoustic albums, then you also know a company that has run into troubles with its special

## True Stories: John Tchicai/ The Legendary Blues Band

nat hentoff

His name is hardly a household jazz word, but musicians around the world know of alto saxophonist John Tchicai—both in Denmark and for some years an expatriate in New York (playing with Archie Shepp, Don Cherry, Rosewell Rudd, et al.). Tchicai eventually went back home, where he leads his own groups, works in others, and makes compellingly distinctive albums. The most recent one available here is *Ball at Louisiana/Museum of Modern Art* (SteepleChase), a concert in Humlebaek, Denmark.

Tchicai is a modernist in musical temperament, but he is a traditionalist in his quiet passion for telling stories on his horn: tales of feeling, portraits, scenes, memories. His sound is clear and penetrating, with a natural lyricism that conjures up a player by himself in a field or a forest. In this set he is joined only by guitarist Pierre Dorge. The result is a continually fascinating interplay of voices that engage in actual conversation, not just an interplay of musical skills.

The improvising is thoughtful, unhurried, and unusually evocative because there is no showboating, no manipulation of the listener's emotions. It's as if the two were just by themselves, being as honest as their lives. The recorded sound is spacious yet immediate, and very sensitively balanced. This is an album that goes far beyond trends; it's that fundamental.

The oldest and yet freshest common language of jazz storytelling is the blues. And one of the nation's most easeful, powerful assemblies of basic bards is the *Legendary Blues Band*, whose *Red Hot 'n' Blue* has just been released by Rounder.

Composed of some of the most authoritative carriers of the rich and resonant Chicago blues tradi-

tion, the band's vocalists are Calvin Jones, Pinetop Perkins, and Jerry Portnoy. The latter also plays harmonica, and his "harp" is so strong it sounds like a train whistle.

The songs range from celebrations to deeply inconsolable laments and, along with originals by Portnoy, there are enduring standards by Ivory Joe Hunter, Arthur Crudup, and Pinetop Perkins. The band's specialist in gently painful meditative blues is Pinetop Perkins, and his illuminations of such numbers as "I Almost Lost My Mind" and "Come Back Baby" are among the more hauntingly persuasive recorded vocals in this vein of classic American song in a long time. Indeed, the album is a forceful reminder of how little most Americans know of the depth and range of the blues. After all, it's hardly ever shown on television—that is, its most authentic singers and forms are not shown.

The engineering is among the best to come from Rounder—vivid without being hokey; and simultaneously, the sound is remarkably warm and full. While it would be interesting to learn what equipment engineer Michael Golub used, I expect the primary ingredient in this superb sound is Mr. Golub himself.

**JOHN TCHICAI & PIERRE DORGE:** *Ball at Louisiana/Museum of Modern Art.* [Nils Winther, producer; Jan Irhoj and Michael Bovoert, engineers.] SteepleChase SCS 1174, Denmark and 33943 West Lawrence Avenue, Chicago, Illinois 60625.

**THE LEGENDARY BLUES BAND:** *Red Hot 'n' Blue.* [Jerry Portnoy, producer; Michael Golub, engineer.] Rounder 2035.

audiophile pressings because most ears thought the regular pressings to be just as good!!

An undeservedly brief introduction to this label, no doubt, but for newcomers *An Evening with Windham Hill LIVE* may well provide the coaxing spark to better examine the music and technical perfection of this label's recordings. The incredible sales figures achieved by conceptually honest music and the sound quality that accompanies the music are the envy and marvel of the record industry.

The real star at work on this lp is recording and mixing engineer Steven Miller. His ability to accurately document every note, nuance and intonation of any acoustic instrument is outstanding. The sensitivity and dedication to endless trial and error which he insists upon in his work marks this album unmistakably. The mic'ing and the final mix are representative of the live situation to a point transcending studio perfection! This album is the epitome of the live record.

What makes Windham Hill so accessible is its artists' profound sense of melody coupled with instrumental prowess, enabling performance of the melodies with feeling, personality and imagination. Many of the artists, most notably George Winston, whose compositions are gorgeous beyond description, are intensely visual in their pieces. Winston's "Reflections," performed here with a section of John McLaughlin's "Lotus Feet," retains this visual quality on record largely through Miller's efforts. The mic'ing on Winston leaves nothing to the moment as even subtle murmurs (among Winston's most haunting effects) are vividly recreated.

Also notable is Michael Hedges' solo steel string guitar playing on his piece, "Rickover's Dream." The easy power of the composition and Hedges' care with it are readily apparent; it is as if Hedges were in your living room.

Strictly for music's sake, the most stirring outings on this album are trio renditions of selections by never-recorded combinations of players. "Spare Change," featuring Hedges, Story and bassist Michael Manring, and "Hawk Circle," with Hedges, Ackerman and Winston, are perfect examples of the introspective sensibilities that are this label's mainstay. These are bright, uplifting state-

ments by musicians who probably never suspected that their kinds of creations could sell tens and sometimes hundreds of thousands of records.

The seven-year history of Windham Hill is both a musical and technical fairytale of success. The album at hand will warrant a place in any audiophile collection, as do its numerous remarkable predecessors.

michael fishman

#### **RAMSEY LEWIS TRIO: *Reunion*.**

[Paul Serrano, Ramsey Lewis, Tom Tom "84," producers; Goh Hotoda and Paul Serrano, engineers; recorded at "George's" in Chicago, Ill. on location.] Columbia FC 39158.

Performance: **Kinetic but predictable**  
Recording: **As alive as "live" can be**

In what must be the most inflated liner notes I have read in the last few years, producer and engineer Paul Serrano writes on the back cover of *Reunion*: "Seventeen years ago, the Ramsey Lewis Trio was perhaps the number one musical group in the world..." Note that qualifying "perhaps." Those of us with a more comprehensive sense of jazz history than Mr. Serrano tend to remember the music of seventeen years ago in terms of Cecil Taylor or John Coltrane. Perhaps Mr. Serrano meant to write that in terms of commercially successful packagings of jazz, the Ramsey Lewis Trio was numero uno. Perhaps.

The occasion for these liner notes of great pomposity and pretense? A new live recording of the original Ramsey Lewis Trio featuring Eldee Young on bass and Isaac "Red" Holt on drums. Now both, on the evidence of this recording, are well seasoned professionals with considerable chops and charms. Young is consistently snappy and zingy on acoustic bass and Holt is snappy and right on top of the beat on drums.

Which compels us to consider the star of this date, Ramsey Lewis. I'd like to think that in the seventeen years since the founding of his trio that he, too, has matured and ripened as a jazz pianist. But if he has, I don't hear the evidence on this recording. What I do hear is a perfectly polished minor stylist on piano who aims for commercially viable jazz that will appeal to audiences who find Cecil

Taylor abrasive, Sun Ra insane, Marilyn Crispell tedious. This is jazz reduced to its lowest common denominator. Lots of funk and soul flavorings; lots of glossy glissandos to make the drunks at the bar pay attention; lots of the "pretty" touches executed with speed one would associate with an Oscar Peterson.

Now some will claim that I am being unfair measuring the value of a Ramsey Lewis recording against the rigorous standards of truly great jazz pianists, but if Bud Powell is the yardstick with which to measure the musical worth of a Ramsey Lewis, Lewis registers nary an inch.

But I invite the music lover to listen to this record and count the number of well worn cliches in rehashed hits like "The In Crowd" and "Hang On Sloopy." Listen to the corny "Spanish" tonalities in the introduction by Lewis on "Carmen."

To offer a deserved tribute to Lewis: he does maintain a kinetic beat throughout this live recording. He does succeed in drawing a bright and dynamically catchy sound from his Steinway grand. He also manages to stay attentive to the musical expressions of Young and Holt.

The recorded sound done on location at this Chicago club is consistently full and bright. I particularly appreciated the clarity Young's bass was given in the final mix. In addition, Lewis' piano was recorded with great crispness throughout.

But this live recording offers nothing that Lewis fans don't already have. And for those of us who aren't in that fold...this recording offers little reason to return to the earlier Lewis recordings. As for those who will use Lewis' spectacular popularity as evidence against my judgement, let me close with the words of the great philosopher Soren Kierkegaard: "The crowd is a lie."

norman weinstein

#### **DAVID SANBORN: *As We Speak*.**

[Robert Margouleff, producer; Howard Siegel, engineer, recorded at Warner Brothers Recording Studios, North Hollywood, CA.] Warner Brothers 23650-1.

Performance: **All that glitters is not gold**

Recording: **L.A.'s finest hour**

"Dub" is a name given to instrumental recordings sans vocal tracks



in Jamaican musical lingo. Although the recording under consideration has nothing to do with fashions in Jamaican music, it does sound exactly like a "dub" version of the last Steely Dan album. Of course, this should come as no surprise to music lovers aware of the fact that Steely Dan's progressive rock-jazz sound was largely the product of numerous Los Angeles-based rock and jazz musicians.

On one level, to say that this David Sanborn record sounds like a "dub" version of Steely Dan is to offer a compliment. On another level, such an assertion is damning. I regret that my meaning rests with the latter level. What made the Steely Dan sound so enthralling to me was the marriage of surrealistic lyrics and polished jazz-rock riffs. Stripped of provocative lyrics, Steely Dan would have sounded just like this album. In a word: vacuous.

David Sanborn is a talented and ample player of soprano and alto sax. He has chosen on this recording to demonstrate his abilities within arrangements that rest halfway between muzak and movie sound track. He has developed such a uniformly mellow tone on soprano sax that he manages to make a Grover Washington Jr. sound like a raving Steve Lacy. Yet there are moments on this album when I begin to hear the depth and/or potential talent of Sanborn.

"Over and Over" has a funky kick supported by James Skelton's Hammond organ work and proves an excellent vehicle for Sanborn's more ardent horn play. "Rush Hour" is another rhythmically charged jazz/rock tune that allows Sanborn to put more push into his playing.

But the rest of this album is so, so, so maddeningly laid-back as to be without musical distinction. Part of the problem stems from the fact that former Miles Davis bassist Marcus Miller has composed nearly half of the compositions on this record. Someone should inform Miller that a meaningful song consists of more than a collection of riffs—which are all his compositions consist of. The two vocal numbers on this recording are so slick that Wayne Newton would feel right at home crooning them for his buddies in Nevada. Cuts tend to blur into each other as one listens. A little Latin jazz, a little bossa-nova, a little fusion—nothing with enough raw energy to upset one's digestion. There



is no reason on earth why the title cut on this album could not be programmed into any elevator or shopping mall in America. It is *that* bland.

The recorded sound on this flavorless disc is quite perfect...perfect in the way one would identify with those producers who churn out the "L.A." sound. I'm not unfriendly toward that L.A. studio sound. Stars like Steely Dan, Joni Mitchell, and Linda Ronstadt have made remarkable records in L.A. studios. I identify that sound with a sonic transparency and wide spaciousness. Vocals float over guitars with a gravity-defying ease. Cymbals roar like the waves at Malibu. This recording possesses a very tasteful mix.

Sanborn's playing is equally tasteful. That's all I hear in his playing: good taste. No guts or soul. Do both myself and Sanborn a favor, Warner Brothers. Do an on-location recording of Sanborn at a bar in Watts with local musicians. Make him sweat on soprano sax. Let us see what the man is *really* made of.

Jazz has never been for the purely tasteful.

norman weinstein

**MARTY GROSZ & HIS BLUE ANGELS: *I Hope Gabriel Likes My Music*.** [Jerry Valburn, producer; engineers Paul Goodman and Dave Smith; recorded June 25th & 26th, 1981, RCA Studios, studio C, New York City and July 2, 1981 at Westchester Media Center.] Aviva 6004.

Performance: **Hot dance music from the 30s and 40s**

Engineering: **Better than the 30s and 40s but a bit too soft-focus for my taste**

Don't expect the hell-for-leather jam of a super hot dixieland jazz session. That's not what this record's all about. It's a standard four piece rhythm section with four horns in the front line somewhat tightly orchestrated, but with enough solo windows left for such soloists as pianist Dick Wellstood, clarinetist Sam Parkins, trombonist Bob Pring and trumpeter Jimmy Maxwell to shine through. Marty Grosz, as usual, somewhat underplays his guitar. There are some solo spots, none of them lengthy. At this point in time Marty has chosen to showcase his talents as singer and arranger and let his guitar contribute more to the rhythm section than as a solo vehicle.

The tunes are from varied sources. "Serenade To A Wealthy Widow" is one of the chamber jazz efforts penned by West Indian composer, pianist, and arranger, Reginald Forsythe. "Junk Man" belongs to Jack Teagarden except for those of us who prefer Mildred Bailey's rendition of the tune. "Cactus Charlie" is pure Marty Grosz and "My Old Gal" is Jimmy Maxwell's contribution to the repertoire. "Lonesome Me" is another of Fats Waller's non-hits. Most of the other compositions are well enough known to be called standards. The least popular of these is "I Hope Gabriel Likes My Music," which owes its primary fame to a 1936 session for Victor under Gene Krupa's name. Even though Gene was listed on the label as leader, the band was all stellar including Gene's boss Benny Goodman on clarinet, Roy Eldridge on trumpet and Chu Berry on tenor sax among others. Most succeeding artists have been too intimidated by that recording to rush in where anybody with much sense would fear to tread. What Marty Grosz lacks in sense he and his blue angels make up for in talent, and darned if the title cut doesn't turn out to be the best thing about the album.

Sam Parkins is heard to advantage playing bass saxophone on the luxuriously slow first chorus of "When Day Is Done" before the guys double the tempo and stomp on the tune for dear life. Frankly, everybody plays magnificently on this LP (just wait till you hear Dick Wellstood's piano on "California Here I Come"). I'm particularly glad that Jimmy Maxwell has finally gotten on record in top form.

While I can't say that I'm crazy about the current system of mic'ing a

band used by most recording engineers (one mic' for each man), I think that there is a lack of clarity and definition here. It's not annoying, but in the ensembles it has the tendency to jumble the individual voices to a point of diffusion. Maybe this is what the guys in the studio wanted. It certainly makes for a listenable MOR sound, but somehow I miss that little crackle that I know from hearing Bob Pring play in person.

As for the title admonition, if Gabriel doesn't like the music of Marty Grosz and the blue angels, he needs a new battery for his hearing aid.

JOE KLEE

**BUCKY PIZZARELLI: *The Cafe Pierre Trio*.** [Bill Borden & Bucky Pizzarelli, producers; Rich Le Page, engineer; recorded at Generation Sound in New York City on August 25 and 26, 1982.] Monmouth Evergreen MES 7093.

Performance: **Warm, intimate jazz**  
Engineering: **Warm, intimate sound**

The Cafe Pierre of the Saint Regis Hotel is one of New York's posh Fifth Avenue watering holes where the beautiful people dine and dance while listening to music that's a good deal more absorbing than the kind of plastic muzak you usually find in posh watering holes.

A good part of the season the band on the stand is a tight, clean trio led by guitarist Bucky Pizzarelli. Bucky's paid his dues in bands like Vaughn Monroe's and Benny Goodman's and The Three Suns trio. (Remember their hit record of "Twilight Time"? Well Bucky wasn't on the record, but he replaced the guy who was.)

The people who come to the Cafe Pierre like to dance. They also like to listen to the kind of show tunes that one often hears from pianists whose main stock in trade is that they can play, at the drop of a request, anything from the pen of Porter, Gershwin or Rodgers and Hart. Thus Bucky and his group can be called on to play things like "My Ship," and medleys of tunes like "Isn't It Romantic," "Penthouse Serenade," "East Of The Sun" and "What Is

There To Say." Leave it to Bucky Pizzarelli to throw in jazz standards like "Cherokee," "Do Nothin' Til You Hear From Me" and a version of "Indiana" that's closer to Charlie Parker's "Donna Lee" than to the original melody of the tune. That, plus Pizzarelli originals such as "Blues Chromatique" and novelties like "Nola" make this an unusual band for a posh Fifth Avenue watering hole.

I don't know how much of the music on this LP they would dare try on the beautiful people at the Pierre, but it's a good bet that some of it'll go down live on the job, if not in such sizable chunks as it does here. Yet all of it, even Duke Ellington's "Ishfahan" from the Far East Suite, is done in such a manner that it won't disturb the dancers, the drinkers, the diners and the lovers. On the other hand, even something that is as obviously slanted for the non-jazz crowd as "My Ship" is listenable, cleanly played and intelligently thought out. And the fun the trio has with "Nola" is infectious.

The sound on this LP is very natural and acoustic even though both the guitar and bass were amplified. The instruments were played through their amplifiers and picked up by microphones in the studio. Additionally, both were plugged directly into the mixing board, allowing producer Borden and engineer LePage an additional source to mix from. The result is a very intimate and warm sound with the body of amplified instruments, yet without the mechanical harshness that electric guitar and bass often show in recording situations. The surfaces are ultra quiet and the liner notes, if a little sketchy, give a good feel for what the producers, artists and engineer were trying to achieve. P.S. They succeeded.

JOE KLEE

**CHARLES AZNAVOUR: *Aznavour '83*.** [Phillipe Rault, producer; recorded at Ocean Way Studios, Hollywood, Calif. and Kendun Recorders, Burbank, California; Warren Dewey, engineer.] Polydor 811 505-1 Y-1.

Performance: **Pretentious and boring**  
Recording: **LA layered**

Charles Aznavour has to his credit songs like "The Old Fashioned Way" and "Yesterday When I Was Young," special material written by him for Chevalier and Piaf, and a successful career as a screen actor in *Shoot The Piano Player*. Yet you can look in vain for any signs or reasons for his success on this LP. I find it just plain boring. I tried to like it. I listened to it several times over, but it still somehow sounded like nothing so much as pretentious lyrics that could have been penned by someone like Rod McKuen and set to predictable musical banalities such as are commonly heard being piped into hotel elevators.

As none of these songs list Aznavour as sole composer, we are left more or less in the dark as to whether Aznavour wrote the music or the lyrics (and if the latter, did he write the French lyrics or their English equivalent—as all are sung in English). No matter—both lyrics and music leave much to be desired.

For sure, as they say these days, Aznavour the composer/lyricist knows what he wants of Aznavour the singer and vice versa. Perhaps in a program of material that was closer to top-drawer I would find Aznavour's singing palatable. I've heard, over the radio, his recording of "The Old Fashioned Way" and I was taken with it—not enthusiastically—but it was, in a word, enjoyable.

At times, as in "To Be A Soldier," Aznavour seems to be actually getting around to saying something substantial, but it's a momentary illusion that withers away into fluff.

The backgrounds make an attempt to be contemporary and even include some well-known West Coast session musicians like percussionist Paulinho de Costa and saxophonist Ernie Watts. But generally, the arrangements, by Gene Page and James Newton Howard, conform to the fashions of the day with synthesizers, background singers and strings.

The recording is what we've come to expect from Hollywood. It comes in layers as though the singers, the strings, the synthesizer, the percussion and Aznavour were in different studios at different times. I suspect this was the case. If it wasn't, it might have well as been given the lack of interaction between them. This sort of layered recording technique has its benefits, however: It does make for a slick product... Too bad it doesn't guarantee musical excellence.

JOE KLEE



**LONNIE LISTON SMITH: *Dreams of Tomorrow*.** [Bob Thiele, producer; Harvey Goldberg, engineer; no recording location given.] Doctor Jazz FW38447.

Performance: **Cosmically sterile**  
Recording: **Timeless touch of the Thiele sound**

Walt Whitman once wrote that a person only writes one long poem throughout his/her lifetime regardless of the number of separate volumes published. Lonnie Liston Smith is a terrific demonstration that some jazz musicians only record one original composition over a lifetime. I have listened to his recording career since his releases on the Flying Dutchman label nearly a decade ago; I've followed his career through releases for RCA and Columbia. And now this.

Sorry, I've lost patience. There are only so many expected electric piano fills I can hear in a decade. Only so many song lyrics heralding a "Mystic Woman" or "Dreams of Tomorrow." In spite of Donald Smith's always excellent vocals, in spite of a kick-ass bottom provided by bassist Marcus Miller and drummer Buddy Williams, in spite of Bob Thiele's pluperfect (as usual) production—I'm bored.

There's a sameness to all the tunes on this album; a homogenized blandness created by no sustained solos. This is truly a pity. Smith proved his vitality as a pianist during recordings made with Gato Barbieri and Pharoah Sanders. What has happened in the years since? How did raw energy turn into elevator muzak? The average length of a cut on this album is about four minutes. Charlie Parker and Bud Powell could compress an exotic musical universe into that time slot. Smith can't even keep an unusual sounding *riff* going that long.

There are two cuts that rise above the fluff that covers most of these tracks. "Rainbows of Love" features Smith on acoustic piano (bring back the old days of the non-electric Smith!) and is pushed forward by Buddy Williams' urgent drumming. "A Garden of Peace" is a solo showcase for Smith playing a theme on acoustic piano while counterpointing himself on electric. Pretty, not necessarily deep, stuff. Jazz critic Leonard Feather makes much to do about the fact that Smith has found an Indian guru and is now a vege-

tarian. When our most famous jazz critics feel an urgency to include such information on record covers, we know that criticism, in this instance, has sunk to the identical level of quality as the music under consideration.

The kindest words I can say about this record are about Bob Thiele, a saint among jazz record producers; someone who can get a full-bodied sound out of almost anyone; a man who knows how to allow proper space for every band member. I appreciate how Thiele keeps Donald Smith's honey-smooth vocals high in the mix, how the sounds of acoustic and electric pianos are simultaneously balanced. I like the close mic'ing of Buddy Williams' drums.

Only I wonder why the man who sat at the controls during much of John Coltrane's career is willing to produce this stuff. Are you waiting for the new hot kid with a horn, Bob?

NORMAN WEINSTEIN



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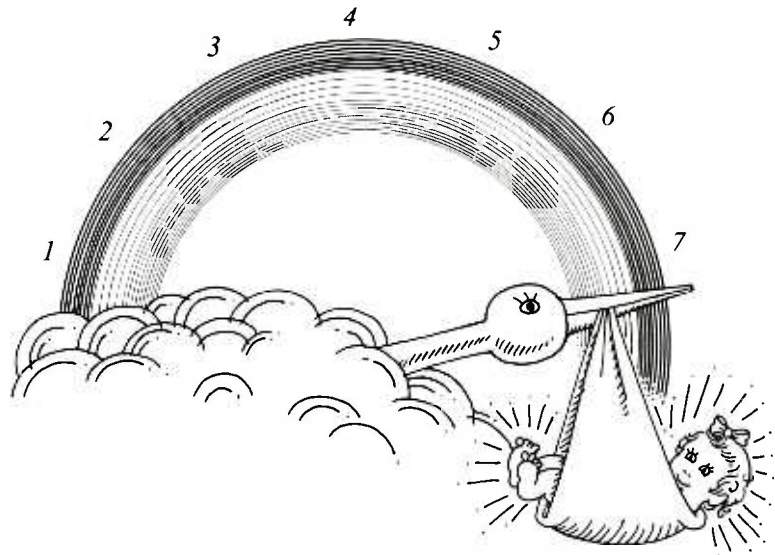
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You get microprocessor control and three motor Simul-sync™ design. You get convenience, portability, and the ability to record eight sources in a single take. You get the flexibility to bounce tracks and add live sources at the same time.

All by itself, the 234 is a formidable recording tool. Combined with a mixer for EQ, cue and monitor mixes, solo and effects sends/returns, you've got a full blown 4-track production studio.

Face it. You put sound on tape for a reason. You want somebody to hear it. Most importantly, buy it. It's your life. We built the 234 to help you because you never get a second chance to make a first impression.

We know you want to find out more. See your TASCAM dealer or write TASCAM Production Products, 7733 Telegraph Road, Montebello, CA 90640, (213) 726-0303.

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# THE WORLD'S FIRST PROFESSIONAL 4-TRACK CASSETTE MACHINE.

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**DESIGNED BY POPULAR COMPLAINT.**

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