

Profile:
Ronnie Spector
& Genya Ravan

ICD 08560
\$1.75

MODERN RECORDING

SERVING TODAY'S MUSIC/RECORDING-CONSCIOUS SOCIETY

VOL. 5 NO. 9
JUNE 1980

a session
with:

HEART

LAB REPORTS:

Ramko Research ARA-1612
Audio Router/Amplifier
Onkyo TA-2080
Cassette Recorder
Sanyo Plus N55 "Super D"
Noise Reduction System

HANDS-ON REPORT:

Lexicon Prime Time
Model 93 Digital Delay

NEW PRODUCTS RECORD REVIEWS



NY 11201

MR
81/04 05

APOME0193BAL99
POMEROY
193 BAL TIC ST
BROOKLYN

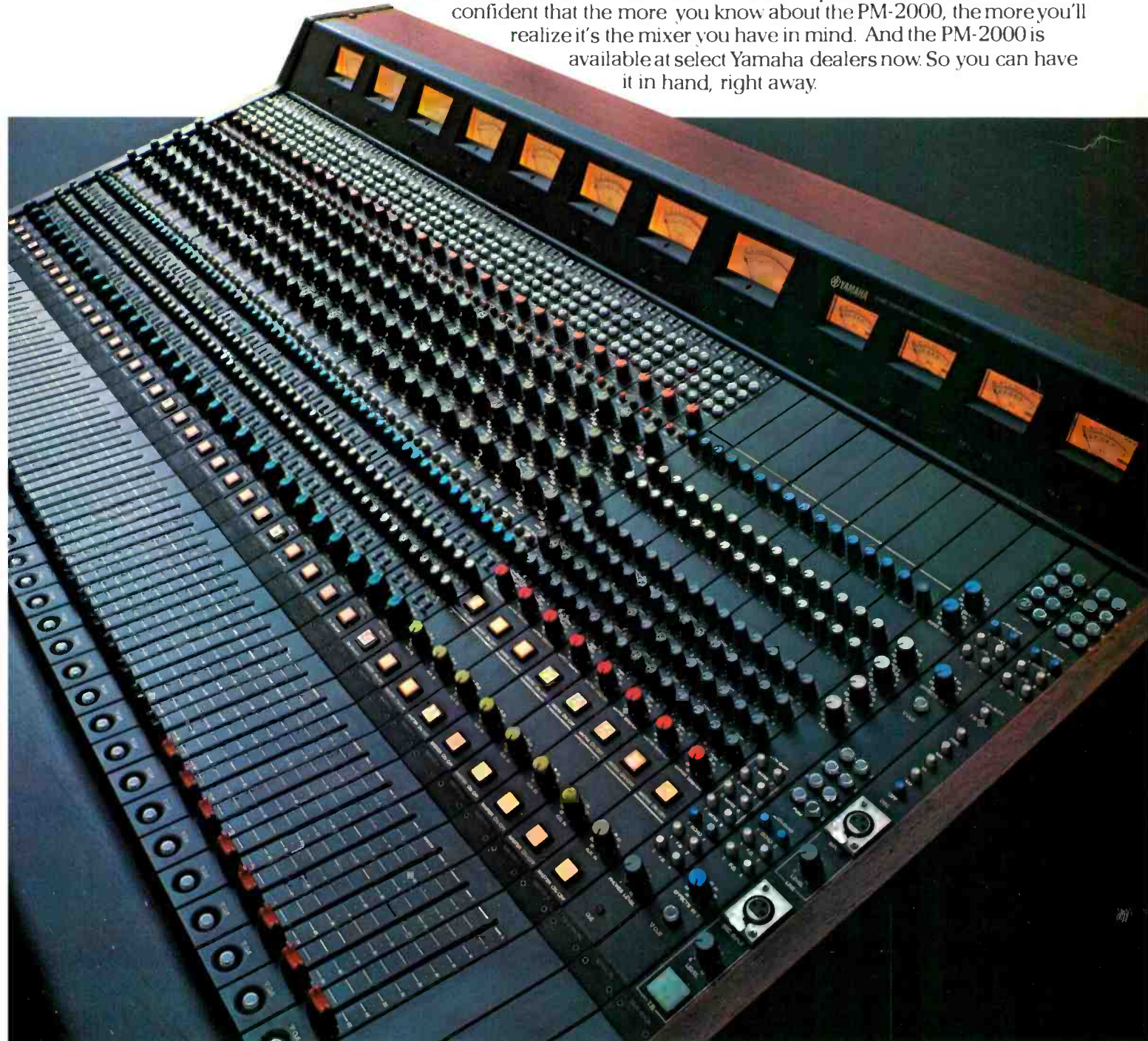
We have on hand what you have in mind.

We had you in mind when we designed our PM-2000 mixer. That's why this is the mixer that more than meets your performance expectations. And feels the way you want it to feel.

The layout is simple and uncluttered. Yet the PM-2000 is sophisticated, versatile, and rugged. It's been proven equally adept in broadcast and recording, both at fixed installations and on the road.

With 5-position, 4-band eq, and six independent sends on all 32 inputs (24 channels also available), plus a full-function 14 x 8 matrix, the PM-2000 has earned a reputation as the consummate console. Distortion and noise specs are as low as much more expensive studio consoles.

Write to P.O. Box 6600, Buena Park, CA 90622 for complete information. We're confident that the more you know about the PM-2000, the more you'll realize it's the mixer you have in mind. And the PM-2000 is available at select Yamaha dealers now. So you can have it in hand, right away.



CIRCLE 99 ON READER SERVICE CARD

 **YAMAHA**

www.americanradiohistory.com



Studiomaster is Expanding

We have never been ones to sit around and watch others progress. Instead, we prefer to be the leaders. And in our field, that is how many regard us. So we apply our energy to expansion . . . growth in every phase of the development of our products.

Our mixers are expandable. *Studiomaster* was first with the add-on module concept in affordable professional grade mixers. Whether you select our 12X2b or 16X4 units, neither will ever limit your group or studio to its original capacity. By our four-channel-at-a-time expander modules, a 12X2 can become a 24X2 in minutes. A 16X4 will change to a 20X4 almost immediately, and without the hassle of dangling cables that can cause shorting or transporting difficulty.

Our features are expanding. As pioneers in the more-feature-per-dollar area, *Studiomaster* was the first to offer 5 way equalization on an affordable mixer. We still are. Our 16X4 mixer was the first studio quality desk that allowed the operator to have a separate stage (or radio) mix for the performers while still sending an independent, unaffected mix to the tape recorder. No competition yet. And now, our mixers come with direct in/out channel patching as standard equipment, just one example of our expanded features.

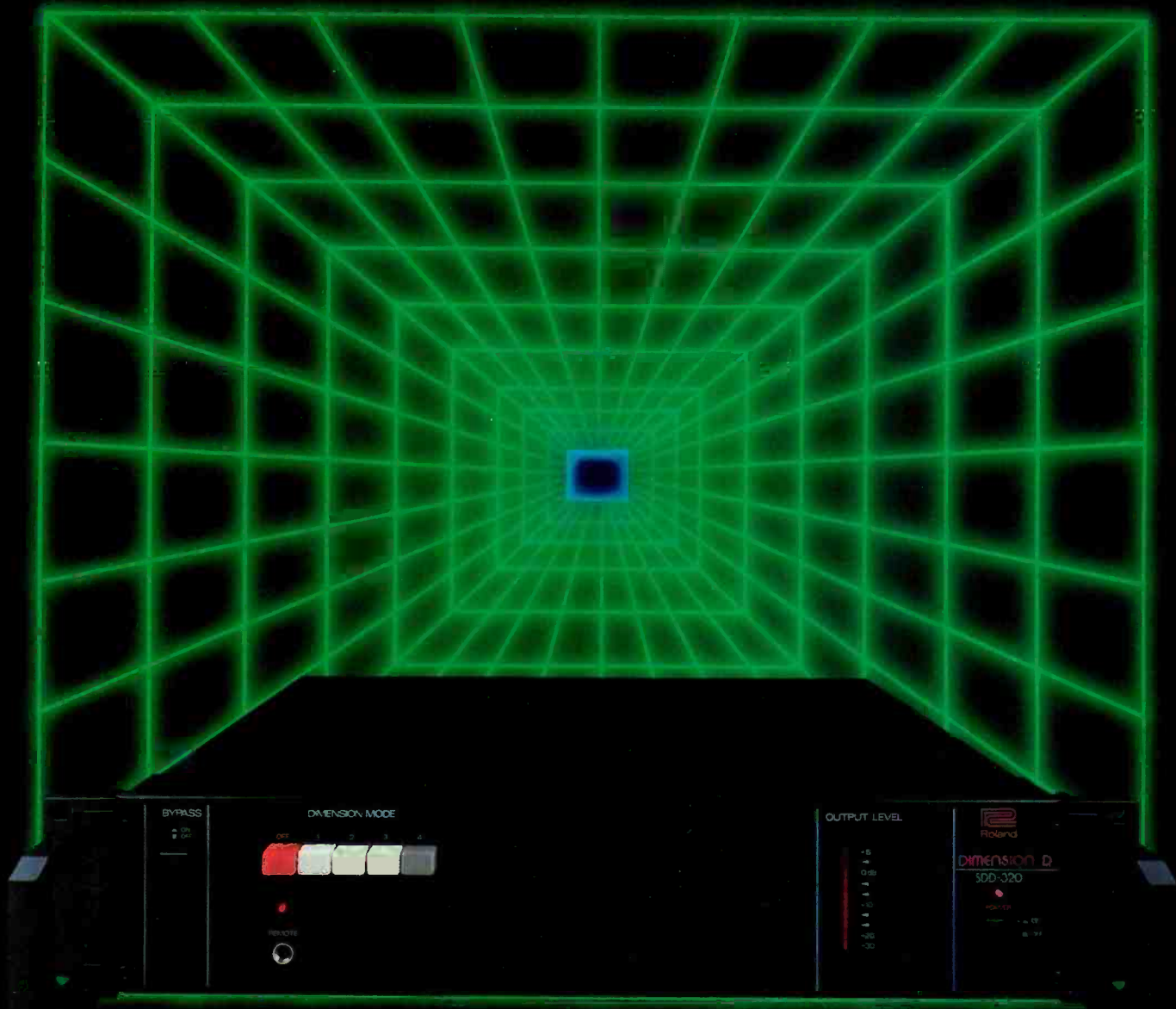
Our product line is expanding. *Studiomaster* now has a 16X8

mixing console designed for 8 track studios and live performance. We offer the professional touring band the most affordable 20X8 monitor mixer available. And we now manufacture three and five way stereo crossovers which solve the complex speaker system problems of large concert arenas. We even make the coolest running, smoothest sounding 225 watt/channel amplifier around, too. Did we say we're expanding?

The only thing that really hasn't kept pace with our other phases of expansion is our price tag. It has escalated only a fraction in two years . . . and that only to justify the extras we offer. So we are still the most affordable 16X4 mixer that money can buy in our performance category.

Maybe you should consider expanding your studio's or group's ability to create. Give us a call at (800) 854-6219 nationally or (714) 528-3360 in California. We will give you the name of the *Studiomaster* dealer closest to you. If you visit him this month for a *Studiomaster* demonstration, you can receive a *Studiomaster* T-shirt free from us. Visit him soon to see the continually expanding possibilities of *Studiomaster* products.

For more information about Studiomaster products, please write to Craig Bullington, National Sales Manager, Studiomaster, Box 55, Atwood, California, 92601.



The Dimension D

The problem with many special effects is that they have a tendency to become specialized effects. Rather than being integral to a performance. They become simply the frosting on the cake, used only occasionally because their very nature makes constant use tiresome.

But what if the fundamental sound itself is lacking? What if you want to give it some life without having to put it through a wringer for improvement? For you Roland offers Dimension D—the Uneffect.

The Dimension D changes the life of your sound without changing the sound itself. Electric and electronic musical instruments are enriched with a depth and liveness that they

never had before... fundamentally the same, but deeper and richer. Likewise, acoustic instruments and vocals are richened and thickened when you amplify or record them. They're given back the brilliance they had live.

The Dimension D is not a device that will be relegated to sitting in a bank of equipment, rarely used. On the contrary, the Dimension D is likely to become as integral to the creation of sound as any other element. Once you turn it on, you won't turn it off.

The Dimension D can work on either a mono or a stereo signal, and also has the capability to generate a stereo field. And if you don't want to turn the Dimension D off, you won't have to, because its signal-to-

noise ratio is better than 90 db.

The Dimension D is not an effect, it's really an experience. It won't blow you away—it isn't supposed to. That's because some effects are not measured by their intensity, but by their subtlety.

Enclose \$1.00 for a copy of the Roland Rack catalog.

RolandCorp US
2401 Saybrook Ave.
Los Angeles, CA 90040
(213) 685-5141

 **Roland**
We Design the Future

CIRCLE 144 ON READER SERVICE CARD

www.americanradiohistory.com

MODERN RECORDING

JUNE 1980
VOL. 5 NO. 9

SERVING TODAY'S MUSIC/RECORDING-CONSCIOUS SOCIETY

THE FEATURES

RECORDING ... ?

By James F. Rupert

38

Modern Recording and author Rupert take you to Japan for a very unusual and nearly true story on recording the *big* film stars. Who says *MR* doesn't do everything it can to bring you all the news!

A SESSION WITH HEART

By Nina Stern

44

From *Dreamboat Annie* to *Bebe Le Strange* Heart has come a long way in proving that it is one of the best rock bands in music today. Heart and engineer/producer Mike Flicker talk about their latest release.

PROFILE: RONNIE SPECTOR, ARTIST; GENYA RAVAN, PRODUCER

By Jeff Tamarkin

52

Ronnie is back! Ronnie Spector, the voice of the sixties, has teamed up with Genya Ravan and will soon be releasing a *new* album titled *Happy Birthday, Rock and Roll*. All we can say is that we are happy to see Ronnie back and we hope to get our little mitts on the album ASAP.

COMING NEXT ISSUE!

A Session with Herbie Hancock
Profile: The producer for Queen, the Cars and Foreigner—Roy Thomas Baker
Plus!

The musician's best friend: "NOTES,"
MR's newest section

THE STAPLES

LETTERS TO THE EDITOR

4

TALKBACK

The technical Q & A scene.

22

THE PRODUCT SCENE

By Norman Eisenberg

30

The notable and the new, with a comment on the latest newsbits in the industry.

MUSICAL NEWSICALS

By Fred Ridder

34

New products for the musician.

AMBIENT SOUND

By Len Feldman

60

If you couldn't make it to London for the recent Audio Engineering Society convention, don't worry about getting behind on the latest in recording technology. We carry the word in this month's "Ambient Sound."

LAB REPORT

By Norman Eisenberg

and Len Feldman

62

Onkyo TA-2080 Cassette Recorder
Ramko ARA-1612 Audio Router
Sanyo N55 Noise Reduction Adaptor

HANDS-ON REPORT

By Jim Ford

and John Murphy

Lexicon "Prime Time" Model 93 Delay Unit

72

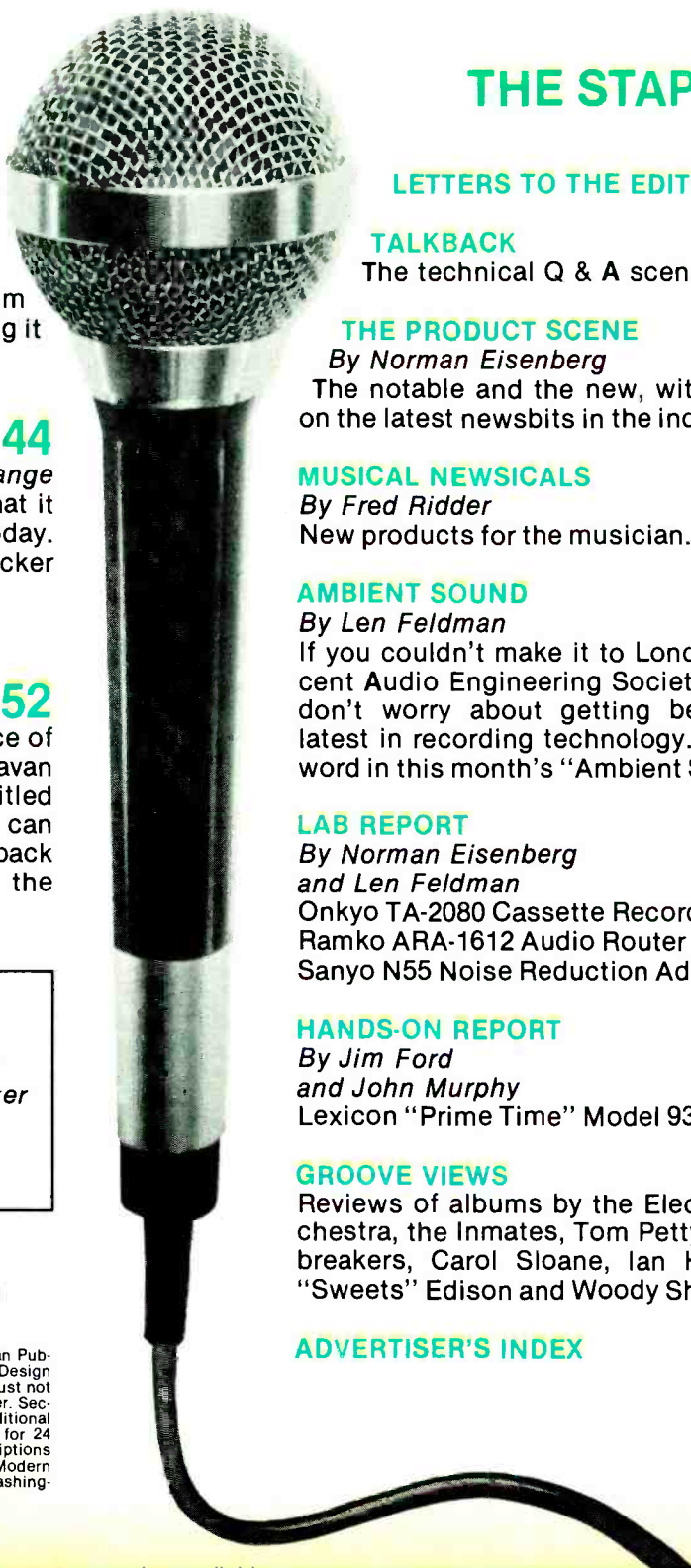
GROOVE VIEWS

Reviews of albums by the Electric Light Orchestra, the Inmates, Tom Petty & the Heartbreakers, Carol Sloane, Ian Hunter, Harry "Sweets" Edison and Woody Shaw.

78

ADVERTISER'S INDEX

91



Cover Photo: Darrell M. Westmoreland
Heart Photos: Darrell M. Westmoreland
Genya Ravan and Ronnie Spector Photos: Doug Hanewinkel

Modern Recording (ISSN 0361-0004) is published monthly by Cowan Publishing Corp., 14 Vanderventer Ave., Port Washington, N.Y. 11050. Design and contents are copyright 1980 by Cowan Publishing Corp., and must not be reproduced in any manner except by permission of the publisher. Second class postage paid at Port Washington, New York, and at additional mailing offices. Subscription rates: \$14.00 for 12 issues; \$26.00 for 24 issues. Add \$3.00 per year for subscriptions outside of U.S. Subscriptions must be paid in American currency. Postmaster: Send Form 3579 to Modern Recording, Cowan Publishing Corp., 14 Vanderventer Ave., Port Washington, N.Y. 11050.

H.G. La TORRE
Editor/Publisher

PAM HIGHTON
Managing Editor

AUDREY KURLAND
Assistant Editor

NORMAN EISENBERG
LEONARD FELDMAN
JIM FORD

JOHN MURPHY
BRIAN ROTH
Technical Editors

CRAIG ANDERTON
ROBERT ANGUS
NAT HENTOFF
DAVID MOYSSIADIS
FRED RIDDER
PETER WEISS
Contributing Editors

MIKE DEREVLANY
ROBERT HENSCHEN
JOE KLEE

ALLAN KOZINN
STEVE ROW
RUSSELL SHAW
JEFF TAMARKIN
Music Reviewers

LORI RESSA
Production Supervisor

BILL TRAVIS
Art Director

KAREN JENSEN-RICHARDS
Associate Art Director

ELIZABETH BAILE
Staff Artist

JANET KURTZ
Circulation Manager

EILEEN NOFI
Advertising Assistant

BILL SLAPIN
West Coast
Advertising Representative

MYLES GROSSMAN
Associate Publisher
Advertising Director

Editorial and Executive Offices
Modern Recording
14 Vanderventer Ave.
Port Washington, N.Y. 11050
516-883-5705

Cowan Publishing Corp.: Richard A. Cowan, Chairman of the Board & President; Cary L. Cowan, Vice President; Jack N. Schneider, Vice President, Marketing; Marc L. Gilman, Credit Manager; Amy C. Gilman, Secretary/Treasurer; Sanford R. Cowan, Founder & President Emeritus.

Editorial contributions should be addressed to The Editor, Modern Recording, 14 Vanderventer Ave., Port Washington, N.Y. 11050. Unsolicited manuscripts will be treated with care and must be accompanied by return postage.

LETTERS TO THE EDITOR

Notes from the Big Bear

First, I would like to thank *Modern Recording* for the informative and balanced review given our Space Station Digital Reverb System in the April issue. I would like to comment on two points raised in the Lab Test portion of the review. The slew rate limit data appears to be correct, and is due to an op amp gain stage after the Input Level Control. In normal use, with typical audio program containing most of its spectral energy below the 7 kHz cut-off frequency of the anti-aliasing filter, the 0 LED will guide the operator to a proper adjustment of signal level and the slew limit will not be reached, or even approached. However, when testing with pure tone above 7 kHz, the 0 LED, which is in the digital domain and only "sees" signal energy below 7 kHz, will not light to show the abnormally high level tone, and it may cause slew limit.

We feel that such pure tones, if they do occur in music, occur in the context of program material whose peak program energy below 7 kHz has already dictated an operating level such that slew limit will never be approached. However, recognizing that slew limit effects are of great concern, we have introduced a design change that eliminates the problem—a change of the op amp type used at the internal gain stage. Any registered Space Station owner who is concerned about this may request a replacement IC at no charge. As the IC is socketed, it can easily be changed in the field.

Note: To verify the improvement in slew rate resulting from the change, please remove the top cover and borrow IC U19 (a TI TL074 or 84) from the ADA-1 board. Replace IC U2 (a Motorola 4741 or Exar 4212) on the ANA-1 board with the TI part and recheck slew rate. Reverberation Feedback should be at zero during this test because of the missing IC in the ADA-1 board. Please restore the IC's to their original sockets when done.

The second point is the Direct channel noise performance. We 100% test production units, and never see noise above -78 dBm (reference 0 dBm = 0.775 V).

—Christopher Moore
President
Ursa Major, Inc.
Belmont, Ma.

Reply from co-author John Murphy follows:

We have to agree with Chris that most full range program material (an album mix for example) will have little energy above 7 kHz and therefore, for reasonable meter indications, the slew rate limit of the Space Station will not be exceeded or approached under such conditions. However, in studio applications (where it is assumed the Space Station will often be used) the program material will frequently consist of "tracks," or individually recorded instruments. In this situation there may, in general, be significant high frequency energy in the program material. A cymbal track, for example, could well contain a high level of energy in the octave from 4 to 8 kHz. Under these conditions the slew rate limit of the unit could be approached when signal levels approach "0 dB".

Technics

Everyone knows what Technics direct drive does for performance and accuracy in our turntables. That's why 73 of the top 100 radio stations that use turntables use Technics direct-drive turntables. Now, for only \$330*, you can record your cassettes with the accuracy of Technics direct drive. And that says a lot about the Technics RS-M45.

So does its tape transport system. Especially when you consider what the RS-M45 has going for it: An FG servo DC direct-drive capstan motor. And while 0.035% wow and flutter can tell you a lot about our direct-drive performance, the world's only limited 3-year motor warranty† tells you a lot more.

Equally impressive are the RS-M45's solenoid controls. They not only make switching from one mode to another simple and accurate, they also put minimal strain on the tape transport system.

And to put minimal strain on you, there's the optional RP-945 remote control unit. With it, all transport functions, as well as record mute, can be operated from your easy chair.

Just as special are the RS-M45's fluorescent VU meters with auto-reset peak-hold. They're fast, electronic and highly accurate. You'll also like Dolby[®] NR and a S/N ratio of 68 dB.

And if our SX record and playback heads make CrO₂ tape sound great (20 Hz-18 kHz), wait until you hear the increased frequency response (20 Hz-20 kHz) and extended dynamic range of metal.

Technics RS-M45. Direct drive and solenoid controls say it isn't your typical \$330 cassette deck. In fact, compared to the leading brands, it's one of a kind. And that's very typical of Technics.

* Technics recommended price, but actual price will be set by dealers.

† Limited 3-year warranty on the direct-drive motor and limited 2-year warranty on the deck. Includes labor and parts. Carry-in service. Proof of purchase required. Warranty is void for commercial use. [®] Dolby is a trademark of Dolby Laboratories.

How to tape your records as accurately as Technics direct-drive turntables play them.



CIRCLE 98 ON READER SERVICE CARD

www.americanradiohistory.com

And it is this *approach* of the slew rate limit that is the concern of current researchers studying slewing induced distortion (it is generally understood that actual slew limiting results in gross distortion). In any event, the increased slewing headroom provided by the design change (faster op amps) should eliminate any concerns about slewing induced distortion in the Space Station.

We rechecked our noise measurements and found the combination of the unit and our measurement system exhibited some grounding sensitivities. With careful attention to grounding we observed noise levels of about -87 and -91 dBV respectively for L and R channels (which is considerably lower than the -68 and -74 dBV originally reported). In any event, the output noise of the direct channel is sufficiently far below the noise from the delay channel as to not be of concern since the unit will almost always be used for its outstanding delay effects!

— John L. Murphy
Technical Editor
Modern Recording

Electric Serial

Is it possible to obtain reprints of The Electric Primer," Parts I, II and III as published in *Modern Recording*? I missed the beginning of this series. Thank you.

— Barry J. Nichols
Cincinnati, Ohio

Part I of the series was published in our Sept. '79 issue, which is in limited supply at this time. Send for it soon. Parts II and III of "The Electric Primer" by Peter Weiss appeared in the October '79 and December '79 issues. Each issue is sold through our Back Issue Dept. for \$2.50 per (postage & handling included).

Sound from Women

First, I would like to be counted in the ever-growing crowd cheering, "Thanks for the fantastic magazine!" Finding *MR* a few years ago was really a great relief to me. Starting out in sound work was mind-boggling, at first—you can only read so many spec sheets, etc. . . . But you folks at *MR* made a lot of sense to me, and gave me an excellent information base.

I am currently working with an eight-piece rock band. Keyboards, drums, bass, two guitars, two reeds (saxes, clarinets) and a lead singer-percussionist. I run a

Kelsey 16 in 3 out board. It's good for our application. Originally I wanted to go with a Soundcraft Series 1 16-channel, but it was out of our budget at the time. We use Crown DC300s for power, output is rented and changes with the job. We also employ a Biamp 210 EQ and a Multivox echo/reverb unit. I hope to soon expand the system with a parametric EQ, some limiter/compressor and perhaps a digital delay (oops, my device fetish is showing).

I find doing "live" sound an *incredible* experience. The amount I have learned is enormous and I feel that there is a great deal more to discover.

I am interested in hearing about other women who work in mixing or producing—pro or semi-pro. I'm curious to see what paths other women have taken in this field and to share experiences. I know there are other women out there, but sometimes I see eyes bugging out at me when I'm behind the board or moving equipment around after a grueling show.

— Jeanne Mara
Hoboken, N.J.

By coincidence, this issue contains our first major interview with a focus on women, specifically Genya Ravan and Ronnie Spector. We welcome letters from women who have also broken into recording and "live" sound. Do write and share your experiences.

Midnight Audio

I've been doing sound for club bands in L.A. and Orange County for a number of years, and in order to get good vocals I've tried to get the band to keep its stage volume down as much as possible—which is not the easiest thing to do. My main problem is my drummer, who uses a set of very loud Ludwigs (which I rarely have to mic).

One night, though, while watching *The Midnight Special* on TV, I saw one of the bands using a Plexiglas™ baffle about three feet high at the front and sides of the drummer.

What I would like to know is if this is an effective way to quiet him down and what miking problems I might expect by adding one of these to his riser.

— Tim Price
Santa Fe Springs, Ca.

Terry Fountain, sound engineer for the George Benson tour, which Terry also wrote up for us in our December 1979 Modern Recording, described his own

JBL'S NEW E SERIES: THE TECHNOLOGY.

Continuing research and development at JBL has led to significant improvements in the JBL line of musical instrument loudspeakers.

The result: more efficiency, higher power ratings and better sensitivity.



1) E110, 150W. 2) E120, 300W. 3) E130, 300W. 4) E140, 400W. 5) E145, 300W. 6) E151, 400W. Watt figure (W) represents continuous program power.

The E Series loudspeakers feature a new ferrite magnet structure incorporating JBL's exclusive SFG (Symmetrical Field Geometry) and Flux Stabilizing Ring. These developments help provide higher acoustical output at low distortion levels.

The new E Series speakers also offer increased sensitivity over previous models—a 1dB to 2dB increase!

And the E Series can handle more power than previous models—up to 100 watts more on some models.

While all these improvements are audible, the characteristic sound of JBL musical instrument speakers has not changed.

It's still the same sound that musicians have preferred and demanded for so many years.

James B. Lansing Sound, Inc., 8500 Balboa Boulevard, Northridge, CA 91329.

JBL
FIRST WITH THE PROS.

GREAT SUPPORTING CAST.

Introducing JBL's new E Series.

Until now—no other loudspeakers could support a musician's performance like the JBL K Series.

But now the E Series is here... the next generation of JBL musical instrument loudspeakers. They're tough. Powerful. Dependable. With that same unique JBL sound preferred by musicians around the world.

Each E Series speaker features an innovative Symmetrical Field Geometry (SFG) magnet assembly—the result of years of concentrated research and development at JBL. SFG has expanded loudspeaker technology. And SFG helps give the E Series many advantages over previous models: The Es handle more power. They're even more efficient. And they offer lower distortion.

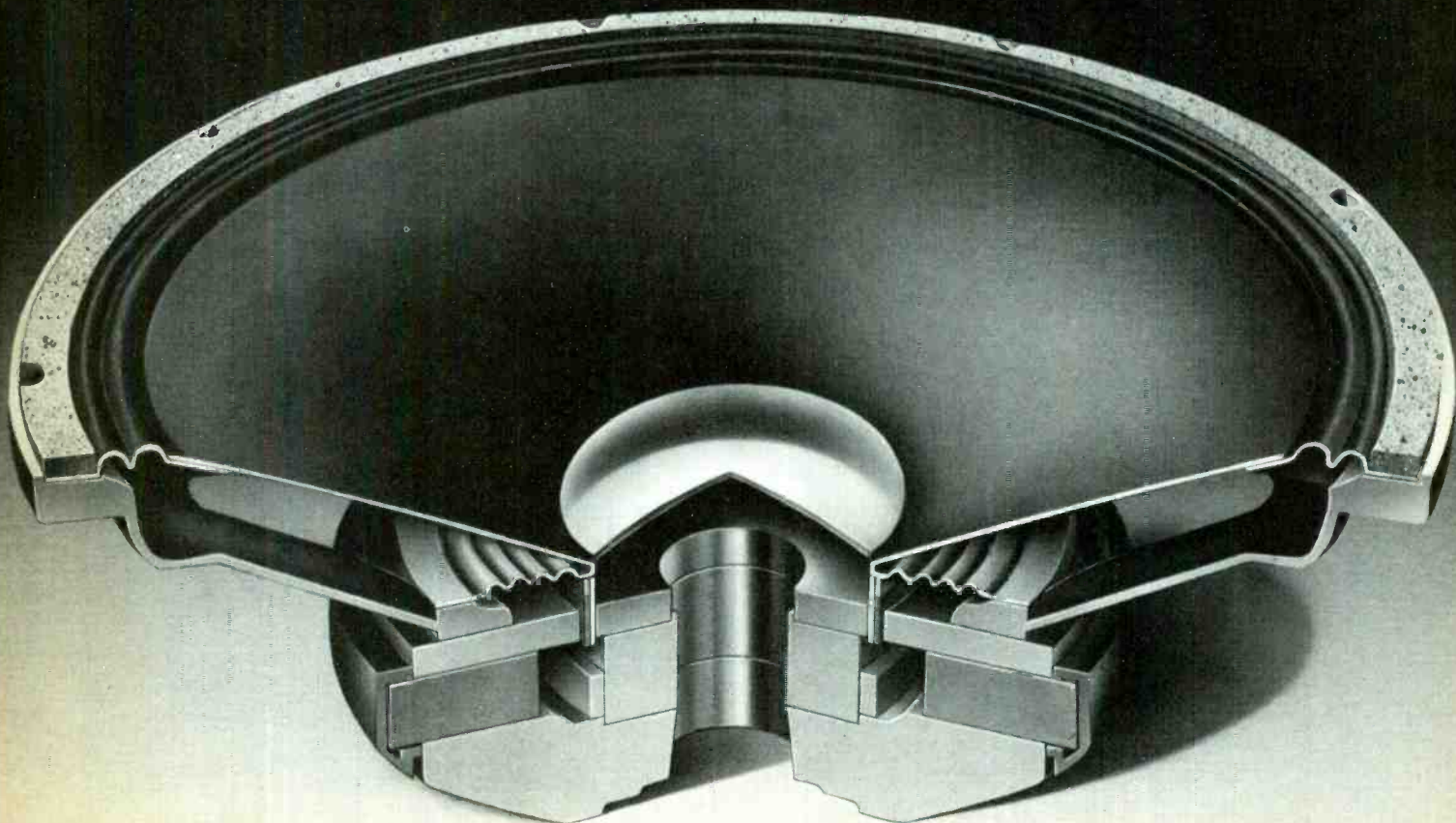
So whatever instrument you play—electric piano, synthesizer, organ, bass or guitar—let JBL support your performance.

The new JBL E Series.

The best has been improved. James B. Lansing Sound, Inc., 8500 Balboa Boulevard, Northridge, CA 91329.

JBL

**FIRST
WITH THE
PROS.**



CIRCLE 140 ON READER SERVICE CARD

www.americanradiohistory.com

experiences with using Plexiglas™ to isolate Benson's string section from the rhythm section to alleviate an "abominable" bleed. To quote his comments, "I felt that, out of all the ways I'd tried, this way (accidentally) sounded the best. It was also by far the easiest." Well, that's good enough for us. Try it!

As for miking problems you might encounter, any that arise (we suspect they will be easily dealt with) will no doubt be peculiar to whatever space you find yourself in and other such variables.

Erasure Eradicated

While I do not wish to criticize Robert Henschen's review, some time ago (Sept. '79), of Robert Fripp's *Exposure* album, a few points need to be added.

I had the pleasure of seeing Fripp in Chicago during his recent tour of the States. His tour included mainly music stores with a few restaurants and hotels.

In Chicago, Fripp reminded the audience that "this is a concert, not a demonstration." There he sat alone with his guitar and a pair of Revox A77s and proceeded to perform and confer

with the audience for well over an hour.

The unique sound that Fripp achieves through tape loop and electronic modification is the mysterious "Fripptronics" referred to in the album credits.

I could ramble on for hours about Fripp's *Exposure* album as I have been a fan and have followed his career since King Crimson's first album. Although I have this tremendous admiration for Fripp, the main point I would like to make pertains to Daryl Hall.

Robert Henschen failed to make mention of the song "North Star," which featured Daryl Hall on vocals. This is, I think, one of the more melodically pretty songs on *Exposure*. Henschen did mention, though, that excerpts from Hall's solo album *Sacred Songs* — which is not yet available to the public — appear on *Exposure*.

Here is the killer: *Sacred Songs* will never be released due to the fact that RCA destroyed the master tapes, saying the end result was not suitable for marketing. This information came directly from Fripp, who also pointed out that "Fripptronics" was recorded here for the first time.

What was RCA thinking? If "North Star" is any indication of what we missed, I think even Fripp skeptics will agree "It is impossible to achieve the aim without suffering."

— John T. Mick Schererville, In.

Our RCA contact tells us that the Fripp tapes of Daryl Hall's solo album were in fact not erased and that the album's scheduled release date was 3/10/80.

Rupert Rebuffed

I seriously doubt that I am the only woman reader of *Modern Recording* out here, but after reading the opening paragraph of James Rupert's article in the February issue ("Small Studios: The Lighter Side of Business"), I wonder if any of the staff realizes this.

It may shock Mr. Rupert to know this, but most of us do a lot of other things besides become nagging, humorless housewives, as he implies with his generalized statement "... as surely as a woman's sense of humor is removed with her premarital blood test." Such references, lighthearted and jestful as

The Orban 672A: A Dream Equalizer at a Practical Price



The 672A is a single-channel equalizer offering astonishing control and versatility. There are eight non-interacting parametric bands with reciprocal curves and the convenience of graphic-style controls. Highpass and lowpass filters with 12dB/octave slopes that tune continuously over a 100:1 frequency range. And, separate outputs that let you use the 672A as an eight-band parametric cascaded with an electronic crossover in reinforcement and monitor tuning applications.

The dream equalizer is usable practically *everywhere* in professional and semi-professional sound: recording studios, cinema, theater, reinforcement, broadcasting, disco — you name it! Yet its price is down-to-earth: \$499*. And, it's built to full professional standards.

Check it out at your Orban pro-audio dealer.

orban

Orban Associates Inc.
645 Bryant Street
San Francisco, CA 94107
(415) 957-1067

*suggested list

CIRCLE 100 ON READER SERVICE CARD

BREAKING THE SOUND BARRIER

The new SD12-2 finally bridges the gap between price and professionalism which has prevented groups attaining high quality PA and demo recording sound. We supply complete studio systems to bands like Genesis, Thin Lizzy and Queen so you have assurance of quality and reliability. Why accept anything less.



- ★ Separate line inputs and direct recording outputs.
- ★ 4 way stereo monitor with powerful headphone amp
- ★ Separate foldback eq for control of stage sound

- ★ Now long travel faders
- ★ Larger illuminated VU meters
- ★ Padded front arm rest
- ★ Fully balanced XLR mic inputs

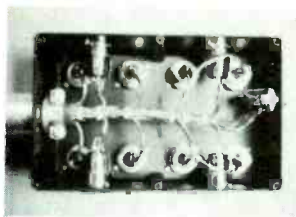
ALLEN AND HEATH LTD.
Pembroke House
Campsbourne Road
London N.8.
Tel: 01-340 3291

AHB
ALLEN AND HEATH BRENNELL LTD.

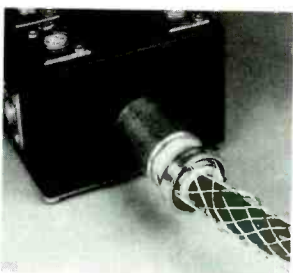
audiomarketing ltd
Glenbrook Industrial Park
Stamford, Connecticut 06906
U.S.A.
Tel: (203) 359 2312

CAVEAT EMPTOR. Let the buyer beware.

All multi-cable connectors are not created equal. Some of them may look alike on the surface, but a closer examination of the design and components will show a marked difference. A professional will know the difference; if not now, then in time to come. The Whirlwind Medusa will hold up under abusive day in and day out treatment.



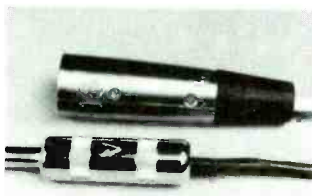
Medusa systems are available in five basic configurations, or with many custom options depending on your specific needs. Multi-pin connectors at either end permit quick connect and disconnect. Impedance matching line transformers can be included for greater line flexibility. Storage options include the Medusa Wheel and two different road cases.



We feel it's important to take a close look at the Medusa and at the competition. Look inside the junction box. How were the connections made? Do they look like they will withstand the kind of torture you will put them through? And what about the strain-relief? Our heavy duty wire mesh strain-reliefs are double reinforced and are at both ends. Check to see if the cables are color coded (by subgroup) on the sends and returns.

This could save you time and aggravation. Only Whirlwind uses cable custom made to our specifications by Belden for increased life and versatility. We individually hand stamp the plug ends for easy identification; We don't use wrapping which can come off. We've designed our Medusas with independent grounds to eliminate ground loops.

But we're not telling you all this to scare you. We feel confident in the way we design and build our products. Besides using the best possible cable and connectors, we back our Medusas with the Whirlwind full two year guarantee. That should ease your mind and let you concentrate on your music. So don't worry, beware and buy Whirlwind.



whirlwind

Whirlwind Music Inc.
P.O. Box 1075
Rochester, New York 14603

Shown above is the standard Medusa 15 with 100' cable, 12 mikes in, and 3 sends.

CIRCLE 110 ON READER SERVICE CARD

they may be, do negate the existence of a whole population of serious women musicians, technicians, engineers, producers, audio enthusiasts, business partners and music lovers.

So, Mr. Rupert, get out of your studio, take off your headphones and stop playing with your plugs. When you look around, you'll see that along with such advances as digital recording, some of us in this industry have made advances as people.

—Jacquelyn Newman Bergstein
Brooklyn, N.Y.

The author responds:

Wow, do my wrists seem slapped! In all seriousness, I do realize now that the one-liner in question was a cheap shot for a cheap laugh and I must apologize for it. In the words of my wife, "The next time I want your opinion, I'll give it to you." I do sincerely apologize to Ms. Bergstein, to the rest of *MR's* woman readership and to God. I hope Jacquelyn Bergstein and other women readers can find it in their hearts to forgive me. I know that God can forgive me, because that's the way she is.

—James F. Rupert
Lincoln, Neb.

Down, but Determined

I was bitten by the "music bug" some fifteen years ago (right after the Beatles did the Ed Sullivan Show). Has it been so long ago? Anyway, I made the rounds at the high school gyms, teen clubs, etc., etc. I've been with all the backyard bands in town. We made mostly noise, but we had fun!

Now the punch line ... playing was fun, and I'll always love music (my tastes run from Country to Classical). I have just begun to tap the surface of the recording hobby. So far, so good. Having made a substantial investment of \$5,000, I now own a 6-channel stereo mixing board, a good playback system, two microphones (nothing fancy), several hundred feet of low Z cable, two cassette decks, tons of tape, a very nice boom stand, two floor stands, two sets of headphones, a copy of *Modern Recording Techniques* by Runstein, a copy of *Home Recording for Musicians* by Craig Anderton (both of which are excellent!), and all my back issues of *MR*.

Now, I find myself in a trap ... I want to pursue my interest, but I still need some touches to finish off. An equalizer would be real nice, maybe a

Prime Time™

Digital Delay Processor



professional quality delay plus special effects



Lexicon's new Model 93 "Prime Time" digital delay processor gives recording studios and entertainers an easy-to-use professional quality time delay with special effects and convenient mixing all at a price you can afford. It combines a degree of flexibility and versatility never before offered in equipment of full professional quality.

- Two delay outputs independently adjustable from 0 to 256 ms
- Complete mixing for delay and reverb processing, freeing up main console channels and tape tracks
- Integral VCO for special effects like vibrato, doppler pitch shift, flanging and automatic double and triple tracking
- Long delay special effects — up to 2 seconds
- All dynamic functions can be footswitch controlled
- 90 dB dynamic range, total distortion below 0.08% at all delay settings

Lexicon

Lexicon, Inc., 60 Turner Street
Waltham, MA 02154 (617) 891-6790

Export: Gotham Export Corporation, New York, New York

CIRCLE 122 ON READER SERVICE CARD

www.americanradiohistory.com

limiter or a direct box. But, where does one find time to build the kits (and still put in the 40-hour work week), or the money to buy upgraded equipment? Norfolk, Virginia is not a bright spot on the musical map. I've been to the local studios where the line is, "We do multimedia work; mainly photography, and technicians are always wanting to watch the sessions we do. If you want to learn about recording, go to school and study audio engineering, then come back and we can talk!" What a bummer!

So now what? Do I support my habit by listening at home and saying to myself, "Marty, you should have been a recording engineer", or do I keep knocking on doors in hopes of finding someone who wants to tell me whether I've got what it takes to go on?

Sure, I'm discouraged, but I won't give up my little hobby. I only wish a fond farewell to the days of the \$100 guitar, the \$400 drum set, the teen clubs, and a bunch of guys who play for free because they enjoy making noise. Simple music is gone forever. I guess when it left, a little part of me went with it. Your magazine is like a blast from the past as it reminds me someone out there "remembers when."

—Marty Rogers
Norfolk, Va.

Hey, Marty! Not only do we "remember when," but every month, we cover what's new and what's in store. People are still making music for free and for fun, but most of them are around the age you were fifteen years ago. (We're guessing.)

Maybe you should have been a recording engineer, but there's no reason to think you still couldn't be. Read up. Take some classes on the weekends, or at night. If your forty-hour work week is not in the field you want it to be in, it really may not be too late to change things around. It depends on how valuable music and recording is to you. Keep knocking on doors, that's what we say. Good luck!

Readers' Forum

I salute those thousands of malnourished over-criticized insomniacs who have worked their buns to the bone for the musicians in their area, as well as themselves. Anyone who has marvelled at the wonders the guy down the street with the basement or garage studio has managed to accomplish in his little recording world, look deeper. You may be

missing a great deal.

I'm sure there are those who have set up their studios for nothing more than their own personal use. If you are one of these people, you have only the *first* symptom of "engineeritis dreamitis." For those of you who have already contracted this infectious virus, welcome to the clinic. Your first booster shot is on its way.

Let's analyze some of the side effects caused by this incurable ailment. First, how many times have you had one of your local vocal legends recording in your studio, turn to you during a play-back and ask, "What do you think of my song?" I would rather be felled by a gross of razor blades travelling at the speed of light than answer that question. So now, a direct plea to these up-and-coming songwriters/vocalists: Please, use your noodle! The whole concept behind the performing and recording of music is the audible stimulation one acquires from it, let alone the enjoyment. Chances are great, if the engineer truly likes your material, he will say so before you have the occasion to ask. Also, it is not his job to place judgment on the appeal of your music or scope of your talent. His job is to know his equipment inside and out, and how best to use it to acquire the sound you or your producer are looking for. Asking him this question will likely place him in an uncomfortable position. If you were in his place, trying to do the function he's performing, you'd realize that a comfortable relationship with the artists is quite necessary for his/her full potential to be realized. Therefore, let the mixer mix, not play Rex Reed.

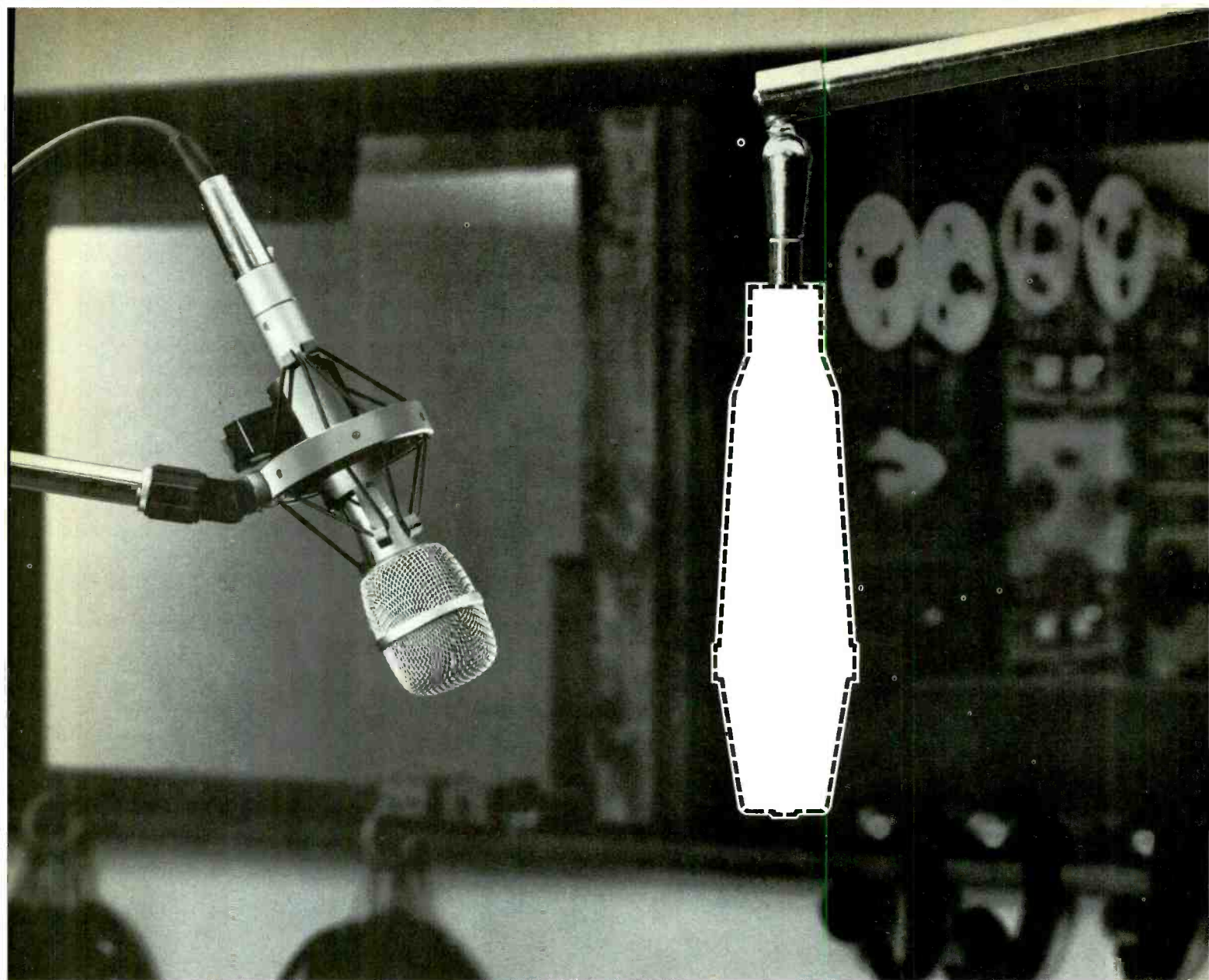
Secondly, can you count on your fingers and toes the number of times someone has innocently proclaimed "This is a nice hobby you have here." The person who dreamed up the word "hobby" was obviously not a sound engineer. Saying this to an amateur or semi-pro engineer is nothing less than taboo. Models and crafts are hobbies, but sound engineering is a way of life. Give the person credit for the accomplishments he has done on his own. The best way you can do this is not with flattery or praise, but simply do not mention THAT word.

The third point has to do with the people being recorded. Small studios have their share of demo sessions with not-so-talented players. The other side of an engineer is to realize that everybody has to start somewhere, and that talent is truly something a person can gain to a

certain degree if they are devoted. The novice singer or player, no matter how underpitched or unpolished, has realized that recording is a medium, among other things, to gain knowledge of themselves. This often leads to self-improvement and confidence. I take my hat off to these troupers. But, many times these people (the overconfident ones) try to act and talk so knowingly their first time in the studio, that the engineer may feel a need to go to the latrine for 3 hours or reach for a bromo. Many, many times, engineers are accomplished musicians who simply enjoy the other side of the microphone. People who try to brow-beat the mixer with their supposed talent and musical capability, are only convincing him they belong on the underside of the lower portion of the human anatomy. Again, let the engineer decide quietly to himself if he recognizes your talent. Don't wear an aura of filet mignon when the guy can see your hamburger nature.

The fourth point is absolutely aimed toward recordees. The person recording your music in the small studio, has likely paid for most or all of his equipment out of his pockets. If you want a 4 dB boost on the mids, let the engineer turn the knobs, not yourself. A semi pro recordist's equipment are his tools and a very integral part of his way of life. After all, would you take your car to a mechanic, then turn and tell him how to do it as you demonstrate with *his* tools?

Point five is directed toward the guy who is full of surprises. Just when you think you know what he's all about, he's something else. An example would be the fellow who consistently tells you during the session how great your sound is compared to another studio he may have used, and then behind your back tells someone else that you don't know how to record. This kind of person is not only a pain, but can hurt business. These types just can't be honest with themselves, or with anyone else for that matter. If a studio can't give you the sound you want, for pete's sake go someplace else. Don't waste the engineer's time and make him think you're pleased with the results. If you don't like the sound you're getting initially, tell the mixer. He'll try to correct your problem. If then you're still not satisfied, do him a favor, and go to a bigger facility. If you are extremely critical on demo material, you'll just have to dig deep in your wallet to rent a place with the type of equipment or versatility you need. The little guy usually tries to keep up with the



10 to 1 you'll like ours!

Every studio needs a \$1,000 microphone. It tells everyone you're serious about good sound, and it impresses the talent.

But when the session gets under way, all that counts is results. Not price tags. And judged *only* by what you hear, the new AT813 Unidirectional Electret Condenser from Audio-Technica is going to truly impress you...at about 1/10 the cost you might expect.

Recently a recording engineering class at a major university made simultaneous multi-track tapes comparing our AT813 side-by-side with some of the best microphones money can buy. The informed and critical students did the judging.

Surprisingly, in many cases they couldn't find a nickel's worth of difference. And some preferred the AT813 sound to the expensive competition.

You may agree with these student engineers when you hear the AT813. Or you may not. But at these odds, you can't afford to overlook us. And for new studios just getting underway, who can't afford a roomful of top-dollar microphones, the AT813 is an effective way to achieve full multi-mike capability. Write today for the AT813 spec sheet and A-T microphone dealer list. Then see your Audio-Technica sound specialist for great sound...right from the start.

 **audio-technica**
® INNOVATION □ PRECISION □ INTEGRITY

AUDIO-TECHNICA U.S., INC., Dept. 60MR, 33 Shiawassee Avenue, Fairlawn, Ohio 44313

CIRCLE 102 ON READER SERVICE CARD

www.americanradiohistory.com

trends utilizing the most cost effective devices he finds and keep his price down to layman's rates. He also will bust his bottom to give you a comparable sound.

By now, you're thinking this engineer is a hard-nosed old grouch. Not so. I'm merely trying to bring to light some of the very real problems that exist between engineer and artist. I'm sure there are probably enough irate, arrogant mixers out there too. This then is a message to the small operator saying "You're not alone," and to the artists, "Remember, we're working for you as much or more than ourselves." Let's take a close look at both sides of the coin, reflect in the mirror for a moment, and then MAKE MUSIC.

—Randy DeFord
DeFord Sound Workshop
Logansport, In.

"On" for Life

I've bought fine equipment and play music "live" (vocals and keys) five nights a week under these conditions: Forty minutes on, twenty minutes off (break) five hours per night. All solid state equipment. No tubes anywhere.

Question: Should I turn the equipment and amps off at breaks or should I leave it on through the break? Many thanks.

—Chris Johnson
Tampa, Fl.

John Murphy, member of the "Hands-On" team, suggests that it is wise to leave such equipment on. If there are "standby" positions available, do use them. The thermal cycling (warming and cooling) that occurs when equipment is turned on and off, tends to reduce the longevity of the equipment.

Protective Coatings

Re Paul Andrew Smith of the Ear Music Co., Oshawa, Ontario in February '80 "Letters to the Editor": Paul and others may also be interested in Injectorall's Poly Spray, a polyurethane resin coating for printed circuits. We have found this spray to be an excellent moisture and abrasion barrier for those who want to get maximum protection of their electronic components.

Make sure you do not spray on connector contacts and inside controls. This product is MIL Spec'd (1-46058A). Injec-

torall is located at 98-100 Glen St., Glen Cove, N.Y. 11542.

General Cement has Koloid-Clear Acrylic Plastic which insulates and is moisture and corrosion proof. From GC Electronics, Div. Hydrometals Inc., Rockford, Illinois 61101.

Keep the information flowing; best regards to all.

—Vic O'Brien
V-I-K Technical Services
Div. V-I-K Productions

Paul had asked about protection from the elements and certainly the products you name seem to fit the bill. Thanks for writing.

Is This Normal?

Two friends and I (we are all band directors) got together a short while ago and formed a partnership. It seemed to be the most logical way for all of us to pursue a common interest: multi-track recording. We have the Teac/Tascam model 5A mixer, 80-8 recorder, A-3300 SX-2T 1/2-track recorder, Sound Workshop 242 C reverb, assorted AKG, Sony, Electro-Voice, Beyer and Shure mics,

The Sound Workshop 1280 Recording Console at home at home.

Sometimes ideas can come at 3 A.M., and it's nice to be able to put them down on tape. Many creative recording people already know this. It's no wonder that the Sound Workshop 1280 has found its way into hundreds of home recording studios around the world.

Its compact size and flexibility make it perfect for home music production. And its superior sonic quality makes it the best performing board in its class. For a demonstration or more information see your professional audio dealer, or contact us.

BRINGING THE TECHNOLOGY WITHIN EVERYONE'S REACH.
Sound Workshop

Sound Workshop Professional Audio Products, Inc.
1324 Motor Parkway, Hauppauge, New York 11787
(516) 582-6210 Telex 649230



The 40-4, a professional point of view.

Tape recorders are like tools. In the hands of professionals, they do their best work. And when professionals choose to use them time and time again, they become tools of the trade.

The TASCAM SERIES 40-4 recorder/reproducer is a shining example of a professional recording tool. Look inside.

The transport is the same as our 80-8 half-inch 8-track. Designed to handle the heavier half-inch tape, the 40-4 controls standard quarter-inch tape with remarkable ease.

It's rugged enough to take the constant wind/rewind process of building multitrack masters.

The switching matrix for record status and monitoring

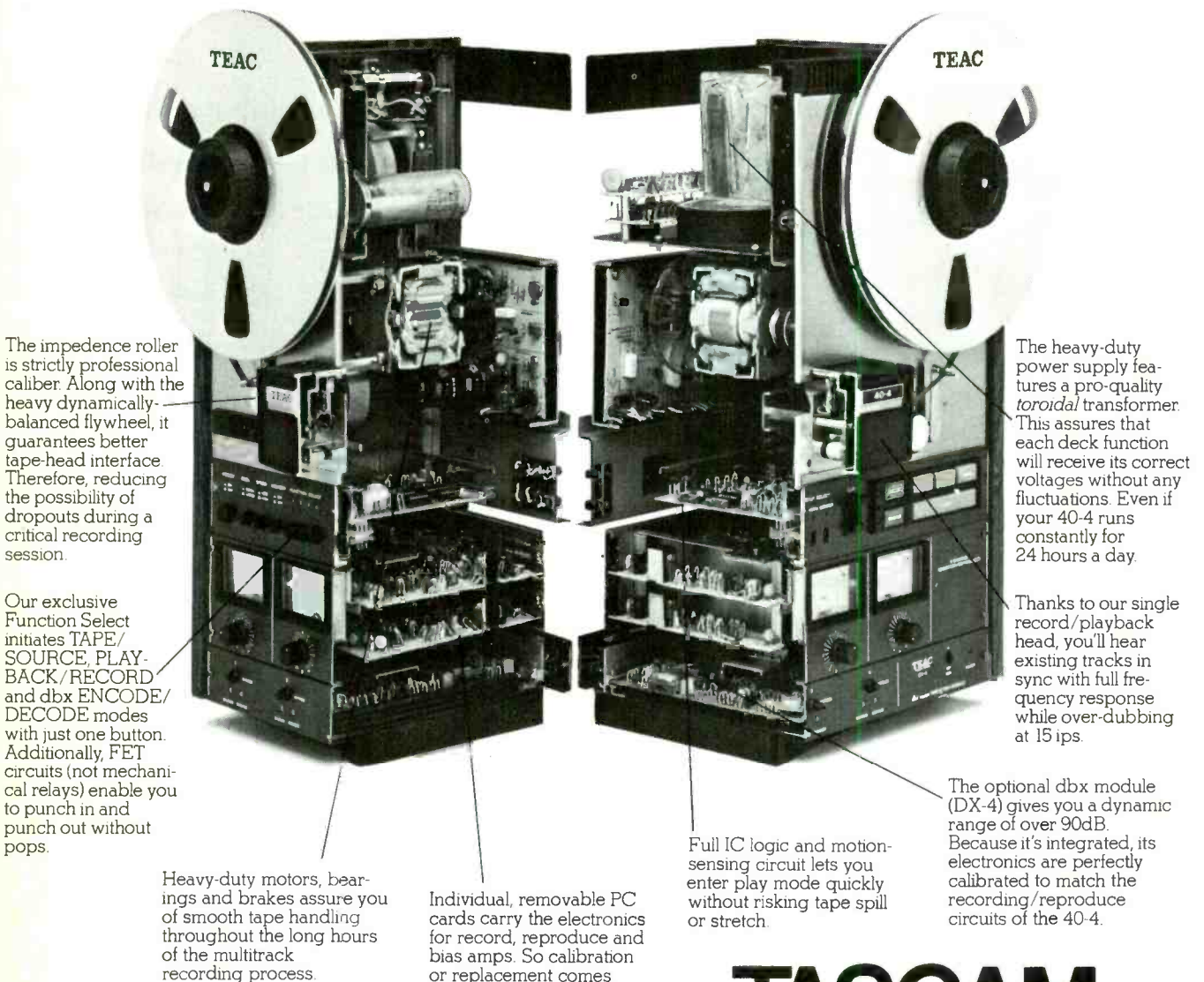
make overdubs and punch-ins convenient as well as positive.

Calibration adjustments are readily accessible, because professionals constantly maintain their tools in peak operating condition.

The results produced on the 40-4 (and its 8-track companion, the 80-8) are a matter of record. Sometimes gold.

And results, on demand, for payment is what we think professional recording is all about.

Check out the details below, then check in at your authorized TASCAM Dealer. And get the inside story from another professional.



The impedance roller is strictly professional caliber. Along with the heavy dynamically-balanced flywheel, it guarantees better tape-head interface. Therefore, reducing the possibility of dropouts during a critical recording session.

Our exclusive Function Select initiates TAPE/SOURCE, PLAYBACK/RECORD and dbx ENCODE/DECODE modes with just one button. Additionally, FET circuits (not mechanical relays) enable you to punch in and punch out without pops.

Heavy-duty motors, bearings and brakes assure you of smooth tape handling throughout the long hours of the multitrack recording process.

Individual, removable PC cards carry the electronics for record, reproduce and bias amps. So calibration or replacement comes quick and easy. Just swing down the meter panel for quick access.

Full IC logic and motion-sensing circuit lets you enter play mode quickly without risking tape spill or stretch.

The heavy-duty power supply features a pro-quality toroidal transformer. This assures that each deck function will receive its correct voltages without any fluctuations. Even if your 40-4 runs constantly for 24 hours a day.

Thanks to our single record/playback head, you'll hear existing tracks in sync with full frequency response while over-dubbing at 15 ips.

The optional dbx module (DX-4) gives you a dynamic range of over 90dB. Because it's integrated, its electronics are perfectly calibrated to match the recording/reproduce circuits of the 40-4.

TASCAM

TEAC Professional Products Group

and, of course, dbx noise reduction. We have been quite successful doing on-location 1/2-track and multi-track recording. Our work has included several demos, local concerts, jazz festivals, a gospel album, a country 45, and some limited production work. This all sounds great, but is actually sporadic. My question is, is this normal, especially for a business in its first year?

I would like to see an article on how to get jobs. We, for one company, need

more steady, reliable work, but do not know how to go about it. Commercials would seem to be lucrative—how about a jingle article or two? You folks have always done such great work in educating us and so many others like us.

— Wayne Dyess
DJ's Sound Productions
Nederland, Tex.

As you wrote your letter, we were just in the process of putting together the

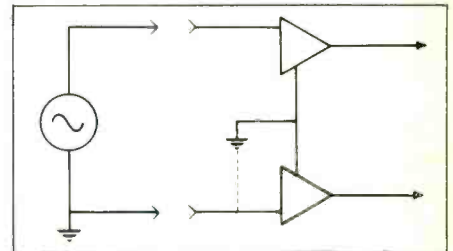
second of new articles by James F. Rupert devoted to the studio business. This, "Stalking the Wild Studio Customer," has already appeared in our April '80 issue. We think it's just the ticket for you. Being a subscriber, you've probably seen, read and dog-eared the article already, and we would appreciate your comments on it. (Mr. Rupert has become a tad star-struck and has refused to type out more pieces for Modern Recording unless he gets film offers, on the cover of Time, requests for his autograph, and such-like. But we are working closely with his agent and may manage a deal yet.)

Jingles? Sounds great to us. We'll get on that one right away. Thanks for writing.

"Talkback" Talkback

The reply for "Interfacing Ins and Outs" by Mr. Blakely in the December '79 issue's "Talkback" is, as he says, good for most all cases. I hope I'm not being too picayune in pointing out a situation where the simple ground rules may bring one up short.

For reasons of fidelity or economy, many devices don't use transformers. While you can fake it with impedances, grounding considerations may either drive you to distraction or cause a sly grin when confronting a setup like the ac-



Only upper half sees an input, yielding half the output one might expect.

companying sketch. A peek at the Heath sin/sq generator schematic reversed my assumption that it was balanced.

In this case the center ground in the 3rd-hand line amp worked with the Heathkit to short out the input to the lower half of the circuit. Normal operation resumed after I cut the ground out of the amp, as a) it's not needed here, and b) transformers would cost more than the amp.

Keep up the good work: next time I'll try for better puns.

— Jim Tolson
Chicago, Ill.



MUSICIANS, RECORDING ENGINEERS and COMMERCIAL SOUND CONTRACTORS depend on Equalizers to help them achieve ideal performance from sound systems in every conceivable acoustical environment.

Perhaps you've considered an equalizer to remedy your sound system problems, but are confused as to which type, and how to get the most out of one. After all, you're a musician, not an engineer... Presenting...

Soundcraftsmen's NEWEST, the ULTIMATE EQUALIZER—

(Complete Equalizer AND complete 0.1dB accurate Real Time Analyzer)



THE SOUNDCRAFTSMEN AE2420-R "SCAN-ALYZER" is a completely self-contained, superb stereo 10-BAND OCTAVE EQUALIZER and a REAL-TIME FREQUENCY SPECTRUM ANALYZER in one Unbelievably affordable unit. With it you can quickly and accurately analyze room acoustics and equalize your sound system to compensate for characteristics of any lounge, hall, auditorium, etc. In less than five minutes, you can virtually eliminate mike feedback problems and improve your group's overall sound quality to a degree (0.1dB accuracy) never before possible!

Visit your nearest Soundcraftsmen dealer right away.

Take your whole group and find out how good you really CAN sound. \$499

Send for complete literature and the name of your nearest dealer, or call
(714) 556-6191 COLLECT!

NEW CLASS "H"

250 W. AMPS

MADE IN U.S.A.

FREE! 16-Page
Full-Color Brochure

WHYS & HOWS OF EQUALIZATION
INCLUDES COMPLETE SPECIFICATIONS ON ALL MODELS

SEND \$6.00 FOR EQ-EVALUATION KIT:

1-12" LP "FREQUENCY SPECTRUM ANALYZER" TEST RECORD, 3 CHARTS, 1 CABLE, INSTRUCTIONS.

Made in U.S.A. by SOUNDCRAFTSMEN • 2200 South Ritchey • Santa Ana, CA 92705 U.S.A.

CIRCLE 130 ON READER SERVICE CARD

HUSH MONEY.

The dbx 208 tape noise reduction system is a new product that will impress both your engineering staff and your accountant. The 208 features 8 channels of simultaneous noise reduction on plug-in modules, plus a spare, all in a compact 5¼" rack mount package.

dbx noise reduction is rapidly becoming the new industry standard because it provides 30 dB noise reduction and 10 dB headroom improvement, from 20 Hz to 20 kHz, without the problems of other systems. The dbx system does not require critical and time-consuming level-match adjustments. Its true RMS detectors are not sensitive to tape recorder phase shift. Its voltage-controlled amplifiers (VCAs) operate over a 100 dB range. Overall the dbx system provides a level of performance and a simplicity of operation that is unsurpassed.

But the 208 is also a great value. It is priced at \$3700. That's \$7400 for your 16-track and \$11,100 for your 24-track.* And no matter how complex the future becomes, the 208 system expands simply and economically.

The dbx 208. The easy solution to your noise problems, today and in the future.

dbx, Incorporated
71 Chapel Street
Newton MA 02195
617-964-3210

dbx[®]

Making Good Sound Better



*Nationally advertised value.
Actual prices are set
by dbx dealers.

CIRCLE 92 ON READER SERVICE CARD
www.americanradiohistory.com

**WHAT'S
HAPPENING
ON THIS PAGE
SHOULDN'T
HAPPEN
ON YOUR
RECORDING
TAPE.**

IT'S WORTH IT.

© 2005 American Radio History. All rights reserved.

It's called print-through.
And if you think it interferes with your
reading, you should hear what it does
to your listening.

It happens on tape that has low
magnetic stability. Music on one
layer of the tape is transferred to
music on an adjacent layer, causing
an echo.

At Maxell, we've designed our
tape for superior magnetic stability.
So what's happening to the opposite
page won't happen to your music.

You see, we believe you should only
hear the music you want to hear.

Nothing less, and nothing more.



IT'S WORTH IT.

Maxell Corporation of America, 60 Oxford Drive, Moonachie, N.J. 07074.

CIRCLE 79 ON READER SERVICE CARD

TALK BACK

"Talkback" questions are answered by professional engineers, many of whose names you have probably seen listed on the credits of major pop albums. Their techniques are their own and might very well differ from another's. Thus, an answer in "Talkback" is certainly not necessarily the last word.

We welcome all questions on the subject of recording, although the large volume of questions received precludes our being able to answer them all. If you feel that we are skirting any issues, fire a letter off to the editor right away. "Talkback" is the Modern Recording reader's technical forum.

Sound Studio Ideas Wanted: Dead or Alive!

I am currently attempting to design a small home recording studio. The studio portion is capable of holding a maximum of five or six people, and I plan on using the control room primarily as a listening room. I've planned it so that the speakers in the control room focus directly at the engineer's ears. Is this practical?

I plan to build the studio to be extremely "live," since I consider it very important that it never lack sharpness. The walls will have plywood on the outside and drywall on the inside, with sand in between for soundproofing and sturdiness. The floors will be tile over a concrete base, except for the drum platform which will be constructed of wood.

My basic floor plan is shown at right. Are my ideas sound on the whole, or are there some changes that should be made before I start building?

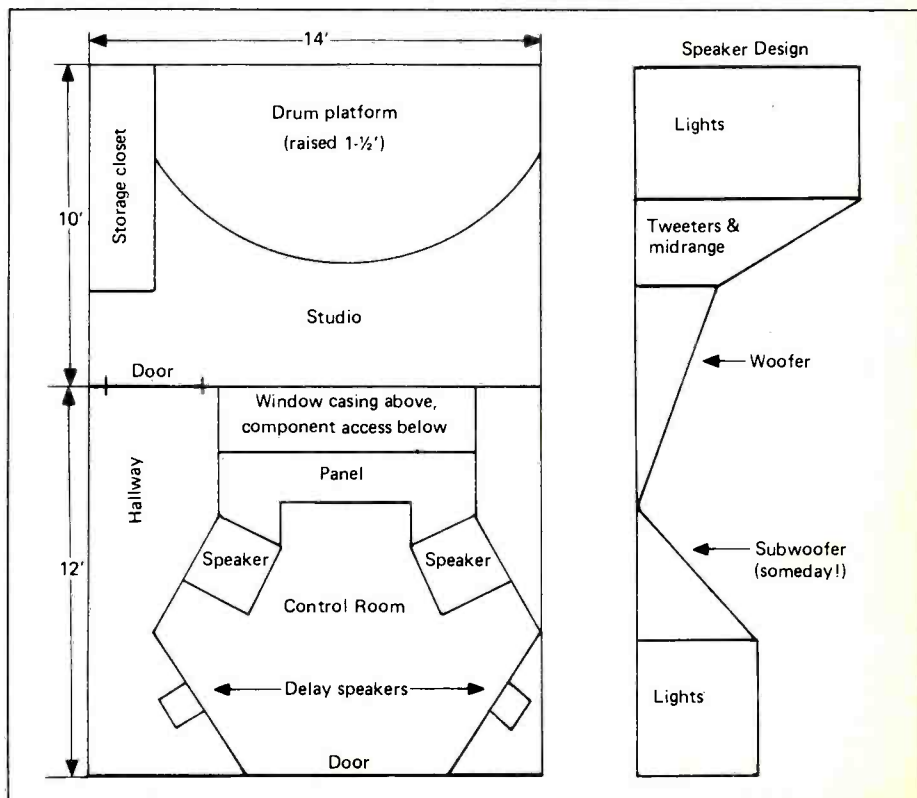
— Jody Hart
Louisville, Ky.

The description of your control room and studio is very basic, therefore, we will discuss some pertinent basic concepts.

Acoustics is a very complex art and acousticians are not to be found on every street corner. Even more rare are acousticians who specialize in recording studios. If your budget permits, you should carefully consider hiring an acoustical consultant. Most professional studio design firms have an experienced studio acoustician available. If, on the other hand, you are going to design the studio yourself, we have two major suggestions: Before you build anything read several of the excellent books on the subject of small studio construction. We recommend *Acoustic Techniques for Home and Studio* and *How to Build a Small Budget Recording Studio from Scratch*, both by F. Alton Everest. If you feel inclined to tackle some of the more advanced texts, read the classic books on acoustics by Michael Rettinger,

Acoustic Design and Noise Control—volumes I and II. Pay close attention to detail. You cannot be too meticulous. When designing and building, every phase requires great detail. Studio construction is more like fine cabinet work rather than house construction so remember, "burlap and egg cartons do not a good studio make!"

The dimensions of the studio and control room are the first important decisions. The intended use of the studio will dictate the general proportions within an available space. For instance, an electronic keyboard studio would require a large control room and a small studio. The control room must be able to accommodate all the keyboards which are recorded direct. A studio which will regularly be recording four or five piece bands should have a large studio and a



Why Pay For Degraded Performance?

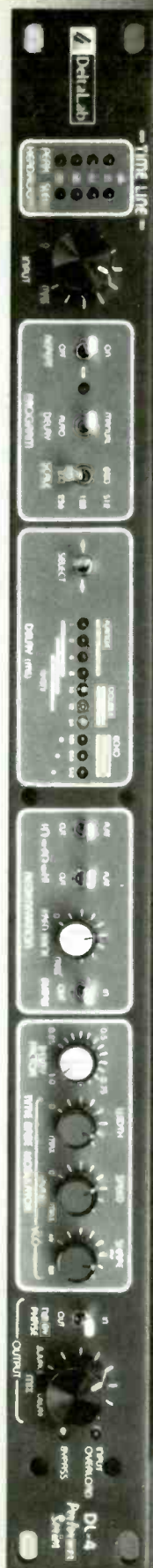
DeltaLab Has *The Special Effects Digital Delay Line* Featuring...

- Unique VCO with infinitely variable waveshape control.
- 512 milliseconds delay at full bandwidth
- 2.5 seconds delay with external memory module
- Flanging/Dubbing/Echo
- Digital Octave Flanging (a new effect)
- Infinite (non-deteriorating) repeat
- 15k Hz Bandwidth at all delay settings
- Resonant and doppler effects
- Footswitch control of effects
- 90 dB min.; 95 dB typ Dynamic Range
- 1 limited 2 year warranty



DeltaLab Research, Inc.
27 Industrial Avenue,
Chelmsford, Mass. 01824
Tel. (617) 256-9034

Canadian Distributor:
Heintz Audio Developments, Inc.
Markham, Ontario, Canada
Tel: (416) 495-0688



DL-4 Time Line™ Performer Series available at quality dealers

smaller control room. Having established the general proportions, the exact dimensions must now be calculated. Near field monitoring (discussed later) in the control room allows greater flexibility in the control room dimensions. The studio dimensions then become the most critical. After all, that is where you place your microphones to pick up the "sound." All rooms have three dimensions: height, width and length. These dimensions correspond to three different room resonances and their harmonics. A build up of resonances at discrete frequencies will "color" the sound to an extent that your recordings will appear muddy. Proper calculation techniques to prevent this problem can be found in the books mentioned earlier.

The structural walls should be as massive as your budget allows. Mass is the only thing capable of preventing full band transmission through the walls. Sand is acceptable as mass in your walls, however, you should consider that it is very hard to work with. It must be thoroughly dry and well sealed in plastic or you will face the possibility of the sand working its way into the studio.

A small studio would do itself an injustice if it were locked into a given wall texture. The dimensions and wall surfaces you have submitted would result in the studio sounding very much like your bathroom. Vary your studio surfaces with panels which are reflective on one side and absorptive on the other. You can then use these panels to structure the room acoustics to your daily needs — dead, live or anywhere in between.

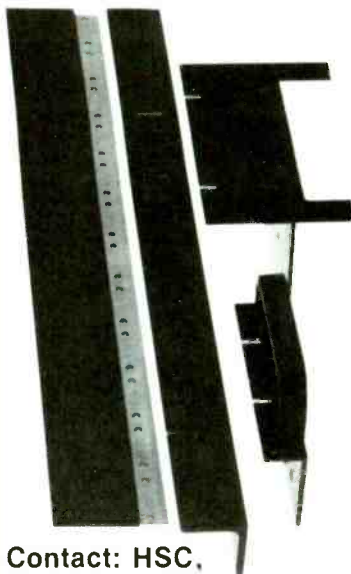
A drum booth really should be considered in a small studio. Out of necessity, the microphones will be placed close together and leakage of sound between instruments will become a real problem.

Your control room monitors need to meet some very stringent requirements. Many times home built speakers will sound fine as you are mixing but the recording will sound strange when played on your friend's hi-fi down the street. This problem is very frustrating and can be avoided by choosing an industry standard speaker which exhibits flat frequency response and a very narrow focus on the parameter defined as clean sound. What we're trying to say is that the majority of speakers are designed to hype the sound of the program so that even bad recordings sound better than they actually are. For your purposes you will need speakers that tell you exactly what's on the tape. Professional model speaker components are



You've already purchased the equipment . . .

Now, how are you going to mount it?



Contact: HSC,

- * we are the only manufacturer and distributor of custom mounts
- * we offer, in stock, mounting hardware for all audio and video equipment



Special!
Teac and Tascam rack mounts \$35.00 a pair this month

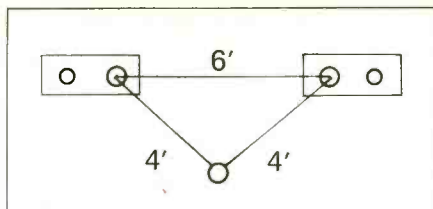


Now that you've purchased the equipment... contact HSC to mount it!



PHONE NO. 312-452-5551

CIRCLE 41 ON READER SERVICE CARD



built with the extra robustness needed to handle the transient peaks you'll encounter while recording. Focusing the speakers directly at your ears is not only a good idea, it will probably prove necessary in order to hear the high frequencies which tend to beam in a straight line. Another concept that has worked well in control rooms is near field monitoring. Place your speakers four feet from your head, about six feet apart on their sides, with the woofers toward the center.

This arrangement will decrease your room's acoustic effect on the sound. A subwoofer and delay speakers are not really needed and we recommend that you do not use them for recording. Instead, pursue the application of digital delays which can be used for an excellent effect in your stereo mix.

—Allen Rumbaugh and
George Juodenas
Audio Architects, Inc.
Nashville, Tenn.

Lofty Sound Ideas

My partner and I would like to install a sound-reinforcement, tape-playback system in a large, multi-roomed, showcase loft consisting of one large main room adjoined on three sides by several smaller rooms and a stage. This stage is elevated off the main room floor and is recessed between two of the smaller rooms.

First, we would appreciate any in-

formation or advice about suspending speakers from the ceiling, particularly the JBL 4663 and the Bose 800. We would like to suspend a pair of 800s in front of and above the stage area.

Second, because it would be desirable to have a means of monitoring an independent mono mix of the "live" program, as well as background (not Disco) level tape playback in four of the smaller rooms, we would like to install remote monitor speakers in these rooms. Each room will have an individual attenuator.

Would it be possible for us to use one channel of a Peavey CS-800 fed from the monitor send of the mixer (a Studiomaster 12 x 2B) to drive a pair of Bose 800 speakers, and the other channel of the CS-800, fed by the echo two send of the mixer, to drive six Shure speaker columns (two VA-300s, rated at 16 ohms each, and four VA-301s, 32 ohms each) in parallel, or should we consider a 25- or 70-volt distribution system?

—George A. Watkins
New York, N. Y.

Because building codes and safety standards vary widely throughout the country, I can only offer some basic ideas as far as hanging cabinets are concerned, as I would not like to have you construct something which may conflict with your local codes. However, there are a couple of "tried and true" methods which I will explain here.

The first method is to construct a plywood base with an eyehole bolt at each corner. This is suspended from the ceiling by two rigging cables, each terminating at the base with a bridle (See Figure 1).

The other method requires modification of the cabinets themselves and a

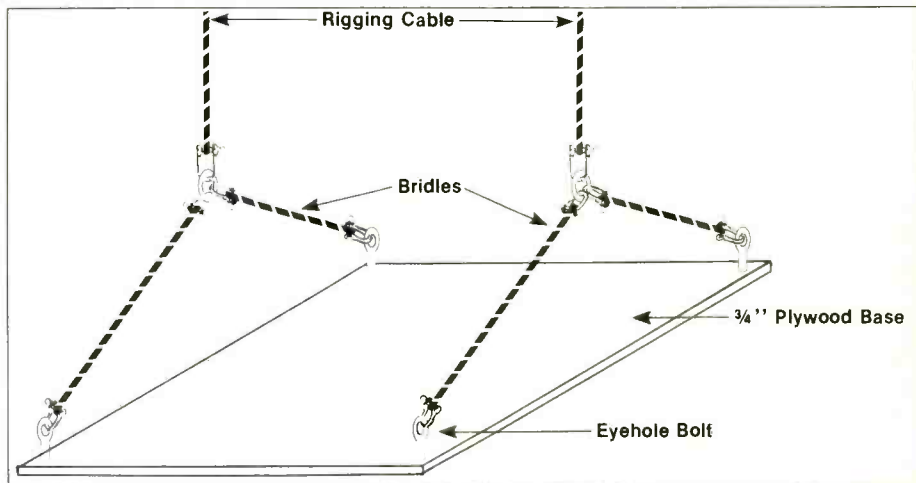


Figure 1

If You Haven't Purchased The Equipment Yet, Contact HSC, We Sell All Major Brands.

P.O. BOX 155
RIVER GROVE, ILLINOIS 60171

Take me to your leader.



Your leader needs me to perform with him.

I know.

I am a Bose Model 802 Loudspeaker.

I am the product of an advanced technological society.

The beings who designed me thought of everything.

I can be hung, cradled, placed on a stand or stacked with others of my kind.

I can imitate the sounds of your musical instruments precisely.

I can sound like a piano, or a guitar, or even like the cylinders you call drums.

I can sound more like your voices than any of my primitive relatives.

Place me with a few of my clones, and we can be heard by multitudes.

I am virtually indestructible, but also extremely light and compact.

The beings who fabricated me are continuously making clones of me, so we may one day populate the galaxy, accom-

panying stars and the rising comets destined to become stars.

Do not hesitate.

Take me to your leader.

BOSE

Better sound through research.

Bose Corporation, Dept. MR
The Mountain Road
Framingham, MA 01701

Please send me a copy of the Bose Professional Products Catalog and a complete dealer list.

Name: _____

Address: _____

City: _____

State: _____ Zip: _____

Telephone () _____

Covered by patent rights issued and/or pending
© Copyright 1980 by Bose Corporation.

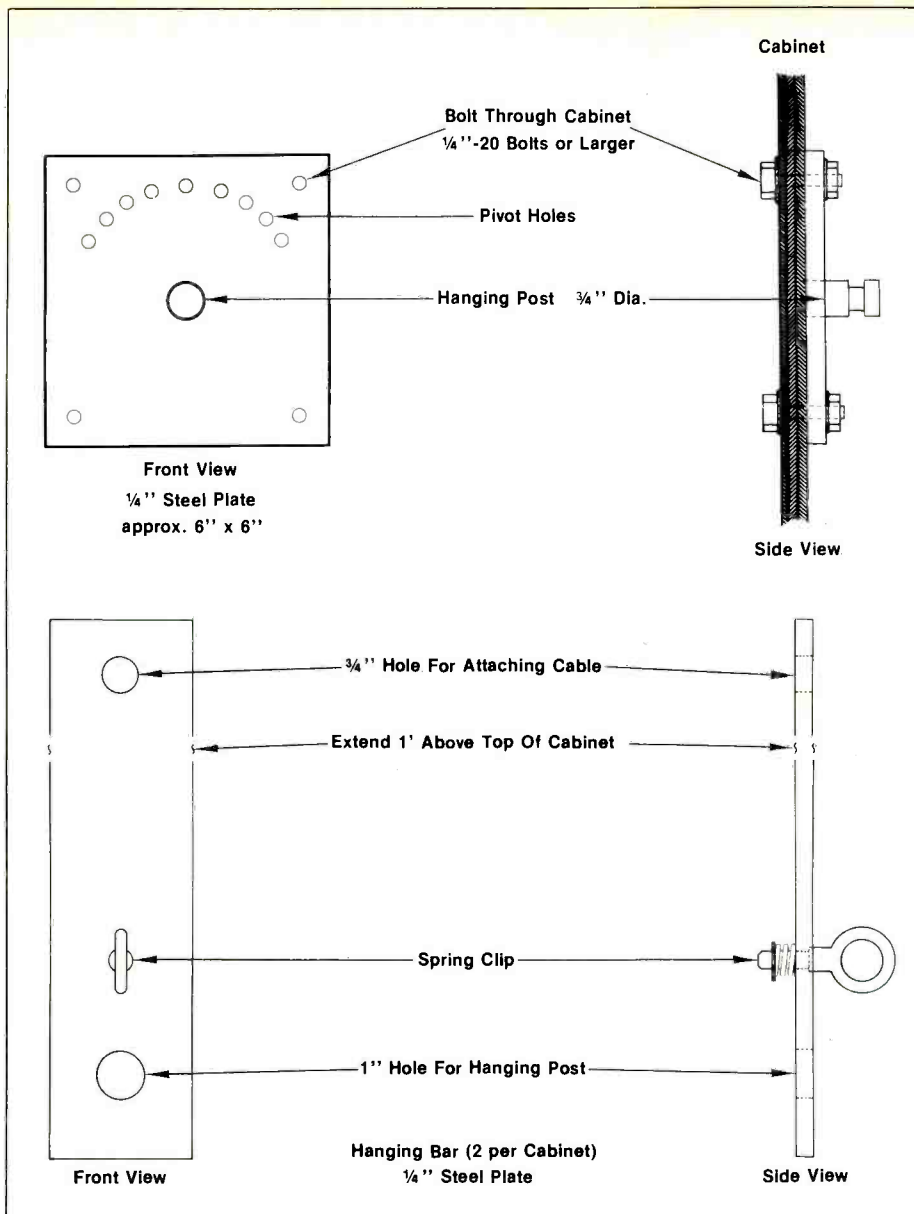


Figure 2

certain amount of metal work, but by this method the cabinets may be tilted. Basically, a steel plate, with a number of holes (forming an arc) and a post is bolted through each side of the cabinet. Hooking onto each post is a steel bar with a spring pin which lines up with the holes on the plate. Thus, when the cabinet is tilted, the pins will snap into the hole and lock. The complete structure may be hung once again by rigging cable (See figure 2).

Driving the speakers as described would not be feasible as the resulting impedance sinks down to 2 ohms. Also, the cabinet volume controls may create another problem of interaction. However, if both channels of the CS-800 are bridged (as per user manual), it will be easily capable of driving a 70-volt line.

Once this is done, 70-volt line transformers will have to be fitted to each cabinet. Be sure that the rating of the transformers chosen are adequate for the purpose required. There are several transformers available with 4-5 taps on the secondary (speaker) side. By connecting these taps to a rotary switch in

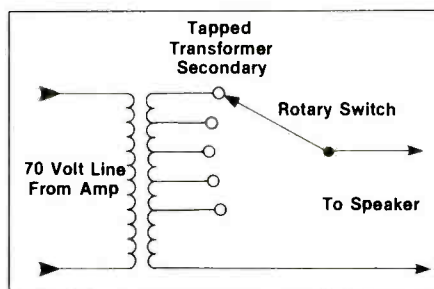


Figure 3

incrementing orders of power and then to the speaker, an effective stepped volume-control on/off, switch is obtained.

If you need further advice, *do not hesitate to contact me.*

— Steve Griffiths
Chief Technician
Tasco Sound, Ltd.
Newbury Park, Ca.

This One's For You

I phoned Dale Dalke of the Teac Corp. of America in Montebello, California concerning a phantom power conversion for the original Model 5 board. He told me that although he couldn't offer any information on this modification, he knew that it had been done before. Perhaps someone out there has performed this feat successfully and would like to share how it was accomplished?

Better yet, perhaps some reader or contributor to Talkback is able to offer information on how to build a central phantom power supply for a condenser mic that could be used with any board.

I appreciate and would encourage you to do more "how to build" articles. They do indeed help our pocketbooks, and offer some technical experience that is otherwise unaffordable for those of us with limited resources.

— Ed Perrone
Gloversville, N.Y.

Is anyone out there? We tend to think there is (our daily mail proves it)—and we also believe that you enjoy helping one another out when you can. That's why Mr. Perrone's request for assistance from dedicated MR do-it-yourselfers caught our attention. He had done his homework—checking with a representative of the manufacturer to gauge their opinion of the proposed modification—so we're turning the tables on our normal operating procedure and asking you to "talk back," as it were. If you have any experience with the modification that he wishes to make, please address a letter to Mr. Perrone, care of our editorial offices.

Suitable Slant for Studio Equipment

I am having all my equipment built into cabinets and everything has been turning out great except for my reel-to-reel. I have a Dokorder 1120 which I am hoping to build into a cabinet similar to Teac's Studio 8000 series, where the deck lays on a 45 - 60 degree angle.

The Revox B77 records much more than music.



If you think of the Revox B77 as an extraordinarily well-made tape machine, with a great reputation among musicians and recordists, you're right.

But you're only partly right.

Because the B77 is now available with so many options and in so many configurations that it can be almost any kind of tape machine you want it to be.

Whether you need a deck for broadcasting, mastering, duplicating, security, education, medicine, lab research, sound effects, municipal services, A/V presentations, transportation, or cinema, we have a B77 just right for you. With the same quality that made Revox a legend in the music business. Look at all the possibilities:

FULL RANGE OF SPEEDS: any two from 15 IPS for mastering to 15/16 IPS for logging or surveillance.

QUARTER OR HALF TRACK operation is available.

OPTIONAL DOLBY B removes high frequency noise.

RACK-MOUNTED OR PORTABLE. All B77's have folding handles and available rack-mounting flanges.

VOICE-ACTIVATED CONTROL saves tape in broadcast logging, surveillance, courtrooms, forensic pathology, municipal services, etc.

TIMER CONTROL permits recording or playback at pre-selected times.

AND MUCH MORE: Remote control • Special narrow bandwidth third track • Self-Sync • Stereo slide sync • Variable pitch • High and low-z mic and line inputs.

With all that flexibility, plus the legendary Studer qual-



ity, and tape-protecting features like a motion-sensing logic-controlled switching system, the B77 is perfect for anyone who needs to record anything.

Visit your Studer Revox professional distributor and tell him what *you* need.

STUDER REVOX

Studer Revox America, Inc.
1819 Broadway, Nashville, TN. 37203 (615) 329-9576
Offices: Los Angeles (213) 780-4234 / New York (212) 255-4462
In Canada: Studer Revox Canada, Ltd.

CIRCLE 91 ON READER SERVICE CARD

www.americanradiohistory.com

...EXR welcomes the small studio owner and the working musician to the era of Psychoacoustic Enhancement.



The EXR Exciter mode SP1 is the simplified direct descendent of the EXR Exciter model EX2.

The same EXR Psychoacoustic Enhancement that is dominating the Record Charts and Major Concert Circuits is now within the

financial feasibility of even the most modest recording studios and concert situations

The EXR Exciter restores the natural presence, clarity, fullness, and signal separation lost in the audio reproduction chain.

The Pioneer in Psychoacoustic Enhancement

EXR CORPORATION

3618 Elizabeth, Ann Arbor, MI (313) 996-4111

CIRCLE 121 ON READER SERVICE CARD

ASHLY

HAS AN EQUALIZER FOR YOU



SC-63
369 List

SC-66A
599 List

We've been building Parametric equalizers for over six years now and our new SC-63 (mono) and SC-66A (stereo) reflect our experience. Our basic design has evolved to include the latest technology and a host of new features. You'll find that our clean, logical front panel layout takes the mystery out of Parametric equalization and you'll have more power to control real world sound problems than you believed possible. Equalize at just the right frequency and bandwidth to get precisely the sound you want, not just a close approximation. You'll also appreciate our heavy-duty construction and attention to detail which is unique in the industry. When you think about tone controls, think Ashly Parametrics, the world's most powerful equalization tools . . . designed and built by people who still care about quality and reliability.

For more information see your Ashly dealer or Call or write:

ASHLY

Ashly Audio Inc.
Customer Service
100 Fernwood Ave. • Rochester, N.Y. 14621
(716) 544-5191 • Toll Free (800) 828-6308 (except N.Y.S.)

CIRCLE 84 ON READER SERVICE CARD

But! . . . In the Dokorder's reference manual it states, ". . . Your deck is designed to operate in a vertical position; it should not be used in the horizontal position, otherwise ventilation is inhibited and heat inside the deck may increase to the point of damage."

My question is, of course, considering this advice, can I lay my deck down to the angle I desire? Since these cabinets are being custom-made, ventilation on the sides and the back should be sufficient, or would it be wise to consider installing a fan somewhere in the cabinet for my Dokorder's safety?

—Kevin Birch
Weston, Ontario

It's now safe to say that everything is turning out great—including your reel-to-reel. Hirozo Kambe, Chief Engineer for Dokorder Service Center, Inc., when advised of your plan, saw no reason for you to worry. He felt that sufficient ventilation would be available, and that installing a fan in the cabinet would not be necessary. However, he did recommend that you do have the prescribed maintenance performed as outlined in your manual. This is especially important since, while you will not harm your recorder in any way operating it at this angle, you might void any warranty you now hold on the machine. If you require any additional information, please contact Mr. Kambe at Dokorder, 1117 W. 190th St., Gardena, California 90248.

A Typical Input? Try Atypical Inputs!

Please show a typical circuit of a balanced transformerless XLR microphone input. Does a transformerless mic input have an isolated ground? Can phantom powering be used with such an input?

—Paul Rumsey
Long Beach, Ca.

There is a broad range of designs of transformerless microphone (or line) inputs. Some have a grounded "center tap," some don't. Some can be used safely with phantom powering; some may require additional circuitry to prevent phantom-power D.C. from getting to the input of the first stage of amplification. Because of these variables you should get as many facts as possible concerning the particular input type you intend to use before you attempt to utilize it.

—Peter Weiss
Contributing Editor
Modern Recording



MODERN RECORDING



The Eumig FL-1000: The world's only computer-compatible cassette deck; your best interface with the world of music.

Capturing the full richness of music on a cassette requires an extraordinary cassette deck. It takes extraordinarily wide frequency response. Incredibly smooth tape motion. And an undistorted dynamic range at least as great as that of your musical source. It takes the Eumig FL-1000.

You need the ability to use the latest metal-particle tapes, of course. And separate record and playback head elements that permit each to be designed specifically for its function and that let you monitor the actual recording as it is being made. You need the kind of innovative engineering that produced the exclusive Eumig Opto-Electronic capstan drive, which automatically corrects motor speed 15,000 times every second. And the fast, easy-to-use Computest[®] system to optimize record bias and Dolby* calibration for individual brands within each tape type. And you need extraordinary technical performance: a full-range 20-20,000Hz (± 3 dB) frequency response; a 0.035% (WRMS) wow/flutter rating; and a 70dB signal-to-noise ratio.

Thanks to its built-in microprocessor you can "punch in" the number of any location on the tape, at any time, and the FL-1000 will immediately advance or rewind to that exact spot, indicated on a 4-digit electronic readout so precise it can be used for automated broadcast stations. (Yes, the Eumig FL-1000 is a genuinely professional deck.)

A peak-reading fluorescent display shows the exact, instantaneous signal level being fed to the tape, and is equipped with switchable peak-hold, 6-dB attenuator, and 2-position

dimmer functions. Mic/line and line/line mixing facilities, with master attenuator and cross-fader provisions are included, as are switchable reverb, mic. sensitivity limiter, MPX filter, and timer-activation controls.

Above and beyond all these attractive features, however, the Eumig FL-1000 is the world's first—and only—cassette deck capable of directly interfacing with any of the popular 8-bit home microcomputers. Thanks to its digital read-write capabilities, the FL-1000 can index all the selections on a cassette for instant readout on your monitor screen and for automatic selection sequence. With another program you can sort all the recordings in your collection by artist, by title, or however you choose, to instantly identify the cassette you want and direct the FL-1000 to play any selection on it. And with such a computer you can completely program—as the professionals are already doing—the operations of up to 16 FL-1000's! The possibilities are endless.

See your Eumig dealer today for an introduction to the FL-1000. It will be the beginning of a very beautiful musical relationship.

*(Dolby) is a trademark of Dolby Labs, Inc.

eumig[®]

Eumig (USA) Inc., Lake Success Business Park, 225 Community Drive,
Great Neck, New York 11020, (516) 466-6533

CIRCLE 74 ON READER SERVICE CARD
www.americanradiohistory.com

THE PRODUCT SCENE

By Norman Eisenberg

AUDIO LOGIC OFFERINGS

New products in the line from Audio Logic include the model ALM-15MX, a fifteen channel multiplexer/demultiplexer, which allows ten amplifier signals and five temperature-sense signals to be multiplexed over one two-conductor shielded cable to a remote location. Price is \$329.

The model AL-3 is a hand-held phase checker for use in checking the phase of microphones, speakers, cable wiring, console input to output, signal processors and complete systems. Price is \$100.

The MS-3 is a microphone splitter (one in/three out) supplied with cable, shielded transformer and ground lift switch. Price is \$85.

The ALM-1500 auto level monitor provides ten peak-reading line-level and power amp displays. Normal peak or peak-hold modes are provided, as well as dot or bar displays. Price is \$649.

The PS-4 48-volt phantom power supply features power and connections for four microphones and is expandable to handle fifty mics. Price is \$100.

CIRCLE 17 ON READER SERVICE CARD

TAPE DUPLICATORS UPGRADED

Tape duplicators by Cetec Gauss of Encino, California, have been updated with what the manufacturer calls several technological breakthroughs. The Gauss 1200 series will be outfitted with a microprocessor to assist in production and quality control, and with newly developed electronics to minimize noise in the duplicated final product. Both the microprocessor and the amplifier boards are available as kits to retrofit existing Gauss 1200 systems. The Gauss 1200 high-speed tape duplicating system can be used for cassette, 8-track and 1/4-inch open-reel duplication.

CIRCLE 18 ON READER SERVICE CARD

HANDS FREE INTERCOM SPEAKER STATION

Clear-Com Intercom Systems of San Francisco has announced its KB-124 speaker station, said to allow two-way communication between it and other hands-free or Clear-Com remotes. Available in both rack-mount or portable versions, the system allows full duplex operation in noisy locations as well as in low-noise areas from up to 20 feet. For private communicating, an optional handset or headset may be plugged in. Applications include video tape room, master control, lighting grid, motion picture sound stage, on-location film and ENG/EFP and any area where a headset would be restrictive or impractical.



CIRCLE 19 ON READER SERVICE CARD

GAS POWER AMP

The GAS 500 Ampzilla by Great American Sound Co. is a stereo power amplifier rated for 256 watts per channel into 8 ohms with no more than 0.05 percent THD. At 4 ohms the power rating is 375 watts for 0.1 percent THD. At 2 ohms, power is listed as 500 watts with no more than 1 percent THD. The amp has a speaker-protection relay, two-speed fan and overload indicators. Price is \$1395.

CIRCLE 20 ON READER SERVICE CARD

NEW AMPS FROM GIBB-JOHNSON



From Gibb-Johnson of La Mesa, California comes word of three new power amplifiers in its CPU series (40 watts, 100 watts, and 200 watts). Outputs are 4 to 8 ohms. Full-spectrum audio response is delivered on the transformerless 4 to 8 ohm output, while controlled response is available on the transformer-coupled 25- and 70-volt outputs. Four inputs can be used as high impedance, low impedance, low impedance balanced or program. A fifth input accepts a magnetic phono input or program level, and can be muted. All five inputs are available as program-level outputs both separately and mixed. This design, explains the manufacturer, allows "virtually any combination of inputs to be easily connected without internal strapping or accessory input transformers, at prices that are competitive with units having unbalanced inputs."

CIRCLE 21 ON READER SERVICE CARD

EUMIG CASSETTE DECK

Said to be the world's first cassette deck that interfaces with a home computer, the new Eumig FL-1000 incorporates a microprocessor chip that can be controlled by a front-panel keying system and permits interconnecting the deck with any 8-bit home computer. Up to sixteen FL-1000s can be interfaced through a single computer and can be individually controlled—simultaneously or sequentially—to play or record any section of any tape. Under computer direction, the titles and index locations of musical selections on a tape can be digitally stored and then read out on the computer screen.

A three-head deck, the FL-1000 has two mixable inputs with reverb, master fader and Dolby NR. Test signals of 400 Hz and 14 kHz are provided. A 14-segment per channel fluorescent level display allows switch-selectable VU, peak or peak-hold indications. Price is \$1550.

CIRCLE 35 ON READER SERVICE CARD

TANDBERG INTRODUCES NEW COMPONENTS

Among high-end separates recently introduced by Tandberg is the model TPA 3003 power amplifier, rated for 150 watts per channel into 8 ohms at less than 0.02 percent THD. Tandberg calls special attention to the amplifier's transient capability which results "from a unique . . . feedback design which optimizes the balance between high speed and stability." Price is \$1200.

The new TCD 3004 cassette recorder features Tandberg's Actilinear recording system, microprocessor-operated functions, a calibration meter in addition to normal signal meters, three heads, front-panel azimuth control and more. Price of the new recorder is \$2800.

Other new Tandberg units include the TCA control preamp and the TPT 3001 tuner. These are priced at \$1000 and \$1500, respectively.

CIRCLE 23 ON READER SERVICE CARD

EVENTIDE ADDS RTA'S FOR COMPUTERS

Following its real-time audio analyzer for use with the Commodore PET computer, Eventide has announced similar units for use with Radio Shack TRS-80, and Apple computers. The new devices divide the audio spectrum into thirty-one third-octave bands for display on the computer's CRT. Applications include measuring sound and noise levels, optimizing equalization, checking frequency response and speech and sound recognition pattern in voice-control systems.



CIRCLE 24 ON READER SERVICE CARD

ACE GROUND ELIMINATOR

Designed to break up ground loop faults in connecting cables and thus reduce hum problems is the new model 3900 Ground Eliminator from Ace Audio. Containing completely passive circuitry, the 3900 is available as a kit for \$14.25, or wired for \$16.

CIRCLE 25 ON READER SERVICE CARD

REVOX ADDS SPEED CONFIGURATIONS

The Revox B-77 open-reel tape recorder (reviewed in *MR*, November 1979) is now available in four different speed configurations ($1\frac{5}{8}$ and $1\frac{7}{8}$ ips; or $1\frac{3}{4}$ and $3\frac{3}{4}$ ips or $3\frac{1}{4}$ and $7\frac{1}{2}$ ips; or $7\frac{1}{2}$ and 15 ips).

These options, states the manufacturer, make the B-77 ideal for logging purposes, extended record and playback, background music systems, or professional, studio or portable use. The deck also may be ordered in either half-track or quarter-track formats. Also available is an A/V head option that permits recording sync pulses between stereo tracks for slide-show presentations. The deck operates in either stereo or mono, and it may be configured to record in mono from either or both inputs, and onto one or two tracks. In mono, any combination of input sources may be mixed, a feature that facilitates "voice-overs." The deck also is equipped for the sound-on-sound transfer of a previously recorded track. Simultaneously with the transfer, a mic or line-level source may be combined and balanced with the track being transferred.



CIRCLE 26 ON READER SERVICE CARD

CROWN ANNOUNCES MICROPHONE

Claimed to "represent the first fundamental advance in microphone technology in over 45 years" is a new line of "pressure zone" microphones introduced by Crown International of Elkhart, Indiana. PZM operation is based, explains Crown, on the principle that within a few millimeters of a rigid surface, the incident and reflected sound waves from a pair of equal level signals add coherently. This means that in close proximity to that surface or "boundary," the signals remain in phase as they are reflected after being stopped by the boundary. This creates the "pressure zone" at the surface of the boundary. In such a pressure field, the instantaneous pressure is uniform everywhere, and response is not a function of the angle of incidence. A pressure-calibrated electret capsule, mounted within a few millimeters and facing the boundary, receives incoming sound indirectly. A signal cannot be received on-axis, but can enter only at the sides of the opening between the microphone's diaphragm and the metal plate. This design maintains flat response for all angles of incidence in the surrounding hemisphere. The result, Crown concludes, is cleaner or truer sound since the signal is totally free of anomalies caused by the phase cancellation of direct with reflected sound. Crown has announced four models of the pressure zone microphone. One is a "general purpose" model for various recording and concert applications. Another is a "low profile" version for unobtrusive use. A third is a "flush mount" model that may be removed from view. A "lavalier" mic, the smallest of the models, completes the family.

Editor's Note: For additional information on the Crown PZM mics, please see Modern Recording's April 1980 issue—"Ambient Sound."

CIRCLE 27 ON READER SERVICE CARD

LUX POWER AMP

Lux's model M-4000A power amplifier is rated for 180 watts per channel into 8-ohm loads at no more than 0.008 percent THD. The same figure is given for IM distortion, while S/N ratio is spec'd at better than 115 dB. Features include independent channel level controls, VU meter and peak indicator. Weight is 66 pounds. Price is \$1495.

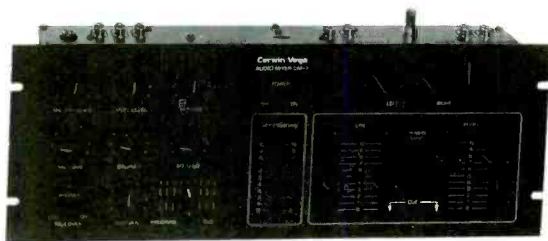
CIRCLE 28 ON READER SERVICE CARD

NEW POWER AMP AND DISCO MIXER

Cerwin-Vega has introduced the new model M-500 power amplifier, and the DM-2 Disco Mixer. The amplifier is rated at 250 watts per channel into 8 ohms at less than 0.02 percent distortion THD or IM. Peak-holding meters and a two-speed fan are included in the rack-mountable amp.

The mixer features a beat synchronizer for use on program or cue (headphones) to help a DJ sync a record to a given beat, thus facilitating smooth record segues for dancing.

Both devices are described as being built to standards of rugged professionalism.



CIRCLE 29 ON READER SERVICE CARD

BITS AND PIECES

By way of demonstrating its commitment to the burgeoning video cassette market, Fuji has started delivering its video head-cleaning cassettes, available in 30-foot and 20-foot lengths. Says Fuji: "At the first appearance of picture 'snow'—an indication of clogged heads—the cleaning cassette should be inserted into the VCR and run for about ten seconds." Each cassette can be used a recommended maximum of 270 times. The cassettes are priced at \$25 for the 30-foot length, and \$18.50 for the 20-foot length.

CIRCLE 30 ON READER SERVICE CARD

RKO Tape Corp., a recent arrival on the recording scene, has three basic tapes. Broadcast I is described as a premium ferric cassette; Ultrachrome as a top-of-the-line chrome tape; XD is a "high-quality 'workhorse' for general recording." Ultrachrome will be priced at \$5.76 for a C-90 and \$3.96 for a C-60. XD prices are \$3.66 (C-90), \$2.60 (C-60) and \$2.36 (C-45). Broadcast I is priced at \$5.76 (C-90) and \$3.79 (C-60).

CIRCLE 31 ON READER SERVICE CARD

3M reports that its 32-track digital mastering system has been used to make the first digital multi-track recording of an opera. The take was of Wagner's four-and-a-half hour "Parsifal" utilizing the Berlin Philharmonic Orchestra and the chorus of the Berlin Opera, conducted by Herbert von Karajan for the Polygram label. Editing and mix-down are now under way; the final decision to release the work will be made this summer.

CIRCLE 32 ON READER SERVICE CARD

CAMEO (Creative Audio & Music Electronics Organization) has released a "Dictionary of Creative Audio Terms," available to member manufacturers at \$3 each. The soft-cover, 100-page volume contains over one thousand terms commonly used in recording. Written primarily for new hands without much previous technical background, the book contains many general terms familiar to the audio-minded plus many special terms for the audio activist.

CIRCLE 33 ON READER SERVICE CARD

The latest group of dbx-processed disc recordings, more than ever, demonstrates the superiority of this cutting technique. The new discs—containing heavy orchestral music recorded by the Philharmonia Hungarica—were cut from digital tape masters. The two-to-one linear compression system thus was able to squeeze a 90-dB dynamic range onto the cut disc master, and the dbx decoder restores it during playback. With their ultra-quiet grooves and unprecedented dynamics, these discs may well be the most spectacular sounding yet released.

CIRCLE 34 ON READER SERVICE CARD



MUSICAL

NEWSICALS

SOUND REINFORCEMENT SPEAKERS

Eastern Acoustic Works has introduced a line of full-range speaker systems known as the MK Series. The design goal of the new series was to provide very high sound levels in near-field applications with frequency linearity comparable to studio monitor speakers. A unique feature of Eastern Acoustic Works systems is the interchangeable tuning system which uses various vent cut-outs to optimize the enclosure's tuning according to the latest techniques in vented-box synthesis and allowing optimum results with virtually any professional-quality low frequency driver the user may choose. All MK Series cabinets include a high-quality, low-loss crossover capable of handling 350 watts RMS and have a front panel high-frequency level control. Other standard MK series features include 18-ply-per-inch hardwood plywood, extruded edging rails, roadie-type corners and perforated steel grilles over the drivers. Each of the five basic models comes in a permanent instal-



lation version as well as a touring version which features an ABS finish on the exterior plus large recessed handles and latching transit covers. As an option, all models are available with a baffle cut-out for a very high frequency driver or supertweeter.

CIRCLE 4 ON READER SERVICE CARD

Acoustic Control has introduced two new P.A. system components to complement their Model 820 Professional Bass Bin. The model 824 is a compression driver/exponential horn



combination for high frequency use. The 824 has a built-in 800 Hz crossover to prevent low frequencies from reaching the driver to potentially damage it. A special circuit additionally protects the driver by lowering the drive level when a potentially damaging signal is present; once triggered, the circuit may be reset by depressing a circuit-breaker button on the back of the enclosure. Nominal impedance of the 824 is 8 ohms, and power handling is rated at 200 watts. The model 826 High Frequency Projector is an array of six piezoelectric horns designed to extend the high frequency of any speaker system.

Unlike most piezo horn arrays, the 826 utilizes a highly selective crossover network to eliminate the harsh sound produced by piezo drivers below 5 kHz. Nominal impedance is 16 ohms, and the 826 may be used with any amplifier of up to 200 watts (into 8 ohms). The enclosure of the 826 occupies only about one-half a cubic foot and weighs seventeen pounds.

CIRCLE 5 ON READER SERVICE CARD

MIXING CONSOLES

Audy Instruments recently announced the introduction of a new mixing console with independent stereo and mono outputs for "live" performance and recording applications. The Audy Series 2000 console is available in 12 and 16 input versions and is stackable for up to 32 inputs. The console uses the latest high speed, low noise IC op-amp technology to minimize slewing-induced and transient intermodulation distortion, and maintains 24 dB of headroom throughout the console for cleaner sound. Other features of the Audy mixer include transformerless balanced inputs and outputs, patch points on individual inputs as well as outputs, 3-band EQ with switchable midrange frequency, monitor and effects sends with pre/post switching, soloing of any input or output, phantom power for condenser mics and a genuine Anvil flight case for each model.

CIRCLE 6 ON READER SERVICE CARD

The VM44 is a four-input mixer with integrated 50 watt power amplifier from Multivoxx/Sorkin Music as part of that company's Premier Amplification line. The unit features bass, treble, reverb and level controls on each of its four inputs, which may be fed from high-level or low-level sources. An

effects send and return circuit, master volume and reverb controls, a VU meter, and a line output jack as well as the two speaker output jacks round out the features of this compact unit.

CIRCLE 7 ON READER SERVICE CARD

Dallas Music Industries has introduced the Kelsey Pro-Club Series of reasonably priced sound reinforcement mixers. The Pro-Club line is designed to offer professional quality with simplicity of operation. Among the professional features of the line are transformer-balanced inputs with variable gain control and overload LED, three-band EQ, monitor send, echo send, VU meters and a separate record output. Pro-Club mixers are available in 8, 12 and 16 input versions, and are furnished with an SMF road case.

CIRCLE 8 ON READER SERVICE CARD

MUSICAL INSTRUMENTS

Within the ranks of Japan's acoustic guitar manufacturers, Takamine & Co. has a reputation for building a top-quality, handcrafted guitar from some of the finest woods available. Takamine now stands to further enhance its reputation on the basis of their new series of dreadnaught and classical guitars with integrated pickup systems. Takamine correctly recognizes that a guitar's sound is a combination of string vibration and vibration of the guitar's top, and for this reason most Takamine guitars use a fine spruce top with an "X"-shaped bracing pattern to aid sound projection and balance while maintaining physical strength. Beyond this, Takamine realized that any pickup system which hopes to capture the natural sound of a fine acoustic guitar must pick up both the string and the top vibrations and must do this with a minimum of coloration. Extensive research led to the development of the Palathetic pickup system which incorporates six palathetic crystals ingeniously mounted in the bridge assembly of the guitar where they can pick up both types of vibrations. In the case of Takamine's classical guitar models, the palathetic crystals are encapsulated in acoustically conductive epoxy and mounted in a lightweight copper frame which is then set into a cavity immediately behind the saddle in the bridge of the guitar. In the various steel string models six cylindrical palathetic crystals are mounted in an

alloy frame which is then mounted on the underside of the bridge, inside the soundbox, in such a way that the pickup crystals are in close proximity to the string pins. The palathetic pickup system features an integral FET preamp, powered by a single 9-volt battery and mounted inside the sound box of the guitar. The preamp has frequency response from 80 Hz to 5 kHz and is tailored to give the most natural acoustic guitar sound. Gain and low frequency rolloff controls are provided as part of the preamp; the controls are mounted in the side wall of the guitar just above the neck and are slider-type controls with low profile styling. The output jack for the palathetic systems has been incorporated into a secure end peg. At present Takamine offers seven different palathetic pickup guitar models: one cedar-topped classic model, one concert-style steel-string model, a twelve-string dreadnaught, and four six-string dreadnaughts with various choices of woods and trim. All models boast the various Takamine features including adjustable truss rod, rosewood fingerboard with nickel silver frets, real bone nut and saddle and faultless construction.

CIRCLE 9 ON READER SERVICE CARD

Despite its overwhelming popularity over the years, one complaint owners always had about the Fender Rhodes electric piano was that the unit had a curved top cover which made it very difficult to stack other keyboards or

accessory units on top of the instrument. This problem has finally been solved on the new Mark II Rhodes Stage and Suitcase model pianos from Rhodes Keyboard Instruments. The new cover is molded from the same nearly indestructible ABS plastic as the original harp cover, but is even heavier gauge and has a ribbed design for greater strength. A shallow well has also been molded into the Flat Top for storage of the black anodized music rack which comes standard with the Flat Top; also standard is a convenient desk-top which is supported in use by the music rack when the Flat Top is not being used to support a stack of keyboards and accessories some three feet high, weighing several hundred pounds. The new, flat cover will also be available to Fender Rhodes owners as a retrofit requiring no modification to existing Stage and Suitcase models.

CIRCLE 10 ON READER SERVICE CARD

Ibanez has introduced a new, low cost series of acoustic guitars which feature the same craftsmanship and many of the same features as the higher priced Ibanez acoustics. The new series is known as the Champion Series, and features laminated spruce tops and mahogany backs and sides. The various dreadnaught models were carefully designed to offer a balanced sound as well as attractive appearance in their natural and brown sunburst finishes.

CIRCLE 11 ON READER SERVICE CARD



SYNTHESIZER EQUIPMENT

Two interesting news items have come from PAIA Electronics, the synthesizer and electronic kit folks. The first concerns PAIA's The DRUM, a new percussion synthesizer. The DRUM uses an encapsulated sensor which can be mounted permanently or temporarily on a conventional drum, or it can be used with practice pads available from PAIA. The DRUM features full synthesizer versatility by providing continuously variable controls for pitch modulation (down as in other percussion synthesizers, or up), oscillator waveform mix, noise filter frequency and oscillator/noise mix. The system is fully modular and features rear panel signal and control patch points to allow the user to configure as small or large an electronic drum set as desired.

fier with simultaneous linear and exponential control response and on-chip summing of signal and control inputs; and a temperature compensated VC oscillator with ramp, triangle and VC pulse waveforms, hard and soft sync inputs and linear and exponential control voltage inputs. Prices range from \$7.95 to \$10, and full details on applications are available.

CIRCLE 12 ON READER SERVICE CARD

The type of news we see all too rarely these days comes from Star Instruments. Star has announced that they are lowering the price of their latest Synare Sensor percussion synthesizer from \$140 to \$119. The Synare Sensor clips to the rim of any drum to provide a full range of synthesized percussion effects, and is even more attractive to musicians at the new price.

CIRCLE 13 ON READER SERVICE CARD



The other news concerns PAIA being appointed as exclusive small quantity distributor for a new line of integrated circuits for audio processing and music synthesis from Curtis Electronic Specialties. The Curtis ICs are second generation devices offering a higher degree of integration and requiring less external circuitry than competitive devices along with low noise and wide range. Among the devices made by Curtis available from PAIA are a Voltage Controlled envelope generator with a typical time control range of 250,000:1; a high performance VC four-pole filter with on-chip controlled resonance and temperature compensation, a dual VC ampli-

MUSICAL INSTRUMENT ACCESSORIES

The company that brought the world the Nasty Cordless tunable FM wireless system for guitars has now introduced a professional quality VHF wireless system. The basic model is the Nady VHF 600, a crystal-controlled VHF system with 25 Hz-20 kHz response and 102 dB signal-to-noise claimed by Nady Systems Inc. Additionally, Nady claims to have eliminated compressor-limiter distortion and the unnatural sound common to other wireless systems. The VHF portion of the Nady has achieved high sensitivity and a remarkable 100 dB rejection of spurious images through the

use of dual helical resonators. The system is available as the basic VHF 600 or as a true diversity system as the VHF 700. Unlike the so-called "antenna-diversity" systems which are not true diversity systems at all, the Nady VHF 700 is really two complete receivers in one plus a comparator which selects whichever tuner section has the stronger output. An unusual feature of Nady's systems is that the VHF 600 may be upgraded to a 700 series true diversity system at a later date for only the difference in list price between the two versions. The transmitter section of the Nady system has also been improved for higher electrical efficiency and hence longer battery life. In addition, the output power of the transmitter is switchable to either 125 mW or 50 mW to further conserve battery power; in the 125 mW mode, the range of the Nady VHF system is said to exceed 1500 feet in a line-of-sight, and to be at least 200 feet under worst case conditions.

CIRCLE 14 ON READER SERVICE CARD

Dallas Music Industries has announced all-new fiberglass construction on the SMF line of road cases. SMF road cases have had a reputation for quality and high protection of contents, and the use of fiberglass exteriors should improve the outward durability of the cases themselves. Top quality hardware is used throughout, including an exclusive corner design. Various standard models are offered to accommodate amps, speakers, keyboard instruments, guitars, mics and electronics, plus custom designs to meet a wide variety of special requirements. SMF road cases are available in five standard colors: blue, green, black, white and red.

CIRCLE 15 ON READER SERVICE CARD

SIGNAL PROCESSORS

Peavey Electronics has introduced a new graphic equalizer which they say is the culmination of three years of design engineering. The new model is called the EQ-27 and features balanced inputs and outputs, a maximum output level of +20 dBm, a heavy cast front panel and a rugged steel chassis. For ruggedness and long-term stability, the Peavey EQ-27 has eliminated the trimmer adjustments common to most other equalizer designs which are so likely to drift under vibration.

CIRCLE 16 ON READER SERVICE CARD



Peavey equalizers have been designed using the latest computer assisted design techniques and precision components to offer the musician, sound man, and home audiophile flawless performance without extravagant cost or compromises in quality.

The Stereo Graphic features two independent ten-band sections with 15 dB cut or boost at ten center frequencies. Filters are provided for each channel with continuously variable 12 dB high and low cut or boost.

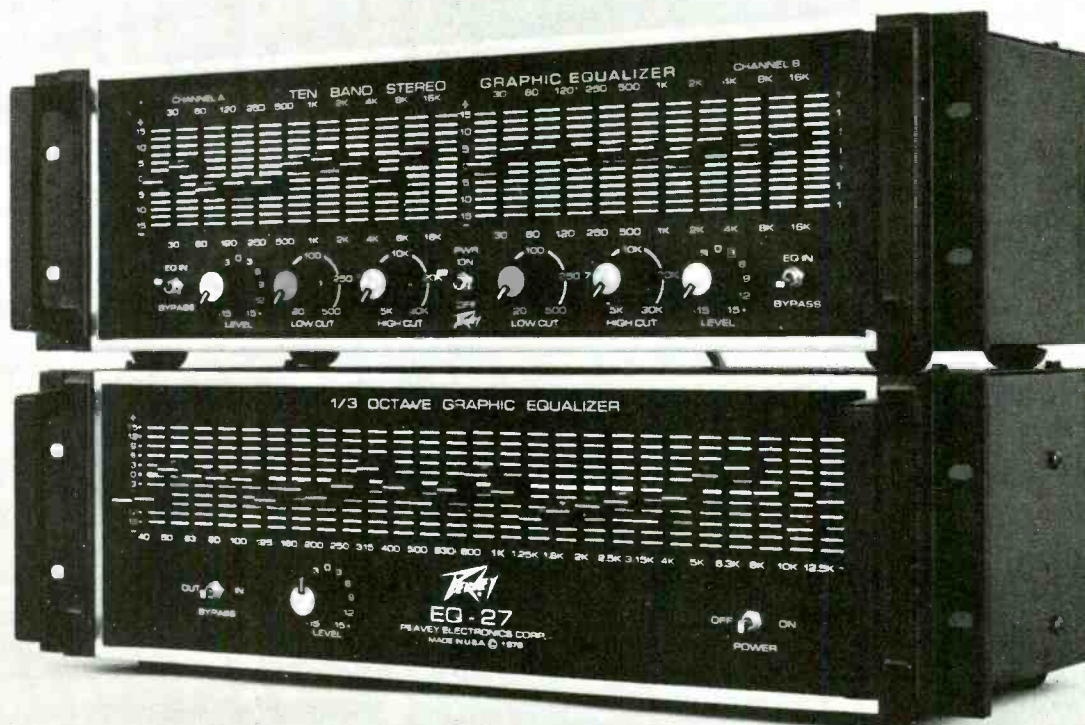
The EQ-27 features 27 bands at one-third octave centers throughout the audio range and is fully compatible with the most professional real time analyzers.

Each system's input circuitry can be matched to a wide range of signal levels thanks to special gain/attenuator level controls. Balanced and unbalanced outputs are equipped on each unit with protection for any accidental overvoltage or short circuit situation that may occur.

Because of a high level transformer balanced output circuitry, the Stereo Graphic and EQ-27 have the capability of providing greater than +16 dBm into 600 ohms making them excellent as high quality line amplifiers.

The Peavey Stereo Graphic and EQ-27 are technically two of the finest equalizers available today. Exceptional performance and compatibility with a wide range of signal and impedance levels make these units an unmatched professional value.

PEAVEY STEREO GRAPHIC & EQ-27 price/performance no other graphics can equal.



Complete specifications and descriptions of the Stereo Graphic and EQ-27 are available upon request

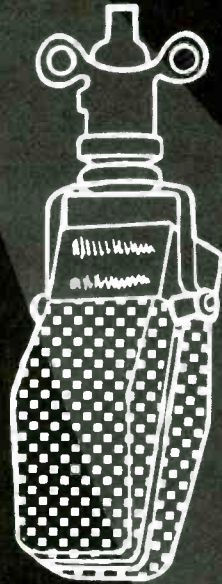
by writing our Literature and Promotional Department, Peavey Electronics; 711 A Street; Meridian, Miss. 39301.



CIRCLE 89 ON READER SERVICE CARD

www.americanradiohistory.com

Recording...



By **JAMES F. RUPERT**

I doubt if any past "Session with" article has ever taken on the somewhat preternatural aspects of this one. The articles I've placed in *Modern Recording* in the past have been very good to me, what with the kind letters and encouraging responses I've gotten to them. The editor says I'm getting good enough that pretty soon I won't have to pay him to print them any more!

I knew that these esteemed pages were distributed and read all over the world, but little did I realize that someday that same worldwide exposure would affect me so directly. Imagine if you will my surprise when I was approached about our studio doing special effects recording for an upcoming movie starring one of the biggest stars in the world. (And I do mean biggest!)

It may seem as somewhat of a shock

to his legions of fans that when they see this superstar up on the silver screen he is merely lip syncing to a pre-recorded soundtrack during his big scenes, but it is true. Yet do not underestimate the time and technology that must go into the preparation of that audio track. Every effort is made to insure that the soundtrack will make this deserving star sound... well, big.

After much negotiation and deliberation the details were finally worked out so that we might begin to undertake the biggest project of our careers. We'd all dreamed of the day when we might record a really big star for the first time but who'd have thought that the big star in question would turn out to be Godzilla.

But a deal is a deal and we soon found ourselves on a plane heading toward the land of the rising sun to try and make a

dinosaur sound macho on a tape recorder. We tried to convince our clients to have Godzilla come to our facilities in the states to lay down his tracks, but evidently the last time the inhabitants of planet X spaceshipped him out to their place to battle Rodan and Ghidra he had gotten air sick and now refused to fly anywhere. So Japan here we came.

We were met at the airport by Godzilla's personal manager, a fellow by the name of Urwikawa Wang. (He insisted we not stand on formality and told us we could call him U. Wang.) There were four of us on the sound crew including myself—engineer Doug Dickeson, electronics wizards Ken "Fuds" Greiner and Fat Fred Meyer. After ramming all five of us and our luggage into a Honda, the sardine express went directly to the

studio to meet the big boy.

The soundtrack was to be cut at a special studio built for Mr. Godzilla by his alma mater company, Toyoho pictures. U. Wang explained to us as he snaked through Tokyo traffic at 80 m.p.h. that Godzilla had been in retirement for the past few years, but was planning a big (what else) comeback in the new movie, *Godzilla vs. the Giant Wax Lips!* The big moment in the picture was going to come at the end when the Giant Wax Lips climbs the Tokyo Tower by sucking on it.

"Sounds great," Fred remarked, trying to pull his foot out of his face in the back seat.

U. Wang told us they didn't know if the Tokyo Tower would have all the repairs done in time for shooting. It seems Mothra the 200-foot moth had broken the tower in two during the shooting of his picture.

"That's the last time I hire an insect!" Wang spat indignantly.

We were much impressed and pleased after examining the control room and console at Toyoho Studios. As Doug and I sat at the console examining the layout, I glanced up through the glass to see what I thought was a large green tree growing in the studio. Upon closer examination I discovered that same tree was found to have three mammoth toes with corresponding claws attached. I then realized we were about to meet the biggest movie star in the world.

U. Wang led the way into the studio to start the introductions off. Godzilla, I must admit looked magnificent standing beneath the two hundred and fifty foot ceilings especially built for him. As I watched him standing there in all his twenty story splendor, it dawned on me that his height was going to cause us some problems. A conventional mic stand just wasn't going to work. There was only one thing we could do. We'd have to use a boom.

"You're looking beautiful, Sweetheart," U. Wang beamed as he approached the lizard wide-open-armed.

"Ever try to get a cab in this burg on a Monday morning?" Godzilla growled, sucking on a Marlboro the size of a telephone pole.

U. Wang made introductions and each of us received a bone-jarring handshake to begin the relationship.

"Just call me Gozzy," Godzilla said, smiling and relaxing to the situation.

"Anything you say," replied Doug,

placing stressful emphasis on the "anything."

We spent a couple of relaxed hours receiving a rundown on how Wang and Gozzy wanted to run these sessions and what had to be recorded by us. U. Wang called for luncheon to be catered so we might work straight through that day. The four Yankees chowed down on a bucket of the Colonel's finest, while U. Wang attacked a more traditional Japanese repast and Godzilla had a Buick.

Doug and I finally decided that a multiple miking sequence would be tried initially to attempt to pick up some of the natural room ambience. Wang wanted the fullest sound possible without the use of artificial delay lines.

"Can you make it sound like his roar is bouncing off the wall of a building he's about to pound the crap out of?" he asked repeatedly.

We ended up using a Neumann U-87 about 15 inches from Gozzy's gaping gob, a Sennheiser 421 about 28 inches away and a selection of Shure 57s and Sennheiser 441s at varying distances and degrees off-center further away. Limiting on the U-87 had to be handled with kid gloves to keep a full bandwidth and the natural sound that U. Wang was by now pleading for.

Problems developed almost immediately with Gozzy moving about in front of the microphones, ruining the position we had set him up with. Fat Fred was out in the studio like a shot on several occasions to discuss the situation with the behemoth. After the fourth trip out I could see tempers were wearing thin because by this time Fred and Gozzy were disagreeing about everything.

"Can't you stand even a little bit still?" Fred was shouting.

"I gotta move," Gozzy moaned. "It's part of my schtick!"

Doug and I were struggling to watch meters, ride gain and give cues through the headphone mix as we watched the script. Members of the film crew including the director and chief editor were in the booth by this time and we suddenly found ourselves hip deep to a big Indian in experts. Everybody had an opinion and everybody had to voice it. The consensus was that—simultaneously—Gozzy's voice was too bright, too dull, too loud, too muted, too weak, too forceful and so on.

Gozzy finally called a halt to the madness in the early evening and earned my undying friendship for doing so.

U. Wang drove us to our hotel, the

company-owned Toyoho Arms, where we were to stay during our visit. Let me tell you, the Arms turned out to be the pits, but by this time we were all so tired it didn't matter. We had a light supper, Fred downed two gallons of saki, and we crashed till morning.

Our wake-up telephone call came through the next morning at too early an hour to be considered decent by any standard.

"You rang?" Doug finally muttered into the phone receiver.

"How did you know?" cried U. Wang on the other end. "Pick you up in ten minutes."

After taking three of those ten minutes to start my heart, we melted into the lobby and met our Honda-driving chauffeur. At the studio Gozzy looked like I felt so we waited until he had polished off his morning bathtub of coffee before starting. Fred had marked out on the floor with 32 yards of masking tape where Godzilla was to stand and they began their daily disagreements with that issue.

TIM distortion was no problem in this well set up facility but by mid morning we had found ourselves faced with the new hassle of TTN, or *transient tail noise*. Fred's boundary marks on the floor kept Gozzy in pretty much one position, but his tail was flopping like a carp. Doug and Fuds began repositioning microphones and shoving foam rubber under the offending two-ton jackhammer. Doug finally called a break while Fuds began ganging a cascade of equalizers together to try and minimize the problem. Fred offered to remedy the tail problem with a fire ax, but was voted down.

By late afternoon we had convinced our 200-foot friend of the importance of the proper techniques by the recording artist and he agreed to hold down the tail "schtick."

We rolled very productively until late evening when Gozzy again declared the session finished for the day. To show his appreciation the reptilian insisted on treating us all to a night on the town, which we eagerly accepted.

We were not so eager when we discovered that a night on the town to Godzilla meant spending the evening at the Famous Japanese Monsters Nightclub and Grille. Still, all in all it turned into a most interesting outing.

All the famous Japanese giant creatures from films were there, as well

LEARN 24 TRACK RECORDING ENGINEERING 7 DAY INTENSIVE SUPER SESSION BASIC/INT./ADVANCED JUNE 23-29

IN WASHINGTON, DC.

In 7 days you'll learn to make better tapes. Study with top professionals at one of the East Coast's newest and most complete 24 track automated studios, OMEGA 24.

Lecturers Include: Mack Emerman, owner of Criteria Recording Studios, John Woram, editor of db magazine, Tom Behrens, Allison Research and Bob Yesbeck, owner of Omega 24 studios.

Basic & Intermediate Sessions Include: Acoustics, Sound Reinforcement, Studio Effects, Demo Production, and Multi-Track Theory.

Advanced Sessions Include: Studio Management & Maintenance, Automated Mixing, Jingle & Radio Production, Album Production.

Qualifying advanced students will receive hands on instruction. Fees range from \$695 to \$895, including tuition, books, lab fees, supplies, certain meals and ground transportation between Omega 24 and the Silver Spring Plaza Holiday Inn Convention Center. (Accommodations are still available at special student rates.)

Call now for information regarding limited enrollments: (301) 946-4686 or (301) 946-3242.

Master Charge & Visa are acceptable forms of payment.

The Omega School of Applied Recording Arts & Sciences, 10518 Connecticut Ave., Kensington, Maryland, 20795.

The Omega School of Applied Recording Arts and Sciences is approved by the Maryland State Board for Higher Education and courses are available for accreditation by The American University in Washington, D.C.



10518 Connecticut Avenue, Kensington, Maryland 20795
CIRCLE 97 ON READER SERVICE CARD

as a few tourist or vacationing monsters from other countries. The Beast from 20,000 Fathoms waved one of its eight tentacles to Gozzy as we first walked in, and our host stopped to chat for a minute at a table full of giant crabs.

When the Cyclops bartender came to take our orders we learned that the smallest drink in the joint was a fifty-gallon beer. Doug and I figured we'd better look and feel our best the next day so we decided just to split one.

Gozzy turned out to be quite the gadabout at the bar scene. He was constantly approached by well wishers on his new picture and ours had to be the most popular table in the club.

After a few quiet minutes spent alone talking, Gozzy looked up and muttered an expletive under his breath as we turned to observe a greying King Kong staggering toward us. The huge ape slapped Gozzy on the back with a blow that made even him wince, and blubbered on for ten minutes about a new picture deal he was working on. Gozzy finally got rid of the simian and smiled broadly as he waved goodbye, watching the monkey stagger towards the bar for another eighty-gallon shot.

"That monkey's a big eunuch and everybody knows it!" he finally whispered to us in a dramatic aside.

After he had put a coupla hundred gal-

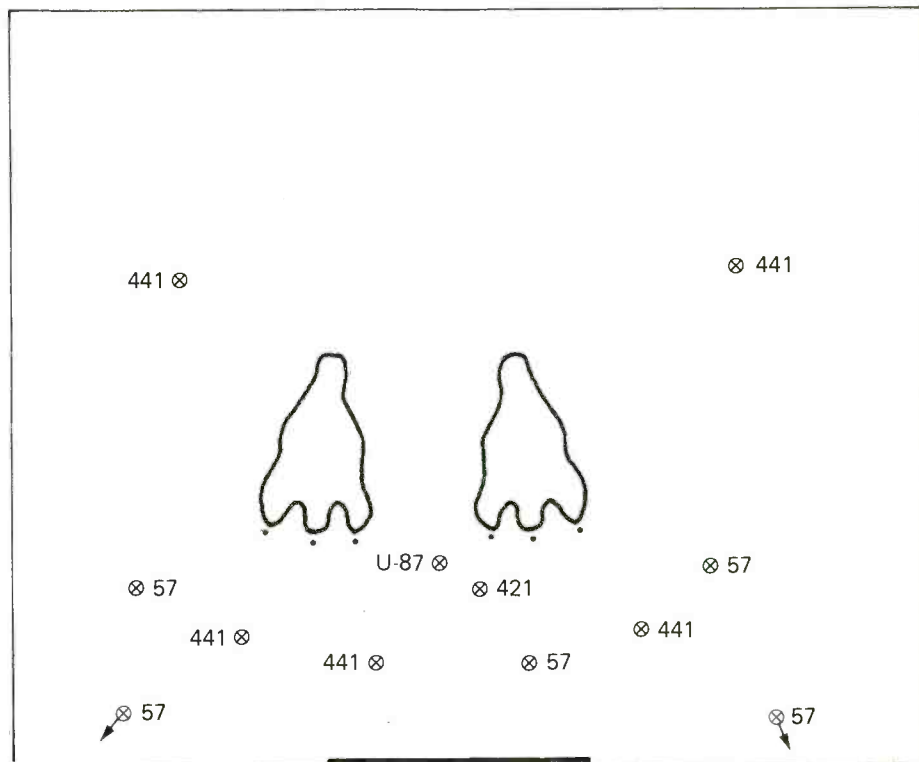
lons away it became more and more apparent Gozzy was beginning to like us. He even confessed that Godzilla was just a stage name. His real name was Melvin G. Hoffsniggle and the "G" stood not for Godzilla but "Gonna Be a Big Sucker." He had been born in Guam after the war but his family had moved to Japan when his father had been transferred to Mt. Fujiyama as a foothill.

We left the club early that evening to get some sleep though Gozzy stayed on. The last we saw of him he was in a crowd around the piano leading a rousing chorus of "Canadian Sunset."



The next morning was scheduled for overdubs of crowds fleeing from the monster. Fred and Fuds spent most of the morning trying to corral the eight hundred extras gathered in the studio and giving pep talks on how to yell, "Look out, it's Gah-zil-ruh."

We got some excellent tracks of screaming and sounds of feet in flight; terrified townspeople effects. Gozzy dragged in about 11:00 that morning holding an iceberg to his aching head. Evidently the party lasted well into the night. He sat in the studio lounge until the extras were finished, killing time by reading a copy of *Modern Recording* and munching on Uranium 235.



Typical dinosaur microphone placement—Godzilla sessions. (From the author's forthcoming book, *How to Mic Your Favorite Giant Reptile*.)

con'stant di·rec·tiv'i·ty



The characteristic of a horn that directs all of the frequencies where you want them to go.

Most horns offer some control of the sound pattern they produce. The problem is that frequencies at the center of the pattern are different from those at the edges.

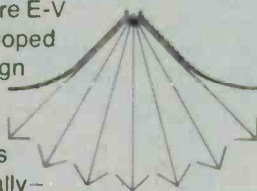
Unless you use HR Constant Directivity horns, that's the problem you'll have. To the audience this means unintelligible, too bright, too dull, and sometimes just plain bad sound at many seats.

These patented HR Constant Directivity horns from Electro-Voice provide full-range frequency coverage and effectiveness of pattern control

unheard of before E-V engineers developed this unique design concept.

Demand for the "white horns" has grown dramatically—almost completely by word-of-mouth. Once a sound engineer, musician or facility owner hears the difference HR Constant Directivity makes, a new demand is created.

Ask someone who has used or heard them, or buy a pair and try them yourself. You'll probably hear that HR horns are so clearly superior that other choices are obsolete.



Write to Electro-Voice for more information. We'll send you a complete set of Engineering Data Sheets and a paper comparing the today performance of HR constant directivity horns with yesterday's promises. Include \$1 with your request, and we will put you on the mailing list for the E-V "PA Bible," a down-to-earth series of papers on the selection and application of professional PA products and concepts!

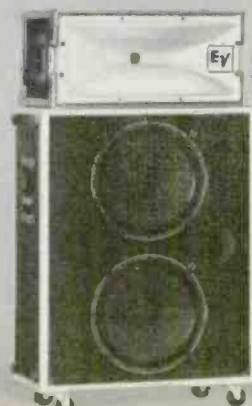
U.S. Patent Number 4071112

Ey Electro-Voice
a *gulton* company

600 Cecil Street, Buchanan, Michigan 49107

CIRCLE 82 ON READER SERVICE CARD

HR6040A

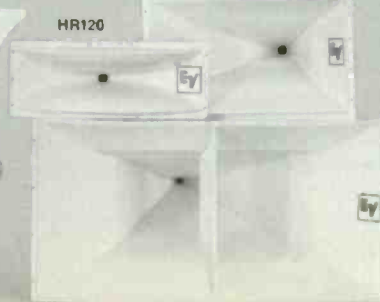


LF215

RC90
(Includes case)



HR9040A



HR4020A



RC60 (Includes case)

Late in the afternoon we discovered a dropout problem on a previously recorded tape, and asked Gozzy if he would mind redoing it. He said his voice was almost gone from the songfest the night before, but he'd try it.

"What did I tell you," gushed U. Wang. "The lizard's a trooper!"

I sent Fuds out for a 40 lb. Sucrets and somehow we recovered the necessary tracks that evening. Even U. Wang was pleased with the final product.

The editing department of the movie company would do the rest and now when the movie would be dubbed into

English there would be four American names they could stick on the credits. I never thought the day would come when I could say I had done a dinosaur proud.

We listened to the tapes one last time and then went out to break up the fight between Fred and Gozzy again. It had gotten so Fred would not agree with the monster about anything. After separating the two combatants and restoring some order, Fuds asked the two to shake hands and forget it. Fred wouldn't agree even with that, and went back to the hotel for the evening.

Once Fred was gone, Gozzy warmed

considerably and invited us all over to his apartment for supper.

"I want you all to meet Mrs. Godzilla," he smiled proudly. "Hasn't put on hardly a ton since we were married!"

Mrs. Godzilla turned out to be a charming little 120-foot creature wearing size 84 Gucci shoes and a (circus) tent dress. We declined dinner after we found out Gozzy's favorite dish was baked Alaska with Aleutian Island sprinkles. I don't think even Fred would have eaten it.

The beds we finally hit that evening were most welcome. Fred was up when we arrived at the hotel, still angry at being forcibly ejected from a bath house earlier in the evening for doing belly-flops. As we retired, we left him watching John Wayne win World War II singlehandedly on television.

Goodbyes were said early the next afternoon at the airport. All of us found ourselves not wanting to leave such a beautiful country to have to return to the land of our creditors, but it was time. U. Wang himself seemed to be softening toward us now that the task was done and we knew we had to leave.


As usual, when the moment finally arrived to board the plane, Fred suddenly turned up missing. Disagreeable to the end, he was no place to be found. After paging him repeatedly over the airport P.A. system, I remembered the headline I'd read that morning about the tidal wave sweeping the bathhouse the night before and swore I'd never take Fred anywhere again. Little did I know how right I was.

By this time U. Wang was rushing us to the plane, promising to put Fred on the next plane home once he found him. We figured it was Japan that was taking the chance of keeping him so we reluctantly agreed.

As we were about to climb the boarding ramp, Godzilla himself came striding across the runway to see us off. We could see his walk was more of a stagger and he was even more green around the gills than usual. His goodbye handshakes smacked of weak wrists and it was obvious the big lizard was feeling just this side of rotten.

It wasn't until we were just about halfway home that we fully realized why Gozzy felt off his feed.

"I'll be alright," he had said as he waved goodbye. "I probably just ate something that disagreed with me!"

And the last thing we saw as the plane soared skyward was Gozzy standing there, sick as he was, with his face turning into the slightest of smiles. 

The Affordable Pro-Mixer by Carvin

No one can match the quality and features now offered in the new CARVIN MX Series Pro Board at our low price! Features like —

- Professional V.U. Meters with on-board calibration controls
- 5 Balanced Outputs for, A-B Stereo, Monitors 1 & 2, and Mono A + B
- Large 90 mm recording type Faders
- Direct Channel Outputs and Interrupt Jacks for recording and channel patching
- Selectable "Control Room" monitoring of all 5 buses
- On-board Phantom Power + 48V for condenser mics
- Independent channel "Soloing" with noiseless J-Fet switching
- Dual reading LED Channel Peak Indicators that read both channel overloading and EQ overloading.
- Talkback System
- 3 Band active channel equalizers
- Optional 9 Band Graphic EQ for main outputs or reassignment to channels
- Available in 12 or 16 channel models

More important than features, you are buying quality! All wiring is done with a military type wiring harness. The steel chassis is precision formed and assembled in a modular fashion designed to eliminate strong RF fields. All P.C. Boards are super strong G-10 epoxy fiberglass. All components are securely anchored. If the board is dropped, it's still going to work.

All components used are of the highest quality obtainable like — Switchcraft connectors, Centralab switches, CTS sealed controls, low noise high slew rate Op-Amps and Discrete amplifiers. Even the sides are 1" thick solid Walnut. The entire board is backed by a 1 YEAR Warranty.

The MX board has proven itself on numerous concert tours. It's been put to the test by professionals and they are raving about its performance.

The best part are the factory prices that won't leave you broke. We currently sell the 12 Ch MX1202 for \$1095 and the 16 Ch MX1602 for \$1495. (Add \$250 for the optional Four 9 Band EQ). Road cases by Anvil™ are available at \$195 and \$215 respectively.

You are probably asking "How do we do it for the price?" It's simple. We build and sell direct to you without any retail markup or commission.

Write for your FREE 64 page Color Catalog or Call TOLL-FREE 800-854-2235 (714-747-1710 in CA) for more information or to place your order. Use your Master Charge or VISA as a deposit and the balance will be shipped C.O.D. As always, if within 10 days you are not 100% satisfied, your money will be refunded.

Carvin Dept MR-32, 1155 Industrial Ave., Escondido, CA 92025

CIRCLE 85 ON READER SERVICE CARD

The continuing story of TDK sound achievement.

Part One.



Music has gone through many transitions. Its rhythms, tones and forms have changed dramatically. As have the means of reproducing it. From the first wax cylinder to today's music machine: the TDK cassette.

TDK pioneering in ferrite technology began over forty years ago. This led TDK engineers to develop microscopic particles which, through their long shape and uniform size,



could translate magnetic energy into flawless sound. By 1968 TDK had created TDK SD. The world's first high fidelity cassette. In 1975, TDK created a

revolution. Super Avilyn. Ultra-refined gamma-ferric oxide particles were bombarded with cobalt in a proprietary ion-adsorption process. The resulting TDK SA cassette had higher signal to noise. Higher coercivity. Low noise. A maximum output level superior to anything heard before. Overnight, TDK SA became the high bias reference.

TDK has a philosophy of sound. A belief that total performance is the outcome of a perfect interplay between the parts. It all begins with *Part One*, the TDK tape. Magnetic powder is first converted into TDK magnetic material in the form of a coating paint or binder. On a giant rotary press and in a dust-free atmosphere, jumbo rolls of tensylized polyester are coated evenly with TDK binder. The tape rolls are edited and leader is inserted at precise intervals. Surgically sharp knives then cut the tape into predetermined widths. The edges perfectly straight. All along the way, TDK tape undergoes thousands of checks. It's polished to micron smoothness to give better head contact, increase sensitivity and maintain stable output. TDK binder, recently improved, packs more particles on the tape surface. And the whole process is done automatically. Controlled by a central computer brain. From

the very first, TDK tape runs true. And so does the sound.

The TDK story will unfold in future chapters. You'll learn about other key parts and their sound synergy in a TDK cassette. And you'll draw only one conclusion. Music is the sum of its parts.



 **TDK**
The machine for your machine



A SESSION WITH:

BY NINA STERN



etween February 14, 1976, when their highly acclaimed debut album *Dreamboat Annie* was released by Mushroom Records, and the same date four years later in 1980, when their fifth LP *Bebe Le Strange* on Epic hit the streets, the group Heart has enjoyed as much success and suffered as much pain as any superstar band could reasonably expect to achieve and endure throughout an entire career.

Early on in their recording career, the Seattle, Washington-based Heart bolted from its contract with Mushroom and signed with CBS Records' custom label Portrait (now absorbed into the CBS subsidiary Epic Records). What ensued in and out of the courts was one of the record industry's most publicized and bloody legal fights. They were forced by various legal decisions and compromises to produce the three albums following *Dreamboat Annie* in rapid succession, and within the period between May 1977 and September 1978 Heart released *Little Queen*, *Magazine* and *Dog and Butterfly*. Yet despite these pressures, each of



their first four albums has sold well in excess of one million in the U.S. alone.

The new LP is a rock and roll odyssey about a fictitious female singer named Bebe Le Strange whose persona was created by lead vocalist Ann Wilson. The album has been a labor of love for the band, and they have devoted great thought and energy to it. In and out of Seattle's Kaye-Smith recording studios starting in April, 1979, with the hardcore session work beginning in late summer, Heart and producer/mentor Mike Flicker had purposely given themselves as much space and time as they felt necessary to create this enterprising and cycle-completing disc—a kind of autobiographical ode to their experiences of the past four years.

But even *Bebe Le Strange* was not all clear sailing for Heart. Midway through production of the album, the band and long-time lead guitarist

Roger Fisher parted company, Fisher going on to pursue a possible solo career. His leaving reduced Heart to a five member group, and they—lead singer/songwriter Ann Wilson; her songwriting partner and guitarist sister Nancy; bass player Steve Fossen; guitarist, keyboard player and arranger Howard Leese; and drummer Michael Derosier—have opted to keep it that way, meaning that Nancy and Howard will both contribute more solo electric work to their albums and also to their “live” concert work.

Fisher's departure aside, the band, Flicker and Nancy and Ann's high school chum and writing associate, Sue Ennis, approached *Bebe Le Strange* during the months at Kaye-Smith with heightened enthusiasm. They see the album as their first opportunity in years to “do it right,” and have chosen some untraditional

ways of structuring the schedule.

“I call this album our ‘second album,’” says Flicker, leaning back in his easy chair behind the mixing console in the studio control room. “*Dreamboat Annie* was the first. We spent six or eight months doing that album, and on this album we've been taking that same attitude of not killing ourselves. If we work two hours a day, or if we work eight—fine, just so long as everybody feels right about what we get.”

On *Bebe Le Strange*, Heart and Flicker decided to completely record and mix the first five songs written for the album before going on to record the next five. That way, they say, they maintain an immediacy that is lost when mixing comes months after the basic tracks have been laid down.

“We'd spent two months on the first three quarters of *Little Queen* when the whole legal thing got really heavy,” Flicker recalls. “We ended up with five days to finish the rest. That's why this time we're taking it easy.”

“This is the first time that we're taking this approach: recording the first five songs, then mixing them, then starting on the next five,” Howard Leese explains. “That way, we're not laying basic tracks for a month, then just doing overdubs for a month. We're doing these songs from start to finish. Before, we wouldn't go to mix till right before we delivered the album to our record company; then months later we'd listen to it and think, ‘Gee, I wish we'd added some low end to that song’ or something. This time, by mixing way ahead of release, we can listen to them later on and make sure we don't want to do anything over again.”

“Before, when we had a lot of legal pressures hanging over us, we did the best we could in the time that was allowed us,” adds Nancy Wilson. “But this is the first time in a long time that we feel really free artistically. And this album is almost like a physical relief from the tension that has occurred in the past. It's been both intentional and unintentional—we knew we wanted to do something more rock and roll.”

Bebe Le Strange is a departure in style from previous Heart LPs. They [the previous albums] all contain that yin/yang quality associated with the group, featuring blistering hard rock numbers side by side with haunting, lyrical ballads. *Bebe* is an uptempo album throughout.

“The essence of this album is emo-



Multi-talented (he contributes guitars, keyboards, as well as arrangements to the band) Howard Leese during the sessions at Kaye-Smith.

“That’s the hardest thing to do when you record on tape — to capture a real sense of personality, of emotions. Duplicating the notes is easy.”

tion and excitement,” Flicker observes. “It has less mellow stuff, but that doesn’t necessarily mean more hard rock—it’s just good, plain, gutsy rock with feeling. I think it’s the closest we’ve come thus far to what the group is ‘live.’”

But Flicker, whose *Dreamboat Annie* is one of rock’s most highly regarded production efforts, hastens to add that he still has used studio techniques to create the “live” feel. “The sound of *Bebe Le Strange* is a little rougher around the edges [than previous albums]; it’s more raw,” Flicker says, “it’s more all around you as opposed to ‘up front.’ But I still believe that ‘live’ is ‘live’ and ‘studio’ is ‘studio’ and never the two shall meet. However, the excitement can and should still be there [in a studio album], and that’s what we’ve been going for in this album.”

“We’ve been going for a real fun and enthusiastic feeling,” notes Howard Leese. “That’s the hardest thing to do when you record on tape—to capture a real sense of personality, of emotions. Duplicating the notes is easy.

“We’ve learning the songs in the studio,” he continues, “so a lot of times we’re getting it right the first time it’s recorded—that way, it’s fresh.”

But they all agree that although *Bebe* may be the start of a new era for the band creatively, it’s not the end of their association with slower material.

“I guess you could say we’re starting a new stage of our career,” Leese goes on, “but I think we still equally enjoy both sides of our musical personality. We like ballads and so we have a whole section of our show that’s slow and probably always will. *Bebe* wasn’t a conscious statement away from ballads, it’s just the mood we’ve been in lately. And, too, Nancy’s been playing a lot more electric guitar.”

“Our songs just describe where our collective heads are at,” says Nancy. “‘Break,’ the most rock and roll song we’ve written so far, just sort of sums it up: the feeling of needing to break out of an inhibiting mold, whether it’s an image that people have of you, what they think you’re like; or maybe it’s that you’ve never done an album the

way you know you could do it . . . just all that stuff. It’s like we’re all saying, ‘Let me out of here!! Let me express myself!’”

With *Bebe*, also, the band is taking a much more active role in producing. Heart and Flicker are listed as a co-production team in the credits; Flicker is chief engineer, assisted by Brian Foraker, who works with Heart on the road and Rob Perkins. A perfectionist and something of a maverick in the studio, Flicker has strong opinions on his role as a producer and his relationship with Heart, a band which he has guided since its early days as a cabaret act in the Northwest.

“My role as a producer has changed as everyone in the group has changed,” he says. “On the first album, I was involved from the point of helping write and arrange the songs. They took what they agreed with and discarded what they didn’t. But they learned real fast from the beginning, so my role has constantly evolved as their knowledge has increased. You might say, my goal is to try and get myself out of a job! More than anything, I want them to be able to express their ideas musically in the studio, independent of me. And on *Bebe Le Strange*, they’re more involved in the actual production than on any previous album . . . but I still find I have a lot to say.”

“What you hear in the studio and what you hear in the control room are very different,” Nancy adds. “It’s a matter of deciding how to get the sounds we want, and in the final process, deciding how loud things should be, what to delete, what to add. I’ve always wanted to get into it, but there’s still an incredible lot to learn.

“A lot of the time we’ve spent on this album,” she says, “has been learning how to do what Mike Flicker has always done for us.”



he walls of Heart’s studio tell a great deal about where the band’s greatest artistic influences come from. They are lined with posters of the Beatles, conjuring up memorable scenes from the different

stages of that most-memorable-of-all-group’s career.

“Our albums have all been ‘theme’ albums,” Flicker says, “because we are ‘Beatle Babies.’ My idea of perfect albums are concept LPs like ‘Sgt. Pepper.’

“We’ve always been experimenting with different kinds of concepts or themes . . . *Dog and Butterfly*, for instance, sort of typifies the theme of the group, its yin and yang character: the girls and the guys, the mellow and the hard rock. In *Bebe Le Strange*, the concept is again centered around the group. The title song is about a fictitious person who is a rock and roll guitar player/singer and her story from the beginning to the happy ending.

“The song is like a letter from a fan who says, ‘You’re so great and you’re so crazy, I think we should call you *Bebe Le Strange*.’ *Bebe* is the total essence of the band, of Ann and Nancy.”

“Usually the concepts of our albums in their basic germ forms come from Ann Wilson,” says Howard. “She’ll have an idea that will be the beginning of one song, or just an idea of a concept for an album. In this case, it was the one song, but all the other songs are tied in to it. When Ann first came up with the concept of *Bebe Le Strange*. She typed up the lyrics in little books for us all to visualize and think about, so when we went out to play we’d understand the music’s basic theme.

“Every year, we have a different theme as a band, too. Our stage is different, our clothes are different. Every year, there is an image metamorphosis. But there are also constants in our music. For instance, the sea has been a recurring image. We’re all West Coast kids, and your environment plays a big part in your imagery, in your art.”

Flicker says he maintains the thematic integrity of the albums he produces by not consciously ordering songs in terms of their “hit potential,” a practice followed by many other producers.

“I really only thought that was important on the first album,” he says. “After that, I followed the album’s theme, not radio concerns. On *Dream-*

Mike Flicker Describes His Tape-Machine System

Dreamboat Annie was recorded on 16-track; the studio we used up in Canada which I had built (Mushroom Studios) didn't have a 24-track. I didn't know the difference.

When we left there and I began experimenting in other studios which offered 24-track capability, I discovered that I didn't like 24-track. It's got nothing to do with the extra tracks, it's just the format. You've got two-inch tape, you've got 24 tracks where you had 16, and if you think about it logically you realize that something's got to suffer, and things do. The sound, the signal-to-noise and the transparency are not the same. Plus, when you start getting into 24-track you have to start getting into Dolby because of the tape noise, and I don't like Dolby.

I was stuck with a dilemma, spent some time thinking about the situation and came up with a different system.

By this time the group was real involved with the production. They had grown musically and technically enough to know what they wanted, but as individuals everyone has his own ideas of what he wants on the album. We still needed a format above 16-track which would give each member the flexibility to experiment on tape, a format larger than 16-track to be able to develop their ideas in the studio. Not liking 24-track it was real difficult.

Around then, I had started working in video with the group; we had used a machine called a SMPTE Synchronizer. I saw how it was used to sync up four machines in video and two in audio, with them all ending up perfectly synchronized. So I asked myself, "Why can't we do that in the studio with two 16-track machines?"

We'd all made the decision that

16-track was better than 24, and we were working in a studio that had 16-track capability (one machine). So, I went out and bought myself another 16-track tape recorder and a synchronizer and I came up with the methods for doing it. In the process, I discovered things that we're now using on this album.

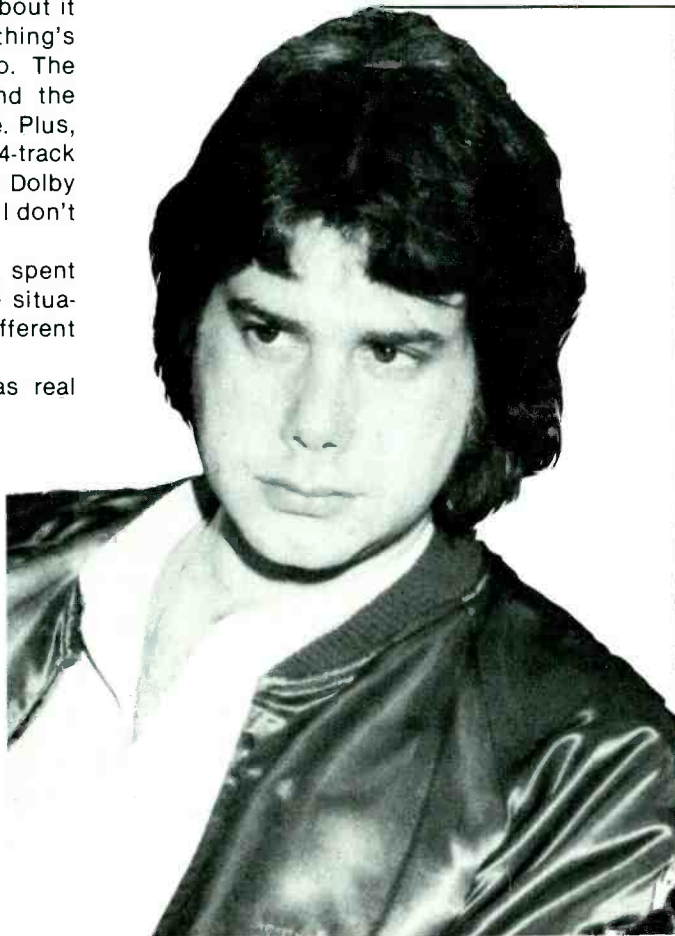
One of the things that always bothered me was the constant overdubbing. You go in, you get a great

you started out with.

So, I devised a system that we've been very satisfied with, as a remedy, as an alternative. When we record the basics, I call the tape that we've recorded our basics the "master." I take it and put it on one of the tape machines and make a mix down of the guitars, drums, etc., and put that mix on another tape, generate a SMPTE tone on both machines so that they run in sync and put the "master" on the shelf. *And we don't use the master.* We overdub on the "slave"—the other tape—and after we've worked on that for a little while, after we've recorded a couple of guitars onto it, I bounce those back on the "master" till I've filled it up. That, I've found, limits about seventy per cent of the use of the "master."

The beauty of it is, when I go to mix, I am using basically the same tape we put away the day we cut it! It's like we've just recorded it, and now we're mixing it! I find I have to EQ less; the sound I remember is *still there*. Plus, it gives me the potential of using 30 tracks (the code takes up just two tracks). Because I use a 16-track format, I get good signal-to-noise. I use good tape and I lay it on there good so the signal-to-noise per track is good. I just use noise gates which don't color the sound at all.

To me, it's like being back with 16-track but being ahead of it at the same time! I'm really happy with it. The Bee Gees are using an adaptation of it; other producers are trying it out, too. I've talked to a lot of people about it 'cause I think it really works. Fleetwood Mac also used the technique on *Rumours*, but not with SMPTE synchronization.



drum sound—just what you want—and then by the time you mix, it isn't there anymore. The high end has lost a little, the original punch is gone. It just follows logically: when you're overdubbing on the same track for a hundred hours, each time the tape passes through the heads, you're losing the fine sound quality

CROSSOVER TO A NEW ERA OF DIGITAL CONTROL

5760

4280

3840



Sunn Model SPL 4320:

- Digitally controlled filters
- True Butterworth response
- Built-in 30 HZ subsonic filter
- Biamp or triamp mode switch
- 11-detent slide level controls
- 248 different crossover frequencies
- Muting circuit for "pop" suppression
- 12 DB/octave or 18 DB/octave switch
- High slew-rate, low noise, low distortion
- Inputs and outputs balanced and unbalanced

The SPL 4320 is the newest addition to our professional products line. The use of digital technology applied to an electronic crossover has allowed us to set new standards of performance and value.

The SPL 4320 uses stable state-variable filters controlled by precision digital-tc-analog converters. The result is a crossover which can be quickly and easily adjusted in 40 HZ increments to any crossover frequency in the range of 80 HZ to 9960 HZ. The selected crossover frequencies are displayed on a large LED display, and are automatically retained in a non-volatile memory when the power is off.

Additional user-oriented features such as the built-in rumble filter and turn-on muting circuit make this crossover equally at home in the live sound reinforcement and studio environments.

sunn 

Capture the Energy

Sunn Musical Equipment Company
A Hartzell Corporation Company
Amburn Industrial Park
Tualatin, Oregon 97062

CIRCLE 76 ON READER SERVICE CARD

www.americanradiohistory.com

“We’re playing a lot more with different ways of distorting sound, with special effects, like Howard’s vacuum cleaner.”

boat Annie, I was real adamant about ‘Magic Man’ being the first song, which may have broken a little bit of the theme, but I don’t think anyone realized it. Now, a good song is a good song. On our last album, our first single was ‘Straight On,’ which happened to be the last song on Side One. If you were thinking of some kind of formula, you’d never put a single there. But that placement fit the concept of the album best. After you sell two or three million copies of your debut album, if somebody buys your next one but doesn’t listen to the whole thing, then what’s the world coming to?”

■

The control room and studio used by Heart at Kaye-Smith were remodeled by Flicker just before they began work on *Bebe*. Starting by completely gutting the interiors, Flicker then installed equipment which reflects his personal preferences. Primarily, he says, he looks for high quality gear which is clean and “musical” sounding.

“Sometimes, those don’t mix, though,” Flicker observes. “Like I use MXR DDLs for a lot of effects. Some people may not consider them ‘high tech,’ but there’s something about the way the echo sounds in the regeneration mode that doesn’t sound ‘clean’ that I like! It’s more real, it has a bit of distortion, and perhaps it doesn’t have great frequency response, which to me is what echo is all about.”

Other equipment includes Altec 604s with Mastering Lab crossovers; an API board substantially modified with the addition of Jensen transformers and Allison automation; and Ampex tape recorders.

Flicker adds that his favorite tape is Ampex 406. “Even though newer tapes are quieter, to me they [the new tapes] sound harder,” he says.

Generally, Flicker goes for a “real” sound in the studio, and he wants equipment which helps him achieve that quality.

“Today, we’re into things being more real, as opposed to being ‘realer

than real,’ which to me was the main sound technique of the 70s,” he explains. “Beginning with the Beatles and Elton John, producers and engineers were into making recorded music ‘better’ or different than reality. I know I went through that; but now I’m back into wanting things to sound as they are.”

He also has strong preferences for certain microphones, though he’s always on the look-out for new miking techniques.

“My favorite lead vocal mic is a Neumann U87, and a particular one at that! My other two favorite ones are a Shure [SM] 57 and a Beyer M69. I really like the M69 for electric guitars, and I’m real fond of that Shure on drums. But I constantly experiment. Like, I’ve been using Shures on bass drums for years and this year I’m using an AKG 412 or [C-] 414.

“Before, I’d always used the basic studio technique of take the [drum] head off, put a mic inside and go for it. But I’ve gotten tired of that. This time, I’ve been using a four mic approach, where I put one mic on the beater side, so you can hear the slap; one in the middle of the bass drums (Michael uses a double-headed bass drum); and two others that have different characteristics: an old RCA 77 ribbon mic, ‘cause I like the way it responds to concussion, and a Sennheiser 421. I’ve been trying to get the total essence of the drum, from all perspectives. Finally, I close it all in with little baffle boxes so we don’t get any leakage.”

The band has also used a unique technique to mic Howard’s guitar for the song “Break.”

“For the rhythm guitar on that track,” Howard explains, “we put a vacuum hose in front of my amplifier, so the sound came out of the amp, down the hose, then around a few times. By the time the sound reached the microphone, it’d been through ten feet of plastic tubing!”

“In some cases in the past,” Nancy adds, “we may have been overly sparse and sanitary, just flat EQ kind

of sound. What we’ve been going for in this album is a much more textured sound, things you can hear into. We’re playing a lot more with different ways of distorting sound, with special effects, like Howard’s vacuum cleaner.”

■

During sessions for *Bebe Le Strange*, Nancy Wilson, Howard Leese and Steve Fossen used an array of instruments, many of them classic models. All three agree that they share a preference for vintage equipment, though Nancy was pleased with the results she got from a Yamaha prototype guitar (a “Super Flighter”) given to her by the company when Heart recently toured Japan.

“On ‘Even It Up’ (the first single from the LP), I play mostly rhythm guitar, and I find that my Les Paul Melody Maker really works well for that,” she says. “It’s not just the sound it projects, but the actual feel of the neck. My Stratocaster is better for lead playing. As I’ve gotten more into electric guitar, I’m finding that the differences between instruments are becoming more obvious.”

In the studio, Nancy also uses Ovations for acoustic rhythm parts, and a handmade classical guitar for much of her other acoustic playing.

“For keyboards,” says the multi-talented Howard Leese, “I use an old Steinway grand piano; my new Prophet Five synthesizer by Sequential Circuits; and an [Arp] Avatar guitar synthesizer with an axe slave, so it’s three-voice. For guitars, I’m using all kinds: a 1960 Les Paul cherry sunburst; on ‘Break,’ a 1960 Esquire Custom; my left-handed Stratocaster; my stage Telecaster, a 1966 Tele; my Dean guitar; and my ‘53 Telecaster.

“For amps, I use Music Man tube amplifiers, and a Leslie. Also, we used this little two-inch amplifier here for ‘Break’ where we mimic ‘Magic Man.’ My synthesizer set-up consists of Mini Moogs, a Prophet, a Salina and a Melotron. Oh, and I used my Rickenbacker 12 string through a Leslie.”

Bass player Steve Fossen used a 1961 [Fender] Jazz bass; a 1958 [Fender] Precision bass; a ‘76 short-scale Alembic bass; and various custom-designed personal favorites, including several Hofners. “I also have an Alembic preamp and input module with a BGW 250 watt amplifier,” he says. “They’re excellent amps.”

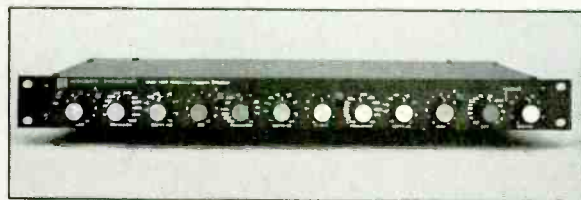




AUDIOARTS ENGINEERING 4000 Mixing System



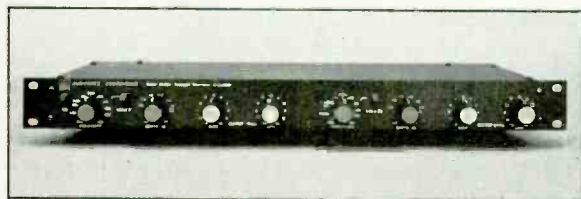
A SYSTEMS APPROACH



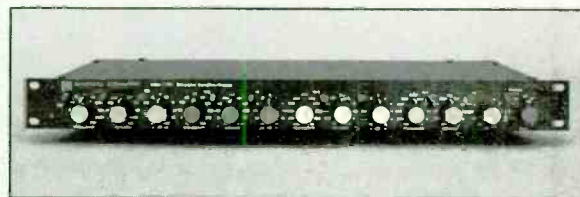
Model 1400 Parametric Electronic Crossover



Model 1500 Feedback Suppressor



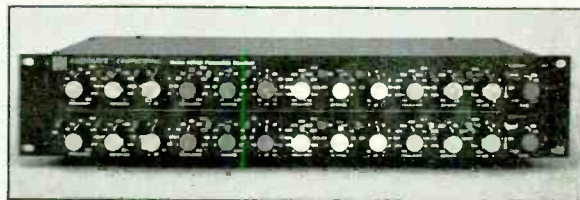
Model 2100A Tuneable Electronic Crossover



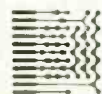
Model 4100 Parametric Equalizer - Preamp



Model 5200A Stereo Mixer/Preamplifier



Model 4200A Parametric Equalizer



AUDIOARTS® ENGINEERING

286 DOWNS ROAD, BETHANY, CT. 06525 • 203-393-0887

CIRCLE 47 ON READER SERVICE CARD

www.americanradiohistory.com

Profile:



Ronnie Spector
artist



Genya Ravan
& producer

by Jeff Tamarkin

Ronnie Spector is listening to the playback of the title track from her first solo album, *Happy Birthday, Rock And Roll*. But she's not just listening, she's singing along to it and acting out her part in the studio. She holds an imaginary microphone up to her mouth and shouts into it, dancing around the control room at New York's RPM studio, to the delight of this Modern Recording interviewer and Ronnie's producer, Genya Ravan. All are in awe watching this legend—it is obvious that Ronnie Spector is happy to be singing again. She's been missed, and it's good to have her back.

Ronnie Spector and Genya Ravan both got their starts in show business during the early 1960s, performing in what have since become known as "girl groups." Ronnie was the lead singer of the Ronettes, whose first Phil Spector-produced single, "Be My Baby," was one of the biggest pre-Beatle rock and roll hits and which has since become a classic. She was fifteen when she recorded that tune, and went on to follow that

debut with other Spectorian gems: "Baby, I Love You," "Walking In The Rain" and many more. The group faded in the late 1960s, and Ronnie married Phil Spector, effectively putting her singing career on ice in the process. She recorded only sporadically in the 1970s, doing a couple of singles here and there and guest starring on an album by Southside Johnny and the Asbury Jukes. It is only now that she is re-emerging full-blown with an album of all new recordings, remarkably, the first ever under her own name.

Her producer, Genya Ravan, has had an equally colorful history, and the two prove to be a perfect match. Ravan began as "Goldie," the singer in a girl group appropriately called Goldie and the Gingerbreads, who had a few minor hits in the mid-60s. They were a bit tougher than the sweetie-pie girl groups that were popular at the time, and earned a reputation within the industry as one of the more talented groups within the genre. Goldie and the Gingerbreads faded away after a few

years, however, and Genya next surfaced as the singer in *Ten Wheel Drive*, a funky, Fillmore-era jazz/blues/rock outfit patterned after the early *Blood, Sweat and Tears*.

Although she continued to make records after the demise of that group, Ravan was not really noticed again until she became involved in the budding new wave scene in New York, this time as producer of the debut album by New York's notorious *Dead Boys*. She then released a solo album (which she also produced) called *Urban Desire* on 20th Century Fox

Records, and followed that up in 1979 with another album, called *And I Mean It!*.

Ravan is highly regarded today as one of the only women actively producing records in this country, and her skills improve tremendously with each new recording bearing her mark. The new *Ronnie Spector* album is a milestone for both women, and Modern Recording is proud to have been able to speak to both Ronnie and Genya together while the album was being recorded this past January.

Modern Recording: Genya, you've formed your own record label, Polish Records, and Ronnie is one of your first signings. Has any product actually been released yet and who are the other acts on the label?

Genya Ravan: One of the groups is called Manster. They were on the *Live At CBGB* compilation album a few years ago, but that did them no justice. I call them new wave/fusion. They remind me a little bit of early Mothers, with a little B-52s. They don't really remind me of anyone, but when a group is new, you have to compare them to someone. And the other group is the Metro Men. We're not putting out anything until all three acts are done recording.

MR: How far into the projects are you at this time (January)?

GR: Ronnie's is the only one that's almost finished now. We have seven tracks down and we're looking for about four or five more. None are mixed yet. "Happy Birthday Rock And Roll" (the title cut) is almost done, and Jack Nietzsche, who used to do Ronnie's old stuff, is going to arrange the strings, in the spots where she's doing her old stuff (part of the title cut features Ronnie singing a few lines from some of her biggest hits). We could've gotten somebody to copy it from her old records, but I wanted the real McCoy. I have the real McCoy, so I might as well use her.

There are a couple of guests on the album — the *Dead Boys*, the *Heartbreakers* (New York's version, not Tom Petty's group) and my group. And we're going to get a special guest star to sing with her on a song, as soon as I find the right song. And she also covered a Ramones song, "Here Today, Gone Tomorrow."

MR: Let's move backwards for a minute. How did you two hook up with each other?

Ronnie Spector: Genya, you tell him that one.

GR: I tried to track her down for ages. I heard who was going to be producing her and I hit the roof. I said, this ain't

right. I'd been trying to get in touch with her for two years, and someone called and said to me, "Genya, I've got Ronnie's number." I didn't even think. I wrote it down and called her up, and I figured she'd either say "F--- you" or whatever. My opening line to her was, "I don't know if you know me or not. It doesn't matter. My name is Genya Ravan and I am your producer." To make a long story short, she was over at my house the next day.

MR: Ronnie, did you know who Genya Ravan was?

RS: Well, I had heard of Genya Ravan, but I didn't know a lot of her work. All I knew was that she said she was the right producer for me, and I had been looking for about five years for a producer. So naturally, when she called me and sounded so positive, I had to go over there and meet her, at least.

GR: I didn't say I'm your *right* producer. I said I'm your (next) producer.

RS: I went over there and we clicked right away. I loved her stuff. And I knew she knew my voice. That was the most important thing. Everybody else was picking the wrong keys and putting me into the "Be My Baby" class. Like, "Say Goodbye To Hollywood" just put me back twelve years ago. When I met Genya, she put me in the 1980s where I belong.

GR: I was getting material for her, and every tape I received started with *boom-b-boom-crash* (the beat used at the beginning of "Be My Baby"). I was saying, wait a minute, she's doing a whole other thing now. She needed to be taken out of that rut. It's not really a *rut*. . . it's a compliment to her, but not in the long run if she's gonna keep doing what she used to do.

That's why we used those old songs in the title track. They'll never play her old stuff again, because they'll have it in her new stuff. Enough is enough. They'll play this track and get some of her hits, but one after another. Her new stuff is totally up to date. Tonight we happen to be working on a track where we bring in

a few of the oldies.

RS: And that's the name of the album. It all fits in because in the song, it says "You're pushing forty," and the song is dedicated to my ex-husband Phil, who just turned forty. And most of the groups like the Rolling Stones and the Beatles are all hitting forty. It's a perfect song for the '80s and for all these groups and my ex-husband.

MR: How long had the album been in the planning stages before you actually began recording?

GR: For a while, because I always wanted to do an album with her. I had the demo on her, but I didn't have the record company. So I hesitated in bringing the demo around, because in the back of my mind, I always wanted my own label. I've known music for a while, but we had just decided about six months ago to start a record company. And Ronnie's album, for its quality, is coming in for about half of what mine used to cost. I will never spend over fifty or sixty grand again; there's no reason.

Another thing we want to do with Polish Records is to have five or six acts on one bill. People go to see a concert, and spend twelve dollars, and they have an attitude. And rightfully so. "OK, man, show me what you know; I just spent my last buck." There used to be bills with five or six acts and they'd get their money's worth.

MR: The first rock concert I ever went to was one like that. It was at the Brooklyn Fox Theater and the Ronettes were one of the acts.

RS: That's right. And there were seventeen acts on those shows.

GR: People really used to go to a concert and it was a night out. Now, it's twelve dollars, it's one act, and the acts don't want to lend their equipment to the opening act. The main acts want to check out the opening act and if they're too good they can't work with them. It's gotten so competitive that it's ridiculous. And it got so expensive that it took the fun out of it. I'm not saying that we're going to put it back on the

“ . . . anybody who would take an artist in and do the tracks first, without rehearsing, is not casting.”

map, but we sure as hell are going to try.

RS: People say to me “Have you ever met the Supremes, have you ever met Marvin Gaye or Stevie Wonder?” I worked with these people. We used to start working at twelve in the afternoon and work until twelve at night, so all I knew was these people. I knew all these acts, from the Beatles on down, because we used to have these shows with seventeen acts, for twelve days straight. We became family.

MR: They really worked you hard in those days.

RS: Oh yeah, and especially when I had a hit record. And we were Murray The K’s dancing girls before that, so every time an act came on that was bad, they would put us on to make them look good. We made about \$200 each in ten days. Then ‘Be My Baby’ came along and it changed a lot of things.

MR: Let’s talk some more about this new album. Why did it take you so long to make your own album?

RS: I couldn’t find the right producer. Well . . . first of all, I was married. I’ve only been divorced five years, and when I was married, there were absolutely no recordings or anything. I did two: the Apple [Records] thing (George Harrison’s “Try Some, Buy Some”) and one for A&M called “You Came, You Saw, You Conquered.” They were all produced for me in the studio to make me think that I was going to do this and do that, when it was only to please me. So, I can say that I never recorded while I was married.

After I got divorced, I went to Bud-dah Records and I had a producer named Stan Vincent, and that was all wrong. Then I semi-retired. I just stopped recording for a while, because I couldn’t find the right producer. Then I bumped into Bruce Springsteen and Miami Steve (Van Zandt, member of the E Street Band and they put me back into the “Be My Baby” bag. Then I met Genya, and this album, *Happy Birthday Rock And Roll*, is like my birthday because I have never had an album on my own. Everything I’ve done as a solo artist was working as a “guest star.” So, now I feel brand new. I feel like this is my birthday.

MR: Genya, can you tell me something about your approach to the production of this record? How do you

build a track from scratch?

GR: It’s a matter of taste. I find a song that I really like. It doesn’t matter if it’s a demo with piano. There’s something about a song that I like. I’ll never rehearse it in the studio and I’ll never have an arranger any more, because then it’s out of your hands. I have an extremely good rhythm section — my own band. I’m using them and a couple of guests. I wanted a couple of guests on her album just to get her out of that whole oldies thing. That’s why I used a couple of the Dead Boys and the Heartbreakers.

MR: Does Ronnie rehearse the material with the band in the studio, or does she just put the vocals on later?

GR: Oh, she rehearses. I wouldn’t have it any other way. But things change. I even change arrangements sometimes. But it’s a quick decision, and when she comes in she picks it up quick.

RS: In my other recordings, I never had any rehearsals or anything. We just went right in and did it.

GR: If she doesn’t sound good in rehearsal, you know it isn’t going to work. So, anybody who would take an artist in and do the tracks first, without rehearsing, is not casting.

MR: Do you find, then, that the songs keep growing as you live with them?

GR: Yeah, but I have a pretty good idea [of how it’s going to sound], which is why I can’t stand when someone second guesses me. People have a tendency to do that. That’s also why I don’t like strangers at sessions. Because if someone turns around and says, “Oh, you know what I can hear here?” The answer is “No, I don’t want to know.” Because I know what I’m going to put on after this, and they don’t know. Even on rough mixes.

I’ll give you an example of how I think about it before it happens. There’s a part with a hi-hat in one of the songs that just goes *swish*. That’s all I wanted, and (the drummer) asked, “Are you sure?” Yeah, I was sure. What he didn’t know was, that in the mix, I already know what I want. That’s going to have a repeat that goes from speaker to speaker. Now, how’s he going to know that? So, you really have to have sponges for ears. Consequently, if they think they can stick something in, I have to say, “Wait a minute. No, no, no, I have plans for that section. Don’t do that.”

RS: She has sponges, believe me.

GR: So, it’s a matter of hearing and building, like a painting process, like painting a picture.

MR: How do you approach an individual session? Are there certain things you look for?

GR: I watch budgets. Even if it weren’t my record company, I would. I keep things organized. When it’s vocals, it’s vocals. As a matter of fact, when the guys came in before to sing, they had to leave when they were done. Mixing, nobody comes, except Ronnie. She’s a great artist; she sits there and listens. Sometimes I’ll turn around and ask her, “I don’t think it’s ready. What do you think?” She’ll say, “It’s up to you, Genya.” That’s respect from an artist to a producer.

RS: I have the faith and trust in her.

MR: Ronnie, do you ever come up with any ideas that you might want to try, and how would you present that to Genya if you did?

RS: I don’t, because she thinks of everything.

GR: Ronnie does spontaneous singing, and she’ll do something that I get off on enough to take the song a step further. So, in fact, she does [present her own ideas]. That’s important; people should work off each other. I’ll hear something, and because I don’t write or arrange, it has to be done right then and there. If it’s not, I’ll forget an hour later.

RS: And it makes sense to me, whereas anybody else might say, “What the hell is that?”

GR: She understands and I understand. Everybody except the people around us understands. We don’t care, as long as we know what we’re doing.

We’ve been having fun. At the beginning, we were saying, “Wait a minute, we can’t have fun.” We actually get excited.

MR: So, do you stay pretty much glued to the board when she’s singing?

GR: Are you kidding? I’m on top of her every note.

RS: That’s what’s so important. With the other producers I’ve had — like when I did “Say Goodbye To Hollywood” — I wasn’t even there when they put the music down.

MR: I’d like to ask a few technical questions. First, do you use any special effects on the vocals?

“When you’re going *ba-da-da-da-da*, who needs noise reduction? If anything, you want it all there.”

GR: No. I’m going straight for her voice and her sound. Sometimes she’ll double [track], but I don’t want to electronically double, because she has a great sound and she doubles it naturally. I would use effects on certain things, but not on her voice.

MR: Do you use any special mics or miking techniques?

GR: What I like to do on basics is use two tracks on bass, one direct, and one amp with a mic in a small room. You have an amplifier sound on one track and then a real clean sound on the other, and then you combine it. It sounds really fat and full. “Live” mics on the drums—overheads. It looks as if you walked into Frankenstein’s room. Just tons of mics, for ambience. Those are separate tracks. I use eleven mics for the drums.

This is the first time I’m trying computer mixing. I’ll have to, because there are so many cues, especially in “Happy Birthday Rock and Roll.” I’d need nine hands. The drum sound has to change when her old stuff comes in. You have to stop the mix and splice it together. It’s very difficult. It’s got three different sounds. The song starts off with dry [no echo] drums, dry everything. Then it goes into her oldies. Heavy on the echo. Then it goes back to dry, and finally, at the end, in 3/4 time, is the ambience, which is a today sound. So it goes through three different sounds.

A lot of times when you want something doubled, you use a digital delay. I don’t feel that’s necessary. Sometimes for effect, I’ll use it. But I like a Cooper Time Cube, which is an acoustic double. So a delay is a second after. Cooper Time Cube is exact. In other words, if a guitar player on one side is doing a thing that I like, and I think it should be on both speakers [sides], I won’t put it [the signal] on a delay, which is a repeat. So, in actual fact, you’re taking what he did on one side, and it’s also coming out on the opposite side, but a little later. It’s doubled that way. It’s a dropoff. The two [signals] are there, but it sounds like a dropoff. A Cooper Time Cube sounds like an exact double and not a delay with the echo.

I don’t like a lot of the gadgets they use. I record non-Dolby. A lot of people think Dolby is better and it doesn’t make a difference. Bullshit—it does make a difference. It makes a cleaner

sound. And non-Dolby picks up breathing. To me, if you’re going to make rock and roll, then let’s breathe. The Dolby is noise reduction, but give me a break. When you’re going *ba-da-da-da-da*, who needs noise reduction? If anything, you want it all there.

MR: Are you worried that although this album is not being designed to capture Ronnie’s old sound, record buyers might typecast her as an “oldies artist” and be unable to accept her new sound?

RS: First of all, Genya has my voice exactly like my old records—*my voice*. Not the music and the production, but my voice. That’s what people love, my voice. Of course they loved Phil’s productions, but she kept my voice (the way it was) and that’s why I’m comfortable.

GR: I’ll tell you another thing. Her voice is her voice, and I don’t care if you put her in an opera, she’ll sound like Ronnie Spector. She has a distinctive sound and you couldn’t miss her sound if she sang with Frank Zappa. The difference with this record is that the sound of her music has changed. I think all the credit that has been given to Phil Spector will shift a little bit to Ronnie Spector. You didn’t hear her hard rock stuff tonight. Ninety-nine percent of her album so far is hard rock and roll.

MR: Ronnie, what are your strongest memories of the years you were with the Ronettes, that whole 60s period?

RS: When “Be My Baby” came out. We had been working so hard as the Ronettes without a name, and just being everybody else’s background singers. So, when we finally made “Be My Baby,” we didn’t have to be flunkies anymore. We had done work with Del Shannon, Bobby Vee, Bobby Vinton, and all those people. After “Be My Baby,” we became ourselves and we didn’t have to do background anymore. “Be My Baby” is not my favorite of my hit records, though.

GR: What is your favorite?

RS: “Walking In The Rain.” I guess because I only had to make one take. Most of what I did with Phil was one or two takes, but some were a lot because Phil wanted to try different ways. But, “Walking In The Rain” was one take and I was out.

MR: When you were recording with Phil, did you appreciate at the time what he was doing? Did you know that these were going to become classics?

RS: To tell you the truth, no, because I used to look at all the musicians, like the Leon Russells, and the Glen Campbells, Herb Alpert... they used to stay there all day and all night and I would wonder, well, how can they take this? Leon Russell used to come out with blisters on his hands, yet he’d go right back after a five minute break. But what I later found out was that these guys were learning. And every one of them is something today. That’s why they never got aggravated. I used to get more aggravated because it took so much time in the studio. Phil believed in getting it exactly right. But these guys stuck it out. I couldn’t understand how they could stay in the studio.

MR: Do you recall the “Be My Baby” session?

RS: It went on all night. I couldn’t believe it. I was so young—fifteen years old—and I’d never been in a session that long and that big in my life. So, I didn’t understand what was going on until they put it all together, and then I said, “Wow, I like this.” But, in the beginning, I didn’t know what the hell he [Spector] was doing. There were about fifteen guys and girls in the background. It was all brand new to me. And being fifteen years old and being in the studio with Phil, you just didn’t know what was going on. But the results were great.

MR: Did the singers and musicians have any say in what took place at one of Phil’s sessions?

RS: No, nothing. He did everything. He even played every instrument. He would go over to the sax, or go over to the piano, and show them how to play it. He wanted everything his way. He was like a Genya: she knows what she wants and she goes out there and gets it.

MR: And at that time, they were only using 4- or 8-track studios, right? Most of what when down on tape was performed “live.”

RS: 8 track. And at that time they had a union man there. So, I’d have to go in and sing with the band, and then when they left, I’d put my real vocal down.

GR: That’s right. At that time, they had a rule that you had to sing at the same time as recording.

RS: And all artists did that. I was the first artist who, after Phil put down all the background—all the violins, all the music—put my voice on last.

MR: What was your impression of the

“(Dolby) makes a cleaner sound. And non-Dolby picks up breathing. To me, if you’re going to make rock and roll, then let’s breathe.”

Beatle thing when that happened? That was right after “Be My Baby.”

RS: That was amazing, because we had just been with the Beatles in England, just before they became really big. “I Wanna Hold Your Hand” was just starting to shake up New York a little bit. We worked with the Beatles in England and they were phenomenal. They stopped all of our records, are you kidding?! (*Laughs*). “I Can Hear Music” was our last hit. That was in '67. Phil just retired after the Beatles.

MR: Now, you hear a lot of reminiscing about the girl groups of the 60s. But at the time it was happening, did you realize that it was a whole genre of rock and roll?

RS: No, I didn't know. I was fifteen years old and having a great time. I just couldn't believe that they were paying me for something I loved.

MR: Ronnie, how would you say the recording business has changed the most since your first recordings?

RS: It's unbelievable, especially money-wise. The money that the groups are getting today! They go out there for an hour, hour-and-a-half, and make I don't know how much....

GR: Yeah, but I want to interject that when we made as little as we made, I remember I used to come home and be able to buy a car. I went out with Ten Wheel Drive and made thousands, and came home with nothing. The roadies got paid; the agents got paid; managers got paid; soundmen; the trucks. The reason the money went up was because all of a sudden everybody else was involved. You used to go and do a gig for two weeks, in a club. There'd be no moving around, no roadies, your equipment was on stage. There was our gig, two shows a night, five shows a night. That's why when people get hoarse [from singing] today, I want to smack them. I used to do seven shows a night, six nights a week. Now, someone will do three takes and say, “That's it; I can't sing any more,” and I want to punch them. Everybody's so spoiled. I used to get home from a gig, and buy a car, with cash. And I made less money.

MR: Ronnie, one last question. Have you liked any of the many cover versions done of your songs?

RS: None, I'm sorry to say. Andy Kim

did “Baby I Love You,” and Jay and the Americans did “Walking In The Rain,” but I like my versions best. I know that that sounds conceited, but I like my versions best because I think Phil was the best producer around at that time and he got the best sound out of me. As a matter of fact, John Lennon did “Be My Baby” for his oldie-but-goodie album, and took it off. He said “Ronnie, I would not embarrass you with the way I did it, compared to the way you sing it. I will not put that on my album.” A lot of people are afraid to touch “Be My Baby.” They'll do “Baby I Love You” or “Walking In The Rain,” but everybody's been afraid to touch “Be My Baby.” That was my biggest seller. That was just in America. Worldwide, I have no idea how many more it's sold. I've always been big outside the U.S. with the Ronettes, and now I'm big just as Ronnie Spector. Here I'm treated more as an oldie-but-goodie, and I hate that. I'm thirty-one and already I'm an oldie-but-goodie. What does that mean?

MR: Genya, how did you first become involved with producing?

GR: By listening to the wrecks that I had out—my records. Just basically by watching what other people did. I used to think they were wrong in the way they were mixing it.

The thing that really made up my mind was when I wanted to do a song called “You're No Good,” a year before Linda Ronstadt did it. I told my producer that not only did I think it was a commercial song, but also not “prostituting” for myself, because it was a song that I'd like to sing that could be a hit. They turned around and said, “Nah, we could write one better.” So, needless to say, when Ronstadt brought it back on the map, that was the last straw.

Mixes can ruin whatever you put down. It's another very important stage of recording, just like mastering is. You can ruin what you've mixed by mastering it [improperly]. A record goes through a lot of stages. So, after it's mastered, you should check the first pressing. The pressing plant can f--- up the mastering and the mixing and everything else. There are a lot of stages, and if somebody isn't on top of it... So, I started to think about that old saying, if you want something done,

do it yourself. The hardest part of the beginning is separating yourself from getting too close to it [the product].

MR: Was the first production that you did your own record?

GR: Mine, and Long John Baldry. I was in England and somebody called up and said, “Why don't you use our studio?” I said because I can't afford it, and they answered, “No, no, no, free,” because they just wanted me in there. Rod Stewart was supposed to come in and they said he'd be back in a week and a half. But I didn't have that long to be in London. We had a lot of good musicians, and we went in. But, boy, did I make a mistake. We ran out of tracks and the engineer thought I knew what I was doing. He said, “We can't put the tambourine on because there's no more tracks.” I said, “What do you mean there's no more tracks?” So, I told him to put it on [with] the bass drum. He thought I knew what I was doing, so he did that. Then when it came time to mix, I said, “You have to bring down the tambourine.” And he said, “Well, I can't without bringing down the bass drum.” I said, “What are you talking about?”

Then when he explained, I said “Oh yeah, right.” I never let him know that I didn't know that it was a terrible mistake. So, I learned that way.

Then I did a lot of demos with people, people I didn't even want to be in the studio with. I have a real good friend at Mediasound, [Recording Studios in N.Y.] an engineer named Harvey Goldberg, who used to let me sit in on sessions, because he knew I wanted to get into production. I'd never ask him questions in front of the act, but I learned a lot of the rules, the do's and the don'ts. I didn't care how stupid the questions were. He told me to ask him anything, and I did.

One time, the act turned around and asked me what I thought and I voiced my opinion. Harvey turned around to me and said, “Genya, don't ever do that again.” That's a no-no. When you're not part of the session, don't voice your opinion. There are certain rules in the studio, and you do not do that.

Then I got more confident after that. I was doing acts that needed me—CBGB [a local New York club] bands like the Dead Boys, the Shirts, the Miamis,

Fender 75 Tube Amplifier. The New Rock 'n' Roll Vehicle.

If you believe volume and good sound belong together in rock 'n' roll, consider the new Fender 75 Tube Amplifier. A small, rugged 75 watt tube amplifier that sounds right for rock 'n' roll from whisper to scream.

Clean and/or dirty. Fender 75 offers dual channel functions. You can have a clean rhythm sound at any volume. And by using the channel cascade foot switch, you are put into a separate channel, with its own master volume control, for ultimate distortion.

Sustainnnnnnn. Fender 75 gives you remarkable sustain and distortion potential. Do both at any volume without altering the tone. Use the first channel—and the

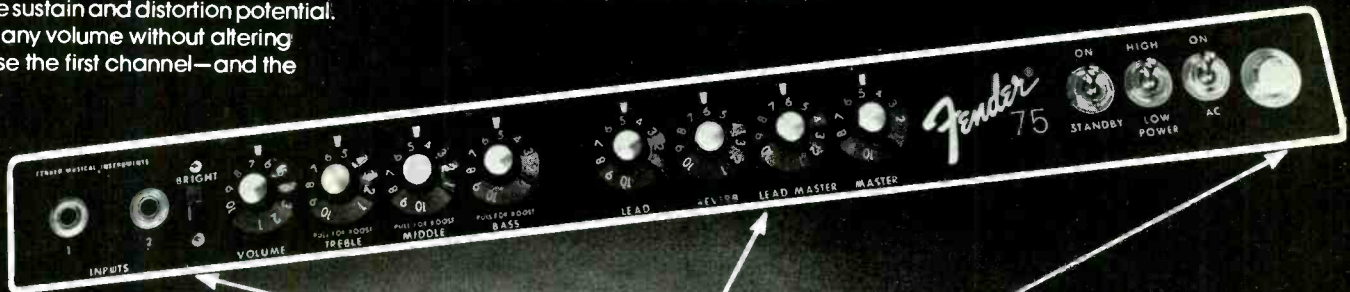
master volume functions, adjusted for clean or overdrive.

Pull for boost. With treble, mid and bass EQ boosts, you can create most any sound. For serious treble like British heavy metal sound, pull out the treble boost—or use the bright switch to get a 6 dB boost. Mid control gives a mid frequency shift and a midboost of 40 dB. Produce a "fat" bass by pulling the bass control.

Fender did it right. It took Fender to produce an amp that's engineered for rock 'n' roll and totally reliable. So reliable

you won't need a backup amp. Small and portable: 22½" wide, 22" high, 11" deep; 60 pounds. In the battle for rock sound, nothing challenges a guitar fired by a Fender 75 Tube Amplifier. Play one now at your authorized Fender dealer.

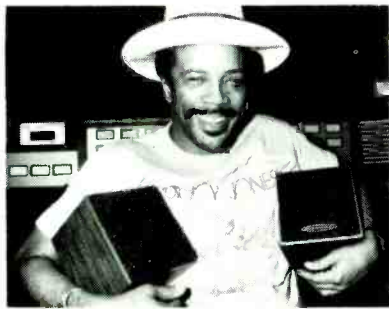
Fender
MADE IN U.S.A.



**GET THERE
FASTER ON
A FENDER!**

CIRCLE 56 ON READER SERVICE CARD

Quincy Jones... demands quality



Photographed at RECORD PLANT, Los Angeles, CA

"... I mix with AURATONE® 5C Super-Sound-Cubes® the little powerhouse speakers. They tell me exactly what will be in the grooves. You hear it all with AURATONE®!"

Join "Q" and other seasoned music world pros, top record company executives, engineers, producers, and artists who lay it on the line with AURATONE®.

Durability, flat full-range response, amazing power handling, and portability have made AURATONE® 5C's the Record Industry's favorite "mixdown monitors,"... for comparison and final mixes, auditioning, remotes, and reference standard speakers.

See your Dealer or order Factory Direct (30-day return privilege, one-year guarantee). \$75.00 per pair. Shipping and handling add: U.S.: \$5.00 pair; Foreign: \$10.00 pair. Calif. residents add sales tax.

Mail to: AURATONE
P.O. Box 698-R9, Coronado, CA 92118
Ship ___ pair 5 C's. Amount Enclosed \$ _____

Name (Please print) _____ Job Title _____ Date _____
Shipping Address _____
City _____ State _____ Zip _____
 Please send additional information.
CIRCLE 142 ON READER SERVICE CARD

"... it's a matter of hearing and building, like a painting process, like painting a picture."

Manster. New wave acts that were never in the studio. I needed the experience and they needed my experience. So, all in all, it worked well. Then when I did *Urban Desire*, it outsold all my other albums. That was the confirmation; that was what I wanted to do.

MR: Can you see more women getting into production as a result of your own efforts?

GR: I think they're there. They just have to work at it like I did. That's a question that's been asked: "How do women get into production?" It's like asking, "How do I get to Carnegie Hall?" Practice. Guys go through it, too. It's not just women. You have to have a track record. Guys are having a hard time getting their foot in the door, too.

MR: Did you find any prejudice at first, since the recording industry is primarily a male-dominated one?

GR: Maybe I'm stupid, but no. The only pressure I ever felt—and I don't work with the engineer any more—is when we were doing an album and somebody took a solo, and the engineer turned around and said the wrong thing. He said, "C'mon, man, you're playing like a chick." I looked over at him and said, "Do you realize what you just said?" His face turned purple. It was the first time I had heard that, and I thought, "Wow." So, of course, later on, every time someone did something wrong I would say "C'mon, you're playing like a guy." I got a little mad. The people that I work with, we pay. Who's gonna put me down? Money talks, you know. I shouldn't say that because there are guys that worked for me for free because they thought that some day I'd land a deal that they could get paid for. And when I did, I paid them double. Word is word, trust is trust, and I haven't felt any [male] chauvinism.

MR: What is the difference in your approach to producing someone like the Dead Boys to producing Ronnie, or even to producing yourself?

GR: The difference is in personalities. The first thing you go for is performance. If it takes shutting off a light for Ronnie because she feels a little self-conscious, great. With the Dead Boys, if they need a case of beer, they've got it. When I saw they were getting a little too drunk, we stopped.

MR: As someone who is producing her own records, is it possible to keep an accurate perspective on your own work?

MR: I keep so far away that it's almost too far away. Therefore, I'm going into the raw quality of it. The rawer the better for me. If it was the day of real polished sound though, forget it. I couldn't do it.

MR: When did you first start noticing that the music business was changing?

GR: It was a gradual thing. After people started seeing that there was money to be made in the record industry a lot of mongers came in—the "one-nighters" they're called. And you couldn't feel that you were having fun anymore. All of a sudden, the pressure was being put on you. You guys are gonna be number one! Nobody ever said that to us in Goldie and the Gingerbreads.

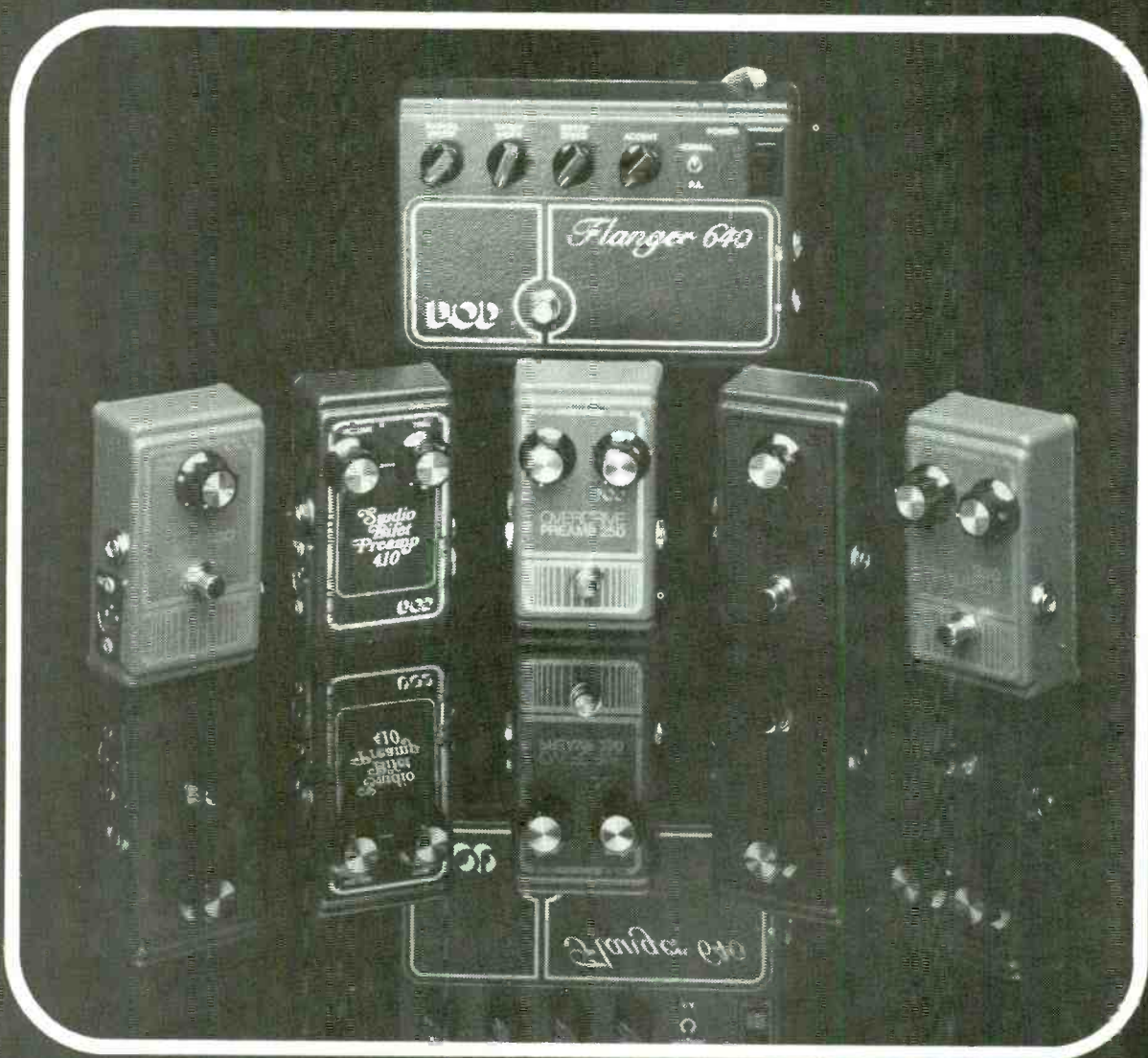
Even when we went over to England, and toured with the Stones and the Yardbirds, we had a great time. Not one dressing room on one side of the stage for the main act, and one on the other side for you. All this shit means something. You either feel like shit or a star. It shouldn't be that way. You go to a concert and the main group has champagne that the theater supplied, and the other group has got to send out for beer. Record companies started signing twenty groups, saying one has got to make it. We went through this thing of "Let's be real, man," and people would come out on stage and fix their amps in the middle of a solo. Gimme a break! That's entertainment? That's what the new wave and punk thing did for me that I love. There is a character inside of everyone on stage that you do not carry off stage. The character is not phony, it just comes alive once you're on stage. You can't walk off stage that way. It's like someone having a crying part on stage. You can't cry like that every night or you'll be in a mental institution.

MR: One last question. Can you see yourself and Ronnie doing some kind of performing together?

GR: No. I'm singing on her album and she'll certainly do some guest shots on mine, but I don't see us becoming the Donna Summer and Barbra Streisand of rock. But I will do one with Donna. No, just kidding.

Take Your Pick

Whichever DOD product you choose you'll find consistent high quality design and materials.



When we design a product we keep the musician in mind all the way. We demand a product that is functionally superior and to ensure that it will stay that way we use rugged name-brand components such as CTS, Carling Switch, National Semiconductor Texas Instrument, Switchcraft, etc. We also

feature solid Die-cast Zinc and Aluminum cases and FR-4, G-10 Glass epoxy circuit board. All our products are hand assembled and individually tested by qualified technicians and have a full one-year warranty on parts and labor.

For further information write or call:

DOD

Electronics Company, 2E95 South West Terrace
Salt Lake City, Utah 84115, (801) 485-8534

CIRCLE 106 ON READER-SERVICE CARD

Ambient Sound

BY LEN FELDMAN

A Look at Audio from London

I have just returned from a week-long trip to London where, among other things, I attended the 65th convention of the Audio Engineering Society (AES). As most readers probably know, the AES is a professional engineering society whose chief purpose is the advancement of the audio art and science. Since most of its members are engineering and technical types (rather than marketing people), an AES convention is generally noted for its absence of commercialism or hype. Of course, there are product exhibitions, some of them as fancily displayed as at any trade or consumer audio show, but what interested me most at this most recent convention, held in London's Hilton and Park Lane Hotels, were the technical sessions and seminars which took place daily for the four day run of the convention.

The technical sessions provide the serious audio-involved person with a glimpse of what's ahead. Often, one can detect trends in audio that are otherwise obscured by manufacturer advertising and contrived "breakthroughs" devised by over zealous advertising and public relations firms. Take for example the forum held on the second day of the convention devoted to digital recording and signal processing techniques. From everything you have probably read thus far concerning the subject, you have probably presumed that digital audio will provide the answers to all your recording and sound reproducing problems and that utopia is just around the corner, at least insofar as audio is concerned. Well, much of what was said at the Digital Audio Conference at the London AES was far less optimistic. For example, the issue of dynamic range was discussed in terms of the new requirements that it will impose upon ancillary, analog equipment. Just when we thought that increased efficiency of monitor speakers in the studio (and, for that matter, all loudspeakers of recent vintage) was getting high enough to preclude the need for super-powered amplifiers, along will come digital audio equipment with its extra 20 dB of available headroom or thereabouts. 20 dB, dear readers, is after all a power increase of one hundred to one! So where does that leave all of us who are working in ambient noise levels of 35 to 40 dB SPL and have been using 100-watt-per-channel amplifica-

tion to reach levels of 100 dB or so? How are we going to achieve the new available levels of 120 dB? Is the age of the 10,000-watt amplifier just around the corner? Obviously not, but the manufacturers of amplifiers and loudspeakers are going to have to take a hard look at what digital audio capability is going to mean in terms of the equipment they make.

In particular, if loudspeakers are to be able to handle the new wide-range high dynamic range audio signals fed to them from digitally processed audio programming, then previous notions about maximum power handling capacity of speakers need to be revised. If today's speakers are not up to the task of handling such wide-dynamic range signals, then one possible solution is to allow the amplifier to clip the digital audio signal peaks. In other words, you could allow the amplifier's limited power to serve as a sort of limiter-compressor in order to protect the speakers when the digital age really comes upon us.

But before we can approach the problem in such a negative fashion, we need to know much more about listeners' subjective reactions to peak clipping. How much can be tolerated? How many people can detect short-term peak clipping? And if it should be determined that we can tolerate and ignore peak clipping up to some point, then doesn't that negate or at least contradict the so-called advantage of full dynamic range which is inherent in digital recording techniques?

One of the interesting events designed to answer some of these questions in a statistical and scientific manner was a series of subjective tests which visitors to the London AES were invited to take. Both tests indirectly related to the future of digital recording, though the tests themselves were of an entirely analog character.

Perception of Filters

As you may know, most of the proposed digital recording techniques promise absolutely flat response up to 20,000 Hz at any recording level. But what about that long-established group of audiophiles who maintain that it is necessary to reproduce audio frequencies to way out beyond human audibility? Which of us has not read about amplifiers whose response extends to

50 kHz, 100 kHz or even 200 kHz? We are told by some that unless an amplifier (or preamplifier) can respond faithfully to such high frequencies, all sorts of inaccuracies of musical reproduction will result. The debate has been going on for decades. So, now, what happens when you have to introduce so-called anti-aliasing filters (and very sharply attenuating ones at that) into digital audio equipment. At best, these filters will permit response only out to 20 kHz. Their slope is so steep that at 25 kHz response may be attenuated by 80 dB or even more.

The first subjective test to which AES visitors were subjected (voluntarily, of course) was a listening test in which music was reproduced, alternately, on a wide-band system and over the same system with various cut-off filters added. An important aspect of these tests and the other ones to be described is that the listener was not asked to judge "which was better," but only whether any difference could be heard. Care in maintaining an absolutely random switching pattern was meticulously observed, so that at times the switching of lights to indicate a change was, in reality, *only* a switching of lights, while at other times the same light switching meant introduction or removal of a given filter in the system's signal path. Filters used in this test had cut-off frequencies of 20 kHz, 15 kHz and 10 kHz. Such tests have been done using sine wave tones before, but in the case of the tests witnessed in London, a special differentiated square wave having a fundamental frequency of 1 kHz was used. Such a signal, more nearly representative of musical signals, therefore contained significant amounts of energy at odd harmonics of the fundamental, or at 3 kHz, 5 kHz, 7 kHz, 9 kHz, 11 kHz, 13 kHz, 15 kHz and on and on to superaudible frequencies.

In so called "blind tests" or double-blind tests, where only "yes" and "no" answers are required, a score of 50% is equivalent to totally random guessing. Yet most of the respondents scored very nearly 50% in the case where the 20 kHz filter was inserted in the signal path, and sounds were compared with and without this filter. In other words, most people just couldn't tell the difference. So much for your golden eared audiophiles who insist that any system worth listening to must be able to reproduce frequencies that only dogs and bats can hear discretely.

While the results of inserting the 20 kHz filter may not be too surprising to readers of this column, you will be as surprised as I was to find that even when the 15 kHz filter was inserted, a clear majority of those tested still had trouble distinguishing between wide-band and filtered response. As might be expected, just about everyone who took the test was able to easily tell when the 10 kHz filter was inserted.

Perception of Severe Clipping

The people who devised the subjective listening tests at the London AES rigged up a second test which was, perhaps, even more significant than the filter perception test. Using a 28-second interlude of piano music (repeated over and over again during the lis-

tening tests) they artificially applied varying degrees of clipping (not induced by the amplifier, but carefully controlled with respect to previously measured peaks in the programming) and again, in a series of blind switchings, asked listeners whether or not they could hear the difference. Here, the results were quite different. A majority of the listeners were able to detect 6 dB worth of clipping of peaks. It is important to point out that the piano selection used in this test was a digitally mastered tape in which the full impact of transients had been maintained. As we said earlier, some of the peaks in this sort of digital piano recording were as much as 15 to 20 dB greater than they would have been if the same recording had had to be made on an analog tape deck.

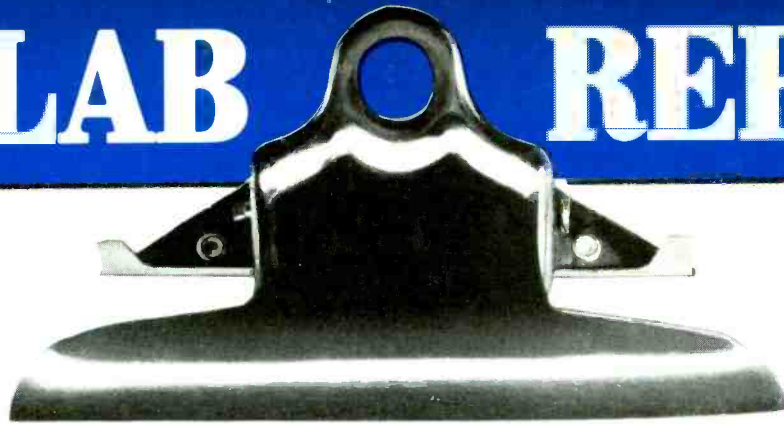
All of which suggests that the ability to reproduce digitally recorded programming over analog amplifiers and loudspeakers may be severely hampered if listeners can perceive such moderate amounts of clipping. Clearly, it is not only the makers of software and software reproducing components (turntables, analog tape decks, records, commercially recorded tapes) who may have to rethink the future of their businesses, but even such staples as amplifiers and loudspeakers as we presently know them may not be up to the task of working properly with the coming digital program sources.

Problems With Editing

At best, digital recording editing is going to require re-training of professional tape editors and recording engineers and technicians. A digitally recorded tape, containing millions of digital "bits" for each second of tape travel, hardly lends itself to the razor blade editing approach. Instead, most professional editing will have to be done electronically, and that means transcribing digital data from one master tape transport to another. At the beginning, at least, that's going to be a big departure for most recording technicians and there will be new skills to learn. The seminar on digital recording at the London AES had some points of view to express on this subject as well. Some felt that, rather than re-train personnel, it would be better to develop editing systems which required the same basic techniques (on the part of the editor) that are now employed in editing an analog tape. These people felt that it might be better to allow the razor blade technique, even if that meant having to come up with more complex drop-out and error correction techniques in the digital format itself.

Others maintained that re-training need not be that much of a problem and that once technicians or recording engineers see how much more flexible purely electronic editing can be they will prefer it over more archaic, analog methods.

I came away from the London AES with a more balanced view of the digital audio future that I had ever gained attending a CES Convention (where the name of the game is sell, sell, sell) or from any consumer-type audio show. Which probably explains why engineers are hardly ever found in sales jobs and vice versa.



NORMAN EISENBERG AND LEN FELDMAN

Sanyo Plus N55 Super D Noise Reduction Adaptor



General Description: The Sanyo "Super D" system is a combined signal compressor (for recording) and expander (in playback), also known as a compander. It is offered essentially for use with cassette recorders, whose dynamic range it is intended to increase by a claimed 100 times, or about +40 dB.

A low-silhouette unit that may be rack-mounted, its front panel contains a fluorescent signal display that indicates peak levels of both input and output signals (before compression or "encoding" and after expansion or "decoding"). An AC power switch is at the left.

Operating controls include a multiplex filter switch, the Super D activating switch and a tape-monitor switch. For calibrating playback level on each channel there are two screwdriver adjustments. A calibration switch to their right may be used to activate a built-in 1-kHz oscillator which is used in the procedure spelled out in the owner's manual for matching signal levels in both recording and playback between the Super D and an associated tape recorder. Reference levels are read on the fluorescent meters. Recording levels are adjustable on a dual-concentric pair of knobs at the right.

The rear panel contains the unit's power cord and four stereo pairs of pin-jacks for signals in and out. These include "encode in," "decode out," "encode out" and "decode in." The recommended hookup is with reference to the tape-monitor loop customarily provided on audio components, and once properly patched into a system the Super D may be used for recording and for playback, or it may be bypassed in either mode.

The Super D system works on a compression basis of 2 to 1, and reciprocal expansion of 1 to 2. A two-banded system, the companding of high frequencies takes place separately (and at a slightly altered threshold or reference level) from the companding that takes place for the mid- and low-frequencies.

Test Results: In our tests, the Sanyo Super D worked extremely well. With regard to coping with cassette tape noise, we increased the gain of our spectrum analyzer so as to be able to plot tape noise with and without the Sanyo device in the circuit. The results, plotted for frequencies above 200 Hz, are shown in the composite plots of Fig. 1. The upper noise "envelope" was obtained without Super D, while the lower envelope—some 35 dB lower in amplitude—was obtained when Super D was introduced to the same deck using the same tape. The vertical scale in this photo is calibrated at 10 dB per division. The results obviously are quite impressive.

Since the encode cycle of compounding makes louds softer as well as making softs louder, the system in effect increases headroom on any tape deck with which it is used. This can best be illustrated by sweeping frequencies from 20 Hz to 20 kHz, and recording and displaying the playback on the spectrum analyzer. The two successive sweeps shown in Fig. 2 were both made at a record/play level of 0 dB on the tape deck, using a high grade of cassette tape (TDK OD). The plots were simply shifted on the 'scope face with respect to each

other for easier visual interpretation, but the actual amplitudes are the same for both sweeps. The lower sweep represents the record/play response of the tape when record levels are at 0 dB. Note how the response begins to roll off at around 6 or 7 kHz, as high-frequency saturation begins to take its toll.

In the upper sweep, recorded at the same recording level, the Sanyo Super D has been introduced into the system. Since during the encode portion of the compressing operation the level is actually compressed, there now is less tendency for tape saturation to occur even at this high recording level. As a result, the playback response is flat to about 12 kHz. To get these results without resorting to a device such as Super D, you probably would have to use metal tape, and even if you did, you probably would not get the signal-to-noise ratio we were able to get (relative to 3% THD) by using the Sanyo device with a high quality normal-bias tape. Would you believe a total dynamic range for the Onkyo TA-2080 cassette deck used in this setup of better than 100 dB? Well, neither did we until we repeated the tests a few more times and got the same incredible results.

Readers who care to know a bit more of how this device works are referred to the accompanying Fig. 3, a block diagram of the unit.

General Info: Dimensions are 17 $\frac{1}{16}$ inches wide; 1 $\frac{1}{4}$ inches high; 11 $\frac{3}{4}$ inches deep. Add-on metal pieces permit standard rack-mounting. Weight is 9.5 pounds. Price is \$359.95.

Individual Comment by L.F.: I have totally ambivalent feelings about this outboard noise-reduc-

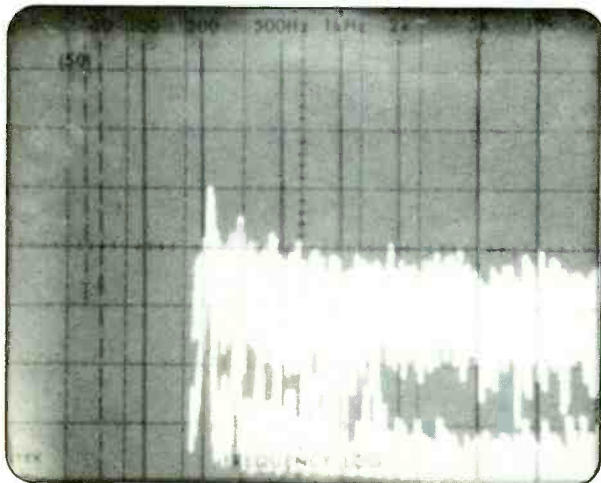
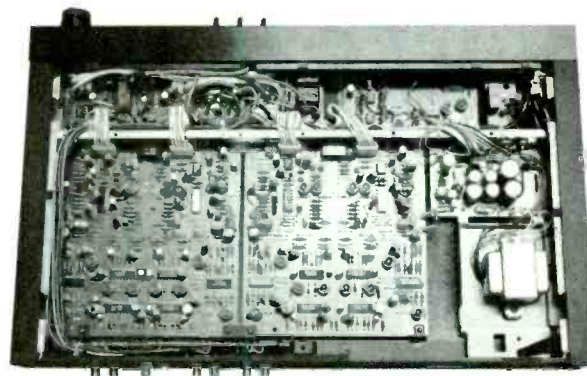


Fig. 1: Sanyo Super D: Noise analysis of residual tape noise with and without the noise reduction unit in-circuit.



Sanyo Super D: Internal view.

tion device. Our test results, as reported above, document that it works very well indeed, and that it can provide a tremendous increase in dynamic range when used with any decent quality cassette tape deck. Having acknowledged this, I would like to get some things off my chest.

It seems that all of a sudden, new noise reduction schemes are creeping out of the woodwork. All of them seem to imply that they have bettered the long accepted Dolby-B standard by a wide margin. Not too long ago I had occasion to measure the new High-Com II outboard device which was a joint effort of Nakamichi and Telefunken of Germany. I was duly impressed with the 20 dB of noise reduction and the lack of breathing and pumping that characterized this product. And, of course, readers of this publication are well aware of how much regard I have for the efforts of dbx, Inc. who, among other things, brought us the new noiseless discs which are still a constant source of amazement and delight to me.

With all due respect to these noise-reduction and dynamic range expansion systems, I think it is not right for us to lose sight of *why* Dolby settled for a "mere" 10 dB of noise reduction in the consumer Dolby-B system. Let's face it, Ray Dolby could have opted for 15 dB or 20 dB too if his priorities had been simply the most noise reduction he could achieve. But when Dr. Dolby developed his system he had other valid concerns. He wanted to insure the same compatibility for the cassette tape format that had been central in Philips' thinking when they developed and introduced the cassette in the first place. In other words, given a Dolytized tape cassette, it remains possible to play it on a non-Dolby deck and vice versa. Admittedly, overall tonal balance is not *perfect*, but reproduction is tolerable. That is *not* the case with dbx, or High-Com II, and certainly not with this new device from Sanyo.

Well, to the folks at Sanyo, my commendations for the Sanyo Super D device, even though I think the

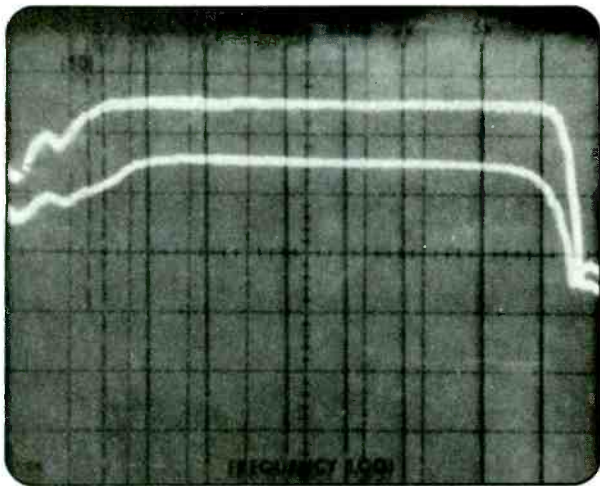


Fig. 2: Sanyo Super D: Device effectively increases recording headroom thanks to its compression action during encoding.

name "Super D" is about as cheap a shot as I have ever seen in my long years with this industry. What, pray tell, does the "D" stand for (or what is it supposed to conjure up in our sub-conscious)? And if the intended subliminal association is made in our minds, what are we to think of the word Super?

On a technical front, the way in which this device works is so very similar to the way in which dbx linear 2:1/1:2 companding works that I would not be at all surprised if questions of patents arise as Sanyo begins to market this device. Very probably, Sanyo's claim

for differences will lie in the fact that theirs is a two-banded system. Still, I wonder if that will be enough to circumvent the basic patents, or innovations introduced several years ago by dbx. I wonder, too, why Sanyo thought this to be a good time to introduce yet another noise reduction/companding system. After all, everyone recognizes that digital audio is on the way and that when it arrives, all of these marvelous noise reducing, dynamic range expanding devices will have seen their last days. How many years of life can Sanyo Super D actually hope to enjoy, what with the problems of introducing a wholly new concept, the incompatibility with any other system currently used to accomplish the same benefits, and Sanyo's basic task of becoming a recognizable force in audio/high fidelity? Only time will tell, I suppose.

In use, there was virtually no audible breathing that I could discern, and residual tape noise was banished to sub-audibility.

If Sanyo's objective was simply to show their technical prowess, they have succeeded. If they really mean to present this noise-reduction system as a possible world standard to replace more established systems, I think they will have a tough fight.

Individual Comment by N.E.: I am not sure what "Super D" stands for—super dynamics, super-duper, or what? In any case, it does work as claimed, and the effect it provides is readily audible. One telling test is to patch it into a system and record with it on, and then for a time with it off. Even on a cassette deck that was deemed to provide excellent sound, the

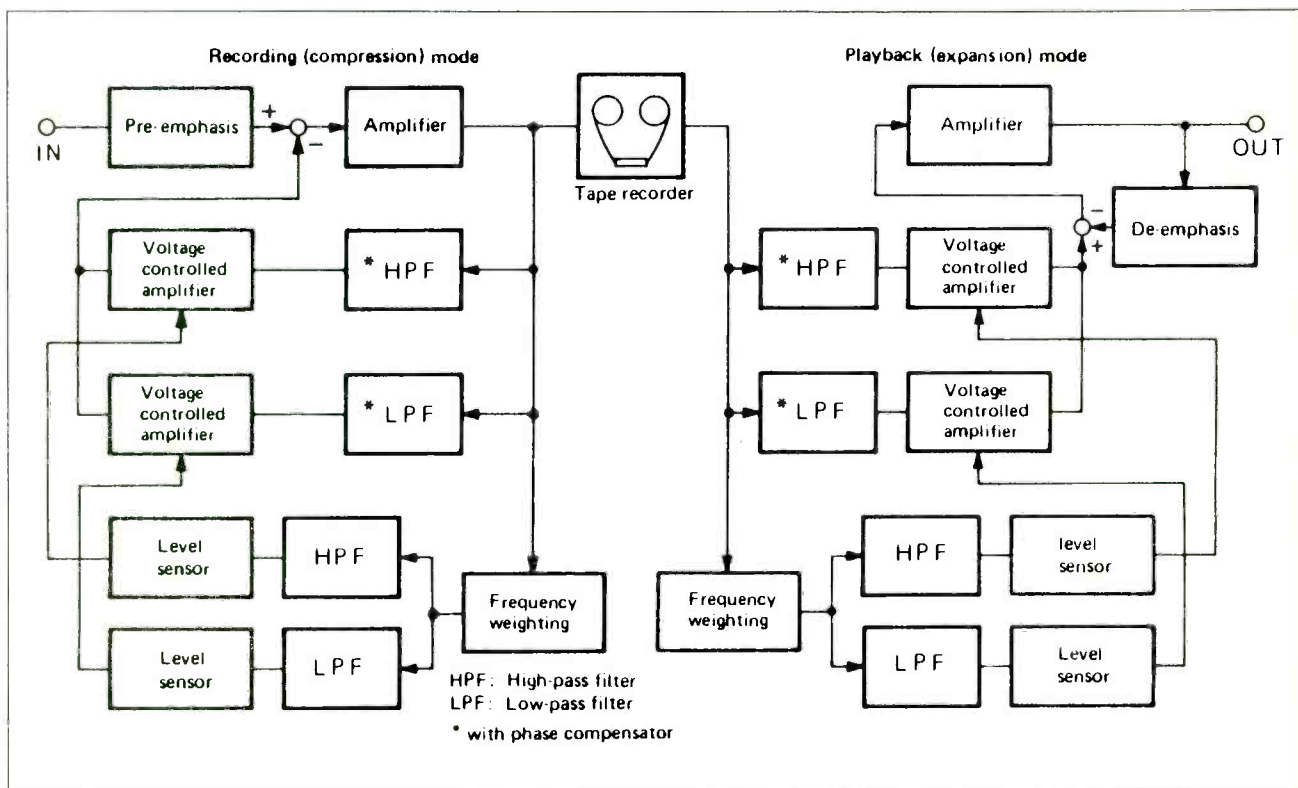


Fig. 3: Sanyo Super D: Block diagram of the system.

addition of the Super D makes a definite improvement—not only in dynamic range but in ultimate clarity of the musical sound.

Of course, in common with other recently introduced in-and-out noise-reduction systems, the tapes it makes are hardly compatible for playback on decks that are not electrically linked with the Sanyo device. And so the serious recordist is faced with a choice: Make a

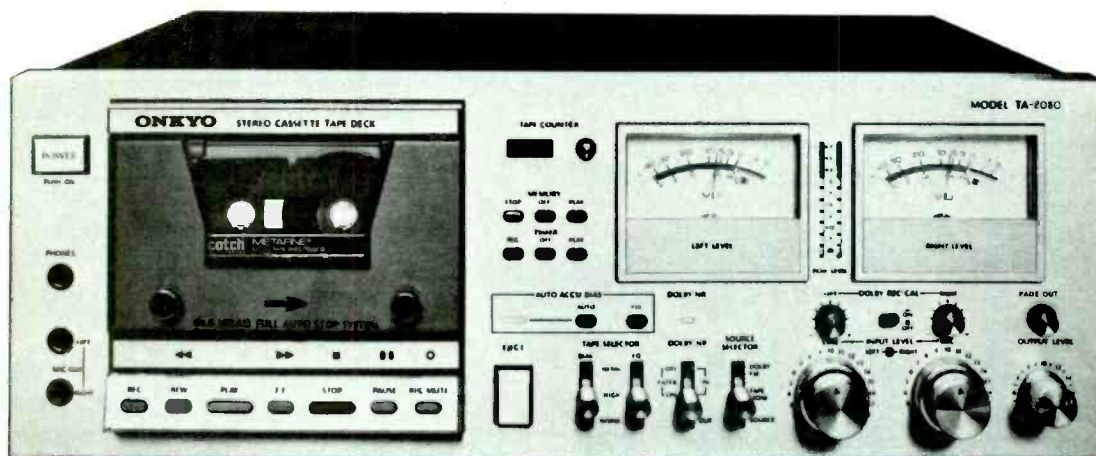
tape with the normal Dolby-B that can be played on just about any deck, or opt for one of the "special" systems that entails the addition of another electronic device. There is no way I can come up with a definite answer to this one. Apparently, Sanyo has tossed its hat into the ring and is making a bid for acceptance with its Super D, which is—all things considered—a formidable entry.

SANYO PLUS N55 NOISE REDUCTION ADAPTOR: Vital Statistics

PERFORMANCE CHARACTERISTIC	MANUFACTURER'S SPEC	LAB MEASUREMENT
Distortion @ 1 kHz, ref. input level	0.08%	0.07%
Frequency response, for -3 dB	10 Hz to 30 kHz	14 Hz to 45 kHz
Input sensitivity for 0 dB	85 mV	90 mV
Output level at 0 dB	0.53 V	0.48 V
Record-out level at 0 dB	80 mV	68 mV
S/N improvement	35 to 40 dB	See text
Compression ratio	2:1	Confirmed
Expansion ratio	1:2	Confirmed
Power consumption	12 watts	13 watts

CIRCLE 1 ON READER SERVICE CARD

Onkyo TA-2080 Cassette Recorder



General Description: The Onkyo TA-2080 is a stereo cassette tape deck employing separate heads for record and play; a two-motor, dual-capstan drive system; and a built-in microprocessor for automatic bias adjustment ("Accu-Bias") of all cassette tapes, including metal-particle. The record and play heads are electrically discrete but share a common housing. Direct off-the-tape monitoring while recording is provided. Transport controls are "feather-touch" and operate through an electronic logic system so that fast-buttoning to and from all modes including run-in recording directly from playback is possible. The panel features two separate and simultaneously acting metering systems, one showing VU levels via dials and pointers on each channel, and the other showing peak levels via vertical rows of LEDs, one row per channel.

The built-in Dolby-B noise-reduction system may be calibrated by front-panel controls.

Adequate tape tension is handled by a mechanism that takes up any slack in the tape automatically after a cassette is loaded and the compartment door is shut. The Onkyo may be operated in record or playback by an external timer. The deck also has a memory rewind option that may be used to stop the transport or to activate playback when the tape counter reaches "000." The microphone and line inputs may be mixed by the front-panel level controls.

The brushed aluminum front panel is fairly "busy" looking but neat and logically laid out, with easy legibility of control markings. At the extreme left are the power off/on switch, a stereo headphone output jack and the left- and right-channel microphone jacks. The

cassette compartment door may be removed for access to the heads and other parts as needed for cleaning. The transport buttons are arranged horizontally below the door. Functions include record, rewind, play, fast-forward, stop, pause and record-mute. The pause button stops the transport without disconnecting the signal. The record-mute button permits the tape to continue moving, but removes the signal.

To the right of the cassette compartment are the tape-index counter and its reset button. Below them are the switches for memory rewind, and for timer operation. And below these are the Accu-Bias controls and an associated indicator that blinks during the automatic adjustment and remains steadily lit when bias has been correctly set.

Across the bottom portion of the panel are the cassette eject button; the tape bias selector and the tape equalization selector (these two switches share markings for metal, high-bias and normal tapes); the Dolby switch (with an optional FM multiplex-filter position, and an indicator light above the switch); the tape/source monitor selector; the line input level controls (a dual-concentric pair for channel adjustment individually or simultaneously); a similar pair of knobs for microphone inputs; and the output level control which handles both channels at once and controls both the line and the headphone output levels. The controls for Dolby calibration are just above the input level knobs. Above the output level knob is a control that may be used to fade out the endings of previously recorded tapes (this does not work with cassettes whose erase-prevention tabs have been removed).

The upper right portion of the panel is dominated by the two metering systems (which operate on both record and playback). The VU meters are calibrated from -40 to $+5$. The peak LED scales run from $+7$ to below -12 dB. Stereo pairs of pin-jacks for line in and line out signals are at the rear, as is the deck's AC power cord.

The owner's manual is well-prepared, clearly written and adequately illustrated. It includes a detailed listing of tape brands and types with recommended EQ and bias settings. The manual cautions against the use of cassettes that have poorly formed cases or that lack guide rollers or pressure-pad springs, endless tapes and C-120 sizes.

Test Results: Although no plus-and-minus tolerance in dB was listed for the Onkyo TA-2080's frequency response, we assumed it to be the customary ± 3 dB, and tested accordingly. As may be seen from the test data, response with normal-biased tape went better at the high end than claimed; response with chrome-equivalent tape was exactly as claimed; response with metal tape fell short by 1 kHz of the claimed performance. However, the advantages of metal tape did become evident in terms of the extra headroom available at high frequencies (as shown in the sweep photo, Fig. 3), and again in terms of signal-to-noise figures. Distortion was comfortably low throughout, being well under the spec'd rating, although the very lowest distortion was obtained with high-bias tape. (The tapes used were TDK type OD for normal bias; TDK SA for high-bias; and Scotch Meta-fine for metal). The deck's built-in Accu-Bias system was activated and used for all tests.

Fig. 1 is a photo of our spectrum analyzer sweeps of response at 0 dB and at -20 dB using normal-bias tape (upper and lower traces, respectively). The sweeps cover the range from 20 Hz to 20 kHz, and it would appear that the Accu-Bias system favors extended response as the single parameter used to arrive at a correct bias setting. At the -20 dB level, a slight rising characteristic occurred at the very high end.

Fig. 2 shows the sweeps obtained with high-bias tape at the -20 dB and at the -20 dB record levels. The rather odd-shaped response characteristic obtained here suggests that perhaps record equalization was a

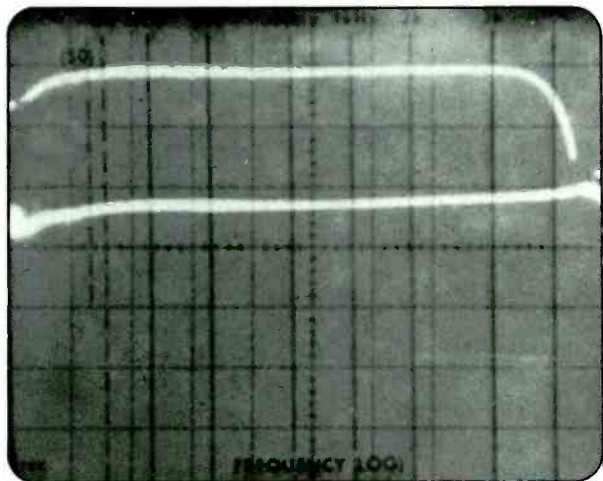


Fig. 1: Onkyo TA-2080: Record/play response at 0 dB and -20 dB record level, using TDK OD tape with recorder in "Normal" setting.

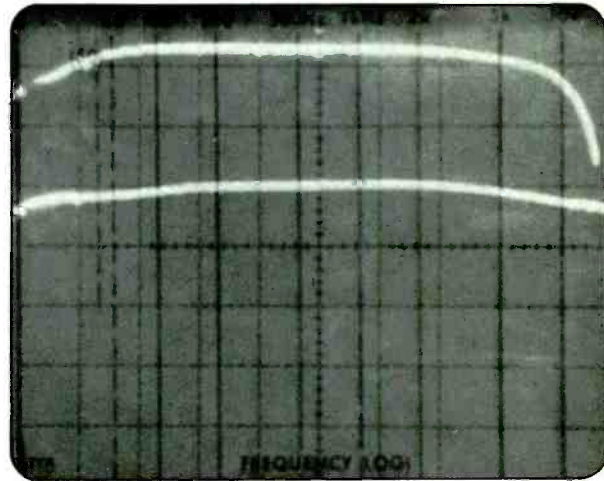


Fig. 2: Onkyo TA-2080: Record/play response at 0 dB and -20 dB record level, using TDK SA (high bias) tape.

bit off for this particular tape, since the slight rolloff above 5 kHz is not the type of steep drop-off that indicates the true limit of the tape's response capabilities when use with the deck/head of a given machine. Although we list the rolloff point (-3 dB) as being at a frequency of 18 kHz, useful response does in fact extend to well beyond that, as the sweep photo shows.

Fig. 3 shows the sweeps obtained with metal tape. Here it is quite revealing to compare the response obtained at the 0-dB level with the response obtained at the -20-dB level for either of the other two tapes. The added headroom well above the 10-kHz region is really what makes metal tape superior to other formulations, and in a recorder such as the Onkyo TA-2080—whose designers obviously knew what they were doing—significant improvement in overall signal-to-noise ratios also can be attributed to this kind of tape. Actually, the S/N figures for the other two tapes were excellent too. But here, with metal tape and the Dolby switched on, you can achieve a signal-to-noise figure of 73.5 dB, which would not have been believed possible for the cassette format a few years ago. For that matter, the wow-and-flutter measurement of 0.03 percent WRMS is also worth pointing out as "state-of-the-art" performance.

Speed accuracy is indicated as "perfect" since any deviation from nominal speed was too small for us to measure (and we can measure deviations as low as 0.1 percent).

Fig. 4 is a plot of playback response with the deck set for normal bias and 120- μ sec EQ. Again, as in previous reports, we used the TDK test tape AC-337. And again, we come up with a slightly rising low end. As a reader has pointed out, this rising characteristic results from the fact that this test tape is a full-width recording, which accounts for the extra energy detected by the playback heads of any machine we test. Nonetheless, we find this test tape in all other respects to be a very consistent specimen with extremely accurate magnetization levels. We should point out again that the spot frequencies on this tape begin at 40 Hz and end at 12.5 kHz; hence the abbreviated curve shown in Fig. 4.

General Info: Dimensions are 17 $\frac{1}{4}$ inches wide; 6 $\frac{1}{16}$ inches high; 14 $\frac{3}{16}$ inches deep. Weight is 22.5 pounds. Price is \$799.97.

Individual Comment by N.E.: The Onkyo TA-2080 impresses me as a sensibly designed and well-executed cassette deck of better-than-average performance, with a canny balance of features that stop short of "going overboard" in the interest of novelty. It has what are the really important things to the serious recordist working in the cassette format: three-head operation, a smooth and dependable transport with complete fast-buttoning, a most functional metering system, readily calibrated Dolby-B, an on-the-panel simple mixing option and metal-tape capability which—in this deck—is second only in overall perform-

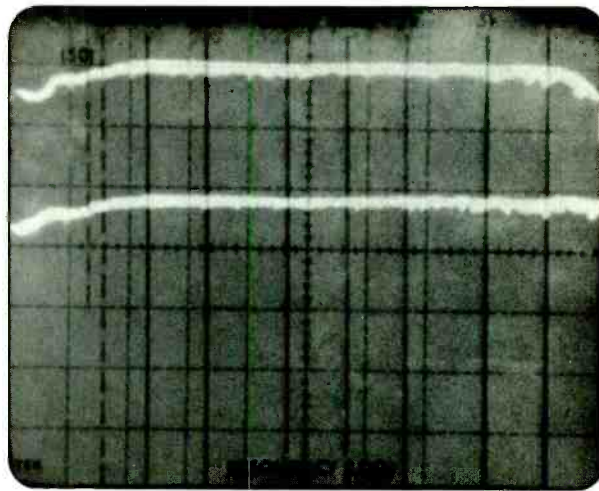


Fig. 3: Onkyo TA-2080: Record/play response at 0 dB and -20 dB record level, using Scotch (3M) "Metafine" tape.

ance superiority to the previously tested (April 1980 issue) Nakamichi 680-ZX. That is to say, except for the Nakamichi, the Onkyo's performance with metal tape is better in more tested parameters than that of any other "metal-tape-ready" cassette deck that I have encountered.

The Accu-Bias system is obviously a tip-of-the-hat to the recent flood of microprocessor technology in audio products. Frankly, I am happy that they confined it only to bias adjustment, which can be tricky (if you care to fuss that much with it beyond the nominal settings provided by the "older" simple switch settings) when you attempt to trim it yourself. To my way of thinking, that's a sensible use of microprocessing from the standpoint of actual audio performance, whereas all the other microprocess-controlled options you can find on many of today's cassette decks relate less to performance as such and more to a kind of "passion" for doing things automatically, but not necessarily better and always at higher cost than otherwise.

In my view, Onkyo has put its design efforts in those areas where it really counts—such as extremely low wow-and-flutter, very low distortion, linear response, ample headroom and excellent S/N characteristics. These virtues, plus the features it does have (those already mentioned plus the more usual ones of memory-rewind, timer-operation and so on) seem to me a nice blend of characteristics that should interest a fairly wide spectrum of tape users.

Individual Comment by L.F.: The microprocessor and the stereo cassette deck seemed to have been made for each other. More and more manufacturers are using computer chips in interesting ways to improve the performance of their cassette decks, and Onkyo's "Accu-Bias" is another example of this trend, albeit a rather unimaginatively named one.

While not nearly as sophisticated in what it does

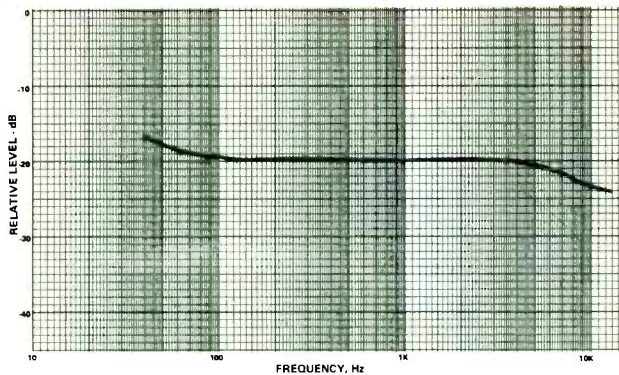


Fig. 4: Onkyo TA-2080: Playback response, "Normal" setting, using TDK AC-337 test tape.

automatically as the systems in some other decks I have tested (the Phase Linear 7000 or the JVC KD-A8), the Onkyo's Accu-Bias system does its thing (which is to optimize bias settings for any tape brand or type) in much less time than the others which do perform a more complex adjusting job. On average, the Accu-Bias process took less than five seconds from the time I pushed the control button to the time I was ready to use the deck.

While this control probably will be most intriguing to the prospective buyer to whom it is demonstrated, as one who is perhaps more concerned with the basics of recording I found that the combination metering system of the Onkyo TA-2080 was of far greater significance. Using conventional meters with attack times that are more or less set up to approximate VU meter standards, and supplementing these with vertically-oriented LED banks that indicate peak levels was pure inspiration on the part of Onkyo's design team. The

combination is unbeatable for getting a true picture of what's going on with the program source being recorded, and the positioning of the LEDs with left and right channel meters flanking them made for easy viewing and understanding of the two types of indicators.

I also was pleased to find front-panel Dolby calibration controls that enabled me to make sure the Dolby circuits were tracking properly. I can remember when Dolby (and its licensees) were afraid to provide consumers with this facility, fearing that the user might mess up the calibration and then blame Dolby for poor recording results. To my way of thinking, anyone spending upwards of \$800 for a cassette deck might be expected to be able to read and understand a few simple instructions regarding Dolby calibration, and should be given the chance to optimize the circuitry.

I was disappointed to find that Onkyo quoted frequency response without providing a plus-and-minus dB tolerance. For shame—I thought that practice was confined to decks in the under-\$200 category.

But that's my only gripe about this deck. Having registered it, I must say I always find it a pleasure to test a piece of equipment that delivers the performance it is supposed to, plus more. The Onkyo TA-2080 is that kind of product, and its price seems fair in terms of its features, transport system and the quality of sound it delivers. Having tested some of the less expensive new machines that are supposed to handle metal tape, and having been disappointed at what I at first thought was the advertising peoples' over-enthusiasm for metal-tape, I find it gratifying to discover that when this tape is used on a machine that is properly designed for it, such as this Onkyo, both the tape and the machine end up doing great things together.

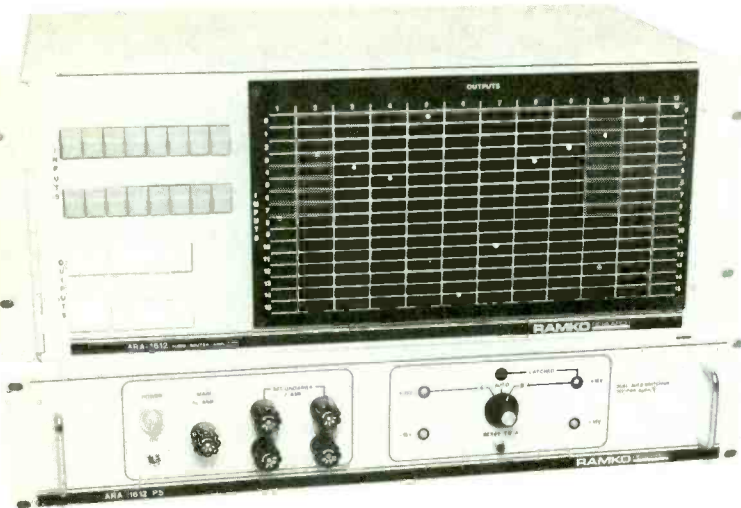
ONKYO TA-2080 CASSETTE RECORDER: Vital Statistics

PERFORMANCE CHARACTERISTIC	MANUFACTURER'S SPEC	LAB MEASUREMENT
Frequency response, normal tape	20 Hz to 16 kHz*	± 3 dB, 20 Hz to 18 kHz
high-bias tape	20 Hz to 18 kHz*	± 3 dB, 20 Hz to 18 kHz
metal tape	20 Hz to 20 kHz*	± 3 dB, 20 Hz to 19 kHz
THD at 0 dB record level		
normal, high-bias, metal tape	2%/2%/2%	0.85%/0.72%/0.9%
Record level for 3% THD		
normal, high-bias, metal tape	NA/NA/NA	+ 10 dB/ + 8.5 dB/ + 10.5 dB
S/N ratio, Dolby off		
normal, high-bias, metal tape	NA/NA/62 dB	58 dB/60 dB/64 dB
S/N ratio, Dolby on		
normal, high-bias, metal tape	NA/NA/NA	66 dB/68 dB/73.5 dB
Wow-and-flutter (WRMS)	0.045%	0.03%
Speed accuracy	NA	"perfect"
Mic input sensitivity	0.3 mV	0.24 mV
Line input sensitivity	50 mV	57 mV
Line output level	775 mV	770mV (max)
Headphone output level	NA	76 mV (8 ohms)
Fast-wind time, C-60	90 seconds	85 seconds
Bias frequency	NA	100 + kHz
Power consumption	45 watts	42 watts

*No dB tolerance stated

CIRCLE 2 ON READER SERVICE CARD

Ramko ARA-1612 Router/Amplifier



General Description: The Ramko ARA-1612 is a sophisticated, professional grade system for routing (switching) signals by means of what may be termed an "electronic patch board." Signal routing is accomplished by an intricate system of interchangeable circuit module boards, and control by the operator is accomplished by "light touch" pushbuttons. Sufficient low-distortion and adjustable gain, via the integrated amplification, is provided to assure against frequency degradation, loading problems or signal-to-noise degradation. Up to sixteen mono, or eight stereo, inputs may be assigned to as many as twelve outputs, and simultaneously if desired.

The modules fit within the mainframe unit whose entire front panel hinges open for easy access within. The input pushbuttons (colored orange) and the output buttons (white) are arranged in convenient rows, with slots above them for small marker-cards on which specific signal designations may be noted. The largest portion of the panel is given over to a grid with twelve vertical columns for the outputs and sixteen for the inputs. Individual LED indicators come on according to what combination of input and output has been selected. Signal connections are made at the rear of the mainframe, together with the power hookup from the separate power supply unit. Both chassis are designed for standard rack mounting.

The system employs a common buss BCD control concept to permit multi-slave control center operation. Optional metering allows checking of input levels and of phasing. All levels may be adjusted individually. The system is expandable to forty-five inputs and twelve outputs, and the power supply can be used for powering up to three full sixteen-by-twelve mainframes. Remote control facilities also are available.

Test Results: The system we tested included the mainframe supplied with two audio router input modules (each of which offers eight mono input capability) and twelve output modules, plus the separate power supply. Fig. 1 shows the mainframe perched atop the

power supply. If you look closely you will see that we have punched up an arbitrary signal distribution pattern with input number 0 going to output number 1, input number 1 going to output 2, etc. The grid read-out tells you at a glance just where every signal is going, and there are no restrictions on the number of outputs to which a given input signal can be branched. The rear panels are shown in Fig. 2.

While the mainframe we tested was fully loaded (see Fig. 3, internal view from the rear), there is no reason why you could not use the system when fewer inputs and/or outputs are required. A single input card will provide eight mono inputs (two must be used for stereo), but the outputs are sold on a single card basis (the full complement being twelve per mainframe).

As may be seen from our table of "Vital Statistics," routing signals around the studio or control room using the Ramko ARA-1612 is hardly likely to degrade those signals in any way. And using the setup in stereo mode, the crosstalk figures of -75 dB are not going to pose any problems either.

Of course, if you are about to get into digital recording or mastering, the observed distortion levels and S/N levels of this system may well become limiting fac-

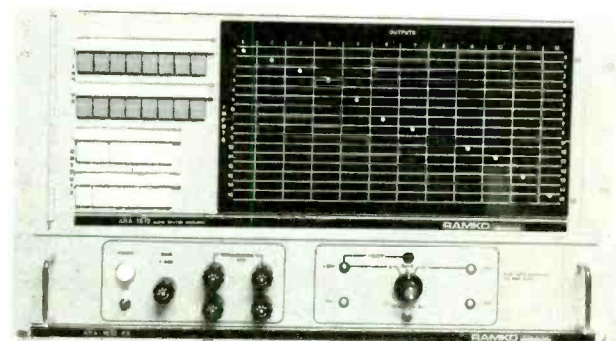


Fig. 1: Ramko ARA-1612: Front panel view of signal routing system. Power supply unit (ARA-1612 PS) is shown below mainframe which displays signal routing in LED grid form.

tors, what with digital recording's capabilities of dynamic range in excess of 90 dB, and harmonic distortion of less than 0.03 percent. But most of us are still a long way from converting everything to digital, and until we do, the Ramko system provides a truly elegant means for getting present-day analog signals where they ought to go.

General Info: Mainframe dimensions: 19 inches wide; 7 inches high; 11 inches deep. Power supply: requires additional 3½ inches of rack space. Prices: ARA-1612 MF (mainframe), \$619; ARIM-8 input module for 8 mono inputs, \$75; ASOM-1612 switching and output module, \$149; ARA-1612PS power supply, \$495. Total price of system tested, \$3052.

Joint Comment by N.E. and L.F.: For those studios or broadcast stations that can afford it, the Ramko ARA-1612 system makes the typical patch-panel look like something that should have gone the way of triode tube amplifiers and cactus record-playing needles. If you are still manipulating a manually-operated patch panel for routing your various inputs to their outputs, consider the problems involved. You

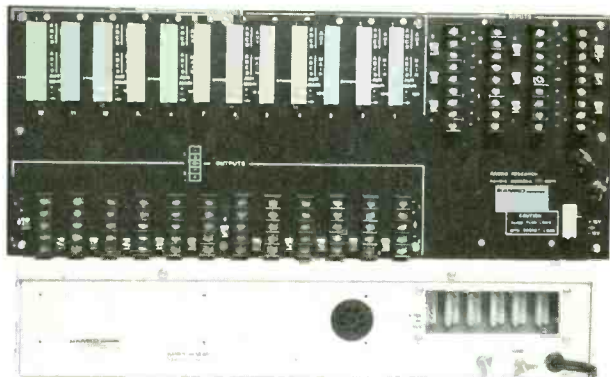


Fig. 2: Ramko ARA-1612: Input and output cables connect to rear of unit.

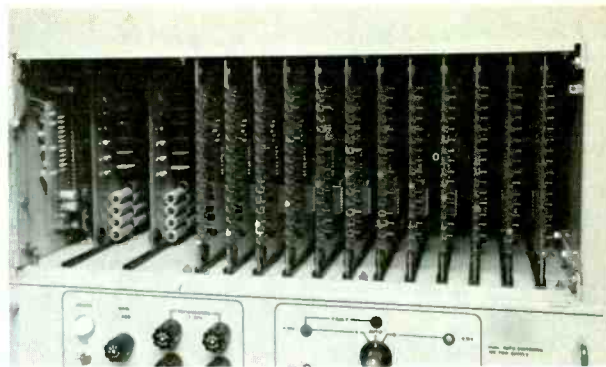


Fig. 3: Ramko ARA-1612: Twelve p.c. boards at right in this internal view are audio switching and output modules (ASOM-1612) while two boards at left are input modules (ARIM-8).

can't create multiple feeds without either encountering impedance mismatches or using resistor branching. In either case, the source signal very likely will be degraded, either in terms of frequency response or signal-to-noise ratio. And, of course, the conventional patch-panel precludes the possibility of remote-controlled switching.

Obviously, in these days of sophisticated CMOS switches and solid-state electronics, there had to be a better way of getting a signal "from here to there" and also to be able to combine it with other signals going to the same place. The Ramko ARA-1612 is that better (albeit fairly costly) way. A statement in the owner's manual indicates that its designers see it "specifically" as an aid to broadcasters. To us, it would seem that the Ramko—or at least its basic concept—would be just as useful in a medium-sized recording studio. It could very nicely cope with the usual "rat's nest" of signal routing wiring that not only cuts down on signal quality, but also reduces the efficiency of the busy studio engineer who has to try to figure out the mess each time a new session is being set up. With the Ramko system, things could become both better and easier.

RAMKO ARA-1612 AUDIO ROUTER/AMPLIFIER: Vital Statistics

PERFORMANCE CHARACTERISTIC	MANUFACTURER'S SPEC	LAB MEASUREMENT
Frequency response	+ 0, - 0.5 dB, 20 Hz to 20 kHz	- 0.5 dB, 10 Hz to 30 kHz
Harmonic distortion at + 8 dBm out		
1 kHz	0.05%	0.043%
20 Hz	0.10%	0.10%
20 kHz	0.10%	0.062%
IM distortion at + 8 dBm	0.10%	0.14%
S/N ratio re + 8 dBm out	75 dB	78 dB (83 dB "A" wtd)
Maximum input level	+ 21 dBm	Confirmed
Max output level (clipping)	+ 21 dBm	Confirmed
Crosstalk		
@ 1 kHz	- 75 dB	- 78 dB
@ 20 kHz	- 60 dB	- 70 dB
Gain	- 24 dB to + 17 dB, trimmer	Confirmed (supplied by factory at unity gain)

adjustable

CIRCLE 3 ON READER SERVICE CARD



OUTRAGEOUS!



Gauss speakers. Outrageous performance in a very conservative package. Demanding specs. Rigid quality assurance. Louder and cleaner sound. Speakers that stand up to 400 watts of continuous pink noise power. That's Gauss. A company dedicated to the proposition that



music is a profession, not a hobby. A company free from the distraction of hifi design considerations. Hear us at your local Gauss music retailer. A select group of the best. They just might turn your head around! Gauss. Professional. Only professional.

gauss by Cetec.

CETEC GAUSS. 9130 Glenoaks Blvd. Sun Valley, CA 91352 (213) 875-1900 TELEX: 194189

CETEC INTERNATIONAL LTD. 16 Uxbridge Road Ealing, London W5, England 01-579-9145 TELEX: 935847

Divisions of Cetec Corporation

CIRCLE 112 ON READER SERVICE CARD

www.americanradiohistory.com

Lexicon Prime Time Model 93

By John Murphy and Jim Ford

The Prime Time model 93 from Lexicon, Inc. employs dual digital delay lines and separate input and output signal mixers to provide a variety of time delay effects. The basic delay line provides up to 128 milliseconds (msec.) of time delay which can be increased to 256 msec. through the use of an optional memory extension. The delay line has two outputs with controls for separately selecting the delay time of each output. A VCO clock is used to provide modulated time delay effects such as: flanging, vibrato and doubling. Multiple inputs and outputs make the Prime Time a truly versatile audio time delay processor. The current price of the unit is \$1485.

General Description: Although complex, the Prime Time can be understood by considering the relatively simple building blocks of which it is composed. Toward this end we have prepared a simplified block diagram of the processor and it is provided as *Figure 1*. The three major components of the system are: the delay line input mixer (which mixes four signals into one signal), the digital delay line (with separate A and B outputs) and the master output mixer (this is a "four-into-one" mixer also). As you can see at the left of the diagram, the unit has an input and an auxiliary input. These two signals are provided to the inputs of each of the two mixers along with the delay A and



delay B outputs of the delay line. The output mixer allows the user to establish any desired mix of direct and delayed signals while the delay line input mixer is used to establish the character of the delay signals.

Since the outputs of the delay lines are returned to the input mixer, the amount of signal recirculation through the delay line is determined by the settings of the delay A and delay B level controls on the input mixer. With the delay level controls at the input mixer all the way down, the delayed signal is not returned to delay line input and the delay outputs will consist of a single delayed repetition of the input signal. Raising the level of the delay A and delay B controls on the input mixer allows part of the delayed signal to be recirculated through the delay line thus giving rise to repeating echo effects when longer delay times are selected. With the shortest delay times (about 1 msec.) flanging effects are possible and recirculation can be





used for further enhancement of the signal. There are adjustable hi-cut filters in the delay line recirculation loops which can be used to reduce the high frequency content of the recirculated signal.

The VCO (Voltage Controlled Oscillator) can be employed to automatically vary the time delay of the delay line over a 2:1 range. This allows the Prime Time to produce swept comb filter effects such as "flanging" and "resonance." When the VCO is employed at the appropriate speed and depth a true pitch vibrato effect can be created. In larger doses the VCO can be used to generate bizarre sci-fi sound effects.

The output mixer is used to select the desired proportions of input signals and effects signals appearing in the master output signal. Unlike the input mixer, the output mixer's level controls have no effect on the character of the signal in the delay loop.

Now that we've had a quick overview of the Prime Time, let's go over the specific features and discuss the operation of the unit in more detail.

The Prime Time is packaged for standard nineteen-inch rack mounting. It has an attractive grey front panel with neat white lettering and graphics. The entire set of controls is color coded to aid in the operation of the unit. The color blue is used for all the master functions, while red and yellow are associated with all the delay A and delay B controls, respectively. Input and Aux Input controls are in green and white, respectively. The result is a highly usable (and colorful!) set of front panel controls.

At the lower far left of the unit's front is a power on/off alternate action push button. Above this is a small momentary action push button and an associated LED indicator for placing the system in the

"repeat/hold" mode. When the repeat/hold mode is activated, the memory ceases being updated by new audio information and continuously repeats whatever audio was in memory when the button was pressed. There is no degradation of quality as the sound is repeated. The repeat/hold mode is defeated by pressing the button a second time whereupon the LED extinguishes and operation returns to normal. The duration of the repeated segment depends on the delay time selected and the setting of the "delay multiply" control. Repeat/hold segments of up to one second can be achieved with the standard memory while segments up to two seconds long can be obtained with the optional memory.

At the right of the power switch and repeat/hold button are two "delay select" controls. Displays for indicating the selected delay time are located just above the "delay select" controls. These rotary controls are used to set the delay times for the two outputs of the delay line (delay A and delay B). Each control has 60 possible settings which vary the delay time from 0 to 256 msec. The actual delay time selected is displayed (in milliseconds) in the display window above. If the delay time selected is a "prime number," a special "prime" indicator will light in the display. Selecting prime number values for the delays insures that the delay times have no common factors and that there will be a minimum number of repetitive delay patterns which could contribute to unnatural effects (such as "flutter" echo).

Next are the "delay adjust" and VCO controls. The "delay adjust" control is a rotary type with a detent at the full counterclockwise position. In the detent, or "cal," position the Prime Time employs a highly accurate crystal time base to provide the indicated delay time. When the "delay adjust" control is turned from the "cal" position the delay time can be varied continuously from the indicated delay time to half that value. Also, switching the "delay adjust" control from the "cal" position enables the VCO frequency and depth controls located below. In this mode the delay time for both delays automatically varies over a range determined by the VCO depth control. The second

VCO control, "frequency," is concentric with the depth control and determines the rate at which the delay time is varied. The frequency is adjustable from 0.1 Hz to 20 Hz. Probably the most obvious use of the VCO is in providing the sweep for flanging effects.

Continuing to the right across the front panel, the next set of controls is for the delay line input mixer and consists of five vertically oriented slide controls. The first four sliders adjust the levels of the four inputs to the mixer while the fifth slider serves as the master level control for the mixer's output signal. From left to right the individual sliders are: input, aux input, delay A, delay B and master. The output from this mixer is fed directly to the delay line and also provided as an additional output on the rear panel.

The signal level at the input to the delay line is monitored and displayed on the front panel by way of a headroom indicator composed of five red LEDs. These are in a vertical column to the right of the input mixer with the LEDs calibrated in 10 dB steps and indicating from 0 dB to 40 dB of headroom. The master level control of the input mix should be set high enough that there is significant level indication but not so high that the 0 dB (limit) indicator lights.

Toward the top of the panel next to the headroom indicator are a pair of horizontally oriented sliders which control the high frequency rolloff of the recirculated delay signals. In the right-most position the high frequency bandwidth is indicated as 15 kHz. At the left-most position of the sliders the recirculation bandwidth is reduced to 800 Hz (which constitutes a pretty strong treble cut).

Below the rolloff controls is a four-position rotary switch labeled "Delay Multiply/Bandwidth." The delay multiply setting is indicated at the top of the control while the corresponding delay bandwidth is indicated by a second pointer at the bottom of the control. In the "1X" position the delay time is as indicated in the display window and the bandwidth through the delay line is 12 kHz. Rotating the control to the "2X," "4X" or "8X" positions increases the delay time by the factor indicated while reducing the high frequency bandwidth to 6 kHz, 3 kHz and 1.5 kHz, respectively.

The output mixer is located further to the right of the front panel and its controls exactly duplicate those of the input mixer. However, the output mixer simply establishes the signal mix at the master output and has no effect on the signals within the delay loop. This is where the mix between direct and effects signals would be established and the overall output level controlled. Also, when the Prime Time is used for flanging effects, the output mixer would be used to match the levels of the delayed and non-delayed signals for deepest notches in the comb filter and therefore the richest sounding flanging.

At the far right of the front panel is a group of four toggle switches arranged in a vertical array. The top

three switches provide phase inversions for the input signal, delay A and delay B. An LED overload indicator located above the phase invert switches indicates when the signal level at the input to the master stage is close to overload. The bottom switch is a delay bypass which when engaged illuminates a red LED just below the switch and routes the output of the delay line input mixer directly to the output mixer's master level control. The delay bypass can also be operated externally, which brings us to the rear panel.

All of the input, output and remote control connections are made on the Prime Time's rear panel. The input and aux input connections are by way of female 3-pin XLR-type connectors. The inputs will properly terminate balanced lines, but instructions are also given for interfacing single-sided lines. Below each of the input connectors there is a slide switch for selecting input gains of either 0 dB or 20 dB. The 0 dB position accommodates input signal levels from +1.3 dBm to +18 dBm while the 20 dB position is for signals from -18 dBm to +1.3 dBm. The master output of the unit appears on a male 3-pin connector and is transformer isolated. In addition to the master output, there are connections for the output of the input mixer as well as outputs for the individual delay A and delay B signals. These three supplemental outputs are provided as single-sided signals on ¼-inch phone jacks and are capable of driving 600-ohm loads. The two delay outputs each have convenient rear panel level adjustments.

A feature that makes the Prime Time attractive for performers is the inclusion of connectors on the rear which allow remote control of three master functions: delay bypass, repeat/hold and delay adjust. The rear panel also contains a connector for the detachable AC power cord.

Field Test: The Prime Time was auditioned at a couple of local recording studios where we had access to master multi-track tapes and could process recorded tracks through the unit individually or in groups. We found it convenient to drive the Prime Time from one of the console's cue sends. The master output was returned to one of the console's input modules through a line level input.

The audio quality when listening to a single delay (no direct signal) was found to be quite good. There was no apparent noise, distortion or frequency coloration, and the high-frequency response seemed quite extended with the delay multiply switch in the "1X" position. The "2X" setting with its 6 kHz bandwidth reduced the highs by a slight (but noticeable) amount on material with significant high frequency content; but this setting also provided us with delay times up to about half-a-second (512 msec.), since the unit we were testing had an expanded memory that seems like a reasonable trade-off.

The "4X" and "8X" settings each doubled again the

available delay time, the price being another octave of high frequency bandwidth for each doubling. Needless to say, bandwidths of 3 kHz and 1.5 kHz restrict the audible highs pretty severely; but two seconds is a heck of a lot of delay!

After a short learning period we found the Prime Time's controls fairly straightforward and easy to use. Of course it can be pretty frustrating to patch in a box like this one and just start turning knobs and pushing buttons. The familiarization period is shorter and more enjoyable if the operator's manual and block diagram are at least surveyed before leaping for the knobs.

Lexicon has included in the owner's manual seventeen "recipes" of control settings for various effects. During the course of our evaluation we managed to try nearly all of them. The echo and repeating echo effects are about the simplest to set up and were carried out nicely by the Prime Time. The reverberation and room expander effects were interesting and found to be somewhat useful, but were not considered to be an acceptable substitute for a good reverb system. The flanging effects were excellent. The dual delays provide for some nice variations on standard flanging sounds. The recipe for "doubling" (artificial "double tracking") and "tripling" employs the VCO to introduce slight timing and pitch variations in the delayed signal and could be quite useful for "live" performance

as well as in the studio. The unit also provides "vibrato" and "resonance" and combinations of these effects with flanging. Of course the recipes only represent a small number of the possible control settings; exploring others can lead to some useful, and some unusual, sound effects.

Lab Test: The first characteristics we evaluated when we got the Prime Time in the lab were its input and output levels. The minimum input signal that will give a 0 dB headroom indication with the 20 dB input gain control setting was about -21 dBV. For 0 dB input gain, the minimum input level for 0 dB headroom indication was -1 dBV. The hottest input that could be accepted (with 0 dB input gain) was +21 dBV. The master output of the unit would go to about +22 dBV before clipping.

The noise performance of the unit was quite good. With all the level controls down, noise at the master output was about -89 dBV. Boosting the output master to maximum increased the noise level to about -77 dBV. Introducing delay output signals brought the noise up to about -70 dBV.

Distortion through the direct signal path was quite low typically, but increased to about 0.2% at 10 kHz. Distortion was higher through the delayed path, measuring about .065% through the mid frequencies

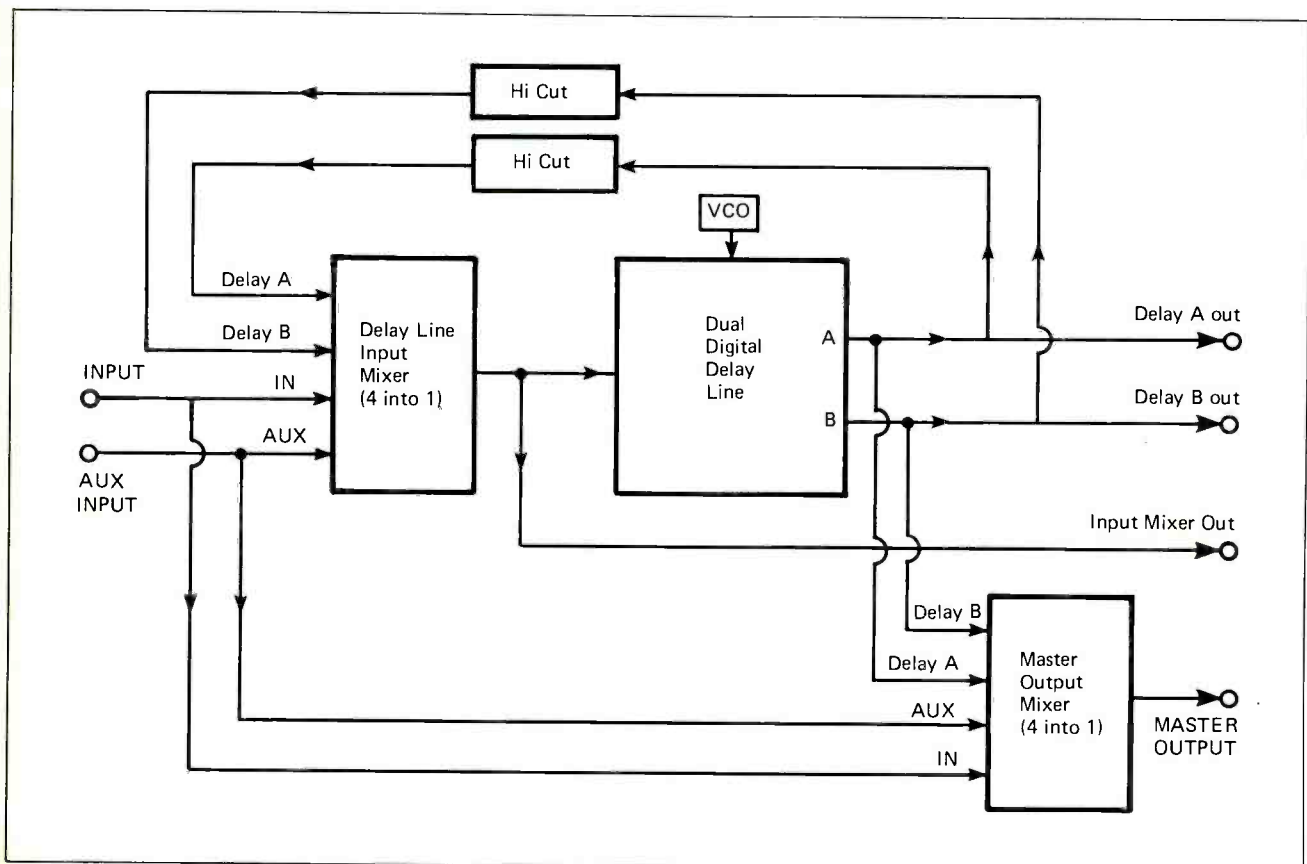


Figure 1: Lexicon Prime Time: Simplified block diagram.

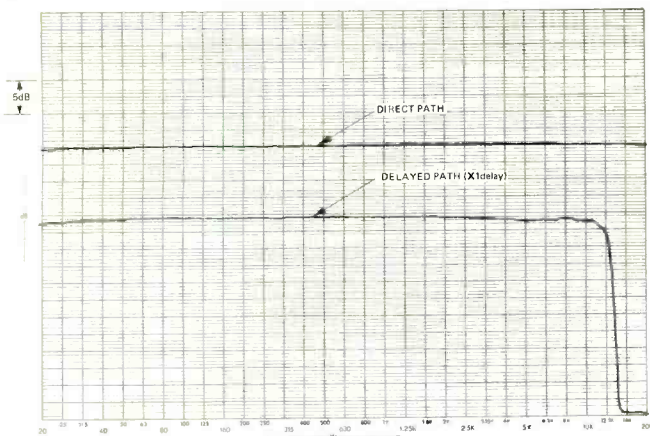


Figure 2: Lexicon Prime Time: Frequency response for both direct and delay signal paths.

and increasing to .67% at 10 kHz.

The frequency response for both direct and delay signal paths is shown in Figure 2. The response is quite flat in both cases. The bandwidth for the direct path is quite wide, extending from about 4 Hz to 100 kHz. The delay path exhibits extended low frequency bandwidth (8 Hz) but the high-frequency response is sharply limited to 12 kHz (for the "1X" delay multiply setting) by an anti-aliasing filter. To avoid "aliasing" (a type of distortion that is found in "sampled" signal processing systems when the signal has frequency components which exceed half the sampling frequency) it is necessary to incorporate a sharp filter ahead of the sampling stage.

It was observed that the direct signal path could be driven into slew limiting by a high frequency, high level sine wave. The slew rate limit was measured as 1.8 volts per microsecond and considering that the output will swing about 14 volts (peak) before clipping, the ratio of slew rate to peak output voltage (what we like to call "slew rate ratio") is 0.13 volts per microsecond per volt. Based on the fact that ratios from 0.5 (minimum) to 1.0 have been recommended¹ for freedom from slewing induced distortion, it would be nice to see a bit higher slew rate from the Prime Time.

The owner's manual supplied with the unit was quite comprehensive and provides detailed discussion of the operation of the unit. The control setting recipes provided make a good starting point for learning to use the Prime Time effectively. The manual has a pretty good trouble-shooting section and even includes a copy of the Lexicon application note titled "Studio Applications of Time Delay."

Conclusion: The Prime Time Model 93 from Lexicon, Inc. was found to be an excellent digital delay effects unit. The processor provides good clean time delay for echo and repeating echo effects, and with its mixing facilities and VCO can produce some very "tasty" flanging sounds as well as a multitude of other effects (doubling, vibrato, resonance, etc.). We can't help but recommend the Prime Time highly.

¹J.G. Jung; M.L. Stephens; C.C. Todd, "An Overview of SID and TIM, Part III," *Audio*, August 1979.

LAB TEST SUMMARY

(Note: 0 dBV is referenced to .775 Vrms)

Input/Output Levels (for direct signal path)

Minimum input level required for
0 dB headroom indication: - 0.9 dBV (0 dB gain)
- 21.1 dBV (+ 20 dB gain)

Maximum input level
before clipping (0 dB gain): + 21.4 dBV
Output clips at: + 21.7 dBV

Noise Performance

(20 kHz filter, unweighted)

With all level controls at minimum,
noise at the master output is: - 88.7 dBV

With controls as above except
output master at maximum, noise is: - 76.7 dBV

With nominal delay level settings and
output master at maximum noise is: - 70 dBV

Distortion Performance:

(THD plus noise at 0 dB headroom indication)

Frequency	Direct Output	Delayed Output
10 kHz	.205%	.67%
1 kHz	.0053%	.065%
100 Hz	.019%	.060%

Bandwidth

(- 3 dB points)

Direct signal path: 3.6 Hz to 100 kHz
Delayed signal path (1X delay): 8.4 Hz to 12.5 kHz

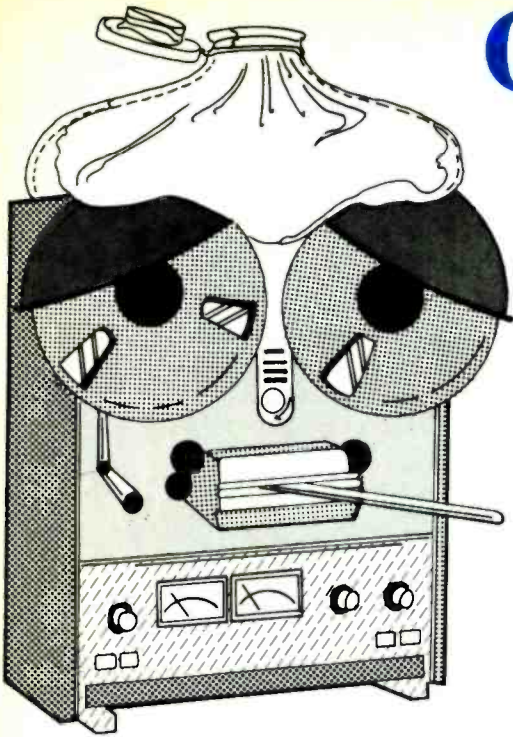
Slewing Performance

Slew rate limit
(direct signal path): 1.8 volts per microsecond

Slew rate ratio (ratio of slew rate to full output peak
voltage swing): 0.13 volts per microsecond per volt



OUT OF SYNC?



"If you don't subscribe to Modern Recording, it's no wonder!"

Every month Modern Recording, the magazine for the creative musician, recordist and sound reinforcement mixer, is loaded with articles and ideas to help you handle your specialty even better.

If you're a professional, or creatively involved in music and recording, you can't afford to stay out of sync with your creative world.

Exchange ideas in our "Talkback" and "Letters to the Editor" sections; see what's new in our "Product Scene" and "Musical Newsicals" columns; find out what really goes on in the studio from our "Groove Views" record reviews.

But most of all, learn...how to get the most from your equipment.

FEATURES

Oct. A SESSION WITH PETER FRAMPTON
THE ELECTRIC PRIMER - PART II
PROFILE: STUDIO DESIGNER JOHN STORYK

Nov. TRAVELS WITH YES
BUILD A DUAL LIMITER
PROFILE: MAYNARD FERGUSON

Dec. ON TOUR WITH GEORGE BENSON
THE ELECTRIC PRIMER - PART III
THE NEW RADIO CITY MUSIC HALL

Jan. A SESSION WITH BOB WELCH
APOCALYPSE NOW - THE MUSIC
BEHIND THE IMAGES
PROFILE: ENGINEER/PRODUCER EDDIE KRAMER

* Sorry These Issues Are No Longer Available.

Feb. THE BEE GEES "LIVE!"
THE ELECTRIC PRIMER - PART IV
SMALL STUDIOS: THE LIGHTER SIDE OF BUSINESS
PROFILE: DR. JOHN & PRODUCER TOMMY LI PUMA

Mar. A SESSION WITH AL DIMEOLA
THE ELECTRIC PRIMER - PART V
PROFILE: RICK DERRINGER

Apr. A SESSION WITH JOURNEY
THE ELECTRIC PRIMER - PART VI
STALKING THE WILD STUDIO CUSTOMER

May CHUCK MANGIONE "LIVE"
THE ELECTIC PRIMER - PART VII
PROFILE: LARRY FAST

Modern Recording in 1980!
Look to MR—it's the advantage.

MODERN RECORDING

14 Vanderventer Avenue
Port Washington, New York 11050

(Foreign subscribers add \$3.00 for each year Foreign subscriptions payable ONLY in U.S. funds by international draft or money order)



006C

I wish to subscribe renew today and save up to \$16.00
\$14.00 for 12 issues- Save \$7.00; \$26.00 for 24 issues- Save \$16.00.
check money order enclosed for the amount of \$ _____

My account number is VISA Mastercharge

Exp. Date ____/____/____



NAME _____

ADDRESS _____

CITY _____

STATE _____ ZIP _____

Don't Miss Out On Back Issues Of MR! Just Send \$2.00 plus \$.50 for postage and handling per issue.
I Would Like The Following Back Issues

Name _____

Address _____

City _____

State _____ Zip _____

Check Box:

Nov. 1979 Feb. 1980
 Dec. 1979 Mar. 1980
 Jan. 1980 Apr. 1980

GROOVE VIEWS

Reviewed By:
MIKE DEREVLANY
JIM FARBER
NAT HENTOFF
JOE KLEE
STEVE ROW
STAN SOOCHER

POPULAR

ELECTRIC LIGHT ORCHESTRA:
Discovery. [Jeff Lynne, producer;
"Mack," engineer; recorded at
Musicland Studios, Munich.] Jet/CBS
FZ 35769.

Performance: **Cute**
Recording: **Pompous-sonic**

If your favorite record store is out of the latest release by the Bee Gees, then this album by Electric Light Orchestra ought to do in a pinch. Perhaps we have been ignoring the warning signs, but with the release of *Discovery*, ELO seems firmly committed now to go grubbing for the young teens' big bucks that had been going to the Australians.

As technically polished as this album is, it must rise or fall on the quality of its material. And the material is too often too juvenile, too often a steal of a kind of vocal work already being done with some success by the Brothers Gibb. "Shine a Little Love," an up-tempo tune, features the same kind of rhythm and vocal setting as the Bee Gees' disco-flavored hits, with the harmonies only slightly airier, more in the typical ELO manner. "Last Train to London" is another example, as is the chorus in "Midnight Blue" (not to be confused with the J.D. Souther song of the same name). One way to distinguish ELO's sound, however, can be found here: The dense string sound tends to make the music sound as if it were being played on cotton candy instruments; the Bee Gees'

sound is a little more like peanut brittle.

Other weaknesses in the material include some of the lyrics. Jeff Lynne, the mover behind ELO, has done some pretty dumb things with his words here. "Wishing," for example, contains the memorable couplet: "I wish that everything was cold/I wish you were here to hold." The biggest hit from the record, the raucous "Don't Bring Me Down," contains a line that is written, "You're looking good just like a snake in the grass;" it should have been written, "You're looking good, you old snake in the grass."

Actually, the latter song is one of the only things to commend to the listener. It has the same good-humor quality as the Cars' "Let's Go," although it makes one wonder if maybe this isn't the year of high school cheerleader rock and roll.

One apparent attempt to recreate a Beatles-like vignette, "The Diary of Horace Wimp," only partly succeeds, and its borrowing (or stealing) of the "Day in the Life" ending points out a debt to the predecessor.

"Need Her Love" could have been the best cut on the album but for its thick, syrupy sound. This is a slow ballad with an interesting melody line that opens with white noise in a circular fashion. The choral bridge between verses sounds suspiciously like the bridge used by Fred Waring and the Pennsylvanians in "The Night Before Christmas," but the twin guitar work isn't half bad.

Bev Bevan, the ELO drummer, said in a recent interview he may be getting bored with the band's sound, particularly in the studio. *Discovery* certainly fits



ELECTRIC LIGHT ORCHESTRA: Technical polish and cotton candy instruments

into the formula for ELO's past successes, but one wonders how long it will last. This is audio novocaine, deadening the sharpness of the music and cushioning the sound like a foam rubber pillow. And it's starting to wear off. S.R.

VARIOUS ARTISTS: *The Maxell Rock Sampler.* [Various producers on individual cuts; Gene LaBrie, executive producer; H. Hoffman, producer; J. Lopes, engineer; remixed and remastered at RCA Studios, New York.] RCA DPL1-0400

Performances: **Varied and versatile, with hits and misses**
Recording: **The kind of quality you'd expect on a hi-fi demonstration record**

For some reason, sampler records always seem to offer a rare chance to experience the collected efforts of not one, or two, but several of the "best" groups as they do some of their finest material. Unfortunately, the results from Maxell seem to have been diluted by a very poor choice of outcasts, out-takes, and just plain garbage, to the point where these also-rans clutter up the album. Someone, somehow, did manage, however, to save space for some (hooray!) exceptions.

The truly outstanding cuts on the album are "Blinding Light Show," by Triumph, and "Genesis Chapter I, Verse 32," by the always outstanding Alan Parsons Project. In the dubious category (somewhat below outstanding), there are the Strawbs, who are inadequately represented by one of their more mediocre works (in fact, it might even be one of the worst Strawbs cuts ever, but that's another story; besides, on this album, it's almost great in comparison): "Deadly Nightshade."

The rest of the album constitutes an outstanding disappointment. Consider, if you will, Hall and Oates. Maybe they're not everybody's favorite group but they're veterans of a long, if moderate, success, and they've certainly amassed quite a repertoire of outstanding variety, with at least one noteworthy tune in every category. But did they pick one of these? Noooo, they had to go and use "August Day," one of Hall and Oates' most forgettable and least listenable tunes.

Even the label, which is downright misleading, is disappointing. Some of the material can hardly be classified as rock. A couple of cuts, "Sho Nuff

We've got it.

The Belden 42 Pair Cable. Ends multiple wiring problems in the studio and on stage. Available in bulk or with custom plug configurations.



whirlwind

Whirlwind Music Inc.
P.O. Box 1075
Rochester, New York 14603
(716) 663-8820

CIRCLE 65 ON READER SERVICE CARD

Get A GNOME

the original micro-synthesizer

Every day more people discover that PAIA's GNOME is the most versatile, cost effective special effects device on the market today.

John Simonton's time-proven design provides two envelope generators, VCA, VCO and VCF in a low cost, easy to use package. Use alone with it's built in ribbon controller or modify to use with guitar, electronic piano, polytonic keyboards, etc.

The perfect introduction to electronic music and best of all, the Gnome is only \$59.95 in easy to assemble kit form. Is it any wonder why we've sold thousands?



PAIA 1020 W. Wilshire Blvd. Oklahoma City, OK 73116

- Send GNOME MICRO-SYNTHESIZER Kit (\$59.95 plus \$2.00 postage)
- GNOME MICRO-SYNTHESIZER (Fully Assembled) \$100.00 plus \$2 postage
- Send FREE CATALOG

name _____
address _____
city _____ state _____ zip _____
visa _____ card no. _____

PAIA Dept. 6 M (405) 843-9626
1020 W. Wilshire Blvd. Oklahoma City, OK 73116

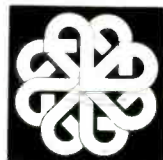
CIRCLE 60 ON READER SERVICE CARD

You've always dreamed of time control ...



IT'S HERE NOW!!

The New D-250
Digital Delay System
from ...



ADVANCED Audio Designs

PROFESSIONAL PERFORMANCE SYSTEMS

3890 Stewart Road · Eugene, Oregon USA 97402 · 503-485-4251

Call us for the dealer nearest you.

CIRCLE 49 ON READER SERVICE CARD



The most versatile digital reverb ever made... for only \$1995!

Ursa Major's new SPACE STATION is a true breakthrough in audio technology—a digital reverb so versatile it can create virtually any pattern of direct sound, early reflections and reverberation, yet which costs only a third of what you would pay for a single-function reverb system. This easy-to-use unit will take your dry tracks and put them into an endless variety of reverberant spaces, from tiny rooms to concert halls to parking garages to sci-fi locales. And the SPACE STATION does even more: its Multi-Tap Delay and built-in mixer give you totally new pure delay effects, while feedback of a single tap provides simultaneous echo or resonance effects.

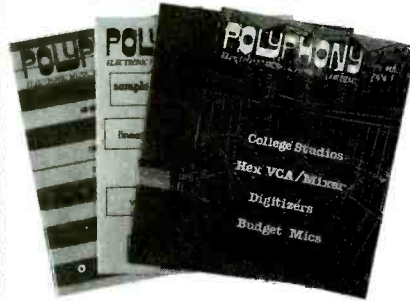


URSA MAJOR, Inc.

Box 18, Belmont, MA 02178
(617) 489-0303 B-3

CIRCLE 120 ON READER SERVICE CARD

SUBSCRIBE to POLYPHONY



The magazine of electronic music and home recording provides the advanced applications, construction projects, modifications, interviews and product information you are not likely to find in general interest music magazines or owners manuals. In addition are regular columns on Home recording, Computer Music, Composer profiles, Experimenters' circuits, Reviews of specialized recordings, books and equipment for the electronic musician.

() Enter my one year (6 issues) subscription; \$8 US, \$10 foreign

() Send sample issue, \$1.50 enclosed.

name _____

address _____

city _____ state _____ zip _____

POLYPHONY Box m-20303, Okla. City, OK 73156

CIRCLE 149 ON READER SERVICE CARD

Grooves," by Harvey Mason, and "Easy Come, Easy Go, Hold de Mota Down," by Odyssey, are pure disco and, at the risk of sounding redundant, purely bad disco at that.

The idea of a sampler record is great; the actual execution of such a project can leave much to be desired, as the Maxell sampler proves. The individual or individuals who actually get to choose what groups and which songs get to be sampled may be subject to certain biases, or they may simply have quirky tastes. In either case, the results of this sampler promise to provide potential earsores for the unsuspecting cassette buyer. If only Maxell would stick to the tape business... M.D.

THE INMATES: First Offence. [Vic Maile, producer; recorded at Jacksons Studio, Rickmansworth; engineer not listed.] Polydor PD-1-6241.

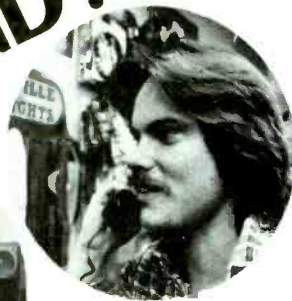
Performance: **Form over content in R&B pop**
Recording: **Intentionally squeaky and trebly**

The Inmates are prisoners of that brand of sixties British R&B that, lacking deeper emotion, always winds up closer to painless pop. It's The Stones still squeezed into 12X5, with covers of songs by people like Wilson Pickett and the old Stax types. As such this could have easily turned out as revisionist Scarsdale soul. But instead The Inmates' approach is successfully reverential, with attention paid to the form of classic white R&B pop, both in performance and production sound.

Like George Thorougood, singer Bill Hurley has a voice well suited to the genre (i.e. he sounds like if he doesn't get a gallon of Vicks sore throat medicine pronto, he's gonna kick off). He's never as forced as Peter Wolf or Willie DeVille, and though he's generally anonymous (lacking the threat of someone like Graham Parker), the formal "correctness" of his voice becomes more important than personality. This can imply a sycophantic relationship to the genre (I call to the stand Robert Gordon); but that's not the case here.

Production-wise, this is a treble freak's nirvana. To get that primitive AM effect, everything is strained into reedy guitar lines (some sharp enough to cut a diamond), and tinny, cymbalic drums. The bass (almost as full and

CALL FREE 800-446-8000 LOOK AROUND!



...THEN CALL

A, L & M



You'll find straight information and super equipment selection from a friendly team of musicians and creative technicians. You'll get fast delivery and great services because, for us, that's what being a **PRO** is all about.

VISA and Master Charge orders accepted
Virginia Residents (804) 583-1894

AUDIO, LIGHT and MUSICAL • 7461 TIDEWATER DRIVE • NORFOLK, VA. 23505

CIRCLE 62 ON READER SERVICE CARD

adventurous as on a Yes disc) is the only modernist twist allowed. The material (only half are originals) favors riffs over melody, so the hooks are found in the rhythm rather than in soaring choruses (in the Dave Edmunds tradition).

On the negative side, the added horn section (from *The Rumor*) is muted to kazoo calls and the band includes a bluesy ballad, which really needs far more compelling lyrics than offered here to cover for the lack of credible emotion. Still, at times *The Inmates* put across pop better than anyone on any continent since the days of Creedence Clearwater Revival. J.F.

IAN LLOYD: *Goose Bumps*. [Bruce Fairbairn, producer; Dave Theoner, Jeff Turner, engineers; Gregg Caruso, Paul MacDonald, assistant engineers; recorded at The Record Plant, New York, N.Y.] Scotti Brothers Records SB 7104.

Performance: **Muzzled**
Recording: **Simonized**

Back in the stone age, Ian Lloyd used to be in a band called *Stories* which had a big hit with "Brother Louey"—a chic inversion of the *Guess Who's Coming To Dinner?* story. Lloyd's yapping, sandpaper squeal of a voice seemed well on its way to Rod Stewart-land back then (in an honored time before such atrocities as "Do You Think I'm Sexy?"). But somehow Lloyd's career never got off the ground. As if to make up for all the lost time in between, Lloyd's latest solo album is an unashamed cash-in on the pasteurized Foreigner market. As in Foreigner's music, Lloyd's voice is cruelly muzzled—his yawling bang is now a whimper—and what's worse, it all pretends to be so leeringly fiesty.

The production sound is pure market-research fare, with factory-new harmonies behind undeniably catchy, if ultimately apathetic, guitar riffs. It's as though, regarding the public as violent mental patients, all sharp objects have been removed. It's a buff and polish job straight out of the Gary Lyons-Tom Scholz school of production.

One remarkably positive exception is "Slip Away," which on the one hand sells out every new wave power pop arrangement faster than you can say "The Knack," yet still includes a syn-

NOISE GATE GT-4



The remarkably simple optical noise gate that contributes no noise or distortion to your signal, occupies only 1 3/4" of rack space and costs only \$395.00 for four channels.

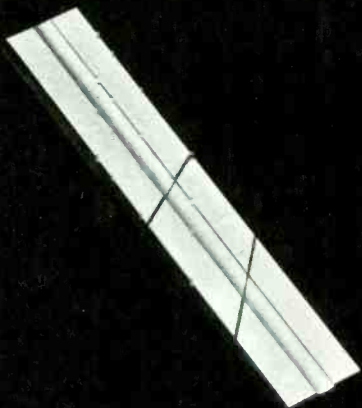
To get the full story and a list of dealers call or write

OMNI CRAFT INC.
RT. 4 BOX 40
LOCKPORT, IL.
60441
815-838-1285



CIRCLE 64 ON READER SERVICE CARD

THERE IS ONE WAY TO EDIT TAPE LIKE A PROFESSIONAL



That one way is to use the EDITALL block. Professionals know this well. Throughout the broadcast industry, in recording studios, everywhere absolute editing precision is the least acceptable standard, you'll find the EDITALL block.

EDITALL blocks are available for virtually all formats of audio and video tape. Our illustrated brochure presents the entire line in detail. Write to us for it.

EDITALL EDITALL CORPORATION
P.O. Box 17435
Washington, D.C. 20041

CIRCLE 57 ON READER SERVICE CARD

ALL PROFESSIONAL AUDIO NEEDS

ANVIL • AKG • ATLAS • AUDIO TECHNICA
• BGW • BOSE • BEYER • CLEAR-COM •
CREST • DBX • DELTA-LAB • ELECTRO VOICE
• EMILIAR • FURMAN SOUND • KLIPSCH •
OTARI • SOUNDWORKSHOP • SHURE
• SOUNDCRAFT • NORTHRONICS •
TECHNICS PRO • WHITE

CMG SOUND/SOUND BOX

Call Toll Free For Information And Prices On
Nationally Known
Professional Audio Equipment

1-800-638-6050

CMG SOUND/SOUND BOX, P.O. Box 2094 Rockville, Md. 20852

CIRCLE 59 ON READER SERVICE CARD

Get Your Act Together!

PROMO KIT

PRESENTATION FOLDERS
for the MUSIC INDUSTRY

Music Groups • Entertainers
Managers • Agencies • Studios
Producers • Publishers

INSERT FOLDER
promo, clippings,
resume, lead sheets, etc. ...

DISPLAY SLEEVE
8x10 photo, graphics, etc. ...



DEMO CASSETTE

BUSINESS CARD

9⁹⁵

- Deluxe grained-vinyl Folder
- Insert Folder
- Foto Frame
- Custom mailing box

If you would like a sample Promo Kit rushed to you by air, please send a check or money order of \$10 to:

PROMO KIT SAMPLE
The A-V Binder Company
Box 117, Custer WA 98240

CIRCLE 95 ON READER SERVICE CARD

A SINGER'S DREAM!

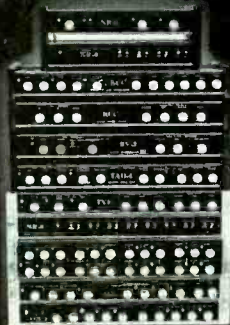


REMOVES VOCAL FROM MOST STEREO DISCS

The Thompson Vocal Eliminator can actually remove most or virtually all of a solo vocalist from a standard stereo record and yet leave most of the background music untouched! Not an equalizer! We can prove it works over the phone. Write for a brochure and demo record below. COST: \$249.00

YOU SHOULD SEE US

- Studio Echo/Reverb
- Tape Noise Reduction
- For: • Parametric Equalization
- Electronic Crossovers
- Comp/Limiters



We manufacture a full line of high quality audio and recording equipment. You will probably have to pay twice as much elsewhere to obtain comparable quality. Only Direct Sales make our prices and quality possible. Send \$1 for a 20 page brochure and 20 minute demonstration record.

Write to: **LT Sound**, Dept. MR, P.O. Box 729,
Decatur, GA 30031. (404) 284-5155

thesizer hook that's wittier than even the campest of early Blondie. Here hooks are tossed out as effortlessly as complaints in a Florida rest home, and the background rendering of the hand claps is the stuff dreams are made of.

—This is one of the few moments, though, where Lloyd and the songwriter here (The Cars' Rick Ocasek) break out of the lowest common denominator production slick up. At it's worst the disc has versions of the Bee Gees' '67 hit "Holiday" (a true funeral dirge) and "Time Of The Season," which is the worst MOR-ing of a once great Zombies' song since Santana did the polyester reupholstering job on "She's Not There." Luckily in all this ultra-gloss, Foreigner's sexism and more recent racism do not crop up, but that's small consolation when a talent like Ian Lloyd's has been, for the most part, so mercilessly exploited. J.F.

IAN HUNTER: *You're Never Alone With A Schizophrenic.* [Ian Hunter and Mick Ronson, producers; Bob Clearmountain, engineer; Ray Willhard, Jeff Hendrickson, Bill Scheniman, assistant engineers; recorded at the Power Station, New York, N.Y., January 1979.] Chrysalis CHR 1214.

Performance: **Raw**
Recording: **Mostly unadorned, straight-ahead**

There's a defiant, punkish sound to this record—something out of vintage Mott the Hoople—that many of today's New Wave groups would be glad to have achieved. Ian Hunter has fashioned an album that is reminiscent of some of the Mott the Hoople albums of nearly a decade ago—ones that you either love or hate. But the sound is not the same kind of nasty, sinister sound so often associated with the New Wave groups. Hunter is backed by a formidable ensemble—three of the members of Bruce Springsteen's E Street Band—and is joined by old friend Mick Ronson here, and the result is some straightforward power rock, mixed lightly with a few ballads, and aimed at a spot in the pop charts.

Hunter himself can sound at one point like Mick Jagger ("Bastard"), at another like Lou Reed and and at another point a little like Al Stewart (this unusual mix can be found in "When the Daylight Comes.") The music owes a lot to the heavy throbbing of Mott's earlier

sounds, but the listener also will find snatches of the Stones (the tune in "Just Another Night" sounds somewhat like the Stones' arrangement of "Just My Imagination," for example) and a bit of the Who (as in the guitar and synthesizer opening of "Cleveland Rocks," reminiscent of "We Won't Get Fooled Again."). Curiously, though, the album as a whole does not sound totally derivative.

The basic sound on the tracks is simple—guitar, bass and drums, with some keyboard work (ARP, Moog, organ) thrown in for embellishment, and for the most part the effect is that of a dense, intense, heavy sound, particularly on the uptempo tracks. The ballads are necessarily lighter, but they are nearly done in by the use of choral "oo-oo-oo-oo"s and rather mawkish lyrics ("We're just two ships that pass in the night," repeated eight times in "Ships," for example.) The listener also will notice quite an intensive use of drums throughout, and Max Weinberg is due credit for providing some unflagging rhythmic underpinning to the cuts.

Actually, the cuts on Hunter's album seem to have a brittle facade, in both the music and recording. "Cleveland Rocks," with its interesting introduction via a tape of Alan Freed on his radio show, includes some guitar work that has entirely too much treble. On the other hand, the spare lines of "When Daylight Comes," a duet with Ronson, uses a conversational rather than sung lyric that combines musical and spoken communication. The track is nicely separated.

Good, too, is "The Outsider," a rock variant on the "El Paso" theme, with keyboard arpeggios to lead into the body of the cut, although the song comes to a rather pretentious, melodramatic close.

There's not really a lot of schizophrenia in Hunter's latest album, although the contents do present a nice contrast between straight ahead rockers and some slower ballads. Hunter is using well his formula of defiant power pop, he has surrounded himself with a good supporting cast of players who know their rock, and he has come up with a release that may re-establish him in the basic British blues rockers of the 1970s. S.R.

TOM PETTY AND THE HEARTBREAKERS: *Damn The Torpedoes.* [Tom Petty and Jimmy Iovine, producers; Shelly Yakus, engineer; recorded at Sound City, Van Nuys, Ca. and Cherokee Studios, Hollywood, Ca.; mixed at Cherokee and

Record Plant, New York, N.Y.
Backstreet/MCA 5105.

Performance: **Defiant**
Recording: **Sparkles**

When Tom Petty plunged into the audience the night before San Francisco's Winterland closed last year and the fans tore off his shirt, he must have experienced the same terrible claustrophobia that gripped the crowd at Cincinnati's Riverfront Coliseum when 11 fans were trampled to death at a Who concert last December. But apparently Petty's run-in with the law over record contract obligations when ABC was sold to MCA, and his songbooks were confiscated as evidence, left larger scars than his flirtation with hero worship. At least we can assume so from the songs Petty and the Heartbreakers give us on their third album, *Damn The Torpedoes*—the first from MCA's new Backstreet label. "Refugee," "Even The Losers," and "Century City" are all obsessed with looking over one's shoulder and shaking off the odds to retain some semblance of personal freedom. Even on "Shadow Of A Doubt (A Complex Kid)," Petty makes the legal terminology of the title apply to his relationship with his girlfriend.

Petty certainly isn't guilty of cheating his fans out of any of the expectations they may have gleaned from *Tom Petty And The Heartbreakers* and *You're Gonna Get It*. Those two albums introduced Petty's band as a brash, uncompromising group of New Wavers who knew the textbook—the Stones, Byrds, Beatles, Searchers, Blues Magoos—but filled in the outline with their own details: a pumping organ here, gut-level electric guitar riffs there. With his Dylan/McGuinn twang, Petty sang mostly about winning a girl's attention (which he did with his appearance) only to begin the game of below-the-belt battling. On *Damn The Torpedoes* the band's playing is as incisive as ever, but Petty's lyrics have jumped up another notch as he expands his use of poetic tools, and he is now as likely to attract a lover with what he says, as much as with his glaring-blond, classic rock star looks.

The songs for *Damn The Torpedoes* were written before the Heartbreakers hit the studio, but Petty and co-producer Iovine have maintained the feeling of spontaneity with intentionally sloppy splices (one suspects) like the scattered beginning to the countryish

Audio Transformers


The **SESCOM** "MI-Series" Audio Transformers are specifically designed for broadcast and recording applications.

FEATURES


1. Low distortion < 2% @ 30 Hz
2. Broad frequency response ± 1 db 20-20KHz
3. Electro-static shielding
4. Six power levels: -40, -30, -10, +4, +18 and +30 dBm
5. Various primary and secondary impedances
6. Double and single mu-metal shields
7. Both shielded and open versions.

SEND FOR YOUR FREE COPY OF OUR NEW CATALOG


Shielded Terminals




Open Frame




Plug-In



Plug-In



Wire Leads



We also manufacture direct boxes, Mic-splitters, snakes and audio modules

SESCOM
"Quality Engineered Sound Products"

SESCOM, INC.
111 Las Vegas Blvd. N.
Las Vegas NV 89101
(800) 634-3457
TWX: 910-397-6996

CIRCLE 116 ON READER SERVICE CARD

Tensimount

the universal microphone isolator



THE PROBLEM—floor vibration, shock, and mechanical feedback transmitted through your microphone stands.

THE SOLUTION—Tensimount universal microphone isolators. These simple, sturdy and ingenious devices accept any microphone up to 1-3/8" in diameter (Tensimount I) or up to 2-5/8" diameter (Tensimount II), and provide more than 20 db of mechanical isolation. Tensimounts also adapt almost any microphone to fit a standard 3/4" stand, so you can interchange mics and stands faster than ever before.

THE PRICE—only \$9.95 for the Tensimount I, \$15.95 for the Tensimount II. Tensimounts are so inexpensive you can equip every microphone you have with its own isolator.

To order, send check or money order (Mass. residents add 5% tax) to:

PoleStar Products
50 Trapelo Road, Belmont, MA 02178
617/489-0303

CIRCLE 145 ON READER SERVICE CARD

Sam Ash

ONE OF THE WORLD'S LARGEST DEALERS

PRO AUDIO

BGW • JBL • YAMAHA • CETEC-GAUSS • ALTEC • ROLAND
TANGENT • EMILAR • KELSEY • TAPCO • ELECTRO-VOICE
PEAVEY • QSC • SHURE • MXR • BIAMP • ASHLY • KUSTOM
BOSE • ANVIL • BEYER • SENNHEISER • IBANEZ • FURMAN
EDCOR • SESCO • WHIRLWIND • SUPERMUSICAL • ATLAS
AKG • ACOUSTIC • CALZONE • LEXICON • DOD • ASHFORD
DELTALABS • ADVANCED AUDIO • McCAULEY • EVENTIDE

WHY WAIT? CALL US NOW—WE PROBABLY HAVE IT IN STOCK.

FAMOUS
LOW
PRICES

SAM ASH HOT LINE
800-645-3518

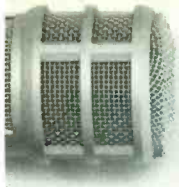
IN NEW YORK STATE CALL 212-347-7757

SINCE 1924
Sam Ash MUSIC STORES

301 PENINSULA BLVD. HEMPSTEAD, N.Y. 11550



CIRCLE 124 ON READER SERVICE CARD



**mikes
by mail?
for less?
why not!™
and much
more!**

Now, we're offering mixers, reverbs, sound reinforcement systems™, amps, DDL's and much more.

And, because we maintain a mail-order only policy, we haven't the high overhead, no store-front, no salesmen... that means lower prices to you.

Write or call us for a prompt price quote or for our price sheet.

The Mike Shop™... mikes and audio equipment by mail, for less... Why not!

The Mike Shop™
PO Box 366V,
Elmont NY 11003
516/437-7925
A Division of Omnisound Ltd.



CIRCLE 136 ON READER SERVICE CARD



CARVIN
Catalog
FREE!
1980 Pro-Line Guide

- A comprehensive 64 pg. color guide to all Carvin Pro-Line equipment including illustrations, technical information and specifications with Special Direct Prices.
- Carvin's new products for the 80's include; double neck guitars, modular power amps up to 700w RMS. Recording and road mixing boards, JBL Pro speakers, bi-channel tube guitar amps, Parts, plus much, much more.
- As we introduce you to the finest Pro Equipment available, you'll appreciate Carvin's policy of selling Direct for exceptional values.

Write: CARVIN Dept. MR80, 155 Industrial Ave., Escondido, CA 92025 • Phone: (714)747-1710

CARVIN FREE CATALOG

Name _____
Address _____
City _____
State _____ Zip _____ MR80

CIRCLE 39 ON READER SERVICE CARD

"Louisiana Rain" and the nervous drum flurry after "Here Comes My Girl" that causes someone to chirp, "It's just the normal noises in here"—a perfect studio metaphor. But none of this detracts from the clear, well-defined sound of *Damn The Torpedoes* evidenced in the ringing guitar overtones of "Here Comes My Girl." The Heartbreakers' earlier efforts offered a condensed sound that relied more on distortion than individuality. Petty still has a way to go before he becomes an important influence for up-and-coming bands, but time is on his side. After all, '80s rock is going to need more artists like him if it is to survive with the sense of urgency it has always thrived on.

S.S.

JAZZ

LES BROWN AND DORIS DAY: *Sentimental Journey*. [Michael Brooks, producer; no reissue engineer listed; original recordings made between 1940 and 1944.] CBS Encore P 14361.

Performance: **A sentimental journey for sure**

Recording: **Typical '40s CBS-okay/eh sound**

SARAH VAUGHAN: *Linger Awhile*. [Michael Brooks, producer; no reissue engineer listed; original recordings made between 1949 and 1953.] CBE Encore P 14364.

Performance: **Classy/sassy**

Recording: **A decade closer to hi-fi than above**

Sentimental Journey would be a good title for both these LPs, and the nostalgia buffs who grew up listening to Doris and Les and Sarah are going to have a field day remembering who and where and when. Those who weren't around or don't care to remember are less likely to be moved by these records.

Doris Day was to go on to a bigger and more lucrative career in the movies after leaving the Les Brown band. If these recordings are not the first she ever made they are certainly among the first. Sarah, on the other hand, was at the peak of her fame during the years she recorded for Columbia. Jazz fans may well complain that she

straightened out her singing style for the major label and certainly her accompanists were less inspiring than those she had on her first records (Dizzy Gillespie, Charlie Parker, etc.). The Mitch Miller mentality ruled Columbia in those years, and except for a brief snip of Miles Davis (not yet fully matured into the giant he was to become) and some occasional passing frills from guitarist Mundell Lowe, Sarah's backgrounds are relatively dull. The voice and the control are still there and there's much to be admired in Sarah Vaughan of any period. Certainly it's worth having her rendition of Duke Ellington's "Tonight I Shall Sleep With A Smile On My Face."

Doris Day was a fine, straight-ahead band singer. Cuts like "While The Music Plays On" and "Dig It" are certainly examples to rate with Helen Ward, Mildred Bailey and the best of them. Frankly, I prefer these early efforts to the more popular "Sentimental Journey," if only because the Les Brown band of the early '40s was a rough-ridin', swingin' band whereas the later Les Brown band had been Hollywood homogenized to the point where the exciting soloists were fewer and further between than they were in the beginning. Les always made a lot of the alleged influence of the Lunceford band and the Ellington band on his orchestra but much of their playing and arranging on this LP sounds closer to the Mickey Mouse bands of Glenn Miller or Sammy Kaye. The band played much hotter on instrumentals such as "Bizet Has His Day," but the object of this LP is Doris Day not Bizet's Day, so we don't get to hear the instrumentalists at their best. J.K.

LALO SCHIFRIN. *No One Home*. [Lalo Schifrin and Schuyler Traugher, producers; Jimmy Hite and Richard Bogart, engineers; recorded at A&M Studios and Wally Heider recording in Los Angeles, Ca.] Tabu NJZ 36091.

Performance: **No one home, they're all trying to escape this record**

Recording: **Crystal clear—unfortunately**

Remember when Lalo Schifrin was a jazz pianist with Dizzy Gillespie's combo? He wasn't a great jazz pianist but he was a good jazz pianist. Then he stopped being a good jazz pianist and went ahead

the CONVIVIAL ROMANTICS: CAROL SLOANE and ZOOT SIMS

By Nat Hentoff

Jazz people are as diversified in temperament as most of the rest of us, except maybe for such more homogenized folks as bankers and generals. Some tend to be austere (Anthony Braxton); others are introspective (Bill Evans). And many are spontaneously outgoing — joyful swingers and also unabashed romantics on ballads. Carol Sloane, for instance, a musicians' singer with flawless technique, natural warmth and wit, and a huge repertory of infectiously mellow songs.

On *Cottontail* (Choice/Inner City), Carol brings back to exuberant life such tunes as Duke Ellington's "Tomorrow Mountain," "Can't We Be Friends," and the thoroughly absorbing mood piece, Bill Barnes' "Something Cool" — a rootless woman's soliloquy-in-the-form-of-a-conversation. She is backed by a crisply incisive combo — pianist Barry Aronov, alto saxophonist Norris Turney, bassist George Mraz, and drummer Joe LaBarbera. Whether Carol is buoyantly scatting, leaping through the instrumental lines like another horn, or getting deeply inside the lyrics of a love song, she is the very model of a jazz singer — in time, phrasing, resonant textures, and improvisatory risk-taking.

I have never understood why Carol has so seldom been recorded because, among other projects, there are any number of composers' songbooks — from Johnny Mercer to Alec Wilder — that she could singularly illuminate. On this set, the quality of recording is superior to many of Choice's previous sets — a lot of presence, equally balanced.

While John Haley (Zoot) Sims is most easily characterized as a natural swinger, he too is a romantic. Even at demanding, fiery-swift tem-

pos, there is a tender lyricism at the core of his improvising that places Zoot in the lineage of such otherwise diverse tenor saxophonists as Lester Young and Ben Webster. There is never anything abrasive about Zoot's music although he is also never bland. What keeps it continually absorbing, aside from the ideas themselves, is the openness and generosity of his spirit. He makes you feel good because he's having such an unselfconscious ball.

And when Zoot moves gently and yet very firmly into ballads, the romantic core of his musical temperament is ardently clear. In "*Just Friends*" (Pablo), Zoot, on alto and soprano saxophones, is heard in the full range of his imagination, from "How Deep Is The Ocean" to "Blue Skies." Also on the front line is trumpeter Harry Edison, yet another lyrical swinger; and the resilient rhythm section is composed of pianist Roger Kellaway, bassist John Heard, and drummer Jimmie Smith.

As always on Pablo, the sound reflects the desires of the label's owner-impresario, Norman Granz: clean, direct, vibrant, as much like a "live" experience as possible. Granz has been known to move mics around himself to get what he wants, no matter how prestigious the engineer. And usually, it works. Whether he did that here or not, this date worked beautifully.

CAROL SLOANE: *Cottontail*. [Gerry MacDonald, producer; Gerry MacDonald, engineer.] Choice CRS 1025.

JOHN HALEY SIMS/HARRY SWEETS EDISON: "*Just Friends*." [Norman Granz, producer; Val Valentin, engineer.] PABLO 2310-841.

GUARANTEED FIVE YEARS



**TYPE 85 FET
DIRECT BOX**

If it fails or you manage to break it within five years of the date of original purchase, we will fix or replace it no questions asked. That says a lot about the way we build them.

ACOUNTRYMAN ASSOCIATES INC.
424 STANFORD AVE. - REDWOOD CITY, CA. 94063

CIRCLE 61 ON READER SERVICE CARD

UNBEATABLE PRICES ANYWHERE!



SHURE

SM 57 List \$118.80

OUR PRICE **\$81.46**

SM 58 List \$151.80

OUR PRICE **\$104.76**



Lo-z/hi-z Transformer
Shure model A95FP \$19.30

All SHURE Professional
Audio Products At
UNBELIEVABLE SAVINGS

We've trimmed our overhead costs to an absolute minimum and pass the savings on to you.

To order send check or money order (Mass. residents add 5% tax) Shipping: \$2.75 first mike 60¢ ea. additional. Transformer \$1.00

Complete price list on request

TECHNICAL SOUND AND VIDEO SERVICE

P.O. BOX 853
HAVERHILL, MASS. 01830
TEL. 617-372-1603

CIRCLE 115 ON READER SERVICE CARD

CANADIANS!

Interested in semi-pro multitrack recording?

Headquarters for:

SOUNDCRAFT
ELECTRONICS LIMITED

dbx

OTARI

MIS

BRISTON

DeltaLab

JBL

TEAC TASCAM

...and many more!

Write or call:

RICHARD AUDIO INC.
6078 Sherbrooke St. W., Montreal, Quebec H4A 1Y1
(514) 487-9950

CIRCLE 119 ON READER SERVICE CARD

SUBSCRIBER SERVICE

CHANGE OF ADDRESS

Planning to move? Please let us know six weeks in advance so you won't miss a single issue of MODERN RECORDING. Attach old label and print new address in space provided. Also include your mailing label whenever you write concerning your subscription to insure prompt service on your inquiry.

Date	City	Address	Name	New Address Here	Attach Label Here
_____	_____	_____	_____		
_____	_____	_____	_____	Please print	
_____	State	_____	_____		
_____	Zip	_____	_____		

MODERN RECORDING Magazine
14 Vandeventer Ave. • Port Washington, N.Y. 11050

to become a composer of film scores.

This album is chock full of second-hand gimmicks that were at least interesting when the innovators, such as Stevie Wonder and his voice bag, used them. Once a gimmick has been used it becomes ineffective because everybody recognizes it as Stevie's voice bag or whatever the gimmick is. It takes another innovator with a new way to use the gimmick to make it new again. Schifrin is not that innovator.

Unfortunately, some good players like trumpeter Oscar Brashear, flutist Jerome Richardson and keyboard ace Patrice Rushen got involved with this hodge-podge. Had Schifrin given them more to do he might have pulled this turkey out of the doldrums.

The singers, especially the soloist who I presume is Sylvia Smith since she's the first listed, are excellent but saddled with the kind of material that Lalo Schifrin has written for them and the lack of distinction of the arrangements there's little they can do to rise above the level of mediocrity.

It's well recorded but that feature really doesn't help when there's so little of value to record. J.K.



WOODY SHAW: Bright without blaring

too many) or in rapid trills or runs. The ensemble work is especially satisfying, with each player contributing to the substance individually or collectively.

Particularly strong, for example, are the drum and percussion work of Victor Lewis and piano playing by Onaje Allan Gumbs. Lewis adds a sparkle as well as guts to the sound of the material, and Gumbs' piano breaks are in the best jazz keyboard tradition.

The material has a gritty, urban touch. The "live" piece, "Escape Velocity," sounds like a Manhattan traffic jam, for example. Horns in unison start the piece, then a tenor sax solo by Carter Jefferson is added—sounding so frenzied as to make the listener a little nervous. Shaw's cornet solo follows in bold, brash strokes, reminding one of a "Sabre Dance" gone berserk. The interplay between Gumbs and Clint Houston on bass is the most interesting of the album and, thankfully, has not been drowned out in the recording.

Some of the material tends to ramble, and the players have not always managed to escape the problem of the aimless solo. But some of the sounds created by the group are dazzling: the exotic percussion by Nobu Urushiyama on "Woody I: On the New Ark;" the splendid sound separation among sax, trombone and ensemble on "Woody II: Other Paths;" the piano chord bridge, with bells behind, to a haunting horn phrase on "Woody III: New Offerings."

And the trade-off of cornet and sax solos in "To Kill a Brick," following a first-rate bass solo, is almost like classical counterpoint.

One will find an "up-close" presence on this album, too, that often is missing

WOODY SHAW: Woody III. [Michael Cuscuna, producer, engineered at CI Recording Studios, New York, N.Y., by Elvin Campbell; engineered at CBS Recording Studios, New York, N.Y., by Don Puluse; engineered during "live" performance at the Village Vanguard, New York, by Tom Arrison and Fedco Recorders.] Columbia JC 39577.

Performance: **Briskly cool**
Recording: **Very good**

This is the kind of jazz that used to be known as "cool" a few years ago—snatches of melody, heavy on rhythm, pushed by solo and small ensemble improvisation. For that reason, there may not be too large an audience for *Woody III*, because much of today's jazz audience wants a little more funk or danceability to its music. True jazz lovers likely will savor this album, however. Shaw, an accomplished cornet and fluegelhorn player, has joined forces with some colleagues of long standing in a skilled, creative effort.

The sound of the six tracks here is quite good—bright, brisk, very close to the listener without blaring. Shaw's horn work sounds effortless, whether in sustained notes (of which there are not

from other, slicker jazz and jazz-rock fusion efforts. So expertly is this album recorded that one has little difficulty visualizing the players clustered together, small beads of sweat forming on foreheads, perhaps slight smiles also forming after a particularly well-executed solo. S.R.

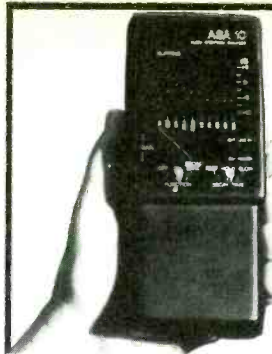
MAYNARD FERGUSON: Hot.
[Maynard Ferguson & Dr. George Butler, producers; John Curcio, Carl Beatty, Don Hahn and Don Koldon, engineers; recorded at Media Sound in New York, N.Y. and Wally Heider and A&M Studios in Los Angeles, Ca.] Columbia 36124.

Performance: **Hot should be a hit**
Recording: **Columbia clarity**

I was most interested in the profile on Maynard Ferguson which Sheryl Roberts wrote for the November, 1979 edition of *Modern Recording*. Maynard's been as involved as anyone in heightening the state of the art of jazz recording of late. From the beginning of his M.F. series of recordings for Columbia they've combined the best that Maynard's jazz feelings and taste have to offer with such varied material as "Rocky" and "Vesti la giubba."

This latest LP includes such side trips as "Rocky II," with Sylvester Stallone himself on punching bag, the theme from Gene Roddenberry's pioneering science fiction TV series "Star Trek" and John Coltrane's now-classic composition "Naima." There are also some compositions by Maynard and Nick Lane (if Maynard is today's Duke Ellington then Nick Lane is his Billy Strayhorn) which touch on the roots of sacred music of India and the heraldry of the angel Gabriel. It's a varied LP and like most of Maynard's recordings it has a lot to recommend it. If I may single out one factor I'd point to Ed Maina, one of the most impressive baritone saxophonists I've heard lately wailing away on "Gabriel."

The engineering is certainly in evidence here. It was recorded at three different studios on both coasts and chances are it was a good long time in the making. Maynard takes full advantage of all the latest technical advances and carries his own sound system and technician with him, a point brought out in Roberts' story. What is important is that with this kind of traveling sound facility, he can duplicate most if not all,



REAL TIME ANALYZER—ASA-10

- Quickly analyze and balance any room
- Reduce feedback while increasing the gain
- Improve sound quality for P.A. systems
- Position speakers for maximum effect
- With REAL TIME ANALYSIS your equalizer will deliver its full potential

Suggested ASA-10 resale \$239.95
Pink/White Noise Generator . . . \$59.95

WRITE: BOX 115, WEST REDDING, CONN. 06896
TELEPHONE: (203) 938-2588

GOLD LINE

CIRCLE 87 ON READER SERVICE CARD

dON'T MISS OUT ON your COPY of modern RECORDING'S 1980 buyeR's guide. If you are A musician recORding ENTHUsiast, of SOUND Man, drop THis coupon along with CheCk or monEy Order in The Nearest mailbox to seCure reTurn OF YOUr CoPy.

MODERN RECORDING'S BUYER'S GUIDE
14 VANDERVENTER AVENUE, PORT WASHINGTON, NEW YORK 11050

006C

SUBSCRIBER OFFER:

I am a current subscriber to MODERN RECORDING MAGAZINE. Enclosed please find \$_____ for _____copy(s) of MODERN RECORDING'S "Buyer's Guide" (\$2.25 each-subscriber's price)

NON-SUBSCRIBER OFFER:

I am enclosing \$_____ for _____copy(s) of MODERN RECORDING'S "Buyer's Guide" at \$2.95 each.

check / money order / enclosed for the amount of \$_____

Please Print:

Name _____

Address _____

City _____ State _____ Zip _____ Date _____

CLASSIFIED

BUY SELL TRADE

- PRODUCTS
- EQUIPMENT
- SERVICES

Classified Rates
75¢ per word

Minimum 10 words.

Copy must be received at Modern Recording, 14 Vanderventer Ave., Port Washington, N.Y. 11050 by the 1st day of the 2nd month prior to cover date [for example, the April issue closes February 1st]. Payment must accompany order. Phone numbers count as 1 word. Zip codes are free.

DISPLAY ADVERTISING
\$115.00 per column inch.

of the effects on his records when he plays your town "live."

It's often disappointing to hear a band trying to duplicate in "live" performance what they've laid down on sixteen tracks in the studio, but Maynard doesn't use the technical advances that way. Everything that goes down on a Maynard Ferguson recording has its *raison d'être* in the music. That's why I find his records consistently more enjoyable than those of most bands that play fusion music today. J.K.

SLAM STEWART AND BUCKY PIZZARELLI: *Dialogue*. [Bernard Brightman, producer; Les Paul, Jr., engineer; recorded in 1978 at Dick Charles Studios, New York, N.Y.] Stash ST 201.

Performance: **A high-class collaboration between two jazz greats**

Recording: **Daddy must be proud**

Wherever your primary association with Slam Stewart comes from (Benny Goodman's Sextet, Art Tatum's Trio or Dizzy Gillespie and Charlie Parker—Slam played with 'em all), the fact remains that Slam's first important exposure came from a team of which the other member was a rather eccentric guitarist named Slim Gaillard. Slim used to write very amusing novelty songs (I guess he still does out there in California) and while the guys were together in 1938 he wrote "Flat Foot Floogie" and the guys had such a hit with it that they were forever known as Slim and Slam and their Flat Foot Floogie boys.

Now, forty years later, Slam is working a duo with a guitarist again but the difference between Bucky Pizzarelli and Slim Gaillard is more than the difference of forty years. Slim played guitar percussively, boldly, in a style that complemented his hit-you-over-the-head manner of delivering a zany lyric. Bucky Pizzarelli is a tasteful, almost retiring, accompanist and his solos have the lyricism that is usually reserved for Italian opera of the *bel canto* epoch. Truly in the old days it was Slim and Slam. Slam got his licks in on the bowed bass but it was always in the manner to best set off Slim's singing and frivolity. Today Slam is in front with Bucky playing the orchestra behind him—content with his feature, here it's Ray Noble's "The Very Thought of You," and an occasional chorus or so.

The repertoire has changed also.

Although Slam still sings when he plays the bass and still includes songs connected with the old days like "Flat Foot Floogie" and "Gotta Be This Or That," the band is now heavy into instrumentals which can go from current collaborations like "B and S Blues" or pop hits like Leon Russell's "Masquerade" back to old classics like "Jersey Bounce" or "I Got Rhythm." Also there are two Erroll Garner originals included in memory of the late pianist who broke in as pianist with Slam Stewart's Quartet at the Three Deuces. If Slam hadn't left the Deuces to join Benny Goodman's band, I wonder if Erroll would have become a leader as soon as he did.

As for the recording, anyone who has been around the pop record business very long will remember that in addition to being a fine jazz guitarist, Les Paul was a recording pioneer, one of the first if not the very first to use multi-tracking and over-dubbing. Two of his sons (Gene and Les Jr.) are still active in the field. This is an example of someone with the ears of a musician doing a musicianlike job on the engineering side of the glass partition and it makes a difference. With Bucky and Slam there are no gimmicks necessary, but if any were used they were so tastefully done that they're not noticeable. If we have to have technocracy, that's the right way to approach it. As a non-purist friend of mine once put it, as long as there are twenty-four track machines made, people are going to use them—it's *how* they use them that counts. Somewhere in New Jersey, Les Paul, Sr. is listening to this record and he has every reason to be proud of the way his son carries on the tradition. J.K.

SHOWS and SOUNDTRACKS

JOHN WILLIAMS: *Superman (the soundtrack)*. [Music composed and conducted by John Williams; performed by the London Symphony Orchestra; engineered by Eric Tomlinson; recorded at Anvil Recorders, Denham, England.] Warner Bros. 2BSK 3257.

Performance: **Thrilling**
Recording: **Top-notch**

Since December 1978, the soundtrack of the movie *Superman* has been in general release, and it's time to ex-

amine it closely as a recording and as a musical composition. Movie music has emerged from its cocoon once again, following the lull after the Henry Mancini-Jerry Goldsmith-Elmer Bernstein-Miklos Rosza years, and the man who is leading the genre back into respectability is John Williams. Williams is no stranger to the film score—you may remember the warmth of the music from *The Reivers* or the splendid musical arrangements and scoring for the movie version of *Fiddler on the Roof*. But more recently he has been the composer for the films that everyone is watching.

His presence started with *Jaws* and *Star Wars*, continued with *Close Encounters of the Third Kind* and reached its peak with *Superman*. Perhaps more than any composer now writing for the films, Williams knows best how to compose music that can stand on its own merits, while at the same time complementing the filmed image.

Williams' music adds to the visual narrative being told in the film and also has the knack of inducing recall in the listener of the scenes where the music was used. Through both the thematic approach and the impressionistic approach, Williams converts the musical compositions into mental pictures of the filmed images.

Superman is a wonderful case in point. Granted, he had quite a piece of film to work with, but Williams has captured the optimistic grandeur of the story line in his music without resorting to overblown pomposity. He has used musical devices such as fully played out string sections, strong on celli and basses, to convey a tension. He shifts from minor to major key to convey a sense of hope. He builds up to crescendos to convey a feeling of power.

The closest similarity one could cite is the superb scoring Richard Rodgers did for the television series *Victory At Sea*, which was grand popular music of near-classic proportions. Rodgers captured the feeling of the cold north with his scoring for delicate, high-pitched violins for example; Williams achieves much the same effect in his music keyed to scenes of the planet Krypton.

In some respects, Williams pays a debt to such composers as Gustav Holst, too, for constructing a tone poem of related musical themes. Some of the music in *Superman* has more the sound of Holst than of Rodgers.

The recording is splendid as well. Williams once again leads the London

Symphony Orchestra, a great aggregation, and brings forth considerable sheen, brilliance and emotion from the players. The score has symphonic pretensions at least, if not symphonic proportions, and so the players undoubtedly felt at home with it.

The sound is rich and full-bodied, with brasses prominent but not too splashy or overbearing. The strings are well-modulated, and the attack is crisp and precise. One notices careful use of woodwinds, and the percussion and drums are used extensively.

The music has been recorded with skill, too, because one notices many individual touches in the music—the score and performance do not tend to blend together on record into a single homogenized sound, for example.

Playing the music from Williams' recent movie scores back-to-back would lead one to conclude that he believes in bombast first and foremost, but this is true only of the main theme music. *Star Wars*, *Close Encounters*, and *Superman* all have crashing themes. But the test is the remainder of the music for the film, and the best test would be for someone (Williams perhaps) to adapt a brief suite of songs from *Superman* that does not rely on the main theme as its key, and then program that suite in somebody's "pops" concert. Unfortunately, we are likely to get only medleys of Williams' major movie theme music.

But there is some good music apart from the theme here, such as the secondary "Flying" sequence music. And what's more, there are four sides of that good music. Not content to release 25½ minutes of movie music for the mass market, Warner Brothers has put nearly an hour of the music from the film on vinyl. And, I am glad to say, it works.

My only complaint is that the folks who developed the recordings did not stop to think that some listeners might want to have the music arranged for a drop-changer, so that they could play sides 1, 2, 3 and 4 in sequence, and not 1, 3, 2 and 4.

I am not saying this is perfect film music, but it is close. For conveying the right moods (tension, despair, doom, hope, joy), for creating the impression of space and time, for capturing the filmed image in music and then bringing about recall with that same music, John Williams has done a marvelous job. The music complements the film as it runs; I advise you to obtain the album to continue enjoying the music, and the memory of the film.

S.R.

Advertiser's Index

R.S. #	Page #	
49	Advanced Audio	79
141	Allen & Heath	11
84	Ashly Audio	28
62	Audio Light & Musical	80
102	Audio Technica	15
47	Audioarts Engineering	51
142	Auratone	58
95	A-V Binder Co.	82
No #	Bose	25
39	Carvin	86
85	Carvin	42
112	Cetec Gauss	71
59	CMG Sound	81
61	Countryman	87
92	dbx	19
114	DeltaLab	23
106	DOD Electronics	59
57	Editall	81
82	Electro-Voice	41
149	Eumig	29
121	EXR	28
56	Fender	57
87	Gold Line	89
41	HSC	24
140	JBL	6,7
122	Lexicon	13
No #	LT Sound	82
79	Maxell	20,21
136	Mike Shop	86
No #	MXR	Cover 4
97	Omega Recording School	40
64	Omni Craft	81
100	Orban	8
No #	Otari	Cover 3
60	PAIA	79
89	Peavey	37
149	Polyphony	80
91	Revox	27
119	Richard Audio	88
144	RolandCorp US	2
124	Sam Ash	85
116	Sescom	85
130	Soundcraftsmen	18
No #	Sound Workshop	16
91	Studer Revox	27
83	StuDiomaster	1
76	Sunn	49
67	TDK	43
125	TEAC	17
115	Technical Sound	87
98	Technics	5
145	Tensimount	85
120	Ursa Major	80
65	Whirlwind	79
110	Whirlwind	12
99	Yamaha	Cover 2



CLASSIFIED ADS



Tascam, Sound Workshop, TEAC, Technics, Pro, Otari, dbx, MXR, BGW, Eventide, EV, Shure, Maxell, Ampex, Urei, Stax, Sennheiser, Orban, Spectro-Acoustics, NAD, Ivie, DeltaLab, Studiomaster and more! Send for price quotes. ZIMET PRO AUDIO, Dept. MR, 1038 Northern Blvd., Roslyn, NY 11576

FOR SALE: MCI JH-10 16 trk W/Noise gates \$12,500. MCI JH-416 16 x 16 \$13,500. 3-M (56) 2 trk \$2,500. Kirk Kaufman, Box 10, Otho IA 50569. (515) 972-4475 (515) 972-4264.

FOR SALE 20 x 16 Custom Bushnell Console. Full 16 TK Monitor—2 cues—8 effects busses, full patching with AUX patch bay and equipment rack—Mainly UREI Electronics. Price 4 K or make offer. Call Dale or Dave (303) 473-1114.

MULTI-TRACK EQUIPMENT: Best Pricing, Delivery! Personalized Service! TEAC/TASCAM, Sound Workshop, dbx, AKG, Deltalab. Other Audio, Video, Electronic Products. WYCO SALES, P.O. Box 887, Cary NC 27511. 1-800-334-2483. (NC (919) 467-8113).

FREE Information on Home Recording Studios. Send stamped envelope to Trackmasters, Box 585, Bremerton, Washington 98310.

Sound Workshop 1280B 24X8 Recording Console, Excellent Condition. CAS (814) 237-1351.

AB Systems, Audioarts Engineering, Altec, Ashly Audio, AKG Pro, Beyer, Braun, Crest, dbx, ESS Pro, HM Electronics, Ivie, JBL Pro, Klark Teknik, Lexicon, Loft, Northwest Sound, Orban, Otari, PAS, PSL Products, SAE Pro, Sennheiser, Showco, Shure SR, Tapco C-12 dealers, Tascam Model 15, TEAC Multitrack, Technics Pro, Urei and many more. Call or write for a prompt written quote. Professional Sound Labs, Inc., 42 North Franklin St., Hempstead, NY 11550 (516) 486-5813.

WANTED: RECORDING EQUIPMENT OF ALL AGES AND VARIETIES. Microphones, out-board gear, consoles, tape decks, etc. Dan Alexander, 6026 Bernhard, Richmond, CA 94805 USA (415) 232-7933 or (415) 232-7818.

BEYER MICROPHONES—up to 40% off list on wide range of Beyer models including M500, M160, M200, M100, etc. Both new and remanufactured models available. Write or phone for availability and prices. ESS!, Beyer Microphone Offer, P.O. Box 176, Jericho, New York 11753. (516) 921-2249.

James Rupert says, "Join the Fraternity of Audio Recording Technicians!" (F.A.R.T.). T-shirt (state size), membership diploma and newsletter \$6.95 plus \$1.05 postage, handling. James Ltd. Box 4438, University Place Station, Lincoln NE 68504. 4-6 week delivery.

Piezo Super Tweeters. Good quantities in stock. Specifications sent. 4.91-9.90 depending on quantity MUSIMATIC INC. 4187 Glenwood Rd., Decatur, GA 30032 (404) 289-5159.

Recording Institute: The Open Studio: July 28—August 8, 1980 (afternoons and evenings). Comprehensive introduction to recording studio techniques including fundamental acoustics, microphone techniques and designs, the console, mixing, layering, etc. 2 or 3 credits depending on the student's choice of studio work. The unique feature of the workshop will be the full-time presence of an experienced recording group led by Dana Smith, Composer, Recording Engineer, Producer, Director of the Mid-Atlantic Modern Music Institute, Solar Energy Researcher, and performer of New Wave Improvisational-Rock Music, *Uranus*. Northern Illinois University, Music Department, DeKalb, IL 60115.



For Sale: (1) Otari MX5050-8, new condition; (1) Sound Workshop 1280B-8EQ, new condition; Complete portable system consisting of: 2 Bose 802 speakers, Crown D-150A10C amplifier, Tapco 6000R mixer, 2 Anvil Road cases; (1) Crown SX-744, 4 channel reel-to-reel tape recorder in road case; (1) Tascam Model 10 mixing console. Clay Mangum (405) 946-9966.

Two 18 inch Gauss spks. model 8840, in Reflex cabinets. Excellent condition: \$700.00 plus shipping for pair, (614) 878-0748.

DAYTON-WRIGHT XG-8, MK III speakers \$1500/pair. CROWN SA-2 amp \$1150. Call Jim at (215) 322-6358.

PRO-SOUND EQUIPMENT. Mail order discount catalog free. Write or call Sonix Co., Dept. R, P.O. Box 58, Indian Head, MD 20640. (301) 753-6432.

PROFESSIONAL AUDIO EQUIPMENT. Shop for pro audio from N.Y.'s leader, no matter where you live! Use the Harvey Pro Hot-Line 800-223-2642 (except NY, AK, HI). Expert advice, broadest selection such as: Otari, EXR, Ampex, Tascam and more. Write or call for price or product info: Harvey Professional Products Division, 2 W. 45th Street, New York, NY 10036 (212) 921-5920.

LEARN RECORDING ENGINEERING. One month, full time. In-studio. Hands-on. Call or Write for Brochure: Full Sail Recording Workshop, 1221 Lee Rd., Orlando, FL 32810. (305) 299-1076.

EXPLORE YOUR FUTURE in professional recording engineering. Enroll now for 7 day intensive workshop/seminar (June 23-29) sponsored by Washington D.C.'s newest, most sophisticated 24 track automated recording studio. Featuring lectures, seminars by internationally acclaimed experts/pros. Beginning; immediate advanced classes for amateurs and semi-pros in all phases of recording/production. Limited enrollment. Register early. For info write or call (301) 946-4686 weekdays, The Omega Studio School of Applied Recording Arts and Sciences, 10518 Connecticut Ave., Kensington, Md. (see ad in this issue).

How to profit using your own home equipment for part time recording business. Free information. HSC, P.O. Box 4870MR, Austin, TX 78765.

CENTER FOR AUDIO STUDIES—Unique accredited professional audio recording training. 12 St. John, Red Hook, NY 12571. (914) 758-5605.

FOR SALE Stephens 811D-103 1" eight track recorder/reproducer. Complete with VSO, remote control and spare amplifier modules. 2 1/2 years old. New cost over \$14,500.00—\$7500.00 Asi (512) 824-8781.

JBL AND GAUSS SPEAKER WARRANTY CENTER. Fast emergency service. Speaker Reconciling and Repair. Compression driver diaphragms for immediate shipment. Shure microphones: SM-57 \$87.95, SM-58 \$109.95. Cable checkers (XLR-1/4" phone-RCA) \$29.95. NEWCOME SOUND, 4684 Indianola Ave., Columbus OH 43214 (614) 268-5605.

WOULD YOU LIKE TO LEARN THE GUITAR from the most respected teachers and performers playing today? Folk, Blues, Jazz, Bluegrass and many other styles are taught on cassette taped lessons. The teachers include John Renbourn, Stefan Grossman, Duck Baker, Dick Fegy and Eric Thompson. For your free catalog please write to Stefan Grossman's Guitar Workshop, Box 804, Cooper Station, NY 10003.

AABCO MUSIC CLOSEOUT LIQUIDATION: 2ea. TAPCO 2202 stereo octave equalizer \$174. 4ea. TAPCO 6000cf mixer \$195. 2ea. TAPCO 6000R mixer \$243. 2ea. ASHLY SC77 stereo 3-way electronic crossover \$260. DBX 503 3-band expander \$497. DBX 501 1-band expander \$192. 3ea. DBX 500 boom box \$179. 4ea. DBX 505 expander and boom box \$331. 4ea. DBX 164 stereo limiter \$287. 8ea. Audio Technica ATM-41 microphones \$75. 2ea. JBL 2203A 12" LF speakers \$105. 20ea. JBL 3120 passive crossovers \$42. 28ea. JBL 2440 replacement diaphragms \$33. Barney O'Kelly (614) 268-5643.

WANTED: Used 16 Track Recorder and Console: Write/Praise, Box 2307, Vancouver, B.C. (604) 438-8266.

As Good As You Are.

Quietly, You have made OTARI The New Workhorse in literally thousands of studios, radio and TV stations worldwide! To the creative music professional, an OTARI tape machine is known for the kind of performance and reliability that's expected of equipment that keeps on going even when you can't. Session-in/session-out, with an OTARI you have made an investment in a machine that's always ready to expand your art.

For the artistic entrepreneur and recording artist who depend on recording equipment for their livelihood, we have engineered the most comprehensive line of tape recorders in the world. From demo to final master, from 1/4" tape and up, there's an OTARI that will get your music off and onto the right tracks. Like our legendary 5050 Series. All 5050 Series are designed with important growth features: switchable +4 or -10 dB levels, D.C. Servomotors for adaptability to SMPTE interlock and video production, easy alignments for optimum performance, overdubbing, and many more useful production features. 1/4" transports are available in full track, two or four track stereo, and four channel versions. 1/2" transports are available in four or eight channel models. They're the first compact recorders accepted by both the broadcast and recording industries. They remain, dollars for dollars, the best tape recorders made. When it comes to one-inch, eight channel production, our MX7800 is the most rugged and functional eight-track on the market.

When you're ready for your next step towards fully capturing your art and expanding the business of your art, OTARI awaits the challenge to be every bit as good as you are.

Call or write today for your nearest OTARI dealer. They will be happy to show you why The New Workhorse is as good as you are.



The New Workhorse



The New Workhorse

OTARI

Otari Corporation
1559 Industrial Road
San Carlos, CA 94070
(415) 592-8311

In Canada:
BSR (Canada, LTD.)
P.O. Box 7003
Station B
Rexdale, Ontario M9V 4B3

MX-5050B shown in optional CSL3 cabinet
MX-5050/8B shown in optional CSL-4B cabinet.

EXPRESSION



MXR Innovations, Inc., 740 Driving Park Avenue, Rochester, New York 14613, (716) 254-2910