

Profile:
SPLIT ENZ

MODERN RECORDING & MUSIC

Vol. 7 No. 5
February 1982

recording with
RAY DAVIES

RECORDING TECHNIQUES- PART I

LAB REPORTS:

Cerwin-Vega GE-3
Stereo Graphic
Equalizer

Nikko Audio
ND-1000 Compu-Tecs
Cassette Deck

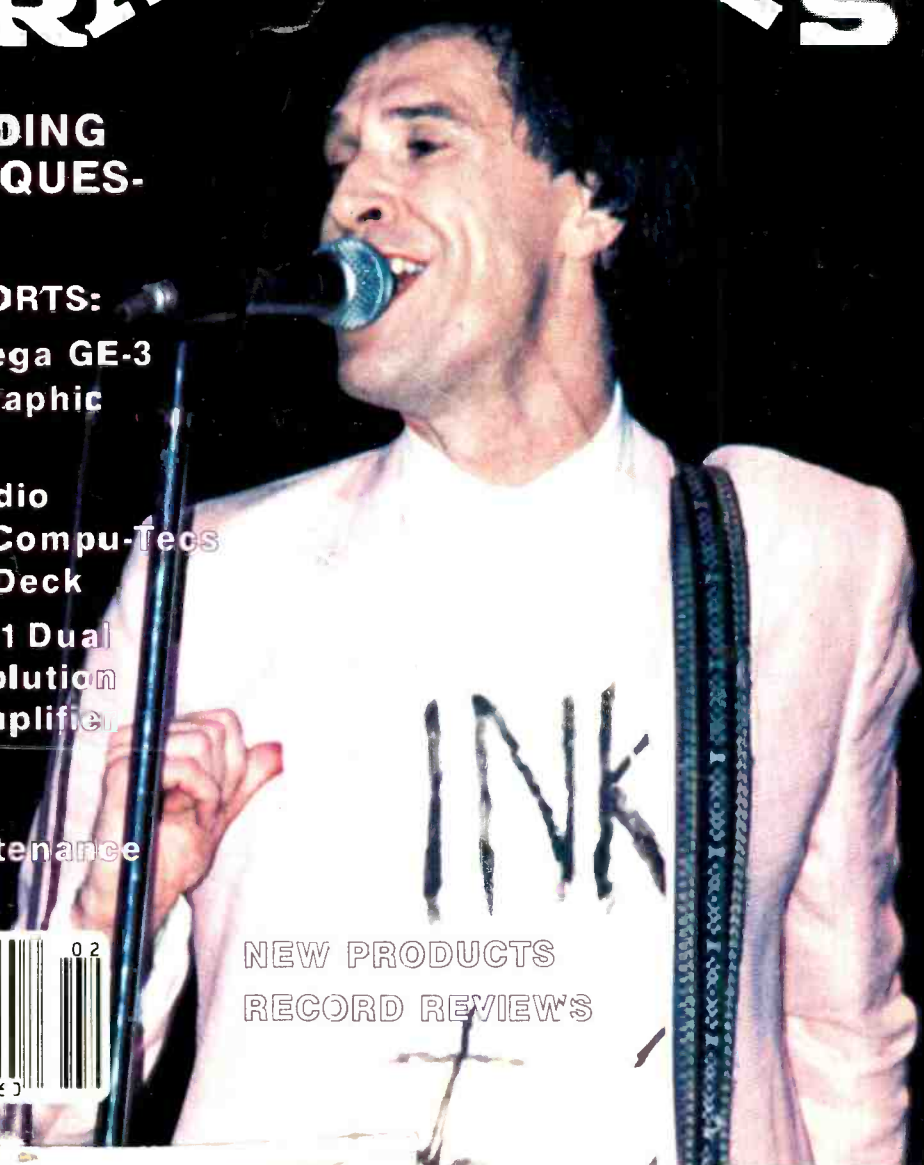
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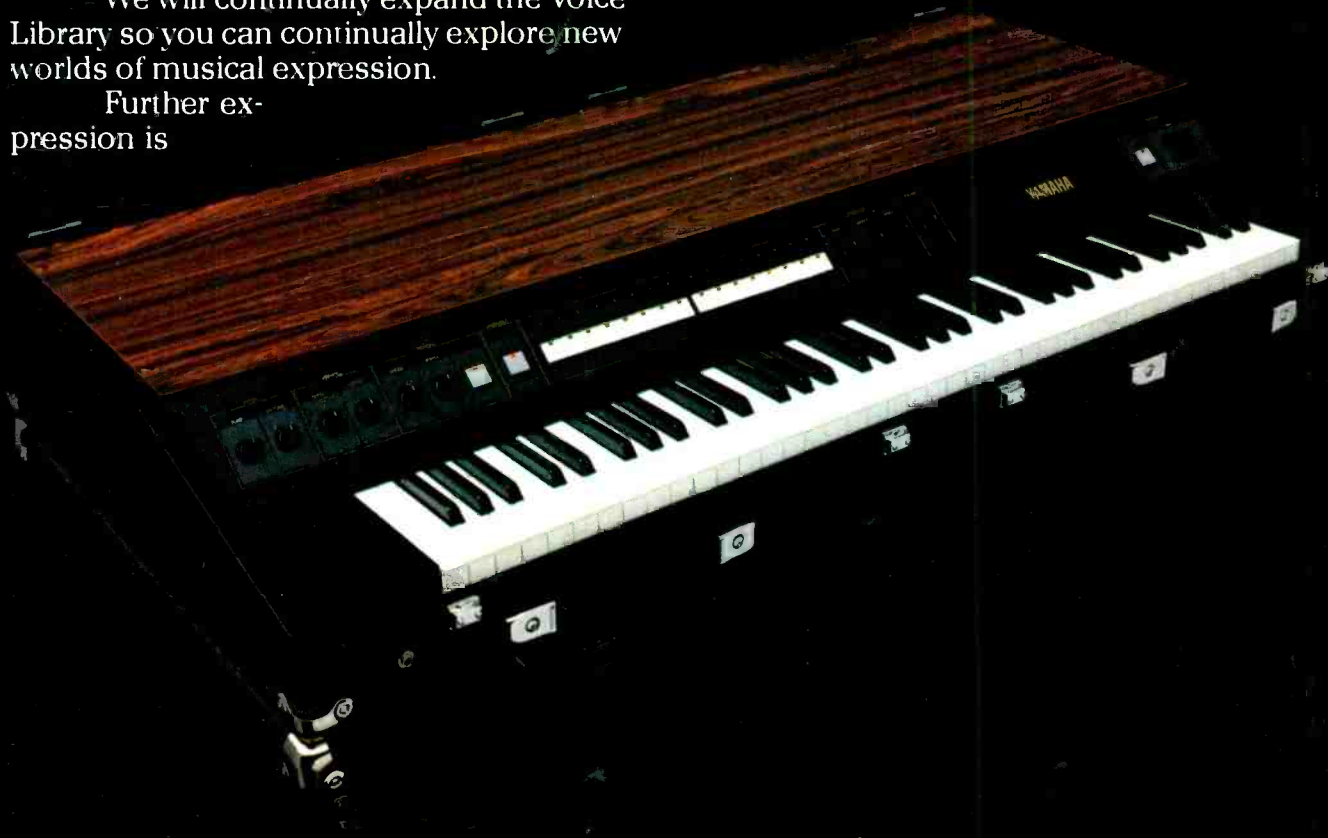
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MODERN RECORDING & MUSIC

FEBRUARY 1982

VOL. 7 NO. 5

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No one said it was easy, and the band did endure its share of ups and downs, but to remain one of the major groups for almost 20 years, and *not compromise yourself*, makes for a phenomenal success story. Ray Davies took time out from their latest tour to talk with MR&M about the band he always had a "fanatical belief in."

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The band that came from "down under" in the early '70's admits that it may be "commercial suicide" to metamorphose as quickly as they do. Yet with the release of their A&M album, *True Colours*, their quirky philosophy appears to be paying off.

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Garland Jeffreys "Live!"

Profile: Teruo Nakamura

Recording Techniques, Part II

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Davies Photos: Laurie Paladino
Split Enz Photo: Bob Sorce

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Editorial contributions should be addressed to The Editor, Modern Recording & Music, 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

Breaking Down the Berlant Wall

We received the following letter from James Rayton in response to Ivan Baran's letter:

I'm writing in response to your letter on page 12 of the November 1981 issue of *Modern Recording & Music*. So, you've bought a Berlant Series 30 recorder! This should serve as a valid initiation into the Glamorous and Wacky World of Obsolete Technology—something that fascinates me also, for some perverse reason...

I'm a bit too young (38) to have been involved in pro audio in the mid-50's, when your machine first came on the market; but I did start getting Allied Radio catalogs out of Chicago around then, and boy did I drool over pictures of such contraptions! And, thanks to that perverse fascination of mine that I referred to, I can give you a sketchy description of what's happened to the Berlant people:

The Berlant name in its heyday was closely associated with another name well-known in the audio field—together, (perhaps having merged), they were known as Berlant-Concertone. The Berlant was a mechanically-operated deck, as you know, whereas the Concertone models were generally pushbutton solenoid-type decks. Indeed, the Concertone 90, probably their most famous and successful model, was a very neat lower-priced version of the Ampex 350, a legend of design if there ever was one.

My facts get hazier here, but probably around the early '60s, the assembly was moved to Japan, and around the same time, I believe, the company became known, paradoxically, as "American Concertone"; their product emphasis gradually moved into the mid-to-high-end consumer category, (and occasionally appeared under other trade names like 'Concord'). Whatever remains of the company today is perhaps better known as TEAC, who, interestingly, continued making the old Concertone 90 at least through the late '60s, with only a change of nameplate (and probably solid-state electronics) and a different model number.

It's probable that no one in the Teac organization today would have any recollection of the Berlant legacy, (and even LESS—oops, less—likely that anyone actually would care enough to rummage through an old filling cabinet to find it).

So, I'm gonna make you an INCREDIBLE, ONCE-IN-A-LIFETIME OFFER!!! Under separate cover, (probably after Thanksgiving dinner settles down), I'm sending you a Xerox of the complete operating and service manuals for your machine. I bought this studio about 8 years ago from an old codger who owned nothing but obsolete technology, and among the neanderthal items I inherited was a Model 30-30 (so called simply because it was 1/2-track stereo). I've since sold the machine to a gullible friend, but saved the manuals. Have fun!

—James Rayton
Ascot Recording Studio
Hollywood, Ca.

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- XC1000 Stereo electronic crossover — \$279
- DCM301 300W micro: amp w 9 band EQ — \$399
- DCA800 800W (bridged) stereo power amp — \$599
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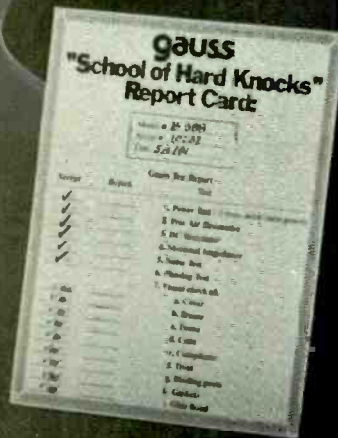


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P.S. HOT TIPS: 1) Don't use small reel diameters. Stick to 10" or 7" large-hub types. 2) Don't use tapes thinner than 1½ mil. 3) Make sure capstan pinch-roller is adjusted precisely, i.e. exactly parallel to the capstan shaft; Berlants love to eat tape, and slight misalignment of the pinch roller is usually the cause.

But It's Still Used in Bumpers

I have two questions that I hope you can answer for me. The first question concerns CrO₂ cassette tape. Is there any particular reason why cassette tape manufacturers such as TDK, Maxell, and BASF don't sell CrO₂ cassette tape in the C45 length?

My second question is about music sound sheets. I was thinking about having some of these made and I was wondering if you could recommend anyone that provides this service?

—Jim Begley
Weymouth, Mass.

In answer to your first question, the few companies we spoke to led us to understand that many manufacturers simply aren't selling CrO₂ tapes anymore because there are other materials that seem to be giving better results. The super avilyn tape used by TDK, for example, is said to have superior magnetic properties. It can reproduce a wider dynamic range and has a better frequency response along with better overall fidelity.

We did manage to come up with one company that can provide you with music sound sheets. They are *Eva-Tone Soundsheets*, Dept. 622, 4801 Ulmerton Road, Clearwater, Florida 33520. Their phone number is 813-577-7000.

2-4-6-8,

Would You Please Elaborate?

Do you have any information on the Tom Robinson Band? I'd be very interested in anything you could dish up.

—Robert Guthrie
Rome, PA

The Tom Robinson Band originated during the British new wave movement. Robinson himself is a "self-avowed" political activist and homosexual. He had originally been a member of a band called the *Care Society*, a small band which had released an album in 1976

with the help of Ray Davies of the Kinks. Robinson then split with Davies and "came out of the closet," forming the quartet to "militate for change." In 1977 there was a lot of activity in England on the music scene, and The Tom Robinson Band managed to get a contract with EMI Records. (EMI had actually been the first label that dismissed the Sex Pistols because of their controversiality.)

The Tom Robinson Band made it to the top of the pop charts with "2-4-6-8 Motorway." Their first album was released in 1978, called *Power in the Darkness*. It included songs such as "Up Against the Wall," "Ain't Gonna Take It," "Glad to be Gay," and "Long Hot Summer." America was very interested in their somewhat preachy music, and they were well-received here when they went on tour. But it was too late for America to really get involved with very proselytizing, radical music, being about ten years after this country's idealistic period. Problems within the group arose before they could make their second album, and by mid-1979 they no longer existed.

Wood Appreciation

I just wanted to write and say that I really enjoyed the article on Ron Wood which appeared in the October 1981 issue. I'm glad I found out about his solo album. Keep up the good work!

—Holly Cripe
Nappansee, IN

The Noise Gate Letters

First of all, let me thank *Modern Recording and Music* for including construction articles for those of us who prefer to "rock 'n' roll our own." The "Building a Noise Gate" article is no exception. I appreciate seeing a do-it-yourself with so much control over its functions as opposed to a black box with a single knob. Hats off to Jon Gaines!

But alas, after taping, etching, and loading the circuit board as outlined, I have encountered a few bugs. (Here we go again!) With the attack control set fast, as the gate opens to pass the signal there is a fairly noticeable pop. Granted this would not pose a serious problem for processing percussive signals like drum tracks, for vocals and the like, still, it is quite objectionable. It also appears with fast release times,

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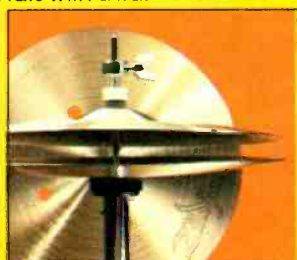
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Steve Gadd
Recording Artist

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although to lesser degree. This same symptom can also be generated by merely opening and closing the gate via the threshold control with no signal applied. A high value capacitor placed in shunt with the gate lead of the FET and ground tames the glitch but obviously adversely affects the attack and release times. Back to square one!

Which brings us to annoyance #2, the threshold control. It seems to be a waste that the first one third of rotation of this control is useless. The gating action is nonfunctional in this range since it is open regardless of any input. Since we encounter so many subtleties and nuances in conjunction with explosive levels with today's recordings, increasing the dynamic range of this control could only make sense. If we can put these problems behind us, surely this gate can compete with the big boys. Any suggestions?

—Jeffrey Schnaidt
Starstruck Audio
Custom Audio Services
Carmichael, Ca.

[We relayed the preceding letter to writer Jon Gaines, and received the following reply:]

Let me deal with the second problem first, since it is the most easily remedied.

The range of the threshold control can be improved by lowering resistor R7 to 10 K ohms and raising R 10 to 39 K ohms. With these values, the threshold will be 0 dBv at approximately 1/3 rotation of the control, +10 dBv at 2/3 rotation, and +15 dBv at full clockwise rotation. This will vary slightly with the taper and accuracy of the threshold potentiometer itself.

The problem of "click" or "pop" when the gate turns on is hard to eliminate, but it can be minimized. In my own studio use of the noise gate, the click has rarely been a problem, but then I've usually used the gate on percussive material such as drums and electric bass.

The simplest remedy for click problems is to slow down the attack time, taking the edge off of the turn-on.

In terms of minimizing what click there is, remember that the click is of a constant level, but the audio you feed into the gate doesn't have to be; make sure you're feeding a good, strong signal level to the gate to obtain the best signal to noise (click) ratio.

Also, remember that any DC offset at the output of the stage feeding the noise gate (mic preamp, tape playback electronics, etc.) will aggravate the click problem, so make sure that all preceding equipment is operating properly.

—Jon Gaines
JTG Audio
Rochester, NY

Power Supply

Because of all the requests we've received from readers for a power supply, Jon Gaines, (author of Construc-

tion Project: Building a Noise Gate, which appeared in our November 1981 issue, among other things, kindly supplied us with the following design.

There are many power supply designs currently in use, and books are available for anyone interested in building precise regulated supplies. Many audio projects will work quite well with the simple unregulated supply described here, so for those who have never built a power supply, this can be a good place to start.

The basic power supply consists of three elements: 1) A transformer to

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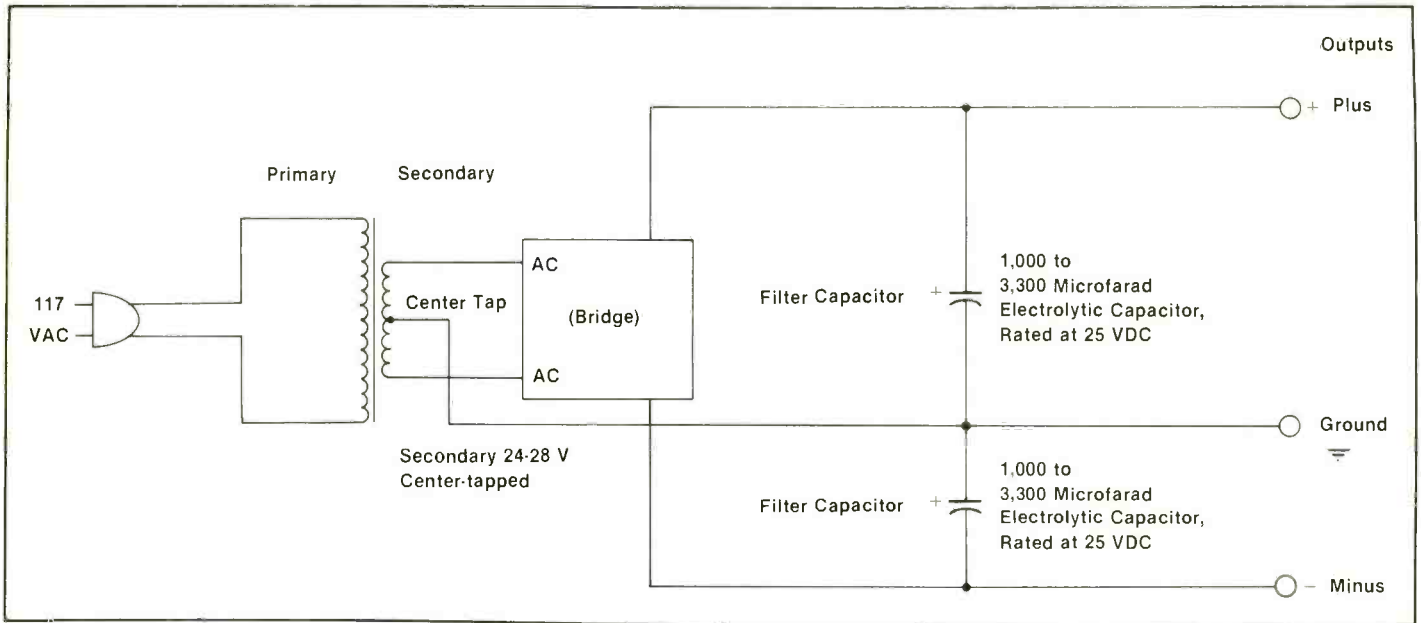
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step down the 117 Volt AC line level to a usable voltage, 2) A bridge rectifier to convert AC to DC, and 3) filter capacitors to smooth the DC and remove noise that might otherwise get into the audio chain.

A parts list for this circuit is given. The part numbers are Radio Shack numbers. Transformer (273-1512) 25 Volt Center-tapped Bridge Rectifier (276-1180)

Electrolytic Capacitors (2 required) (272-1021) 3,300 Mfd., 35 V AC line cord.

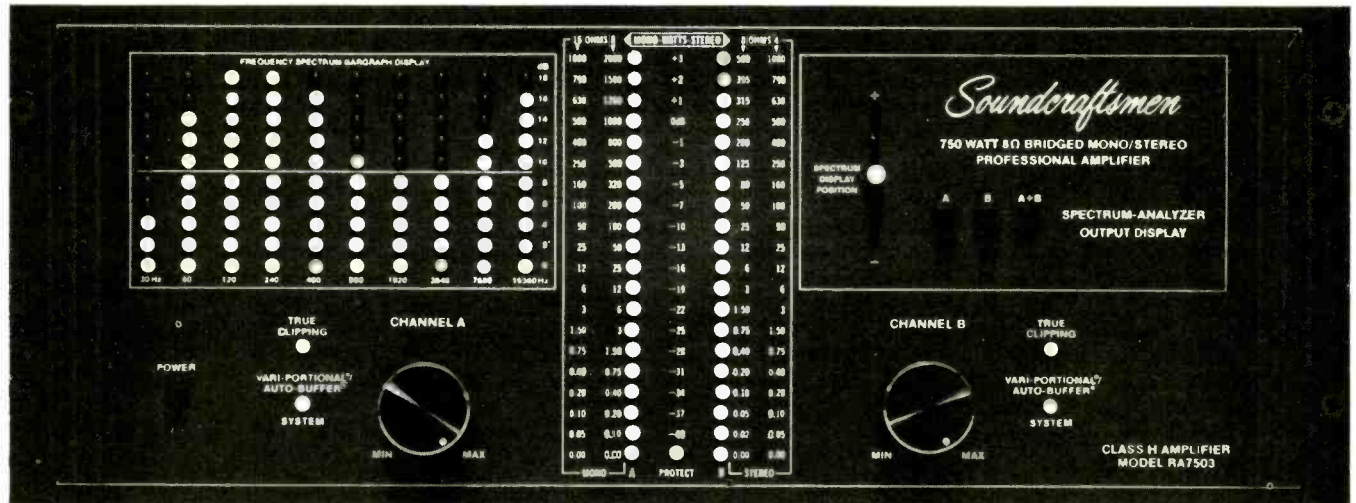
The specific values of the parts are not critical, but should not fall too far



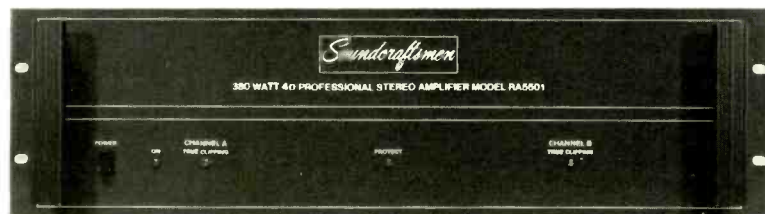
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below the values suggested on the schematic.

The primary advantage of this design is its simplicity. The disadvantage is that under heavy loads, the output voltages of the power supply may begin to fall slightly. This will not be a problem when a few noise gates are used, but if many different pieces of equipment are sharing the same supply, you should check the voltage with an ohm-meter to make certain that you are not losing power.

More elaborate designs use *voltage regulator IC's* to maintain exact operating voltage under all load conditions, but these supplies become slightly more complex and expensive.

—Jon Gaines
JTG Audio
Rochester, NY

George Meany Would've Been Proud

What are the requirements involved when recording with union musicians? I will be facing this situation and wish to know what my responsibilities are. As a producer I've only dealt with non-

union musicians up until now, and the paper problems were minimal. What are everyone's rights?

—David Stouck
Miami, FL

A union contract is the first thing that will be required. You'll also need W-4 forms. To file a union contract for a record date, someone involved must be a signatory to the American Federation of Musicians Recording agreement. They must then be responsible to the union for making sure that all the musicians are paid according to the standard agreements, and that they receive all the health, welfare benefits, and pension fund contributions that they are entitled to. Every musician must present the producer or contractor with a W-4 form that contains his name, address, number of dependents, instrument, union local number, membership number, and social security number. The W-4's then enable the contractor or secretary to make up a union contract which is handed to the union with the musicians' checks and other contributions to the union funds.

Though a recording session can be

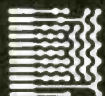
completed without being a signatory to the AF of M agreement, this violates union rules and puts the musician in a bad position. The same kinds of contracts must be filed when recording film, jingles, and TV. Vocalists belong to AFTRA (the American Federation of Television and Radio Artists). AFTRA's rules and contracts are different than those of musicians. A contractor is usually a good idea when recording with union musicians, especially when there are more than just a few people involved. We recommend you look into the details of all the union's stipulations and requirements with the contractor.

The Counts from Montebello

We received the following letter from Drew Daniels in response to the "An End to Teac Test Tape Torment" letter which appeared in the Talkback column of the October 1981 issue, page 16.

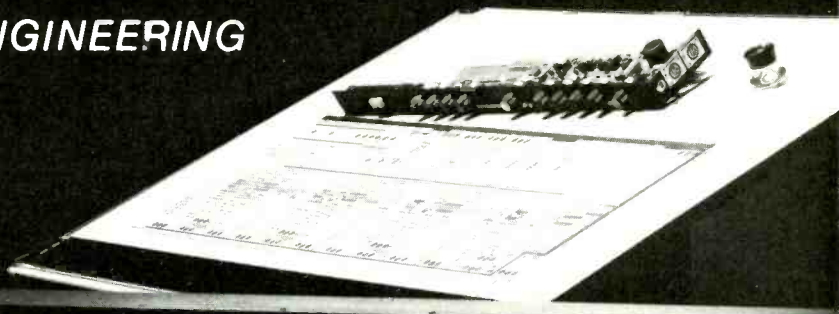
1. Our (Teac's) parts department automatically refers customers who call or write about test tapes, to the proper tapes from MRL or STL. For

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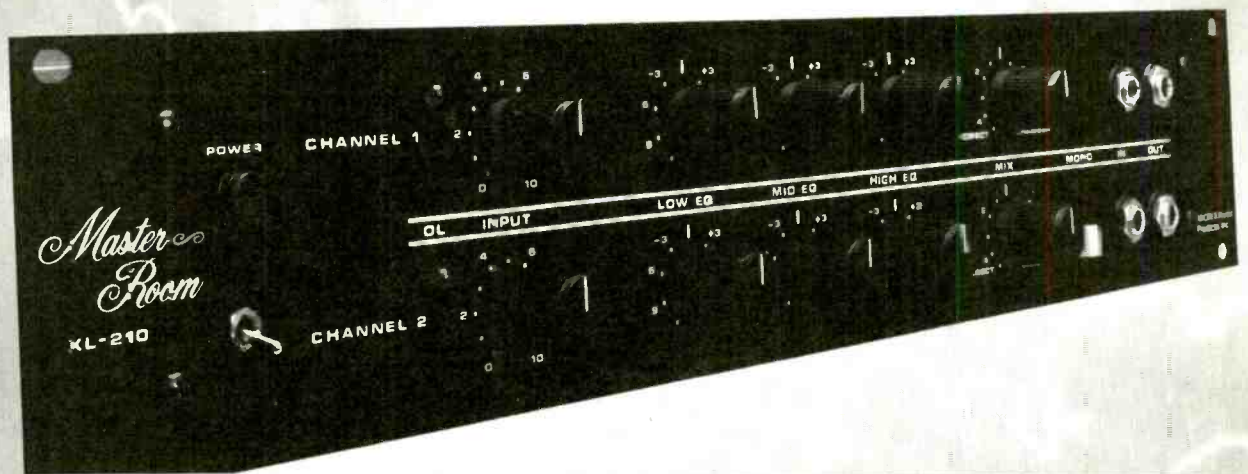
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example: 15 ips NAB = MRL 21 J 105, or STL 3A (200 nWb/m). (NOTE 1): 7.5 ips NAB = MRL 21 T 104, or STL 2B (185 nWb/m).

2. As anyone familiar with electronic test gear knows, most oscilloscopes are "general purpose," since dedicated test gear is impractical for all but a limited number of very sophisticated installations.

If you are *not* familiar with electronic test gear, I recommend you leave servicing of equipment requiring test gear to people who are, or you could end up paying them to readjust your adjustments.

3. Teac didn't make it any more difficult to service their equipment than anyone else's.

What's a professional product or broadcast studio doing without a VTVM? It's impossible to *properly* maintain or calibrate a studio type setup without one!

4. The output of the OUTPUT (pre)AMPS of the 3440 is the output of the deck itself, and there is an additional trimmer for the meter calibration.

5. There are well over 100,000 of the 3340/3440 (I can't tell you exactly) in the hands of all levels of users, and to my knowledge, you're the only one who's ever experienced what you describe!

NOTE 1: When using a 200 nWb/m tape, consult the accompanying spec sheet for level corrections.

—Drew Daniels
Applications Engineer
TEAC Corporation of America
Montebello, CA

A Book with Some Answers

Regarding Stephen Ditmer's requests in Letters to the Editor (November 1981 issue, pg. 4), I would like to offer him and readers of *Modern Recording & Music* some possible solutions. John Roberts of Phoenix Systems offers a parametric design that is capable of -20 dB with a Q as narrow as one fifth of an octave. Cascading two sections of just the portion of the circuit that you require would probably fill the bill, providing performance and noise specs to satisfy the most discriminating of ears. Tunable notch filter designs are also

presented in Walter Jung's book *Audio IC Op-Amp Applications* (SAMS #21558). As for interfacing a semi-pro unbalanced level to a balanced system (with boost), may I suggest a linear feedback gain controlled stage feeding a transformerless balanced transmission system. These circuits along with many others are also presented in Mr. Jung's book. Suitable building blocks for such circuits are the TL series of ICs from Texas Instruments and the NE5534 from Signetics. To make a point, no serious audiophile should be without a copy of this excellent book, whether they use it for designing, reference or just a source of straightforward knowledge.

Jeffrey Schnaidt
Starstruck Audio
Custom Audio Services
Carmichael, CA

Drum Booth

I'm in the process of building a studio and I need some advice on the building of drum booths. I'm trying to avoid leakage and echoing in particular. I've

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heard that these are the main problems to watch out for. Any help you can offer would be most welcome.

—Ray Griffin
New York, NY

One type of leakage that you may encounter would be drum sounds being picked up by microphones that were meant to be for other instruments. This would give you problems when mixing. When the leakage is picked up by other microphones, it is out of phase and delayed in comparison to the original drum sound. The resultant drum sound therefore is muddy-sounding when recorded and all the tracks are put together. The way to solve this problem is to have some way of isolating the drums, such as a booth or a drum area. The booth must contain an isolated platform so that the kick drum's vibrations do not get picked up by the microphone stands. The platform must be large, very large, to provide proper isolation and also to help to create a thudding bass drum sound. You can achieve this massiveness by filling the platform with sand or concrete. If the platform is constructed of a single layer of plywood, for example, it will act as a membrane absorber, and will end up depleting the drum sound by depleting the lower frequencies.

Try floating the platform on a vibration-isolated medium such as fiberglass, celotex, or prefabricated isolators to decouple it from the rest of the studio.

Try to provide the booth with an overhead canopy. This will help absorb sound and to prevent miscellaneous reflections from entering the studio. The lower you make the canopy the better will be your isolation. If the absorptive canopy is too low, under seven feet, it may deaden the drum sound.

You can also place, above the drummer's head, in the canopy interior, basstrapping, to absorb unwanted resonances and overhead reflections. There is really no general rule as to how much absorption you'll need.

Usually booths are placed in the corner of a studio, and the adjacent walls are treated absorptively to prevent high-frequency reflections which are produced by the cymbals and high hat from splashing into the studio. You can increase isolation by placing gobos around the booth or incorporating them permanently into the booth design.

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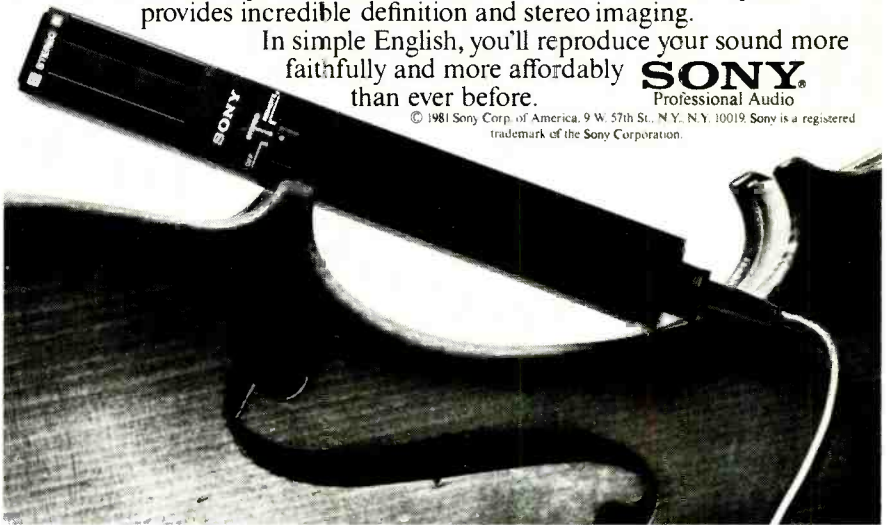
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TALK BACK

"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 & Music reader's technical forum.

Multi-Track Mixdown

I have been using a Fostex A-2 as a mixdown machine for my multi-track tapes. The A-2 is a very fine machine, but is limited to a 7" reel capacity which works out to about 20 minutes or so of recording time. This is approximately the length of an average LP side.

Could you tell me whether record mastering plants prefer to have all of the material on a single reel, or if two (or more) reels are acceptable? Also, would there be any problem in accommodating a 7" reel rather than a 10½" professional NAB reel?

I am planning on purchasing another 2-track machine for dubbing purposes. Your reply to my questions will determine whether I need one with a larger reel capacity.

—Gerry L. Turner
Quincy, Ill.

A call to Jeff Ader, Quality Control Manager for Goldisc Recordings, Inc. of Holbrook, New York, garnered the information you requested. Jeff, who is involved in the process every day, told

us that the mastering plant would quite simply transfer your tape onto a 10½" reel. Apparently their machines are geared for the standard 10½" reel. Jeff did question the wisdom, however, of mastering your tapes at 7½ ips. He felt you might experience some loss of sound quality at the slower speed, requiring a bit more equalization in the cutting room. If you can swing a machine that will handle the larger reels, and allow you to mixdown at 15 ips, it might be advisable.

City Saturation

I have a Teac 3440 and a Model 2A mixer and serious RF problems! So far I have tried shielding, heavy grounding, turning the components around and balancing them on my head! One of the sources was in the mic preamp; constructing external preamps in aluminum boxes helped, but the problem remains severe. Teac Corp. has been surprisingly unresponsive: just a few words on "not doing any engineering in America" and a very general paper on RF.

Can this malicious radio signal be filtered somehow? Is it possible to enclose my mixer in aluminum? Should I move to a different area? A different planet??

—Bob Waxer
Cambridge, Mass.

The Boston area and the Seattle area are two places you should consider avoiding if you need a "clean" RF free environment. There are lots of others, but Boston and Seattle are the only two places we consistently get complaints from. It seems that all the complaints center around non-professional microphones, and poorly balanced input lines or those with no transformers at all. We have recommended using connectors such as Switchcraft A3M

and A3F, and connecting the braided shield of the mic cable not only to pin 1 inside, but also to the case grounding lug—and then making sure the lug tightening screw is set tightly. If this scheme is used at both ends of the mic cable, it improves the RF rejection of the cable at least, and if you have a microphone with a grounded case—one made of metal—you can expect reasonably good RF suppression. The Teac Model 2A and the Portastudio 144 are the two units our customers most often plug unbalanced or high impedance microphones into. We sell some unbalanced microphones primarily for use with cassette decks for recording speech in a living room situation, but any serious recording requires serious microphones and serious line termination with proper components. Using microphones with higher output means you can lower the input sensitivity which also lowers noise—including RF. We've noticed that many of the problems people have with RF seem to be related to the use of large amounts of gain and full treble boost. C'mon now! Be reasonable with what you expect out of these devices! If you don't have enough top end, get a microphone with more top end! You might even try reducing the bottom to make the top seem brighter!

If after you've scanned the area with an RF field strength meter and found that you're lucky not to have RF burns, you can take the offending unit to a guy with lots of pens in his pocket and a calculator on his belt, and have him install RF blocking capacitors and ferrite beads in all the appropriate places. We naturally encourage you to use Teac low-capacitance cable in all cable locations in your setup (except the microphones). It has a braided shield and is as RF proof as RG 58, the cable used by test equipment makers to measure -130 dB signals!

RFI is a common disease and, unfortunately, a growing one. Fortunately the cures are common, and any good practitioner of these should be able to help at least to diminish the effects of the RF-saturated city environments.

—Drew Daniels
Applications Engineer
Teac/Tascam
Professional Products Group
Montebello, Ca.

Mother's Little Helper

In regard to the letter from Nick Cutts of St. John's, Newfoundland in the October 1981 Talkback column (see "Necessity the Mother of Invention?," page 22), I have some information that may be of help to him with his speaker repair dilemma.

Over the years, I have had the same problem—blowing out speakers on the road and in the studio. Of course they had to be repaired as soon as possible, *not* in six months. Luckily, I found out about Waldom Electronics, Inc. (4301 W. 69th St., Chicago, Illinois 60629, telephone 312-585-1212). They have replacement parts for Altec, Celestion, Eminence, Electro-Voice, Jensen, JBL, Vega and most other musical and stereo hi-fi speakers. They also have replacement tweeter parts and diaphragms, all guaranteed. Unfortunately, as you well know, factory kits usually take a good six-to-eight weeks to arrive and are more expensive. I have used the Waldom recones for many high output applications with very few problems and have been very pleased with the results.

Give them a try and good luck!

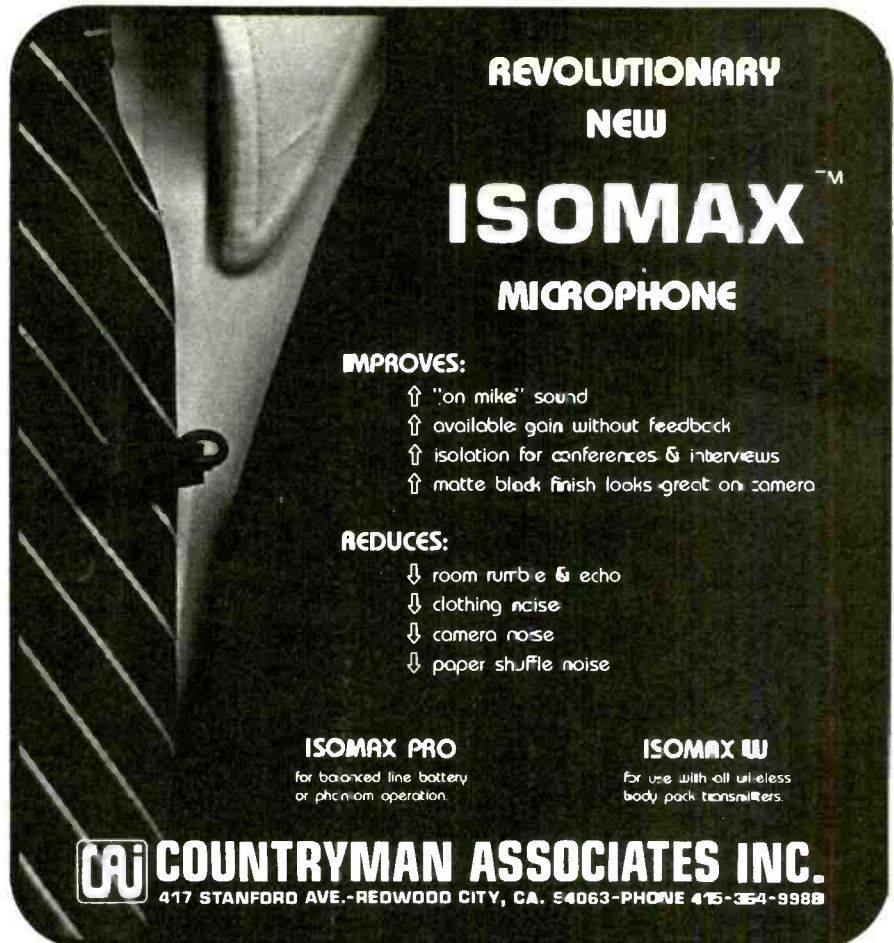
—Jack Le Tourneau
Producer/Engineer
Madison, Wisc.

Appropriate Advice for Avid Avatar Aficionado

I recently acquired an ARP Avatar. I love the product, but the Hex guitar pickup I received with the Avatar is badly damaged. The special guitar cable is also in bad shape.

I would like to purchase a new pickup, all mounting hardware, and an extra-long guitar cable. I also need a new string gate switch and I'd also like to get a demo tape of the Avatar in action.

I've contacted ARP in Lexington, Massachusetts, but was told that they "were no longer selling any products."



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Can you refer me to someone who is selling ARP products factory direct? Any help will really be appreciated!

—Harold Gabbard
Middleton, Ohio

ARP is indeed out of business, but the song goes on forever...or more precisely, the product line (at least partially) continues on. Some of ARP's assets—the manufacturing rights to the EP-16 voice and EP-4 voice Electronic Pianos—were purchased by Fender Rogers Rhodes of Fullerton, California. However, Music Dealer Service (MDS) of Chicago has purchased all available stock of service and replacement parts and accessories. A call to their Parts Department assured us that they have stock on the replacement items mentioned in your letter. They will accept mail or phone orders, and most orders will be shipped UPS COD, but it might be best to phone first for information on prices or any part reference numbers that you might have to include on your order. MDS is also able to service your ARP product, should that be necessary somewhere down the line.

An important note on MDS for all the musicians out there, is that they are the largest, if not the only, source for service and replacement parts for Fender, Peavy and Music Man products. (File this info away for the next time you need "just one of" something in a hurry!)

You can write to MDS at their new address, 4700 W. Fullerton, Chicago, Illinois 60639, or call the Parts Department direct at 312-282-8171.

Phase Maze

I hope you can help explain a situation that has me rather confused. Dealing with 3-pin microphone cable for balanced and unbalanced line sends, as well as microphone signals, I have been unable to determine a uniform pin assignment. Pin 1 is the shield, but pins 2 and 3 seem to alternate as "hot" and "cold" (in-phase and out-of-phase, respectively). Pin 2 is usually "hot" on microphones, but on balanced lines, "hot" can be pin 3 (witness Peavey equipment) or pin 2 (as on Biamp units), or either as is the case with

Yamaha's unbalanced line inputs.

I am confused by this seeming lack of uniformity and I hope there might be a standard I am not aware of that will simplify things for me.

—Doug Klug
Wausau, Wisc.

There is indeed a lack of standardization in the pin numbering of XLR-style connectors. Fortunately, the majority of the known universe recognizes pin number 1 as the shield connection. However, there are two possible arrangements for pins 2 and 3 in terms of "hot" or "not."

From what I currently observe, mic manufacturers almost always call pin number 2 "in-phase" and pin number 3 "out-of-phase." On the other hand, makers of electronic equipment that interfaces in line level environments (tape recorders, mixer outputs, electronic crossovers, equalizers, limiters, etc.) tend to use pin 3 for the in-phase connection.

And to further complicate matters, some manufacturers of mixers wire mic inputs with pin 3 "in-phase." This goes

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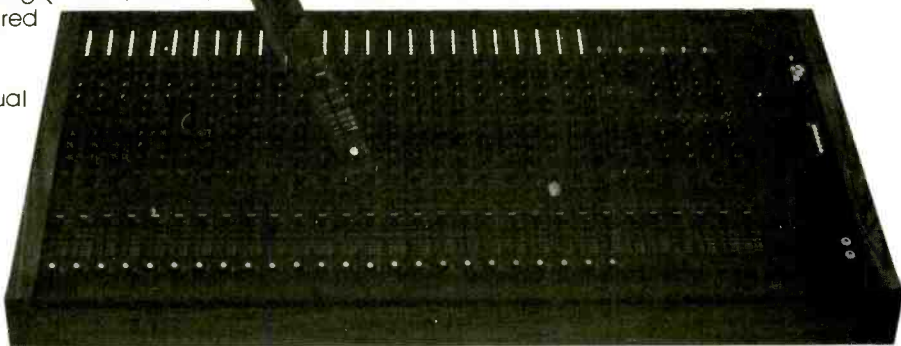
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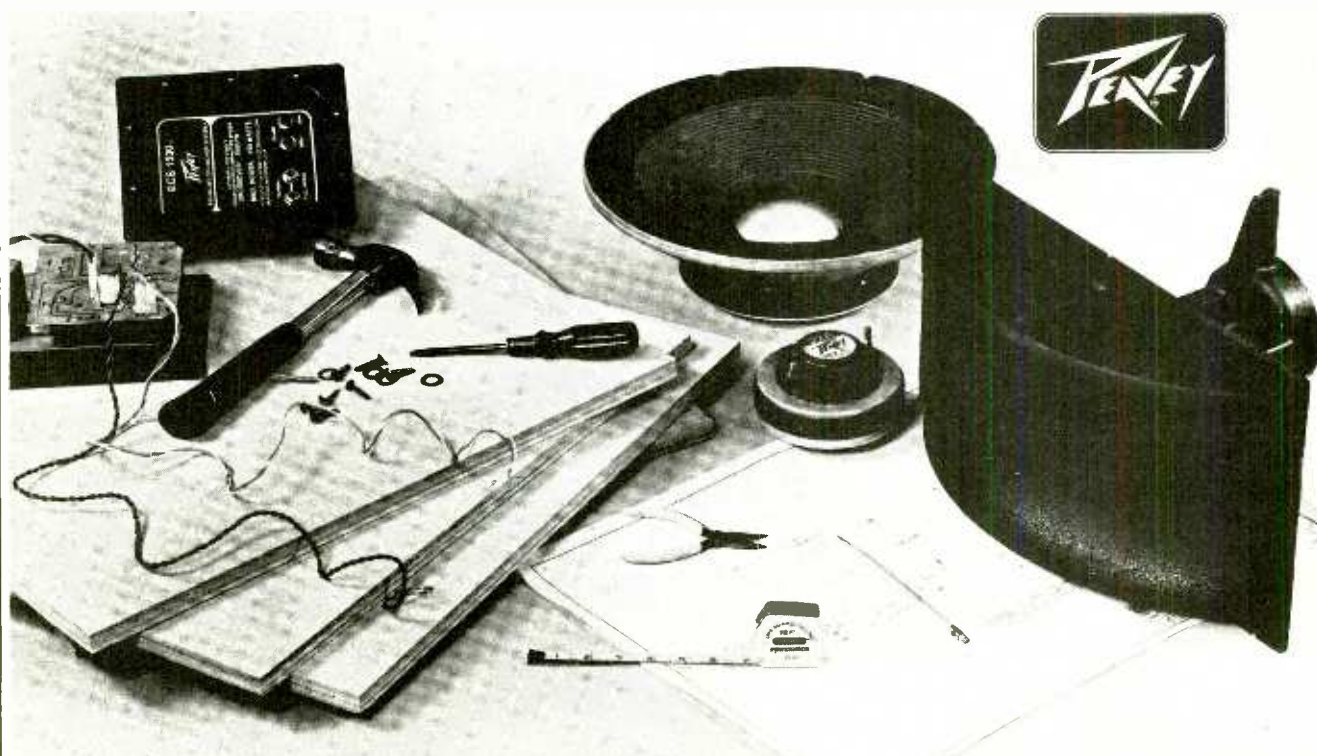
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against the grain of the standards set by most mic makers.

So what's the bottom line? Simply this: relative phase is much more important than absolute phase relationships. This means that all mic cables and inputs within a given system *must* use a consistent pin numbering system. Consequently, all mics will be in phase with each other.

Put another way, any cable connected to pin 2 on one end must connect to pin 2 on the other (and the same

goes for pin 3, of course).

As long as a consistent wiring scheme is followed, out-of-phase cancellations and the resulting audio colorations won't be a problem. This goes for line level equipment as well.

Some authorities have determined that the human ear can detect absolute phase relationships. For instance, if a snare is miked through an audio system, the ideal action of the loudspeaker's cone would be an outward movement (toward the listener) when

the drum is "whacked." If the phase is reversed somewhere along the line, the cone will "suck in," which reportedly results in less realistic reproduction.

In my observations, this problem is relatively minor, particularly in typical club and P.A. systems. It is much more important for all mics/processing electronics/speakers to be properly phased with respect to one another.

If you do desire to maintain consistency throughout a sound system, it will be necessary to determine "which pin is which" in each component. This will require some homework: Study manufacturer's literature carefully. Then, pick *your* standard and rewire any equipment that is not in conformity.

One last thing, a 2-, 3-, or 4-way speaker system has its own phasing problems due to phase shifting effects of the average crossover network as well as the physical placement of the one speaker's element versus the other's. So, absolute phasing accuracy can go out the window in this situation. Just remember, though, that the relative phasing of each part of the system is by far the most important.

Be logical and consistent and you won't have any sonic problems slap you in the phase (sorry!).

—Brian Roth

Technical Editor

Modern Recording & Music

Puzzling Pieces

I've been a subscriber for close to four years now, and I have some questions that I'd like answered.

I have some devices that I'm not sure how to hook up. Do I put my MXR Dyna-comp ahead of or after my Ashly preamp? Where do my MXR Flanger/Doubler and Moog Phaser fit in? Can I use two compressors on one signal?

What I'm doing now is putting my Ashly Preamp into the MXR Dyna-Comp and taking that to my Fender amplifier. I then mic the amp, put that through my Ashly Limiter/Compressor and take the resulting signal into the board. Is this a good way of utilizing these devices?

—Henry Thompson
Oslo, Norway

Ah, yes, the old "what goes before what" dilemma. Without knowing all the details concerning your setup, nor

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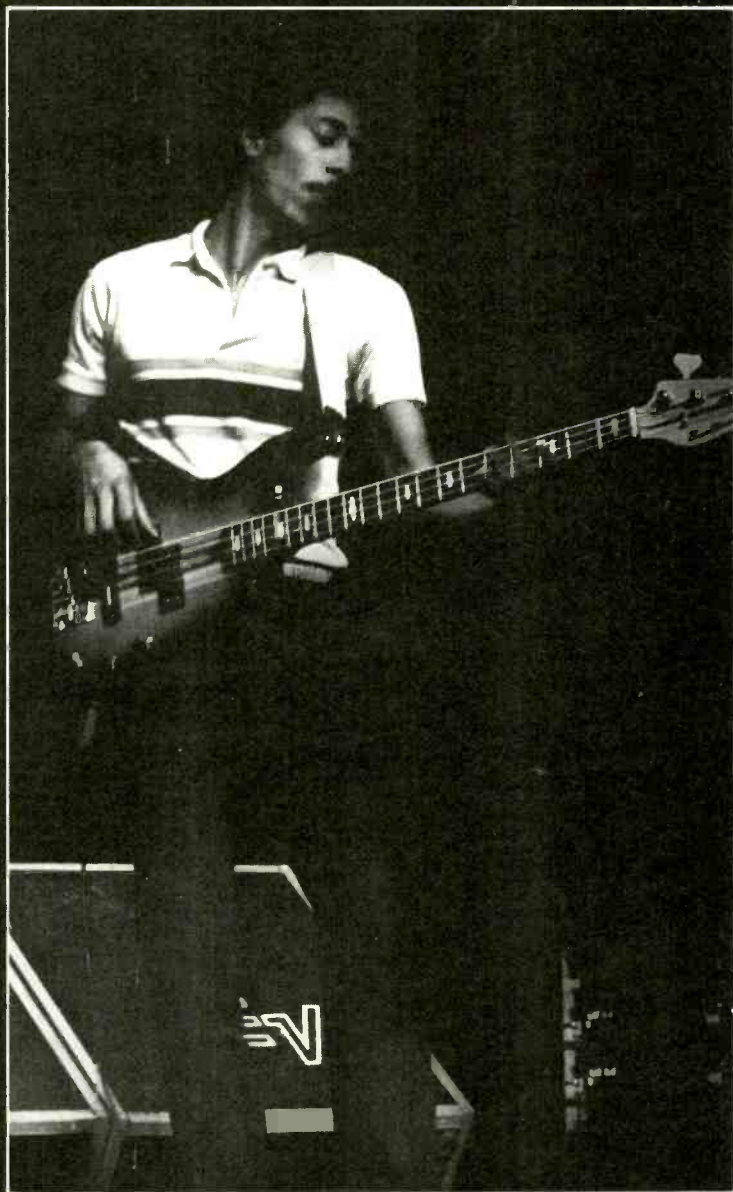
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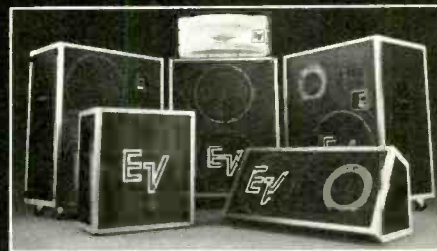


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Don't think that good equipment isn't important just because you may be playing for 300-seat clubs instead of 5,000-seat auditoriums. I've played clubs too. Believe me it's just as important. When your bass speakers are *the* bass speakers, you need the best you can get.

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CIRCLE 82 ON READER SERVICE CARD

the desired audio effect, it is virtually impossible to recommend the optimum sequence.

There are a few general considerations, however. Try to put the noisiest processors at the end of the chain so its racket won't be amplified by other effects devices. For a similar reason, equalizers should go near the front of the sequence to minimize noise accentuation. Also, be sure that a given processor's output won't overload the other devices down the line (unless you intentionally want distortion).

Beyond that, try the different combinations and let your ears decide what sounds best to you. Experimentation is the key. There really aren't any rights or wrongs, just as there isn't one proper way to mic an instrument. I suggest that if it's possible, refer to "The Great Pedal Puzzle" which originally appeared in the July '79 issue of this magazine [It was reprinted by popular demand in the 1980 *Buyer's Guide*, as well.—Ed.] In it, I explored this very topic in much greater length than I could do here, and you might be able to

pick up some hints that will help you find the ultimate "hook up."

—Brian Roth
Technical Editor
Modern Recording & Music

[While we heartily second Brian's advice to read his "Great Pedal Puzzle," it might also be good for you to catch up on a two-part series on interfacing devices that we presented in April and May of 1979. The series, by Larry Blakely, explored this question from a different angle (the recordist's) and the two pieces together might prove to be a perfect "mini-seminar" on the topic. We're quite sure that all these back issues are available as we go to press. If that situation should change, however, by the time you read this, we can get you reprints of the articles.]

Marantz and the Military

I have been a subscriber to your magazine for quite sometime now. Your articles and features have kept me up to date on the recording in-

dustry while I have been in the military, and I thank you.

Due to my geographic location, I must again turn to you for some technical research: I am in need of a schematic and parts listing for a Marantz Model 1060 integrated amplifier. Any help you could provide as to where I can get these materials would be greatly appreciated.

—John H. Zemek
San Francisco, Ca.

The service manual that you require for the Model 1060 is available from Marantz Co., Inc., of Chatsworth, California. Simply send a check or money order to Marantz in the amount of \$2.39 (1.89 for the manual, \$.50 for shipping and handling) and be sure to specify the manual you want. We were told that it only takes about a week to receive it after they've gotten your order. Marantz's mailing address is 20525 Nordhoff St., Chatsworth, California 91311. If you have questions, you can call their Customer Service Department at 213-993-9333.

Total control-with verification-

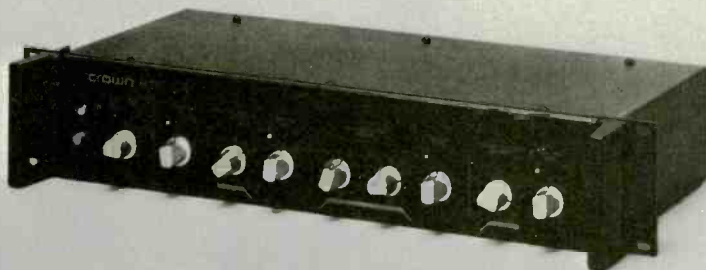
At one location — the crossover — Crown's new mono electronic MX-4 controls bandwidth for four outputs (high, mid-range, low and sub-woofer), with separate level control for each output and for input.

The MX-4 includes signal-present and overload indicators for each band. At a glance it tells you how well it's working. Precision stepped rotary switches select 18 dB/octave Butterworth filters. Easy to set. Easier to reset.

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CIRCLE 104 ON READER SERVICE CARD



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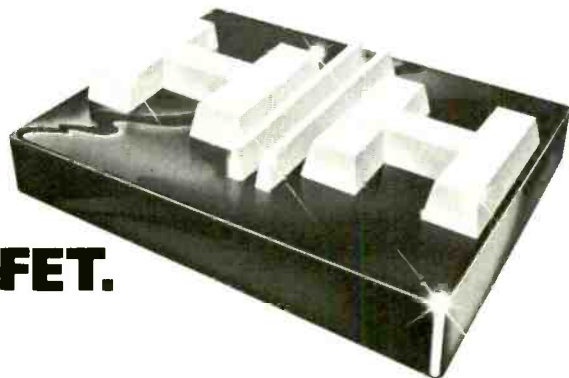
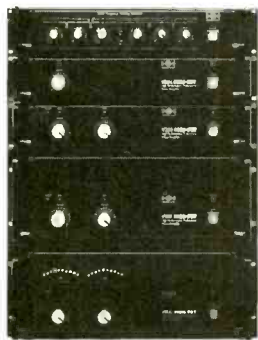
Now there's HH MOS-FET technology; with no thermal runaway, no secondary breakdown, simpler circuits, fewer components and superior high-end performance for better sound quality when reproducing fast transients.

Naturally, we anticipate that most professional sound engineers will be eagerly switching over to MOS-FET at the first opportunity. So to make it easier, there are 4 models (all 19" rack mounting) with outputs

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CIRCLE 210 ON READER SERVICE CARD

DAL 9036

THE **PRODUCT** SCENE

By Norman Eisenberg

NEW 16/8 CONSOLE



Speck Electronics of Arleta, Ca. has introduced the Speckmix 16, a 16 input, 8 output recording console which they say has been designed specifically for the semi-professional and professional 8-track recording studio. For a suggested list price of \$3,575 the Speckmix 16 offers sixteen inputs; eight mixing buss outputs; eight VU meters; six-frequency, three-band equalizers; transformerless mic inputs; operating levels at +4 dBm; plus more.

CIRCLE 26 ON READER SERVICE CARD

MODULAR POWER AMPS

Power amplifiers in the new PA series from Edcor of Irvine, California may be used with a variety of input modules for interface with any program source. Units rated for 50, 100 and 150 watts are available. The amps are rated for distortion of less than 1 percent THD and may be ordered with transformer outputs (4, 8, 16 ohm or 24/70 volts), or with direct outputs. Also featured are clipping LEDs, satisfactory operation down to 85 volts AC line output, rack or shelf mount, electronic and thermal protection circuitry and handles.

CIRCLE 27 ON READER SERVICE CARD

AMPEX ATR FOR BROADCAST MARKET

With the broadcast market so much in the news, Ampex has recently introduced an addition to its ATR series of tape machines. This one is designated the ATR-800 and is offered specifically to the radio and television broadcaster, and, of course, to the recording studio. The ATR-800 offers a number of features such as: interchangeable transport control panels (panel can be mounted on either the left or right side of the recorder); a universal power supply with both NAB and EIA equalization standards; 10½-inch NAB, EIA reel, 30 cm. DIN hub capability; tape marker and cutter options to mark and edit tape at the touch of a button; closed loop DC servo transport for constant tape tension; electronic tape timer for all three speeds (7½, 15 and 30 ips); single point search-to-cue which allows the recorder to return automatically to a cue or edit. Available in one, two and four channel configurations, the ATR-800 will list for \$5,450.



CIRCLE 28 ON READER SERVICE CARD

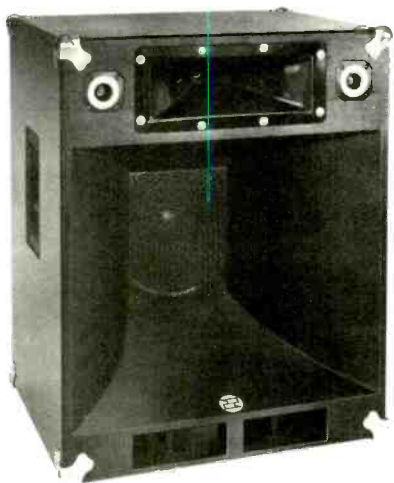
AUTO REVERSE DECK HAS DOLBY C

The new top-of-the-line cassette recorder from Pioneer is the model CT-9R which includes Dolby B and C, and also offers automatic reverse on playback. The transport uses three motors—a quartz-PLL direct-drive type for the capstan and two DC direct-drive motors for the reels. A three-head deck, its response is rated as 20 Hz to 22 kHz with metal tape at -20 dB recording level. S/N ratio with Dolby C on is listed as 80 dB. Price is \$675.

CIRCLE 29 ON READER SERVICE CARD

FULL-RANGE P.A. SPEAKER

A new full-range speaker is available from Eastern Acoustic Works, the professional sound manufacturer. The model FR-350 claims comparable performance to multi-component sound systems and an efficiency of 107 dB SPL per watt over the operating range of 45-22,000 Hz. Bass frequencies are handled by one 15-inch cone driver (3-inch diameter voice coil); middle frequencies by a 1³/₄-inch compression driver mated to an exponential horn with a 500 Hz cutoff; high frequencies are reproduced by a matched pair of 5/8-inch compression driver horn tweeters. Packaging of the FR-350 conforms to on-the-road requirements and includes recessed hand-holds, steel-ball-type roadie corners and a control and connector panel with parallel banana jacks and 1/4-inch standard phone jacks.



CIRCLE 30 ON READER SERVICE CARD

PROGRAMMABLE AUDIO PROCESSOR

Lexicon has produced what it calls the "first user programmable audio processor with memory." The model 97 "Super Prime Time"™ includes eight effects: flanging, resonant flanging, doubling, tripling, chorusing, slap echo, short echo and long echo, and allows the user to "create, store in memory and recall the desired effects in any sequence at the push of a button." The 97 model stores eight factory preset pro-



grams and thirty-two user created programs of effects in a non-volatile memory. If engineers and producers want to keep certain effects for future use, the unit allows for off-loading user programs to ordinary cassettes. The Super Prime Time™ supplies the user with a distortion figure of less than .03% at all delay times; up to 1.92 seconds of full bandwidth delay; 90 dB dynamic range; two separate inputs for input mixing and cross-connection of two delay lines for complex processing.

CIRCLE 31 ON READER SERVICE CARD

DBX-NEW GENERATION

The well-known model 160 from dbx has a new generation which allows for switchable Over Easy® and hard-knee operation regardless of compression ratio selected. The 160X Compressor/Limiter has a dual true RMS display system which utilizes a 19-LED display to monitor input or output signal



level over a 60-dB range and a 12-LED display to indicate the amount of gain reduction over a 40-dB range. The 160X Compressor/Limiter provides continuously variable compression ratio from 1:1 to ∞:1 to -1:1, and permits operation at all standard studio and broadcast levels via its input/output capability of +24 dBm.

CIRCLE 32 ON READER SERVICE CARD

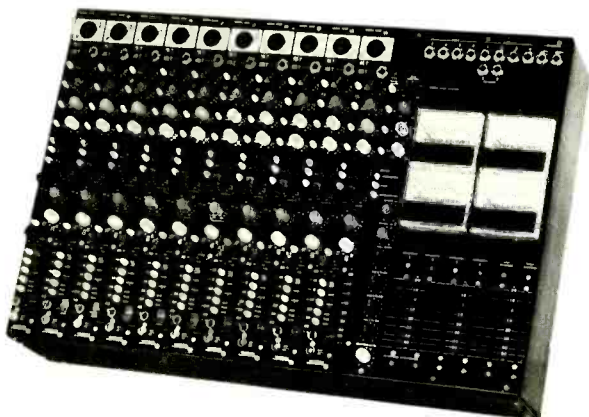
ECHO/DIGITAL RECORDER

The "Echo/Digital Recorder" (EDR) is an innovative signal processor from Imagineering Audio of Milwaukie, Oregon. Computer-controlled and key-operated, the device is capable of the following effects: echo, reverse echo, echo hold, echo reverse hold, record, playback, "live" sound on sound or multi-track—all from the EDR keypad or via remote control at distances up to 100 feet. R-C options include a keypad and a foot-controlled model.

CIRCLE 19 ON READER SERVICE CARD

MODULAR MIXER

Interface Electronics of Houston, Texas announces its Model 400B, offered as a high-performance compact mixer of fully modular plug-in construction. Its primary use, says Interface, will be in sound system where it makes four mono submixes, each of which can be panned into the two main stereo outputs. Slider masters are provided for submixes and main outputs. The four cue/effects sends can be used for special effects, cueing or stage monitoring. The operator's stereo monitor listens to the main output, or to the cue mixes, or to any input solo. The mixer also lends itself to stage monitoring, to recording up to eight tracks, to mixdown for stereo or mono and other applications. Modular and sectional, the 400B has a basic unit with ten inputs (or less). Each added section holds fifteen more inputs. Modules have three equalizers with 15-dB boost or cut capability plus a wide-range tuneable mid-frequency EQ as well as sharp low- and high-frequency cutoffs. The basic 10-input model is priced at \$3500.



CIRCLE 20 ON READER SERVICE CARD

EXCALIBUR CASE

Excalibur Industries of Lake View Terrace, Ca. is producing a videocassette recorder case which allows the user to operate the unit while it is still in the case. The VCR is pressure-fitted into heavy foam pads and remains in the case. The case also has heavy rubber bumpers on the bottom and a ventilation system which ensures proper air flow from under and above the VCR through the rear of the case. Construction is of 1/4" plywood covered with either fiberglass or ABS; interior is 2" thick Ethafoam. Price is \$450.



CIRCLE 21 ON READER SERVICE CARD

AMBIENCE ACCESS SYSTEM

The model ARU (also known as the "Other Half") is an ambience access system from Benchmark Acoustics of New York, NY. Designed to recover the ambience present in a given recording, the ARU adds no reverb. The original signal is transmitted "as is" to the front speakers, while the same signal is also fed to side speakers with a time delay of 0.03 second. In addition, a pair of rear speakers receives an uncorrelated signal consisting of the difference by 0.03 second. Explains Benchmark: Since most recordings are cut in mono at extremely low frequencies, the difference signal will tend to be bass-shy. To fill in here, a mono signal made up of the sum of left and right front channels is added to the rear speakers below 60 Hz. Highs are contoured for the side and rear frequencies as they would be in a concert hall. A remote-control unit permits the sound levels for front, side and rear speakers to be adjusted from up to 25 feet distance. Said to be capable of functioning with any kind of music, the ARU also is credited with broadening the effective stereo listening area. Price is \$829.

CIRCLE 22 ON READER SERVICE CARD

MORE FOR THE PR99

Realizing that its popular PR99 tape machine is being used for a number of different purposes, Studer Revox has issued a transportation case, a monitor panel and a roll-around console for the machine. The console permits three-position angling: 30°, 45° and horizontal.



Rear panel openings make for easy access for AC and all connections. The transportation case is made from the same housing as the console and has a snap-on front cover and flush-mounted handles, plus is finished in scuff-resistant vinyl. The 19-inch monitor panel, which may be fitted in a 3½-inch space at the top of the cabinet housing, contains a 6-inch oval speaker, a volume control, an amp card and a track selector switch.

CIRCLE 23 ON READER SERVICE CARD

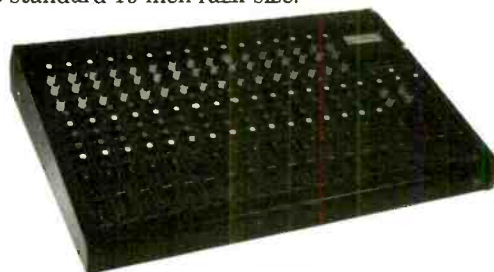
"DC CIRCUITS" COURSE

Having already published two texts covering basic electricity concepts, mathematics, parallel circuits, voltage dividers, capacitors, inductors, etc., Radio Shack, a division of Tandy Corporation, has now released a series of six cassettes as an instructional complement to the two-volume *DC Circuits* text. The two books, *DC Circuits Vol. I*, "Basic Electricity and Circuit Concepts" (62-2019) and *DC Circuits Vol. II*, "Circuit Analysis Methods" (62-2020) are \$6.95 each and should interest recordists who need to know the basic facts of electricity before diving off the deep end. The cassette program complement is \$29.95.

CIRCLE 24 ON READER SERVICE CARD

NEW FROM HEIL

Heil Sound of Marissa, Illinois has introduced four new products, two high-powered amplifiers and two mixers. The amps are the PRO 200E (150 watts per channel) and the PRO 400B (260 watts per channel, 4 ohms). Both amplifiers feature a module design called MOD-U-PAC for easy service, and the exclusive Heil AUTO-MATCH input circuitry that automatically senses either balanced or unbalanced lines and switches the inputs to match the correct mode. The amps are standard 19-inch rack size.



In addition Heil has issued the PRO 800 and SIXTEEN THREE mixers. The PRO 800 is a low cost mixer (\$385) with eight low impedance inputs, variable gain and two-stage EQ, ±18 dB boost and cut. Weight is 7 lbs. The SIXTEEN THREE is a more sophisticated console with sixteen inputs and LED monitoring for level. Its output panel contains, among other features, two summasters, a mono mixdown, four monitor masters and line inputs for all sixteen inputs as well as each submaster and monitor. Price is \$2,290.

CIRCLE 25 ON READER SERVICE CARD

MUSICAL

NEWSIGALS

MUSICAL INSTRUMENT AMPLIFIERS

Road Electronics has added two new compact amps to its product line—the single-channel L120 and the switchable-channel SL120. Both amps feature three-band active EQ including Road's Parascan midrange EQ with variable frequency from 400 Hz to 3 kHz, reverb, master volume control, effects patching loop, a headphone output which disconnects the speaker and an extension speaker jack. Both amps are rated at 60 watts RMS and have a special design 12-inch speaker. Channel switching on the SL120 is accomplished via a footswitch with LED indicators.

CIRCLE 1 ON READER SERVICE CARD

Peavey recently announced three new models which should be of interest to the lovers of the tube amplifier sound. The three models comprise the VTX series and are all tube amplifiers in line with Peavey's long-standing policy of offering both tube and solid-state amps; two of the model names are familiar to Peavey fans, but the amps are all new to complement the recent updates in Peavey's transistor amp lineup. All three models are two-channel amps with Peavey's Automix remote selection system. All three amps feature Peavey's

EQ scheme which combines three bands of passive EQ (bass, mid and treble) with an active presence section, and they all feature Peavey's exclusive Saturation circuit which yields unmatched sustain, overload dynamics and tonal texture. Another feature common to all is a pull-for-bright switch on each input channel which is designed to change as the gain of the channel is varied, and a pull-for-thick control for increased harmonic content in the midrange: the thick effect is enabled by pulling the treble tone control, but it may also be programmed to operate when the lead channel is selected from the footswitch. Also standard in the VTX Series is an Accutronics Type IV Reverb unit which can also be selected from the Automix footswitch. The smallest of the VTX Series is the MX, a high-powered (130 watts RMS) compact amp with a single 12-inch Black Widow premium speaker and a "no-frills" approach to the design. The Classic is a familiar Peavey model name, and this new version of the Classic features 65 watts RMS and a pair of 12-inch Scorpion speakers, plus a built-in Peavey phase shifter in addition to the standard features already mentioned. Both the Classic and the MX have a lead channel with Saturation and a normal channel which feed a common

EQ and master section. The Heritage, on the other hand, has two completely separate channels, a lead channel with Saturation and the Peavey passive/active EQ circuit, and a normal channel which has pre- and post-volume controls and a three-band active EQ circuit with semi-parametric midrange EQ which may be swept over the 150 Hz to 1.5 kHz range for precise control of tonal balance. The Heritage also includes the same phase shifter circuit found in the Classic. The Heritage delivers 130 watts RMS into its pair of 12-inch Scorpion loudspeakers.

CIRCLE 2 ON READER SERVICE CARD

Randall Instruments Inc. recently announced the introduction of two new amplifiers, a high-performance, high-power bass amp head and a high-performance compact combo amp for guitarists. The Randall Bass 500 is a new generation of bass amp featuring unlimited headroom to prevent input clipping even with today's hot pickups and sophisticated circuitry. The control compliment includes Gain, Treble, Mid, Mid Frequency Shift, Bass, Bass Rolloff Filter and Master Volume, plus a five-band graphic EQ; all controls use active circuitry. The graphic EQ and master volume may be switched out of the signal path for operation more like a conventional bass amp; switching is via a footswitch, and an LED indicator is provided to indicate when the EQ and master volume are in circuit. An effects patch loop is provided as well as a signal out jack for satellite amps or direct feeds to mixing boards. Power output of the Randall Bass 500 is rated at 300 watts RMS into 2 ohms. The Randall RG-80-112 SC is a two-channel, 80-watt combo amp with an interesting blend of features. One channel of the amp has an extremely high sensitivity (1.5 mV) for loads of distortion and sustain while the other is the clean channel. A footswitch



is provided to select either channel or both together, and LED indicators are provided on both the panel and the footswitch. Each channel has an input gain control and a master level control, and the amp has bass, mid, treble, presence and reverb controls which are common to both channels. An effects patch loop is provided, plus a preamp out. The amp accurately duplicates the sound of tube amps thanks to a FET preamp design, a special power amp design and the Celestion G12-80 speaker.

CIRCLE 3 ON READER SERVICE CARD

St. Louis Music Supply has announced the addition of a new, higher powered amplifier to its Crate line. The new amp is the Condor CR-90EV, a 90-watt RMS model with two foot-switchable channels, each of which has a gain control and a master volume control. Other features include active equalization, an effects patch loop, low impedance and high impedance direct outputs with level control, Hammond reverb, a 12-inch Electro-Voice speaker and a solid walnut and oak cabinet.

CIRCLE 4 ON READER SERVICE CARD

GUITARS AND BASSES

Kaman Music has introduced the latest in bowl-bodied acoustic guitars under its Matrix trademark. The concept of a guitar with a bowl-shaped back made from molded fiberglass was pioneered by Kaman under its Ovation trademark, and the new Matrix line makes use of several technological advances to bring this design to popular-priced guitars as well as the premium end of the market. The Matrix guitars all use the familiar rounded back molded from a fiberglass material known as Lyramold which is mated to a laminated spruce top with a premium bracing pattern for optimized projection and tone. The unusual feature of the Matrix models is found in the neck where a solid aluminum, T-section brace with integral heel is covered with a new high density plastic material known as Urelite, which is said to resemble mahogany in look and feel while delivering much better durability. The neck is smooth and contoured for fast hand movement, and the rosewood fingerboard with nickel-silver frets is also conducive to fast fingering. Matrix guitars are available in 6- and 12-string models as straight

acoustics, acoustic/electrics with piezo-electric pickups mounted on the bridge and as acoustic/electrics with built-in FET preamps and bridge-mounted piezo-electric pickups.

CIRCLE 5 ON READER SERVICE CARD

Two new models, an electric guitar and a bass, have been added to the Vantage line from Music Technology, Inc. Both new models carry the VP-795 model number and feature neck-through-body construction with laminated maple and mahogany necks and mahogany bodies. The VP-795 guitar features two custom-designed



Vantage humbucking pickups with coil-tap, phase and pickup selector switches, solid brass nut and saddle inserts in a tunomatic-style adjustable bridge. The VP-795 bass has twin split-style Vantage pickups with a three-way selector switch, and also features a solid brass nut and an adjustable brass bridge.

CIRCLE 6 ON READER SERVICE CARD

Odyssey Guitars makes something like a dozen models of guitars and basses, most of which are available in a choice of two colors, although in reality most of the models are variations on the same handsome double cutaway design. Among the design features common to all the models are neck-through-body construction, DiMarzio pickups on the guitars and Bartolini or DiMarzio pickups on the basses, and Grover or Schaller tuning machines. The top of the Odyssey line is the

Series 100 which is a carved body model with a bookmatched maple top 3/4-inch thick with a herringbone and ivoroid binding around the edge; the guitar uses two DiMarzio Dual Sound pickups with separate tone and volume controls, phase switch and dual sound switches, while the bass uses a pair of Bartolini Hi-A pickups with separate volume and tone controls. The 200 series is identical in features to the 100 series, but has bodies carved from select ash wood without the edge binding of the Series 100.

The 300 Series from Odyssey is deluxe in the sense that it uses the same components as the 100 and 200 series, but no-frills in the sense that the body is simply shaped from Honduras mahogany rather than being a carved body. Also available are the Hawk Series 400, an economy series with natural-finish maple bodies and simplified electronics (single DiMarzio for the bass, and two lower model DiMarzios with simplified volume and tone controls); the semi-acoustic Series 500 with free-floating solid spruce tops over the neck-through-body back; and the design-your-own Custom Series 600 with your choice of pickups and electronics including an available built-in six-band graphic equalizer.

CIRCLE 7 ON READER SERVICE CARD

New from International Music Corporation is a new classical guitar model in its Hondo line. The new model is known simply as "The Guitar," or, more precisely, as Model 7, and features a cedar top, book matched rosewood back and rosewood sides. The binding on the guitar is also rosewood, and there is handsome marquetry inlaid around the soundhole. Hondo's new classic was designed for brilliant midrange and treble and is said to be an ideal recording instrument.

CIRCLE 8 ON READER SERVICE CARD

Curlee U.S.A. has announced a new series of electric basses, the ST2001 series, comprising six new models with popular body styles. All six models feature adjustable rock maple necks with 24 frets, and bodies made of either Brazilian walnut, mahogany or koa wood. Components on the Curlee ST2001 series are top-notch and include Grover tuning machines, Badass bridges and DiMarzio pickups.

CIRCLE 9 ON READER SERVICE CARD

Studio Notebook #5

By James F. Rupert

Equipment selection can be a multi-headed dragon for the new studio owner. The equipment you decide to purchase has to jibe with the direction that you wish the studio to go in. An Audio/Visual recording studio will have a far different equipment emphasis than will a straight multi-track music studio. Recording studios to be used with film production will necessitate more specialized gear yet. Every ad you read in this or any other studio-based publication is designed to convince you that the product shown is the one that you just have to have to prevent you from curling up into a little ball and turning into toe jam. Don't get me wrong, they are all fine and reputable products, but you obviously can't buy them all. That same wonder option you hocked Grandma's teeth to get this year might prove to be of use only as a doorstep next year. Not because it malfunctioned; not because it's obsolete; not because it's a bad product. You might not be using it because you found out too late that you really had no use for it in the first place.

The following is a listing of equipment you might want to consider for your studio business. It will be up to you to decide which items listed will truly be necessary to your operation and which will be icing on the cake. On the form you can put check marks in the columns marked "D," "P," and "F" (Definite, Possible and Future) to establish some sort of priorities for what you feel you must have to start, what you would like to get if there are enough remaining funds and what you might consider purchasing down the trail. By each item there is also room to notate a few possible manufacturers' products you'd like to consider for that item. The final column is for a generalized price range you would like (or are forced by your pocketbook) to stay within. (For suggestions of manufacturers and prices I would strongly advise consulting with Modern Recording & Music's Buyer's Guide. This should be an invaluable aid in narrowing down your choices as to which products you would like to perhaps receive any additional information on.)

When filling out this list, take everything in your situation into account. If you are familiar with your competition and their set-up (and you better be, Harvey!), decide if you need a certain hunk of gear to keep pace with them or if you are going to try for another direction. Perhaps you might be able to afford something that would give you the one-up on them in the long run. Perhaps they have accustomed

the clientele in your area to a certain way of doing things for reasons of both creativity or convenience. Are you going to fight that with your own way of doing things or are you going to offer the same type of services for less? Once again, there has to be some kind of demand for something that the competition cannot or will not offer or there is not much sense in your competing with them. If customers are happy where they are and you cannot offer them anything different in your operation, then it's time to pull down your shingle and convert your equipment into very expensive planters.

Remember your budget, too. A beautiful new sixteen-track recorder doesn't do you much good if you have no rubles left over to buy mixers, microphones, etc. Your budget limits will initially determine your overall balance, but if things go right it is also the foundation that you will build into bigger and better equipment in time.

It's all up to you. No one can tell you what to buy or which is the best. Maybe when it comes right down to it, there is no such thing as an absolute best. Nothing is perfect for everybody. But with a little research you can nail down with reasonable confidence what is the best for your budget, your room size, your level of expertise and your studio direction.

Now before the letters pour in saying, "Geez Rupert, you dumb schlemiel! You forgot to include the electronic winky-tink float-a-toner in that list," let me toss out the disclaimer that this list is far from complete as to all the options available on the market today. Nor does it include studio instruments you might want to have (e.g., synthesizers, drums, amps, vocoders, piano, organ, etc.). Also, don't forget about furniture, test equipment, repair equipment, 19-inch racks, shelving and possibly high-speed cassette and/or reel-to-reel duplicators. This list is, as usual, only a starting point to get everybody headed in the right direction for his/her own studio business.

Once again, think and choose carefully. You might want to make some photo-copies of the list for figuring and re-figuring your needs. An audio/visual studio might definitely need an audio pulse generator where a totally music studio might put more priority on phasing and flanging options. Yet both need items like tape head care kits and de-gaussers. (You can't forget the basics!)

See you again, next time.

ITEM	D	P	F	Possible Manufacturers	Price Range
16-track machine					
8-channel machine					
4-trk/4-channel deck					
2-channel half-track deck					
2-channel 1/4-track deck					
Full-track mono deck					
Variable speed control					
Cassette deck (Dolby)					
Mixing console					
Mixing console expander					
Monitor amp(s)					
Control room monitors					
Studio monitors					
Crossovers					
Dolby(s)					
dbx(s)					
Noise reduction					
Graphic equalizer					
Parametric equalizer					
Limiter(s)					
Noise gate(s)					
Phaser(s)					
Flanger(s)					
Compressor(s)					
Harmonizer™					
Expander					
Aural Exciter					
Sibilance control					
Notch Filter(s)					
Digital delay					
Analog delay					
Reverb unit					
Pop/scratch filter					
Turntable					
Cartridge (phono)					
Pulse generator					
Direct boxes					
Headphones					
Multi-headphone junction box(es)					
AM-FM tuner					
Patch bay					
Metronome					
Tape head care kit					
Record disc care kit					
De-gausser					
Bulk tape eraser					
Mic stands					
Mic cables					
Mic clips/mounts					
Phantom power supply					
Patch cords/cables					
Microphones — (Matched pairs? Omni? Cardioid? Stereo?)					

Recording Techniques

Part I

by Bruce Bartlett

One characteristic of modern recording equipment stands out: It's complicated! Before you can achieve a quality recording, there are many functions and procedures to learn; much equipment and terminology to understand.

How do you adjust all the knobs and switches, and choose and place the microphones to attain that elusive quality, "good sound"? To answer that question, this series of articles will separate the multitude of equipment and procedures into easily understandable parts, and will describe effective methods for getting on tape the kind of sound you want to hear.

First, let's take a quick look at the entire process. Musical sound starts with the musician and his or her instrument, goes through a series of changes and manipulations and ends with the musical experience in the ears and mind of the listener. The series of events and equipment that are involved in sound recording and playback is called the **recording-and-reproduction chain** (Figure 1). This article will take a broad view of the parts of the chain; later installments will describe each part in detail.

The Beginning of the Chain: The Musician and His Instrument

From a recording engineer's viewpoint, a musical instrument is a source of sound to be captured on tape. The musician uses the instrument as a tool to convert musical ideas and feelings into sound waves (vibrations of air molecules). The playing technique and the quality of the instrument affect the sound the instrument produces. Sound

waves travel in all directions from the instrument, and a different tone quality radiates in every direction.

Studio Acoustics

After the sound waves leave the instrument, they travel through the air and bounce or reflect off the walls, ceiling and floor of the studio or recording room. The room surfaces affect the character of the reflected sound, which in turn contributes to the instrumental *timbre* (tone quality) and adds a sense of ambience or space.

Microphones

A microphone is a *transducer*, a device that converts one form of energy into another. Specifically, a microphone converts *acoustical energy* (sound waves) into electrical energy (the *signal*). This conversion is done because electrical signals are easy to control, modify and record. By controlling the electrical signal, you can control the sound of the reproduced music.

Microphone technique is the selection and placement of microphones to pick up sound sources. The type of microphones used and their placement relative to the instruments affect the recorded tone quality and the amount of room ambience that is picked up. Often, many microphones are used, even one or more per instrument.

The Mixing Console

The electrical signals from all the microphones are conducted via cables to the *mixer* or *mixing console*. A mixer, (1) amplifies the signals from the microphones; (2) controls their relative vol-

umes; (3) blends all the signals into one or more composite signals; and (4) sends the composite signals to tape recorders, amplifiers and speakers. Mixing consoles offer other functions such as *equalization* or tone control, submixing, signal-level metering and control of special sonic effects.

Outboard Equipment

Separate from the mixing console, these devices produce special effects to further influence the sound quality and, possibly, to enhance the music. Some examples are reverberation, delay, flanging, limiting and compression.

The Cue System enables the musicians to hear each other, and previously recorded material, through headphones. This system includes the cue mixer built into the mixing console, the cue amplifier and headphones.

Tape Machines convert the electrical signals from the mixing console into magnetic signals stored on magnetic tape. A tape recorder acts like a time machine, storing the music in magnetic form until playback at a later date. During playback, the magnetic signals on tape are converted back into electrical signals for amplification. *Noise reduction* devices often are connected at the input and output of the tape machine to reduce tape hiss.

Note in *Figure 1* that the signal from the console can go to either a two-track tape recorder or a multi-track tape recorder. If you mix the music as it is performed, you send the mixed signal from the console to a two-track tape recorder. The tape made on that machine is the final product. As an alternative, you can

send individual signals from each instrument (or group of instruments) to separate tracks of a multi-track tape recorder. Then all the tracks can be played through the console for modification and mixing *after* the recording session. The recorded signals from the tape tracks, rather than the "live" signals from the microphones, are mixed using the console. You play back the multi-track tape of the performance several times until the mix is perfected. Your final mix is recorded on the two-track machine, and the resulting two-track tape is the final product.

The *Monitor System* lets the recording engineer hear the sound of the instruments one at a time, or blended as the final listener will hear it. This system includes a monitor mixer, amplifiers, loudspeakers, headphones and listening-room or control-room acoustics. The electrical signal from the mixing console or tape machine is amplified and is sent to a pair of loudspeakers or headphones, which convert the electrical signal into an acoustical signal (sound waves). Ideally, these sound waves bear a resemblance to those produced by the original instruments. Listening-room sound reflections affect the timbre and decay-in-time of the final sound reaching the ears of the listener. We have arrived at the end of the chain.

To summarize, let's review all the changes the music went through from start to finish:

- 1) The music begins as sound waves (*musical instruments*).
- 2) The sound of the instrument is in-

fluenced by room reflections (*studio acoustics*).

3) The sound that is picked up is partly determined by microphone placement (*microphone techniques*).

4) The sound is converted to an electrical signal (*microphones*).

5) The signal is modified (*microphones, mixing console and outboard equipment*).

6) The modified electrical signal is changed to a magnetic signal for storage (*tape recording*).

7) The magnetic signal is reconverted to an electrical signal (*tape playback*).

8) The electrical signal is amplified and is changed back into sound (*monitor-system amplifiers and speakers*).

9) The loudspeaker sound is influenced by room reflections (*listening-room acoustics*).

10) The sound strikes the listener's ears and is heard as music.

The end product of the "recording" half of the chain is the master tape. Extensions to the chain at that point include tape copies, record cutting and stamping and the listener's home stereo system.

Every Link Is Important

Each "link" of the recording reproduction chain contributes to the total sound quality. A good-sounding master tape is the end result of optimizing every part of the chain (this series will suggest methods to do this). Conversely, a bad-sounding tape can be caused by a deficiency in *any* part of the chain.

Consider, for example, the causes of "muddy sound" (a common fault of amateur recordings). "Muddy sound" generally means too much bass, too little treble or too much *reverberation* (sound reflections in a room). Too much bass may be due to a bassy-sounding instrument; a musical arrangement where several instruments are playing in the same low-pitch area; a close microphone placement that emphasizes a bassy part of the instrument; microphone *proximity effect* (bass boost of closely placed unidirectional microphones); too much low-frequency boost in the console equalizers; a rising low-frequency response in the tape recorder or loudspeakers; or corner placement of bookshelf speakers. (Muddy bass is quite common and is often the result of the bass playing loudly into a small room with walls that are too stiff or too sound-reflective.)

Too little treble can be caused by such things as the musician's playing technique; worn-out strings on stringed instruments; poor high-frequency response in the microphone, tape recorder or speakers; dirty tape heads; or a room acoustic treatment that absorbs and muffles the high frequencies.

Excessive reverberation might be due to insufficient absorptive materials in the recording or playback room; too distant microphone placement; use of omnidirectional microphones (because they do not reject reverberation); or excessive "leakage" of an instrument's sound into several microphones.

To correct poor sound, you must de-

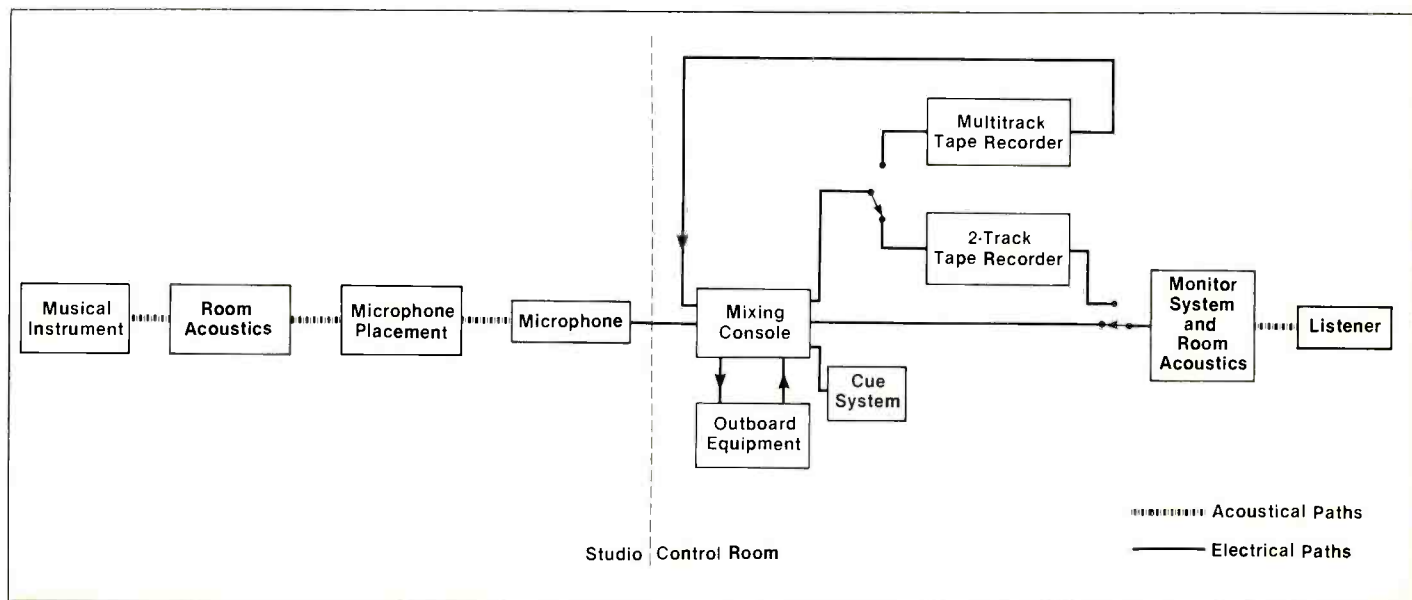


Fig. 1

termine which parts of the chain are contributing to the problem and work on them. If you don't know where the problem lies, it may be best to check out the end of the chain and work your way back toward the beginning. Start by improving the control-room acoustics and monitor speakers if possible, then upgrade each link (including your techniques) back to the microphones, studio acoustics and musical instruments.

A Home Recording Session

To illustrate each part of the chain, we can use a home recording session as an example. Multiple microphones will be mixed down to a two-track tape as the musicians are playing. Note: By performing the following procedures in a "cookbook" fashion, you may be able to get a reasonably good sound on tape. As this series develops, however, you will come to understand the reason behind every procedure, so you can take a creative approach to recording. You'll be able to achieve the results *you* want, rather than blindly following what worked for one particular session. There are many ways to record music; here is just one.

Imagine a pop-rock band who wants to record a simple demo tape to hear how it sounds and to document its progress. The band wants a clean-sounding tape free of production gimmicks and overdubs.

In a large carpeted living room, the musicians begin to set up for the recording session. They are fairly spread out around the room, but are close enough to play together in synchronization. Their instrumentation includes a small drum set, electric lead guitar, acoustic or electric rhythm guitar, electric bass, saxophone and a vocalist.

All the instruments are tuned and are adjusted acoustically to sound good "live" in the living room. For example, the guitars have new strings and the drum heads are lightly damped with folded handkerchiefs and masking tape.

The recording engineer for the session is the group's sound man, who mixes its "live" sound at concerts. He has chosen to use many of the microphones that the group uses on stage. Specifically, "cardioid dynamic" microphones with a "presence peak" in the frequency response (example: Shure 545 or SM57; Audio Technica model AT811 or AT812; or Electro-Voice's model DS35.) are used on bass drum, electric guitar amplifiers and sax. "Cardioid condenser"

microphones with a wide, flat frequency response (example: Shure SM81) are used on drums, acoustic guitar and voice. All the microphones are placed very close to the instruments to minimize pickup of room acoustics and leakage from other instruments.

The drum set is covered with three microphones. One is placed about two inches out from and above the edge of the snare drum, aiming down toward the top head, coming in from the front of the set. It picks up the snare drum, hi-hat cymbals and one of the small tom-toms. Another microphone is positioned just above the top head of the floor tom, aiming up to pick up the cymbals, floor tom and one of the small toms. The front head is removed from the bass drum and a pillow inside the drum presses on the beater head to dampen or "tighten" the beat. The third microphone is placed inside the bass drum a few inches from the head, about $\frac{1}{3}$ of the way from the circumference of the head.

On the lead-guitar amplifier/speaker is a microphone one inch from the grille cloth, aiming at the center of one of the speaker cones. The bass guitar is taken direct; that is, its output plugs into a *direct box*, a device that connects and matches the electric-bass signal directly to the mixing console.

Acoustic guitar is covered with a microphone about three inches from the sound hole. Since this close placement unnaturally emphasizes the bass, the engineer flips the tone-control switch on the microphone to the "bass rolloff" position. This rolloff is also used on the vocal microphone placed three inches from the mouth at nose level. A foam *pop filter* or *windscreen* goes on the vocal microphone to prevent "pops" (explosive breath sounds) from the letters "p" and "t." The sax is picked up with a microphone near the bell, aiming at the finger holes.

All the microphones are plugged into a *snake*, a box with several microphone connectors attached to a long multiple-conductor cable that carries the signals back to the mixing console.

A strip of masking tape is pressed across the front top of the console (below the faders) to write on the names of the instruments that each console volume control (or *fader*) affects. For example, the vocal microphone is arbitrarily plugged into Input 1 of the snake, and Fader 1 of the console is labeled "vocal." A similar procedure is followed for the other microphones and console faders.

The recording engineer wants to listen to (or *monitor*) only the sound of the recording he is mixing, not the "live" sound of the band. To do that, he has placed the mixing console and tape recorder in a separate room with the door closed, and he is wearing high-quality headphones that seal off his ears from the outside world. The headphones are plugged into the output of a monitor amplifier (from a home stereo system) that can be switched to amplify the output of either the console or the tape recorder.

Before the session starts, the engineer cleans and demagnetizes the tape recorder heads and threads some high-output, low-noise tape onto the tape machine. He feeds a 1,000 Hz calibration tone into the console and sets the tone level to read 0 UV on the two console output meters. The tape recorder record-level controls are set so that the calibration tone from the console reads 0 VU on the tape recorder meters, and 30 seconds of tone are recorded.

Every knob and switch on the two-channel console is set to "flat" or "0" as required, so as to have no effect. The engineer turns up the monitor amplifier volume control and sets the *master faders* (that control the overall level) on the console about $\frac{3}{4}$ up.

With the equipment in place and calibrated, he is ready for a "mic check." He turns up one microphone at a time (or *solos* each microphone) and listens for recording-room sounds to make sure each microphone and its cable are working. If not, he checks any microphone on-off switches, batteries and power supplies, and replaces cables if necessary.

As the band rehearses its first pieces, the engineer sets the console *input attenuators* for each microphone so that no distortion is audible. This particular console has, on each input module, an *LED*—a miniature light that comes on when clipping distortion occurs in the microphone preamp. He increases the input attenuation just until the LED stops coming on.

Then, using the console faders, and listening through headphones, he begins to *mix* the instruments—to adjust their relative loudness for a pleasing balance. Basically, he mixes the instruments to resemble the sound of records played over the same headphones. The actual mix he prefers depends on the song, the arrangement and the musical style.

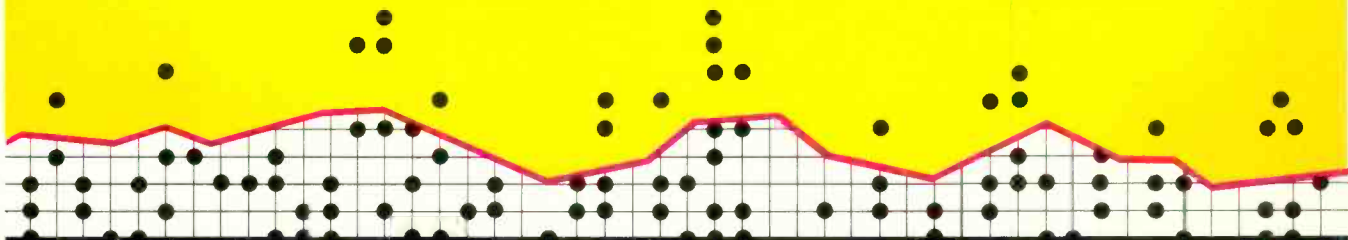
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The Roland TR-808 will undoubtedly become the standard for rhythm machines of the future because it does what no rhythm machine of the past has ever done. Not only does the TR-808 allow programming of individual rhythm patterns, it can also program the entire percussion track of a song from beginning to end, complete with breaks, rolls, literally anything you can think of.

Writing

Because the TR-808 is completely programmable, the rhythm selection is not limited to factory presets. Any rhythm pattern can be easily written into the TR-808 digital memory, even odd time signatures like 5/4 and 7/8.

The programming is done in real time using the step method we pioneered with our BOSS Dr. Rhythm. However, the number of steps is variable so that rhythms can be programmed with as small a division as 32nd notes.

Playing

A total of 32 different rhythm patterns can be written into the TR-808. Rhythms are played by selecting one of the 16 switches along the bottom of the front panel. These can be switched while a rhythm is playing to change from a straight beat to a fill, or another rhythm.

LEDs indicate which rhythm is playing, and a Prescale feature makes sure all rhythms are in time with each other, even while switching between odd and even time signatures.

Composing


A feature that sets the TR-808 apart from any other rhythm device is its ability to record an entire composition's percussion score, which we call Composing the Rhythm Track. This is accomplished in exactly the same way as the unit is played, by switching from one rhythm to another only this is done while in a Compose Mode. When the song is over and you switch from Compose to Play, every change has been recorded, every fill, straight beat and break. Up to 768 measures in length.

The Voices

The eleven instrument voices of the TR-808 include bass and snare drums, three toms, three cymbal voices, hand claps and more. Roland's exclusive programmable accents give additional life to any programmed rhythm.

Each voice has its own level control for total mix, and many of the voices have timbre, tuning and decay controls. If that's not enough control, each voice has its own output jack so it can be processed however you like.

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vocalist and acoustic guitar, they are wearing headphones fed with a *cue mix*. The engineer uses the "cue" section of the console to mix the microphone signals as required for the musicians' headphones. This mix is separate from the one going on tape.

For this particular song, no *equalization* (tone control) is needed except for some bass rolloff on the acoustic guitar microphone (about -10 dB at 100 Hz) and a treble boost for the drum microphones (+6 dB at 10 kHz).

The *pan pots* (panoramic potentiometers) on the console affect the sound-image location of each instrument between the two stereo speakers used for playback. The engineer decides to "pan" (place the image of) the bass, kick drum and vocal to center. Lead guitar and sax are sent far left and rhythm guitar goes far right. The two remaining drum microphones are panned half-left and half-right, respectively.

Since very little room ambience (or sound reflections) is picked up by the closely placed microphones, the sound is overly "dead" or "dry," lacking in "air" or "space." To correct this, the engineer adds *artificial reverberation* (simulated

sound reflections or echoes) by setting the two "echo receive" controls on the console about 1/2 way up, and by turning up the "echo send" controls as desired for each instrument. He decides to put a little reverb on only the vocal and sax.

The band plays the song a few more times while the engineer perfects the mix. He sets the tape recorder in "record" mode at 15 ips tape speed, *slates* or announces on tape the name and take number of the tune and records a final mix of the entire performance, while keeping an eye on the VU meters. The *master gain controls* (or master faders) of the console are adjusted so that the tape recorder VU meters peak often at 0 VU and occasionally at +3 VU maximum. Note that some professional consoles can overdrive some tape recorders, causing distortion. In this case, the console meter levels are reduced until distortion stops (typically, about 12 dB), while the tape recorder record levels are increased by the same amount.

With the song finished, the engineer plays back the recording and tries to listen objectively as if he were hearing a record. He asks himself such questions

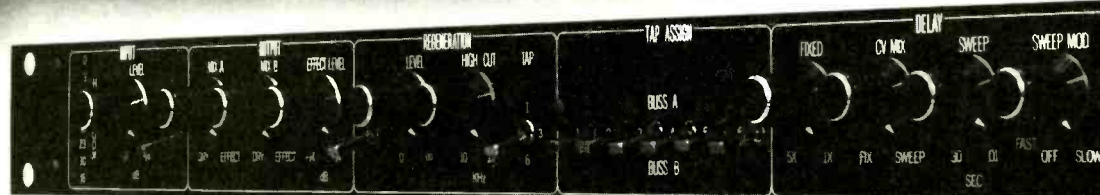
as, "Is any voice or instrument too loud or soft?" "Is the amount of reverb right for the song?" "Do the sounds of the instruments require any equalization?" "Is the stereo stage well balanced from left to right?"

It turns out that he's reasonably happy with the recording, so he plays the tape to the musicians over the stereo speakers in the living room. Each musician comments that he wants his own instrument to be a little louder on tape. After some discussion, several more songs are recorded with the mix, reverb and equalization adjusted as required. Finally, the engineer *edits out* (or cuts out) the tape between songs, and splices 4 seconds (60 inches) of leader tape between each song. He labels the master tape reel and its box for their contents. The recording session is complete.

There are many other ways to conduct a session. A multi-track recording session, for example, requires separate recording, over-dubbing and mixing stages. Each session procedure, and each link of the recording/reproduction chain, will be explored in detail in future issues of *Modern Recording & Music* so, *save* each issue.



SIX SIMULTANEOUS DELAYS



The A/DA Stereo Tapped Delay (STD-1) is the only voltage controlled analog delay capable of producing six different delays simultaneously, making it the most powerful time processor available for "stereo" flanging, doubling, and multi-voice chorus effects.

Conventional delays take one input signal and produce one output signal at one delay length. When a signal enters the STD-1, it is delayed, then tapped at six different non-harmonically related points ranging from 1.3 to 55.5 ms. This produces six variations of the signal, each capable of being assigned and mixed into two output channels. The non-harmonically related taps create a natural sounding time delay, while other units at best, are multiples of some fixed delay time, creating predictable sounding effects.

The extensive delay section produces a 1-5x continuously variable delay range from each tap. The delay time can be swept at rates varying from 1 to 25 seconds. As the Sweep rate is increased, the Sweep range automatically tapers so you perceive a change in rate only, without an accompanying change in

range as is common with other units. (You're not forced to compensate by backing off the C.V. Mix when you increase the Sweep speed). Further, the Sweep Modulation control superimposes a higher frequency sweep pattern over the regular sweep. This allows effects like a vibrato sweep to sweeps which appear to move randomly like sample and hold on synthesizers.

The regeneration section has been carefully tailored to achieve mechanical to natural sounding ambiances by providing separate Level, High Cut equalization, and Tap select controls that can be switched in or out from the front panel or remotely via the rear panel jack. The Level control determines the decay time at long delays (up to 15 seconds), and the amount of resonance at short delays (up to -12 dB). Since a reverberant signal primarily consists of bass and lower midrange frequencies, the High Cut feature in the STD-1 reduces the high-frequency content in the program material as it recirculates through the system for a more natural sounding echo. At longer delay

times, echoes can be textured from a hard reverb to a soft spacious drone. At short delay times, the resonance can be shaped from a sharp "metallic ringing" sound to "boomy" bass peaking.

All these features working independently and in conjunction, allow such effects as high flanging, low flanging, voice doubling, multi-voice chorus, echo, reverberation, machine gun reverb, singular to multiple "doppler" effects, vibrato, and highly resonant flanging. Never before has such an unlimited number of delay combinations been available to the musician, engineer, or concert sound technician.



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reading and a separate stereo variable frequency EQ for monitor sends. Pan pot controls allow panning to the left or right masters while level controls permit 16 x 6 board operation. The left and right direct channel assign function lets you bypass the group modules for individual sources. Portable operation is a snap with easy access connectors.

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midrange. Stereo echo send replaces the separate mono controls you'll find on competitive boards. And you get two independent stereo monitor controls—one for musician's headphones, one for control room monitors—a special feature for any mixer in this class. And there are other important features

like low noise electronically balanced mic inputs with new high-speed IC's, 16 switchable post-fader solo controls and XLR-type mic connectors.

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RAY

DAVIES

.....by jeff tamarkin.....

I have a fanatical belief in the Kinks as a rock and roll band," says Ray Davies, and although it's his band, he's not the only one who shares that belief. For almost 20 years, the Kinks have survived turmoil that would have caused just about any other band to toss in the towel. And it's that fanatical belief that has caused Davies and the band to carry on. Now, the perseverance seems to have paid off again—the Kinks have firmly established themselves as one of the best, beyond dispute, and their audience has grown to a point that top-20 records and filled coliseums are the norm rather than a dream for the Kinks. But it hasn't been easy.

Having first exploded as part of the British Invasion in the mid-60s, the Kinks returned a few years later to find themselves practically unknown on these shores. The struggle to regain prominence was the toughest thing the group ever had to face, and it almost failed. Fights among group members were legend; albums came and went without being noticed by any but a handful of cult followers; and Ray Davies' bouts with personal and artistic demons should have caused him to retire from music and return to painting,

which he had done in college. But eventually, through patience and hard work, the Kinks earned respect and their rightful place among the greats of rock. What's amazing is that Davies hasn't compromised any of his artistic ideals in order to get there.

Recently, the Kinks released what is perhaps their best album in years, *Give The People What They Want* (Arista). Ray, his brother, guitarist Dave Davies, drummer Mick Avory (an original), bassist Jim Rodford and keyboardist Ian Gibbons played at Minneapolis' Met Center as part of a tour to support the album. There, Modern Recording & Music's Jeff Tamarkin met up with Ray Davies to discuss his music and the history of the Kinks. What follows is a candid conversation with a rock and roll genius.

Modern Recording & Music: The latest Kinks album is called *Give The People What They Want*. Is there any special significance behind the title?

Ray Davies: It's a song I've had for two and a half years now. I wrote it for [our album] *Low Budget*. I wrote it while I was in New York. I could see the crass-

ness on television. To me, it's the ultimate perversion of entertainment.

MR&M: Is it specifically aimed at television? That attitude of giving the people what they want can also be applied to rock and roll.

RD: It can also be applied to rock and roll, and it does apply to promoters. There is an element in rock and roll, which has come up through the 70s—a gross element—which is to make a quick buck, get the schedules done, get the album out, get the tour going. I've seen it with a lot of the new groups, and I understand the economics of it, but it appalls me to see what people have to go through.

MR&M: How does that attitude affect the Kinks? The group has been around long enough now so that it shouldn't have to play that game.

RD: I'd like to say I stand alone, but we did stand alone in the mid-70s and we didn't sell any records. My brother nearly quit, I nearly quit, Mick nearly quit. Because if you don't have recognition, you might as well not be doing it. You might as well get a day job and then stay home at night and write songs. That, plus the fact that I have a fanatical belief in the Kinks as a rock and roll



band. I think they should be seen by a lot of new people, and maybe raise the standards of other bands.

MR&M: How do you feel about those new Kinks audiences? A lot of the kids coming to see you weren't even born when "You Really Got Me" first came out.

RD: I think rock and roll has really changed. I think the age element—that you have to be 20 years old to be a rock and roll hero—is dead. You get people in bands like Ian Dury, who's two years older than me, or Chrissie Hynde, who's 30 and not ashamed of it, or Mick Jagger, who's a year older than me and still rocks out. There's a certain element of timelessness in rock and roll, and the kids who come to our gigs, who are 15 years old and even younger, are getting into our new stuff. The oldest thing they know is "Lola" from the "live" album.

**"...I am a bit scared of being seen. I'm really shy.
...there's a reward out... to the photographer
who can get a picture of us in which
we all look good."**

MR&M: I noticed at tonight's show when you went into "Tired Of Waiting For You" (one of the earliest Kinks hits), there was...

RD: No response.

MR&M: Right. Why?

RD: I just did that for one of the old fans, a die-hard, who was outside, and couldn't get a ticket, or maybe he was just giving me a jive to get a backstage pass. I'm an easy touch.

MR&M: How long ago did you begin work on the *Give The People...* album?

RD: This album has been a very difficult one to make. "Give The People What They Want" was recorded at the Power Station in New York first, and so was the song "Destroyer." But I didn't like the way they turned out. When the first sessions were done, I was writing a musical play in London at a small Off-Broadway theater, 'cause I promised to do it. But it took like three months off our schedule, so that's why the album's

late. The first real recording sessions were in April. The first track we did was "Predictable," no, "Better Things," then a re-recording of "Give The People What They Want." That was our foundation. That was April (1981), then we did some tours in England. "Better Things" was made as a total sendup, because that was done for *Low Budget*. But we couldn't get the parts together and people weren't into playing it. We did it at the end of a demo session in April, and completely, as they say in quotes, sent up the genre, that style of playing. Then it turned out great; I think it's really exciting sound, for that sort of rock ballad. "Predictable" was done real happy. The curious thing about that is that Dave isn't playing on it, 'cause he was recording his album. So I did a little overdub guitar with Dave later; he wasn't on the actual session.

We started laying down the rest of the tracks in the end of May.

MR&M: So, was the "live" album (*One For The Road*) actually planned to come out when it did, before this album, or was that just to have something out while you recorded this album?

RD: No, that was planned. I'd wanted to have a "live" album for years. But what happened to me with the "live" album was that it took my life over. I thought, oh yeah, let's get all the tracks and listen to them and pick out the best things...I was listening to tapes for six months.

MR&M: Dave mentioned that he didn't even know about some of the tracks that ended up on the album until the record was released.

RD: Right, that's true. You say to yourself, which one do I go for: the one with the best drum sound or the one with the best guitar solo? Or do you try to get things together? I mixed the

whole album once at Konk (the Kinks' studio in London) and the drum sounds varied more than anything. So we used the "Celluloid Heroes" from Switzerland, with cuts from "Till The End Of The Day" from Dartmouth, New Hampshire. "David Watts" was done at Queens University. What I did was I got another drum kit and put speakers on top of the drums and sent the sound through really loud. Then I got some sort of continuity. Robert Ludwig, who cut the album, deserves a lot of credit. He was the cutting engineer; he's from Masterdisc in New York. The funny thing is that while he was making the album, he gave up smoking, gave up drinking—went on a total health kick. This was a very difficult album to cut. He cut all the parts, and I insisted that there were to be no copies made; he had to cut from the virgin track, 'cause it was "live."

MR&M: Your engineer, Ben Fenner, where did you hook up with him?

RD: He's from the Sussex University of sound engineering. Ben is our resident Konk engineer.

MR&M: Is this the first time you've worked together?

RD: No, I worked with him last year on a project by Trevor Rabin, whom I produced. That was a heavy metal thing. I would like the opportunity to be able to use any studio I want and people I can learn things from. The problem at Konk is that I get young people in, and although they're good people, they come in and they learn from me. Then they split. So next time I want to go to somebody I can get energy from. I really would like to be more involved as an artist, instead of having producer's problems, like wondering if it's a good cut.

■ ■ ■

MR&M: How involved do you get technically? Do you come up with technical ideas?

RD: On this record, we worked really hard to get the best drum sound, and if you play the record really loud you can tell we did. I did a few tricks like put metal on the wall. If you drop a pin, you can hear it. Most studios are dead and we made it very, very "live." We got the drums and all the instruments sounding "live," and [then] I said let's do a rough take and think about the sounds. Usually the rough take ended up being the master.

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The Kinks 'giving the people what they want' on their 1981 tour: (left to right) keyboardist Ian Gibbons, drummer Mick Avory, Ray Davies, bassist Jim Rodford and guitarist Dave Davies.

RD: It's the most consistent because it was mixed roughly. Ben and I knew the band and exactly what I was going for. And the joke is that the prototype for the whole album is "Better Things." That was the one we got right first.

MR&M: That song was released in England as a single before the album came out. Wasn't there a B-side that isn't on the album?

RD: Yeah, "Massive Reduction." That was a leftover track from the Power Station in New York, from *Low Budget*.

MR&M: Can you talk about your studio in London? Was that built for you or did you buy an already existing studio?

RD: Konk Studios used to be a factory for biscuits. I went there in 1971 after making *Lola Versus Powerman*, which cost us about 60,000 pounds to make. I thought for that we could have our own little studio. It was only meant to be a rehearsal place. We eventually put things into it, and rather than go off and tour and blow all our money, we decided to invest and be sensible. The Kinks are still very low paid people. We don't earn that much money as individuals. The sidemen get more because that's their sole living. But the basic Kinks—Dave and myself—get a low wage and then we

plow it all into Konk. Now we have one of the best control rooms in London. It's completely isolated and the floor is separated from the studio by suspension. We have a new Neve desk with a computer mix, which I'm a bit suspicious of. I was talking about that [computer mixing] to Ry Cooder, because he's very into the technical side of it. I prefer to do monitor mixes. Once you go into the computer, it goes through a set of transistors and you get a very thin, "toppy" sound. You lose a lot of that middle and bass end. "Killer's Eyes" on the new album is a monitor mix.

MR&M: Did you have any specific ideas about what you wanted to do with the studio when it was built?

RD: It was meant to be just for the Kinks. But now it's a fight to get in and we have to plan it out by a year. Trevor did his album there and the Bay City Rollers did some stuff there. We did the Robin Trower album with Jack Bruce. We also do a lot of jazz stuff. We have a real good games and pool room, although we call it [pool] snooker. When people hire our place, they hire the whole building. It's theirs for as long as it takes to make the album. A lot of big groups like that because they don't want to share a studio with other

groups. When we were doing *Low Budget* at the Power Station, Blondie was in [studio] one, we were in two and Springsteen would come in at night to do *The River*. There was all that switching over; there was no continuity. But the Power Station is a great studio; I learned a lot there. *Low Budget* was recorded there and it was written in New York—everything except "Low Budget," "Superman" and "Pressure."

MR&M: My three favorite songs on the album!

RD: Well, I better stay in England then!

MR&M: Are you a guitar collector?

RD: I'm becoming one because I really want to improve my sound. The thing I'm proud of on this record is that they've actually faded up my guitar. There's a guy named Mort Shuman who used to be a songwriter with Doc Pomus, and he always used to like to hack away at the piano, to get a good rhythm track. Then they'd fade the piano track out. That's what I tend to do with the guitar. But now they use my guitar a lot. I like using a Melody Maker. I got one for \$110 at Manny's in New York and I use it onstage. I'm very conscious of the weight of guitars: I like them light. Dave has an incredible guitar collection; he has about twenty guitars.

MR&M: Can you list the other equipment you used in making this album?

RD: We used a lot of Neumann mics. I've got a lot of valve [tube] mics; I acquired them from the BBC. But they keep blowing up. I use them for the vocals. My voice is very difficult to record because I have a nasal quality. So I use a valve mic and I use a Sennheiser to get both qualities, and then I mix them down to one track. Then I'll do

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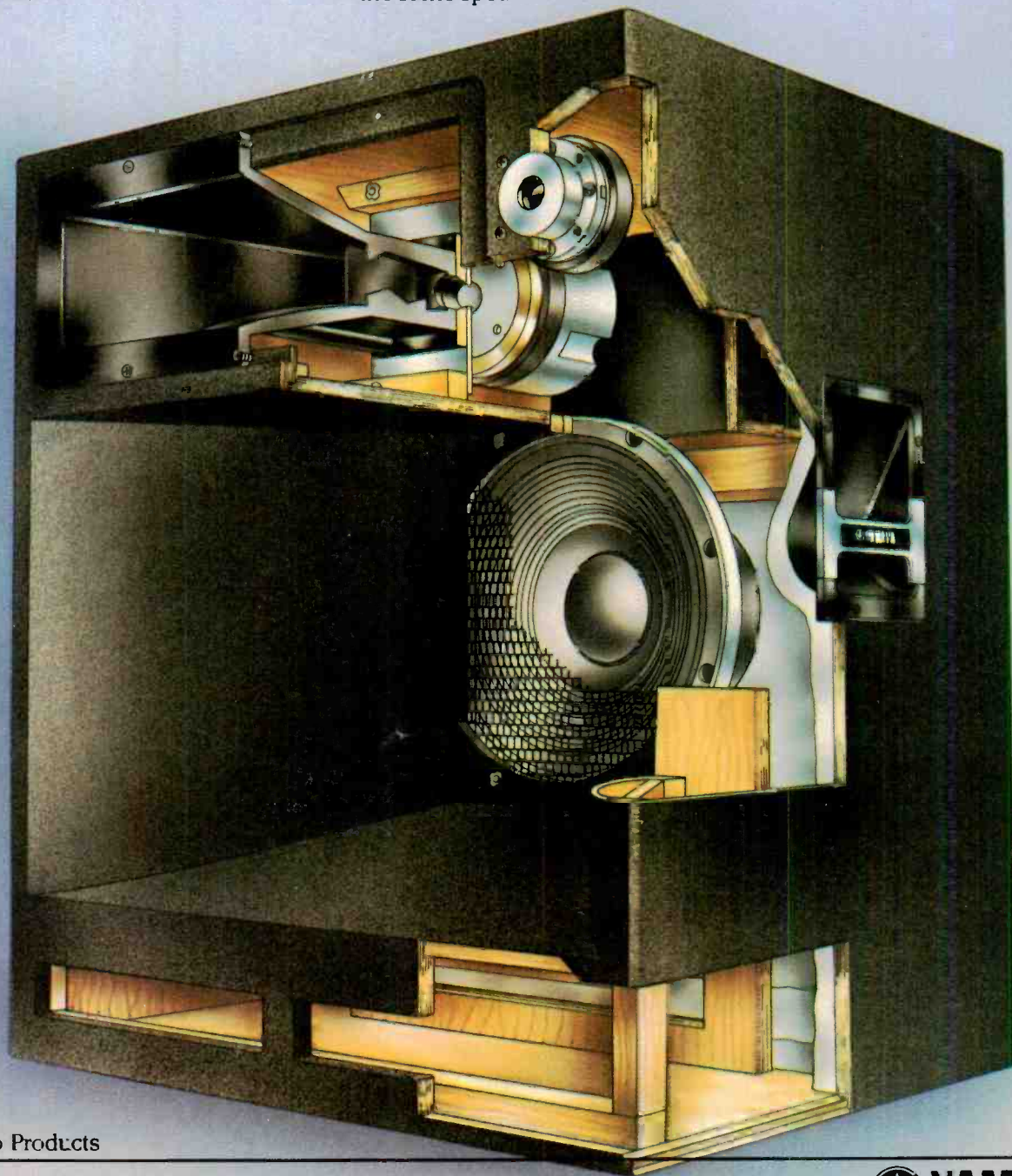
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maybe four or five tracks and mix them down to get the best performance—one line here, one line there. We've got JBL speakers and alternative Tannoys on top because I'm a real Tannoy believer, ever since the days we used to record at Pye Recording Studios. In the studio, Dave's been using a Roland amp slaved up to a Peavey, which he uses on the stage. I'm not totally happy with that because I like a big sound, and he gets a more "jangly" sound. And I like to use as much valve [tube] equipment as possible—if anyone has any, get in touch with me. It's the fattest sound. All the great records have valve equipment.

MR&M: Do you work on your guitar technique a lot or at this point in your career do you just play?

RD: I started off as a very serious guitar player and I studied music. Then I stopped playing an instrument when I became a songwriter. I play piano a lot. I don't do it on stage because I feel I have to move a lot, but Ian is a good piano player. I show him what I want and he's pretty good at doing it.

MR&M: How much preparation went into the recording of *Give The People...*? Did you do a lot of demos first or just jump into it?

RD: We didn't do as many as we did for *Low Budget*. For example, with "Killer's Eyes," I knew how I wanted to record it, so there was no demo. I said, "Fellows, I know this is boring the asses off of you, but we're gonna play it till we get it right." Everybody's doing a part in that. Dave hates rigidity; he hates any kind of plan. There's a big snare sound in that. I wanted to get a reverse echo on the snare, but we had to do that technically. An echo is in fact a lie. You don't hear it, then it comes. So that wasn't the effect I wanted. What we did was put one of the tracks out of phase. If you listen carefully to "Killer's Eyes," you can hear it. It's a very simply recorded track. Other songs, we did rough demos and took them home, listened to them and thought about it.

MR&M: How do you view your role as producer of the Kinks? Do you like to have total control over a project?

RD: No, I like to give people the opportunity to play a bit. Because Dave does most of the playing, we tend to fight a lot about solos. I like to use a lot of synthesizer, and I think I use it very sensibly. Dave likes to wail away. I say, "I'll tell you what Dave, I'll leave the room. That's the sound I want, but I'll

go play snooker. When you think you've got what you want, call me down." What I usually do is mix down what I think is a good sound. But usually we get a fairly good rapport going.

MR&M: Were you happy with the sound of the album in general?

RD: Side one I'm proud of, and side two I'm...I'm proud of side two, but I'm really proud of "A Little Bit Of Abuse." We're all Otis Redding fans—especially Mick and I—and played loud, that's a funky track. That's the whole band's favorite track on the album. "Art Lover" was the only track on the album that was close miked. We wanted to get a warm, close little sound. When the guys first heard me play that, they looked at each other strangely, "What is this man trying to do to himself." But the song is pretty sad, really. It's about this guy who has no family and spends his time looking at all the other families in the park on Sunday afternoon.

"I think rock and roll has really changed. I think the age element—that you have to be 20 years old to be a rock and roll hero—is dead."

MR&M: As long as you brought up the lyrical content, let's talk about that. In general, it seems that you're writing more directly than you recently had been. The songs are less evasive, less vague.

RD: Actually, I'm trying to get more vague. I'd rather suggest. Maybe it's the attitude I got in near the end of the album. My problem is that I finish an album, then I don't get a chance to write for two years. If I could be writing now on the strength of finishing the album, I could be doing some really good stuff. It would be great to make an album with spontaneous thoughts and not have to worry about going platinum. "Waterloo Sunset," which isn't very well known over here, is a poetic thing and it doesn't say anything specific. It's imagery I want to create.

MR&M: With this record, though, it seems that there are some very topical songs, very specific subjects.

RD: Yeah. "Killer's Eyes" was written in England the day that guy shot the Pope. We were traveling from Edinburgh to Glasgow and I bought all the newspapers and looked at that guy's face. I wrote the whole song on the coach. I knew exactly what I wanted. I brought up the attitude [expressed in that song] because there were some quotes from his mother. His mother said he was a poor boy and he was always strange; we always knew he was going to do something bad one day. I took that attitude in the choruses: "Your little sister's seen your picture/She thinks you're in some kind of movie." Also, the Peter Sutcliffe thing, the Yorkshire Ripper; there's an element of that in it. I saw his parents being interviewed on television.

MR&M: That's the side you never really hear about.

RD: Yeah, imagine what Sonya Sutcliffe [Sutcliffe's wife] must have gone through all those years not knowing he was a murderer.

MR&M: Listening to the album, I noticed that some ideas lead from one song to the next. For example, the title cut has that bit about JFK's assassination, then "Killer's Eyes" is about the guy who shot the Pope. Then, there'll be a line in that song that is carried over to the next, and so on, throughout the whole album.

RD: And there's this madness, this attention that most people want in the Sunday papers: "Sonya's Terrible Torment." But they don't give a shit about Sonya Sutcliffe; she's just good copy. It sells papers, and that comes out in "Give The People What They Want." I did a lot of writing, just poetry and stuff, that I couldn't use on this album, and I hope I can get a video made of it. If I can, it's gonna be a long, long video. On the intro to the album, which was made from recordings of various radio stations, you can hardly hear it, but the last thing that's said is: "And if he had only managed to kill the Pope, he would have been a hero in the Moslem world." Then you hear a crash. Obviously, there was a lot of pressure from the record company not to have that on the record. But if I do the video disc, that's gonna be on it. Then I can develop the whole idea of "the missing DJ" from "Around The Dial." I think that's a nice notion: going around the dial looking for the missing DJ.

MR&M: What inspired "Around The

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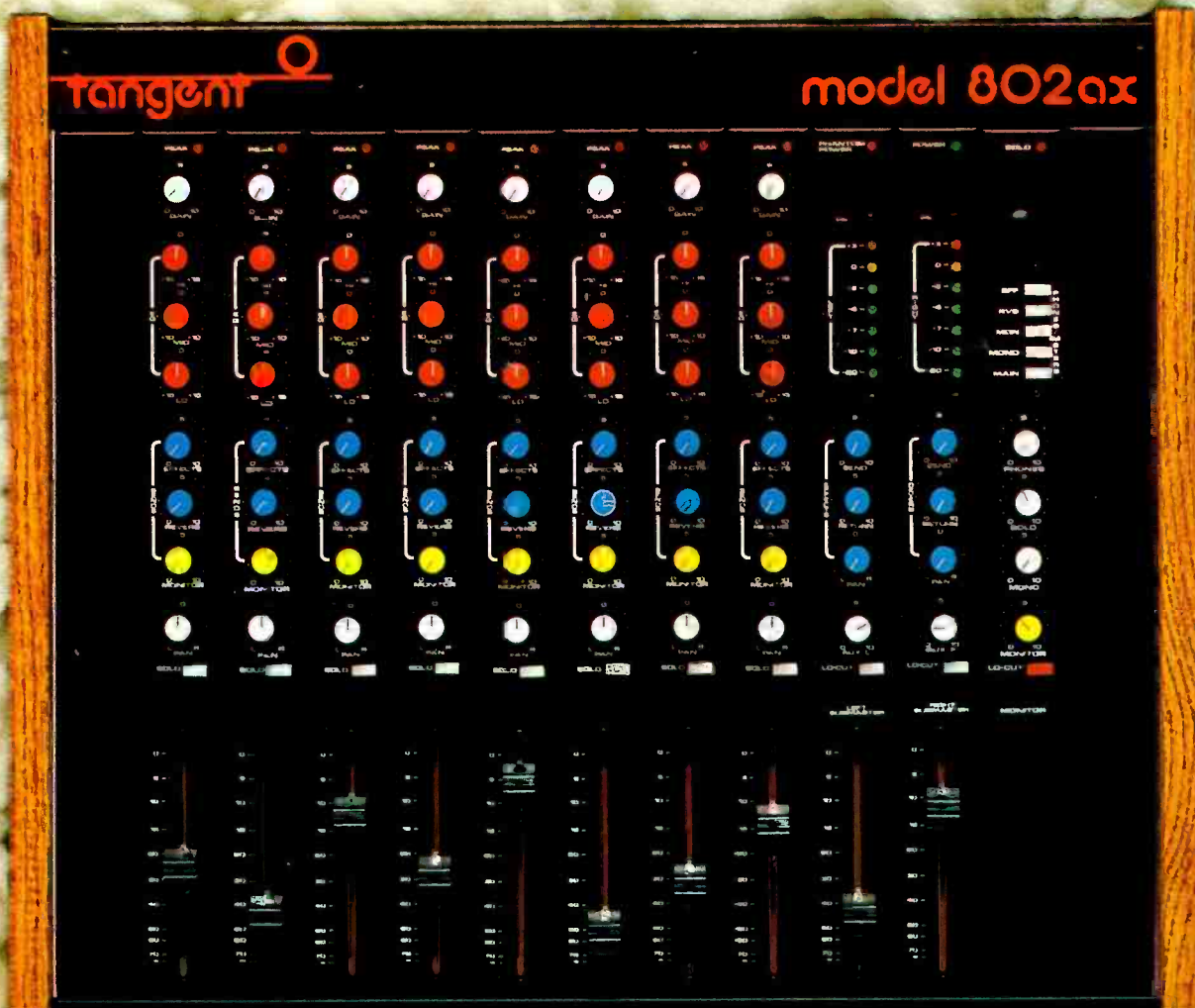
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Dial”? Was it the generally pitiful state of radio?

RD: I’m very random...I’ve got this terrible theory that commerce dictates art. I might be wrong, but think about it—there’s no money in the record business so people tear their shirts. And that becomes fashion, the punk fashion. I thought, fuck it, I’m gonna keep twiddling these dials and make art out of it. And it inspires me. What was the question again?

MR&M: What inspired the song?

RD: I just had a note in my book to write a song called “Around The Dial.”

MR&M: The idea of the DJ being taken off the air, or disappearing, can be related to the concept of giving the people what they want, can’t it? The people want this DJ, but the station owners, or someone, want something else.

RD: I’ve actually got a plot written out for this (video) thing; it’s about this DJ who kind of freaks out and loses control. He gets told what records to play, which ones to lay off...he goes berserk in there. There was a cassette of the Ripper made before he was caught, in which he says they’re never gonna get him, that he’s gonna kill someone else. I want to put that cassette in this. I think on a video disc, without the restrictions of time on an album, I’ll be able to do much more. It can explain the album more. I’d like to say, at this point, though, that it’s [*Give The People What They Want*] not a concept album.

MR&M: Some people have suggested that.

RD: It’s just a piece with songs. You record a lot of songs at the same time and they fit together.

MR&M: What’s the inspiration behind “Predictable?”

RD: [Davies spills some hot chocolate on his lap] I spill things; I’m a bit of a slob. It’s like Robert Crumb comics. You turn on the TV and you see what’s on, why bother? It’s actually based on my brother-in-law, who works for British Airways. He’s an instrument mechanic. He spends—let me work this out—five

hours a day, 25 hours a week in an automobile going back and forth to work, going mad. He gets home to his wife and kids, who’ve become teenagers, and that inspired the song.

MR&M: I like the line where you say “predictable” is the “word of the year.” It’s so true. Every time someone writes a negative review of an album or a film, that’s the word they use. Would it bother you if someone said that about the Kinks, said that their new album sounds like the last one?

RD: I think it would be a great *title* for somebody’s album. It’s the word of the year because it’s all you hear. But if you notice, the lead singer never sings the word in the song; it’s always the backup singers. I think it’s one of the happiest sounding tracks on the album. “Add It Up,” the next cut, is partly factual, about a friend I had who had nothing. “The first time I saw you you were modestly waiting for a bus/and now you’re talking upper crust.” Everything adds up. You’ve got your rental cars, you’ve got your posh hotels, the credit cards. I hate credit cards! I despise them and you can’t do anything without them.

MR&M: Do you use them?

RD: I have an American Express I’ve used twice in three years. It’s disgusting; it’s the way our society is built. That would make a good video, too.

MR&M: What did you think of the video you did for the “live” album?

RD: It’s a miracle that it got finished because they ran out of money. I just finished the nightmare of the “live” album and then Time-Life (who financed the video) turned around and said they had no more money (for the project). So what I did was get Arista to rent me three ¾-inch [video] machines and a very crude editing machine; I sat in my apartment in New York and did a rough cut of the show. I did what they call off-line cutting. Then I got a very good editor named Wayne Hyde, who came to the house and helped, and we finished it off.

That album and video took a year and a half out of my life. It made me a mental defective.

MR&M: You still live in England but you rent a place in New York, right?

RD: Right. It’s right next to where Lennon was shot.

MR&M: Back to the record. There’s a very familiar musical phrase in “Destroyer,” isn’t there? What made you decide to use the melody from “All Day And All Of The Night” again?

RD: Can I just tell you the whole story of this?

MR&M: Sure, I want to hear this one!

RD: OK, we were in the Power Station in New York doing this ponderous track—“Sunny Afternoon” revisited. I said, “Ah fuck this; let’s do this,” and I just shouted out the chords while I was on the piano. I said, “I’ll shout out the chords and you just follow me, and when I say stop, you stop.” When I got to that “All Day And All Of The Night” bit, I said stop. Then after that, I went into the riff that’s in the chorus of “Destroyer”: E-B-E-B-D-A-D-A. It was simply made up on the spot. And because of that, there’s a lot of excitement there. It was very hard to recreate the next time.

MR&M: There’s also the re-use of the lyric from “All Day...”: “Girl I want to...”

RD: Yeah, I wasn’t going to use that and then I heard David Bowie and he was referring to Major Tom, and taking the story on. And I thought so why not? And I rewrote the lyrics to “Destroyer” and developed the character more. And it works great; it’s great to play.

MR&M: I like the idea that you took the music from one old song, and then grafted the lyric concept from another old song, “Lola,” onto it. It kind of ties up a few loose ends and makes something new.

RD: Oh yeah, I love all of that, and I think people who are into a lot of our stuff are really into that track. It always gets a good reaction. And there’s a hint of “Pressure” in there as well.

MR&M: What about the lyrics of that song ("Destroyer")? What was that one getting at?

RD: I really worked hard at that. I had to rewrite a lot of words to fit it in. The words were really done afterwards.

MR&M: What about "Yo-Yo"?

RD: Again, that was written in New York, in 1979. We tried to record it four times, and then I sat down with the guys and said, "Look, we're just gonna do this track, 'cause I know it's a great track. It says a lot of things I want to say about people, and my relationships with people. I just told Mick to sit on the drums and punch. There's a lot of overdubs on that; we had a big problem with Dave's guitar on it. We tried overdubbing a Rickenbacker and that didn't work. I think we ended up using a Les Paul through a Boogie amp.

MR&M: Were there any problems with the vocals on that track? I think it's your best vocal on the album, but it sounds like it might have been a difficult one.

RD: No, the vocals were the first time [take]. "Better Things" was also the first vocal, and there's venom in it. I'm glad you liked it. That song has been edited down; it was twice as long. I'm so proud of the drums on that track; you can hear them crack. That's using more ambient tracks.

MR&M: What's that song ("Yo-Yo") about?

RD: There's a little voice in there, saying, "He's not the man that married me." That's our secretary from upstairs. I've got her singing the line over and over and Ben cut it all in for me. She's singing along with me. That's a very visual song. Really, that song is about my brother-in-law again. He comes home from work every day, and watches channel four, which is a channel in England now, but his brain's not expected home for a couple of hours. And she's sitting in the kitchen. It's a very picturesque thing. Then it goes into the meat of the thing: "You needed me when you were crying." There are a lot of things like that. I rarely have the opportunity to sing that sort of lyric, when you think about it—that person to person.

MR&M: "Back To Front" is next on the album. Any comments on that one?

RD: That was written in 1977. I wanted it to be out of time, sort of avant-garde. But it turned out to be a really bluesy track. It's about somebody going

"On this record, we worked really hard to get the best drum sound... I did a few tricks like put metal on the wall. If you drop a pin, you can hear it."

back home and nobody knows him anymore; all the attitudes have changed. It just says, never go back 'cause things will be different; we've blown all that we had; it's down the drain and we've gotta go on somewhere else. It's all back to front and east is west. I believe they've got the same problems in Russia that they have in America. It's exactly the same.

MR&M: There's a line in that song that goes, "I don't fit in and I don't stand out." Is that something you personally feel?

RD: It's the frustration of being alone. Because I don't follow any sort of committees or any particular course.

MR&M: You don't really hang out with the big shots of the rock and roll world, do you?

RD: No, no. Maybe I ought to. I think the biggest insult to me is to have my picture taken in *Billboard*. No, that's a bit unfair, but I am a bit scared of being seen. I'm really shy. You rarely see pictures of the Kinks. In fact, there's a reward out—a \$1,000 reward—to the photographer who can get a picture of us in which we all look good. Everyone has to approve of it.

MR&M: "Art Lover." That one has a couple of different sides and can be taken different ways. Sometimes the guy in the song seems like a pervert who's out to seduce little girls, and other times he just comes off as a lonely old man.

RD: When I was writing a play this year, I was living near Regent's Park in London. I ran there. I run every day, except I've been ill three times on this tour...what was the question again?

MR&M: "Art Lover."

RD: Ah, so I run every morning, even if I've been drunk and in the pits the night before. It's really hard finding a place to run in America. I tried running in Cleveland and I nearly got run over. Anyway, it's lovely in Regent's Park. I believe in beautiful things...I'm divorced...I have two little girls who I don't see. I'm not allowed to contact

them, but I can write to them. I have a lot of feeling for people in that situation. I want to write for waitresses and divorced people. They like rock and roll as well. That's what's changed in the last three years, thanks to people like the Sex Pistols and Ian Dury. It's great that people like the Stones tour; Bill Wyman is 45, and they still swing better than any band.

I want to write about different aspects. That's why that brings us to the next track, "A Little Bit Of Abuse." When I was writing the play—which was called *Chorus Girls*, an updated Greek play about women taking over a theater and stating their rights—I got talking to all these women, very militant, active feminists. They'd say, "You can never write songs about battered housewives." But their songs are so one-sided. However, the last time I took so much care with a lyric was with "Waterloo Sunset." There's a line in the song that says, "Excuse me, but is this your tooth?"

MR&M: It's a shocking image. It doesn't mince words.

RD: I used to live down the block from this woman, in Muswell Hill, where I grew up, and she always used to have her face all cut up. But I was too young to realize what it was. Her husband used to come home pissed every night and they were always shouting and fighting. But she stayed with him, you know, until one day she couldn't take it anymore. There are so many women like that who don't even talk about it. It's so common. I really wanted to write that song; I'm proud of it. I know there'll still be criticism from feminists, who'll say, "Who are you that you can write a song like that?" But there's also the mental battering that a lot of husbands take. It works both ways.

MR&M: The last song on the album, "Better Things," is so outrightly optimistic. It's interesting that you placed it at the end.

RD: That was written in New York, too.

MR&M: It doesn't seem like a New York song.

RD: It doesn't, does it? It's a fantasy, because New York was really getting to me. I just started singing, "Here's wishing you the bluest sky and all the happy things in life."

MR&M: Let's talk about the Kinks' illustrious past. It recently occurred to me that every other British rock and roll person, including you, got started in art school. What gives?

RD: When you are moderately working class, in London, there is no other outlet but to go to art school. You couldn't say, I wanna be a musician. At the secondary school I went to, the high school, I was real good at painting, anyway. I would've had a good career at it. They said to me, "What do you want to do? You've got all A's in literature and art. Why don't you pursue that?" I said, "But I want to write music." They said, "Yeah, but there are no jobs for that, but I've got an excellent job on the assembly line at Ford's. Try that. Why don't you try silk screen printing. You can get your apprenticeship..." So I left school and got a job in an architect's office for six months, hated it and applied for one of the art colleges. I got in straightaway because I had pretty good credentials. So I took art for two years and passed the course; then you had to do it for another three years, to get to where you're qualified to teach. And I thought to myself, by the time I finish this, the standards will be so far behind. This was in...1962. I thought, art's going in a different direction now and photographers can do just the same job and there aren't any impressionists left anymore. They're just doing copies for chocolate boxes.

MR&M: Had you been playing music at all by this time?

RD: I'd been playing soccer for Finchley Football Club on Saturdays, training two nights a week (Rod Stewart used to play there as well), and the other three nights a week I was playing in a blues club in Soho. Some nights we played at Richmond, sometimes we played at a club called the Flamingo, and there was another club...That's where I first saw the Stones play. I was playing in a blues band; I used to finish at four in the morning and walk home to Highgate and then get up and go to college. I was good at it; I used to go in and pass the exams. I loved it. I was also going to drama

school on weekends. That was the ideal time for me. I left that college because I saw no future in painting. My best friend, who was also a musician, killed himself. He stayed on at college for five years and ended up committing suicide. He was a great man, but he never achieved anything he set out to do. I'll always remember him; he was a great pianist. In fact, one night we booked the Stones out at the college—Ian Stewart was playing piano with them. My friend pushed him away and started playing piano. Stewart was mortified, because my friend was so good.

MR&M: When did rock and roll enter the picture for you as a solid, full-time thing?

RD: When I realized I didn't want to be a school teacher; And when I realized I didn't want to complete the course and be ten years behind as a graphic designer. Music was really what I wanted to do.

MR&M: Is it true that there were actually a couple of records done before the band actually became the Kinks, when you were still called the Ravens?

RD: They were just demos, nothing of any note.

MR&M: When "You Really Got Me" started taking off, and you became caught up in the British Invasion, what did that feel like?

RD: I'll tell you the story of that record. They made it at Pye and I didn't like it. I refused to put it out, said I'd quit the band. They said I was mad and I was stupid. It sounded like [a] Phil Spector [production]. I said, "I want to make it the way I want to make it. I want it to sound cheap." They said they'd give me 150 pounds, or about \$300, to record it in another studio, and if I blew it, they'd cut my fingernails off. We made it in three hours. It came out and it was a hit.

MR&M: Is there any truth to the rumor that Jimmy Page played the lead guitar solo on that record?

RD: Jimmy Page played tambourine on "Long Tall Shorty" on the first album. The guitar player on "You Really Got Me" is Dave Davies. There was another guitar player on the session named Jim, I forget his last name; we worked for the publishing company. Then, we recorded in mono and I wanted three guitars playing the riff, and a piano. We did put it all down at once, so Jim played the same riff behind, but Dave did all the solo work.

MR&M: What do you remember most about that period in the Kinks' career? What was it like coming to America and having little girls scream at you and tear at your clothes?

RD: It was no different than it was in England. They did it there, too.

MR&M: Do you ever feel nostalgic about those days?

RD: No, not at all. In fact, I don't really look back on that era with any kind of feeling, apart from the songs.

MR&M: What made the group turn from the R&B style of the first few albums to the more pop sound of "Well Respected Man," "Sunny Afternoon," and so on? And why did you start writing "socially conscious" lyrics?

RD: I'll tell you what happened. We got back from an American tour, on which we were still playing our bluesy stuff. Before that I was just this guy from Muswell Hill and just wanted to play music. I had gotten married and my wife was pregnant. We were living in an apartment which was about eight pounds a week, or \$25, and then we went to a posh hotel in Exeter. All these people looked at me strangely, and knew I was in a rock and roll band. They tried to make me one of them, saying, "Come on, play golf with me." I took an instant dislike to them because the establishment draws you in and makes you one of them, and that's as far as you can go. You can't break out after that. People like Lennon realized that. That's what I detested about the 60s. The 60s was a lie, a total lie. I said, "I'm not gonna play fucking golf with you. I'm not gonna be your caddy so you can say you played with a pop singer." So I decided I was gonna use words more, and say things. I wrote "Well Respected Man." That's the first real word-oriented song I wrote.

MR&M: In some of those early songs, and maybe even still today, it seemed as though you didn't always take a stand, side with somebody, but just laid out the situation and left it open. For example, "Dedicated Follower Of Fashion" comes down on the so-called "hip" just as heavily as "Well Respected Man" did on the establishment.

RD: "Dedicated Follower Of Fashion" came after a violent punch-up I had at a party. All these awful 60s trendies would come around and wear the latest fashions, and I would have on a pullover. Even at art school, I was always trying to be different. Everyone at art school wore jeans and I would wear a suit and

tie. These jeans I'm wearing now are the first I've ever owned. They were given to me by Chris Hynde [of the Pretenders]. I wear them to look after them for her. Anyway, it was an appalling party and these people were making snide remarks about me, so I had a punch-up with this fashion designer. I thought, right, I'm gonna write a song about him now, the dedicated follower of fashion. "Sunny Afternoon" came about after a severe illness and mental breakdown.

MR&M: Do you think that those songs actually inspired people to change opinions, or to look at themselves a little more closely?

RD: "Dedicated Follower Of Fashion" has become a standard headline in the English press. I get a kick out of that. "Well Respected Man," "Sunny Afternoon"—people actually remember those songs. One song I find that I can do in England but not over here is "Dead End Street," because kids there really relate to it.

MR&M: After those hits, things quieted down until 1969 and *Arthur*.

RD: Yeah. *Arthur* came about when the Granada TV company commissioned me to write the first rock opera. But I was beaten to the North Pole by Pete Townshend. I still haven't heard *Tommy*, but I feel that as a complete work *Arthur* is better. I was proud of *Arthur*, especially "Some Mother's Son" and "Shangri-La."

Arthur is a real person; I lived with him. I left home and lived with my sister named Rose, who then went to Australia to live with Arthur. The year before I formed the band, Arthur and Rose used to drop me off in Soho. She used to say, "Don't go down there and play in those clubs, with all those prostitutes." And I would say, "But I like playing." They went to Australia just as I started going on the road with the Kinks.

I was very close to Arthur; he was a very strict man. He was a welder in a plastic factory, a simple man, but he realized the British Empire was fucked. His brother won the George cross in the war and then he got shot down and killed. Arthur realized that it was futile; that you could never get a break in the British Empire. He was such a frustrated and tormented man; I wrote the album partly for him. He just recently died; he died of tension. But the greatest thing was that when I went home and visited them, and he knew he was gonna die—he said, "I'm gonna die

in six months"—he said, "I loved the album you did about me."

A lot of people in the family thought he was a bitter man. He was just frustrated. A lot of those people who gave themselves in the war, gave up their lives and their youth for the war, came out of it to a promise of a new world. And what did they get? Motorways and concrete.

"Some Mother's Son" is about Arthur's brother Stuart. They used to have his picture on the wall, and every year they'd put another poppy around it. He was a really good-looking bloke. Anyway, that's for him. He's dead now. I get really caught up in my work.

MR&M: After that came *Village Green Preservation Society*. That was really different than anything else that was around at the time. It seemed to be a reaction to all the chaos of the late 60s.

RD: We'd been banned from the U.S. for three years because of a union problem we'd had. [Note: The Kinks performed on an American TV show in 1966 without obtaining the necessary union permits, and were subsequently banned from performing in the U.S. for three years.] They wanted me to join every union under the sun, and I said I'm not gonna join anything. I've got a notorious reputation for not signing things. I don't even have a contract with our agency, and I've been with them for ten years. So we were banned and I wrote my version of what I thought was happening in America, which was a withdrawal from all the horrible realities that were going on. I wanted to save things and help things—cherishing things that were still there but would go within a few years. You can't get draught beer now.

MR&M: If it weren't for that three year ban, do you think the Kinks would have attained the superstar status of the Stones and the Who? By the time you came back over here, in 1969, the Stones were headlining the coliseums and the Who were doing *Tommy* at Woodstock.

RD: Yeah, I definitely do think that. When we got our visas again, we came over here and we were nobodies. We opened up for Spirit and the Bonzo Dog Doodah Band.

MR&M: At the Fillmore East, right? I think I saw that show.

RD: We were terrible. We had just made this album called *Arthur*, which a

lot of people thought was brilliant, and we were just trying to revive our pop status. It wasn't working and it took us about five years to believe in ourselves again. We nearly quit so many times. But now, I feel as though the band was born three years ago, as a great band, a happy band. I was really sick tonight and the guys got me up there.

MR&M: Very briefly, if we can skip ahead to the theatrical period, when you had the *Preservation Act I* and *II* albums, *Soap Opera* and *Schoolboys In Disgrace*, a lot of people consider that a very strange period for the Kinks, not entirely successful. How do you see it now?

RD: *Soap Opera* worked; it was great on TV. *Preservation I*'m proud of. I'd like to do it again in a better form. My problem with that is that I did it all alone; I should have collaborated with a director. I should have made it as a film or play straightaway. That's why I did *Chorus Girls* this year, to get that feeling of theatre again. I've been asked to write two projects next year—one for channel four, which they also want me to direct, and one for what's called fringe theatre, which is like Off-Broadway.

MR&M: After the theatrical period ended, the RCA contract finished and you went to Arista and started putting out albums of short, self-contained Kinks songs again. Of those three studio albums preceding the new one—*Sleepwalker*, *Misfits* and *Low Budget*—do you have a favorite?

RD: This new one is my favorite.

MR&M: To sum it all up, if you can look back on the entire career of the Kinks, how, in your opinion, has the band influenced music? What will the history books say the Kinks contributed?

RD: [Long pause] That's a big one...we haven't influenced it at all. We're still the same band that was playing the Muswell Hill Youth Club, when kids were dancing and enjoying themselves. A lot has gone on in between. We've added a lot of things and have innovated lyrical things and styles to music. But that band you saw tonight was that band that was playing in that church hall in 1964. I'm not saying we haven't progressed. I'm saying that our attitude is still what it started out to be: to make people enjoy the music. And maybe try to say something in the music as well. That's all we can do, really.

Profile:



By JEFF TAMARKIN

SPLIT ENZ

Split Enz claims to have had about twenty different members since its inception in the early 1970s; however, the current quintet is unquestionably the one responsible for bringing the band out of obscurity. Formed in New Zealand, where the group originally worked, Split Enz moved to neighboring Australia where it became one of the most popular bands on the continent. The group recorded a handful of albums including *Mental Notes* and *Dizrhythmia*, released here on Chrysalis, but didn't gain as much notice for its music as for its flamboyant costuming.

All of that changed when Split Enz signed with A&M Records and released *True Colours* in 1980. "I Got You" became a radio staple and the band began filling clubs in the U.S. Although some of the attention was focused on the special laser-etched graphics on the record itself, the music is what ultimately brought Split Enz to the attention of most consumers.

Split Enz also released *Waiata* on A&M. Produced by David Tickle in Australia, the album furthered the band's reputation, bringing tracks such as "I Don't Wanna Dance," "Hard Act To Follow" and "History Never Repeats" to the airwaves. The members of Split Enz are: brother Neil (guitar) and Tim (vocals and founder) Finn, bassist Nigel Griggs, keyboardist Eddie Rayner and drummer/percussionist Noel Crombie.

The first half of this Split Enz interview was told by the entire group during a press conference held at A&M Records' New York headquarters. To make the article easier to read, the questions have been credited to Modern Recording & Music and the answers to Split Enz, rather than to the individual answering the question.

Modern Recording & Music: Was there anything unusual about your youth in New Zealand?

Split Enz: We all had happy childhoods; that's pretty unusual. New Zealand is very isolated, so you see the world differently. To us, America was "Archie" comics and toys that we couldn't get. Also, we were pre-TV. We didn't have it till the early 1960s. We got a bit of everything thrown at us and some of it stuck.

MR&M: Would it have been easier for the band to make it if you'd been from England or America?

SE: It might have been quicker, but a band in America has to spread [to other countries] to become big, while a band in Australia is automatically big there.

MR&M: What happened to the drummer, Malcolm Green, who worked with the band on *True Colours* but not on the latest album, *Waiata*?

SE: We sacked him. We just wanted to get into new areas. Noel [Crombie] is our percussionist. He's pretty nimble and a good anchor man, so he's on drums now. We wanted to get into those skippy rhythms.

MR&M: There seem to be more Australian bands becoming known in the U.S. today. Is there a very healthy music scene in Australia?

SE: Yeah, it's great. The audiences there support the bands, so it's very healthy there now. Australia is very big on fostering Australia.

MR&M: Do you feel there is a prejudice against Australian bands outside the country because the best known groups from the area are those such as the Bee Gees and the Little River Band?

SE: There is and we can understand that. It's unfortunate that the Australian acts that have succeeded in America are those that are the blandest.

MR&M: What did you listen to when you were growing up?

SE: We got the best from America and the best from England.

MR&M: Because you've changed the image of the group since it began, do you find that people aren't quite sure what Split Enz is about right now?

SE: Hopefully they never will be sure. We change more than any other band I've ever seen. We like to keep one step ahead of ourselves. We may be sacrificing things by doing that, because with most bands, people get a fix on them and that's the band. But we like to take gambles. We're ready to change again.

MR&M: What changes do you have

planned for the future?

SE: Nothing definite, but there are things we'd like to try, like different methods of recording.

MR&M: You said before that you see things differently. Can you elaborate on that?

SE: You're so isolated where we are that you get very little of the rest of the world. At the same time, you're getting everything thrown at you because it's such a small country. New Zealand imports a lot of things—cars, technology—and we export things like butter and wool. The laser disc that we did ties in with all our images of America.

MR&M: Is there a large recording industry in New Zealand?

SE: No, it's more of an enthusiasts' pastime in a lot of ways. It's a hobby. There's no money in it.

MR&M: Are there more companies in Australia?

SE: Mostly the big labels such as CBS, Warner Brothers, RCA and Polygram. Mushroom Records is the largest Australasian company.

MR&M: Who writes most of your material?

SE: Mostly Tim and Neil (the Finn brothers), but Eddie (Rayner) also wrote one on the last album.

and improvement. It might be commercial suicide to change as quickly as we do, but then again, we'll probably connect when we stop thinking about it. As long as we satisfy ourselves, we'll probably satisfy a lot of people.

MR&M: How important is rock and roll to Australians?

SE: It means as much or more to them as it does to Americans. There's a program called "Countdown" which probably reaches about a quarter of the population when it's on. It features new bands, whereas every other pop show only features acts that have charted or have very high profiles.

MR&M: Why do you think Americans are complacent and take what they're given on the radio while there's such enthusiasm for new sounds in Australia?

SE: It has to do with the business and the way it's run in the two markets. You don't make as much money with change as you do with what's consistent. The business is still young in Australia.

MR&M: What are the main differences between the New Zealand and Australian scenes?

SE: There's more of an English influence in New Zealand.

MR&M: How important is it to make it in America?

“It might be commercial suicide to change as quickly as we do, but then again, we'll probably connect when we stop thinking about it.”

MR&M: Do you ever argue over which songs to include on an album?

SE: No, we rarely argue at all.

MR&M: Have you been involved in other media outside of recording?

SE: We do videos of our singles.

MR&M: How did the laser-etching come about?

SE: It was A&M's idea. They had the process available. Nobody had used it.

MR&M: Some of the critical reaction to *Waiata* was not as positive as it was with *True Colours*. How do you feel when someone says, "Well, it's no *True Colours*"?

SE: That's an incredibly sensible thing to say. Whether you take a statement like that seriously or not depends upon the context in which it's said. The album satisfied our desire for change

SE: It's a challenge, but it's not important to the point of the exclusion of everything else.

MR&M: Why does the group feel that it's necessary to change its image so often?

SE: We don't really think about it; it just evolves. Most of our favorite artists—the Beatles and Bowie—were like that.

MR&M: Do you feel that you're primarily entertainers or musicians?

SE: Entertainers. We try to move people, shake up their emotions. Our music and songwriting is entertaining; a lot of musicians aren't good entertainers. It's easy to be creative as an entertainer, but if you're just a musician and you play the same songs every night, it can get pretty sterile. We just try to have fun.

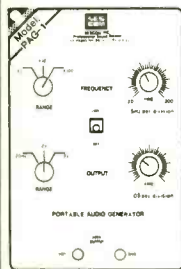
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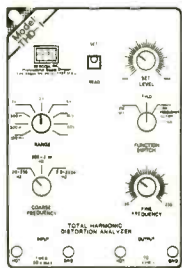
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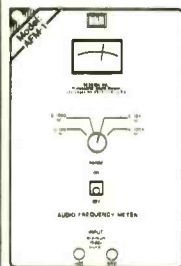
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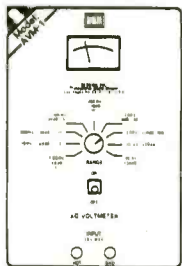
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Following the press conference, keyboardist Eddie Rayner, a five-year veteran of Split Enz, spoke about the band's work in the studio, and especially about Waiata, the most recent Split Enz album.

MR&M: How does Waiata differ from True Colours?

Eddie Rayner: It's just a different bunch of songs. It differs in format in that the way we recorded it was different than last time. We went for more depth on this album. David Tickle, our producer, used two 24-track tape recorders, time coded, together. You can use twenty four tracks or you can bounce one tape recorder to the other and continue from there. It allows you to use 120 tracks!

MR&M: It's a very clean sounding album considering you filled so many tracks.

ER: Yeah, but one of my gripes with the album is the lack of clarity in the mid-range. The guitar and keyboards seem to cloud each other very often. But I think the songs still come through.

MR&M: What did you do with 120 tracks?!

ER: Well, you play one guitar line forty times and bounce them down to one track. You start off with twenty-four tracks, but the sound on those twenty four can be a combination of forty tracks.

MR&M: How did you prepare for this recording? Was there a lot of pre-production?

ER: No more than usual. Of course we had far too many songs, but we just go through them and pick the ones we can play well and that we want. We go in with about fifteen songs and record. Then we cut it down to, say, twelve.

MR&M: Where did you hook up with David Tickle?

ER: It was a luck thing, really. We were in England in 1979 and a friend of a friend knew David. He was due to become chief engineer at Ringo Starr's studio. He invited us down to the studio and we did a single, "I see RED," which did pretty well.

MR&M: Do you think your earlier recordings with Split Enz on Chrysalis still hold up?

ER: I don't really listen to them, but recently I did and I thought it held up. People didn't understand those albums.

MR&M: How long did the Waiata album take to record?

ER: Five weeks to record and three to

mix. We recorded it at Armstrong studio in Melbourne, Australia. We mixed it at the Farmyard in England. We didn't particularly like all the mixes, so we remixed it at the same studio in Australia that we recorded in.

MR&M: What was David's role in the studio? Did he actually influence the material?

ER: Yes, but not as much as anyone in the band did. He'd make executive decisions for us. He'd help with arrangements but he didn't tell anybody what to play. He's a great engineer. He's only 21. I think the album is somewhat overproduced in spots.

“There’s a real lot of technique involved getting the whole band down on tape without a lot of spillage.”

MR&M: Did you feel the same way about True Colours?

ER: No, I liked the production of that album. Most of it was done on overdub. We'd all go out and play in the studio and David would mic everything except the drums. Then we'd replace the bass, dual the guitars and keyboards and do the vocals. When I mix the next album we do I want to try to do it "live."

MR&M: Will you be using David again?

ER: I don't think so; we feel it's time to try something else. We're at the point where we can at least co-produce. I just want to get a top-notch engineer who'll listen to the ideas we have.

MR&M: Are you interested in the technicalities of recording?

ER: Yes, I am. I think engineers and producers like to keep their recording methods secret because it takes them so long to develop. Engineers know what they're doing and you don't have to worry about them unless you're going for a particular effect, say for an ambient sound on the drums. There's a real lot of technique involved getting the whole band down on tape without a lot

of spillage.

MR&M: Because your recordings use so many tracks, how difficult is it for you to recreate that sound on stage?

ER: We try to get it as close as possible. And I think we do it successfully. That involves a good sound man.

MR&M: How many different keyboards did you use on *Waiata*?

ER: I just used the same setup I play on stage. That hasn't changed in a while now. I use a Prophet 5, Yamaha CS 80, Yamaha CB 30 electronic piano, Yamaha CP 70B Grand and a lot of effects. I use my own rack with delays, flanging, phasing.

MR&M: What does the guitarist, Neil Finn, use?

ER: He has a Fender Strat guitar and a Yamaha 3000 guitar, through a Roland amplifier and a couple of effects.

MR&M: And the bassist, Nigel Griggs?

ER: He's got two B.C. Rich basses which he runs through an Ampeg amp with two cabinets each with JBL 15-inch speakers.

MR&M: Noel Crombie, the drummer?

ER: Pearl drums.

MR&M: Anything else?

ER: I have a Yamaha EN 300 mixer, a Roland bi-phase, Roland flanger—all run through JBL keyboard cabinets.

MR&M: What about mics?

ER: In the studio they're always determined by the engineer or the producer. On stage, it's mainly Shure, 58s and 59s.

MR&M: Are there any special miking techniques used in the studio?

ER: On the drums, David likes to use a lot of ambience. He puts mics a few feet from the drums and close mics as well. He keeps the bass cabinet as far away as possible, in a separate room. All that's happening in the main studio is the drums. He doesn't want anything interrupting the ambience.

MR&M: Do your songs evolve after they've been recorded?

ER: Yeah, they do. Sometimes they benefit, but the more you play them the more chance there is of them suffering. There's always a prime time to go in the studio and record a song. I feel more at home in the studio after I've been out on the road and have played the song eighteen times or so.

MR&M: What do you have planned?

ER: I think Split Enz and longevity mean the same thing. We're going to delve into other areas; the next album will be done completely differently.

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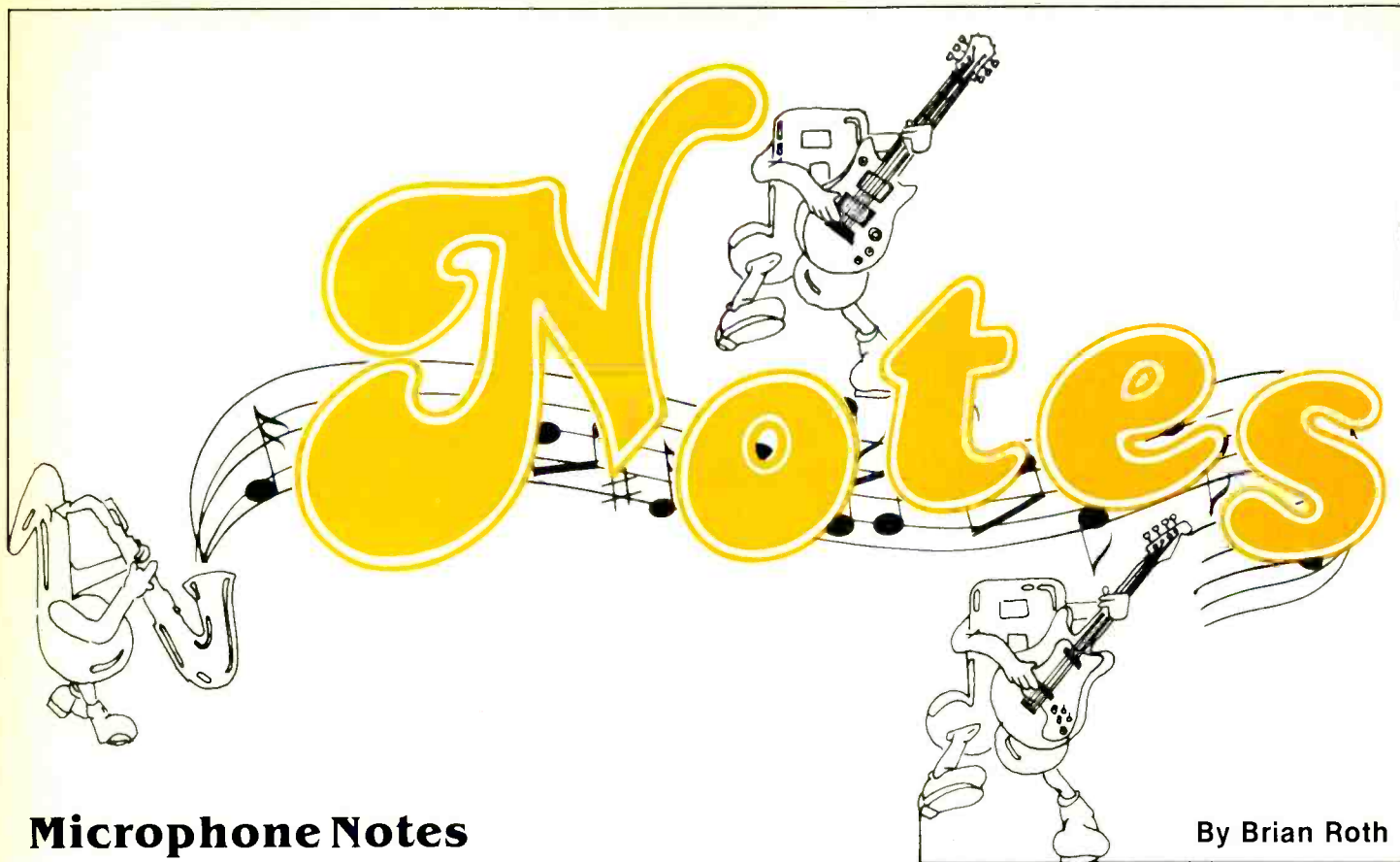
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Microphone Notes

By Brian Roth

There is a certain device used in our business that is really taken for granted. Yet without it, recording of music would be impossible. And, "live" performances wouldn't be the same at all. What I am talking about is . . . the microphone. Usually misunderstood, often abused, but where would Mick Jagger be without it?

This month, "Notes" is going to examine this little wonder. Let's start at the beginning and look at the various basic types currently available.

Pickup Patterns

Any microphone you use will pick up sound (as long as it is working!). However, depending upon the design, it will be more sensitive to sound arriving from one direction than another.

1) *Cardioid* microphones are the most common types in use these days. Directional in nature, a cardioid mic accepts sound from one direction (generally straight into the element) while greatly attenuating sound arriving from the sides and back. This characteristic is very useful for minimizing feedback howls in P.A. applications and for rejecting sound generated by other vocalists or instruments in the vicinity.

Most cardioid microphones exhibit the *proximity effect*. This means that you will hear much greater bass response when working the mic up close, while sound arriving from a distance will be much thinner sounding.

The degree of rejection of sounds arriving at the sides and rear of the microphones depends upon the particular design. For instance, super cardioid and hypercardioid patterns are much more directional in nature, as are the shotgun varieties.

As a general rule, the more directional a mic is, the more pronounced the proximity effect becomes.

Something else to remember when using cardioid microphones: The frequency response for sound arriving at the sides and rear of the mic (or *off-axis*) is usually different than the response *on-axis*. Hence, off-axis sounds will have a peculiar tone color, and if strong enough, can really foul up your mix.

Cardioid patterns are generated by a carefully designed set of small holes or vents in the element or body of the microphone. If you cover or block these vents, the performance of the mic will drastically change. That's why feedback occurs when you cup your hands around the end of a cardioid microphone on stage. *Moral:* Those little holes are not just for "looks," but rather are an important design feature. Don't block them if you want the mic to perform properly.

2) *Omnidirectional* microphones do not discriminate between sounds arriving from various directions. That makes them undesirable for vocalists in "live" performances because feedback will become a big problem.

Omnidirectional mics are useful for recording vocals and instruments in the studio, or for miking instrument amps on stage. Keep in mind that omni microphones do not exhibit the proximity effect found in cardioid designs, so you won't get that warm, fat sound when working them close to the sound source.

3) *Bi-directional*, or "figure eight," patterns are available on a few types of microphones, usually expensive studio models. This pattern is most sensitive on the front and rear,

while severely attenuating sounds arriving at the sides. Figure eight patterns are relatively uncommon these days, but can be useful for recording vocal groups.

4) *Hemisphere* pattern is a recent development, and, to my knowledge, only one company makes microphones with this characteristic. The Pressure Zone Microphone, or PZM (trademarks of Crown International), looks totally unlike conventional microphones. It consists of a flat metal plate typically four by six inches in size. On one side of this plate a pickup element is mounted.

Due to its design, a PZM will pick up any sound arriving at the front surface (with the pickup) while greatly attenuating sounds arriving at the rear.

I have used PZMs in recording and the sound is very pleasing; bright, open and natural, although usually somewhat bass shy. With some care in application, a PZM can be used with a P.A. system as well. It takes a bit of experimentation to maximize the performance of a PZM, but the results are often excellent.

Types of Microphone Pickup Elements

The working "guts" of a microphone convert sound energy into electrical energy. There are three types of elements commonly in use:

1) *Dynamic* microphones are by far the most common. Available in a huge variety of prices, physical styles and pickup patterns, dynamic elements are the workhorse of the audio biz. They are rugged, which makes them a good choice for P.A. applications.

2) *Condenser* microphones are the next most common type. They tend to have a brighter top end response than dynamic microphones. As a rule, condenser elements are more fragile than dynamics, so you need to take more care when using them.

Additionally, condenser microphones require batteries to function, so be sure to have plenty of spare batteries on hand. Without good batteries, a condenser mic will be deader than a doornail!

Another thing to remember is to keep the electrical contacts of the battery and its mating socket clean to ensure good connections.

Many condenser microphones can be operated with "phantom powering" instead of batteries. The voltage to energize the microphone's electronics "rides" along with the audio signal through a microphone cord. Many mixers are manufactured with phantom powering provisions so you can eliminate the hassle of defunct batteries.

The "phantom voltage" available from most mixers is 48 volts. This will properly power virtually any condenser mic available. Some mixers provide 24 volts; this will energize most condenser mics, but not those which are manufactured by Neumann.

3) *Ribbon* microphones are characterized by a warm sound, making them a favorite of many male singers. However, ribbon elements tend to be fragile, and they really hate people that blow into them. Modern ribbon mics are less susceptible to damage from blowing, but nevertheless, care should be taken to avoid that. (For that matter, it really serves no purpose to blow into *any* microphone. If your wind doesn't

damage the element, the moisture in your breath can promote corrosion.)

4) There are other types of microphone elements available such as carbon, crystal and ceramic. These are generally not found in professional microphones; carbon mics are used in telephones, while the others are found in cheaper mics supplied with inexpensive tape recorders. Avoid these types of microphones if you care about high quality reproduction.

Care and Feeding of Microphones

After watching the abuse that many mics are exposed to, I often marvel at how sturdy these little beasts are. After all, microphones are a mechanical device built with tiny bits of plastic and metal.

It should go without saying that microphones should not be dropped. Not only will their bodies be damaged, but so will the inner workings. A microphone should be securely fastened to the stand or boom with a properly fitted adapter. If the stand adapter becomes cracked or broken, don't try to rig it together with duct tape—buy a new adapter. It's a cheap form of insurance to protect your investment from crashing to the floor.

When it is not in use, it is wise to put a microphone into its carrying case. This shields the mic from harm and bad climatic conditions.

“... After watching the abuse that many mics are exposed to, I often marvel at how sturdy these little beasts are ...”

Ah, yes. Climatic conditions. Moisture is one of the worst enemies of any microphone. Rain or high humidity will greatly shorten the life of your microphone. So take care when working outdoors or in a garage, and keep that mic in its case when storing it.

Many microphones are supplied with windscreens, or they are available as an option. A windscreen is most useful when working outdoors, but serves an important function even on stage or in the studio. The foam "sock" will greatly reduce popping sounds from "P's" and "B's," plus helps absorb moisture from your breath. Unless you are using a ball-type mic, always use a windscreen for vocal applications. In a pinch, I have even heard of people using a foam Nerf ball with a hole carved into it!

Another advantage of windscreens is microphone identification if you purchase the color-coded varieties available from several manufacturers. That way, the singers can play "musical chairs" with the front mics, and the soundman will always know which is which (unless some prankster switches windscreens when you aren't looking!).

After heavy usage, it is not uncommon for the parts of a microphone to work loose. Usually, the problem can be solved by carefully tightening external set screws. Be sure to use a

“... Microphones tend to be one of the more expensive investments for any P.A. or recording system, so treat them in a friendly fashion...”

proper sized and shaped screwdriver to avoid messing up the screws. If this doesn't eliminate internal rattlings, then it will be necessary to send the mic to the repair shop, or to the factory since the problem won't get any better.

Switches on Microphones

The most common electrical switch found on a mic allows the performer to turn the mic on and off. Due to their electrical nature, these switches are a common source of failure. That's why many professional mics do not have "on/off" switches.

Many microphones feature other types of switches, often cryptically labelled "M" and "S" or "M" and "V." These switches activate a bass attenuation, or roll-off, circuit which helps compensate for the proximity effect found in most cardioid types. The "M" position stands for "Music" and gives the greatest bass response. "S" means "Speech" while "V" translates to "Voice"; when the switch is in these positions, bass frequencies are de-emphasized. Thus, these switches serve as a simple bass tone control.

Some microphones (the Sennheiser MD-421 comes to mind) offer additional positions between "M" and "S." These alternate positions serve to progressively roll-off the bass response from one extreme to the other, and give you more tonal choices.

Other manufacturers label the bass roll-off switch with numbers, such as "60" or "150." In this case, selecting "150" will attenuate more bass than the "60" position. The numbers represent the frequency at which roll-off begins.

Some microphones feature bass roll-off switches marked with graphic symbols. A straight line means no roll-off, while a line that is bent on the left-hand end of the symbol indicates the bass attenuation position.

Many condenser microphones feature a switch typically labelled "-10" or "-20," or some other number. These switches are commonly called pads, and reduce the sensitivity of the microphone. In other words, the microphone will produce a lower output when the switch is in the "-10" position. This helps prevent overloading of the microphone's electronics when loud sound sources are present. If you hear distortion being generated by a condenser mic, try activating the pad; this will usually cure the problem.

These are the most common "mystery switches" found on microphones. If you can't decipher the function of a particular switch, refer to the instruction manual supplied with the mic, or contact the manufacturer or microphone dealer.

Microphone Cables and Connectors

All microphone cables must be of the shielded variety. This type of cable consists of an outer jacket (rubber in the best quality cables) over a woven mesh of small wires. This shield surrounds the insulated wires that carry the signal and thus prevents hum, CB signals and other interference from disrupting the audio.

Professional microphones have a low output impedance, and require two signal-carrying conductors in the cable. "Cannon" or "XLR" connectors are attached to each end of the cable. When using these 3-pin connectors, remember that the shield must be soldered to pin #1 on each end. It won't matter which of the two wires connects to pins #2 and #3 as long as the same color wire connects to the same numbered pin at each end. My personal convention calls for the black wire to be connected to pin #2, while the red (or white or clear) wire is connected to #3.

Some microphones are supplied with a cable with the mic end connector already attached and the mixer end stripped, but with no connector. In this case, it will be necessary to use an ohmmeter to determine what color code is used for pins 2 and 3 terminations or to visually examine the wiring.

High-impedance microphones generally require only a single conductor cable with an outer shield. Due to the multitude of various connectors utilized for interfacing with the microphone itself, it is impossible to give any general or specific wiring configurations. If in doubt about "what hooks where," consult the manufacturer's literature. The same applies to dual impedance microphones, as well as those utilizing connectors other than "cannon"-type plugs.

“... The best rule for proper mic placement is that there are no hard and fast rules... except handle with care...”

Parting Thoughts

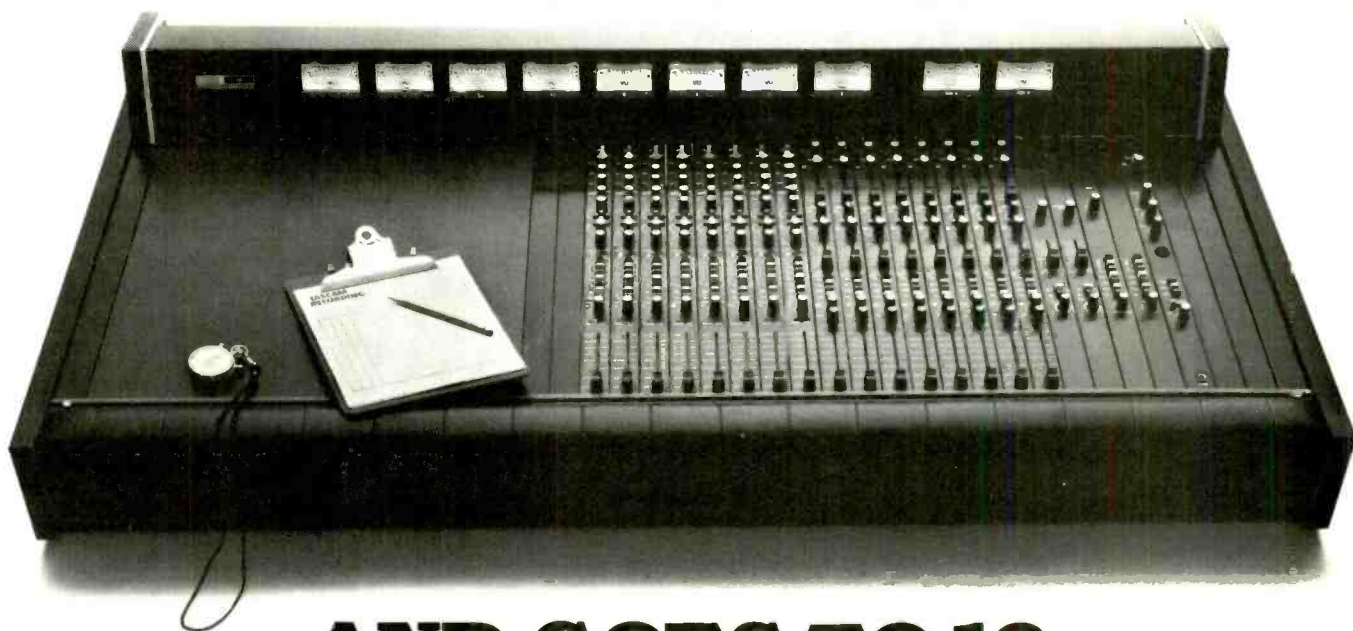
Microphones tend to be one of the more expensive investments for any P.A. or recording system, so it makes sense to treat them in a friendly fashion, just as you would your Seiko watch. With proper care, the sound quality of a mic will remain constant for many years of use.

When using a mic for vocal or instrumental applications, the best rule for proper placement is: there are no hard and fast rules. Just think about how the microphone operates and experiment with different types of aiming (and possibly EQ at the mixer) until you obtain the desired effect. After all, for many years the standard studio rule was to work at least six feet away from the mic. Then, one day, some maverick engineer decided to move it closer to the sound source, and he got the sound he wanted! There are no rules, other than handle with care.

Until next time, happy miking!



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TASCAM STUDIO SERIES
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Ambient Sound

By Len Feldman

Another Standards Battle Looms

I recently returned from Tokyo where I attended the 30th Audio Fair held in Japan. Needless to say, the emphasis was on the compact digital audio disc which had been demonstrated months before by both Sony and Philips. These two companies, by combining their efforts, will someday be credited with preventing the kind of standards battle that many feel was responsible for the "death" of 4-channel sound a few years ago. Faced with the clout of the largest European producer of electronic equipment, *plus* the acknowledged strength and worldwide prestige of Sony Corporation, other Japanese companies quickly fell into line. Many abandoned their own versions of digital audio discs. Others who had not done much research in this important area were grateful for the standardization that was indirectly brought about by the joint efforts of Sony and Phillips and quickly got to work in their labs to build a prototype compact digital disc player that conformed to the standards agreed upon by Philips and Sony.

As a result, there were no less than nineteen companies displaying what purported to be prototypes of compact digital audio disc players at the aforementioned Tokyo show.

I hasten to add that some of these displays involved more showmanship than advanced technology. If one were enterprising enough to look under the draped tables which displayed the tiny disc players, one would find, in many cases, bulky boxes full of electronic circuitry which could not yet fit into the small sized players which have been promised for the future. But miniaturization here is only a matter of time and since *some* manufacturers did *not* have to resort to the "under the table" trick, we can presume that by the time the compact digital disc players actually come to market (sometime in late 1982 overseas and about six months later here in the U.S.) they will be smaller than the proverbial breadbox.

The important thing here is that aside from JVC, which still is pushing the AHD (Audio High Density) PCM format associated with its VHD (Video High Density) videodisc system, just about everyone else has

agreed upon the Sony-Philips format for a dedicated digital audio disc. That bodes well for the audio industry which can turn its attention to improving the hardware (speakers, amps, etc.) that will be needed when compact DADs become significant as program sources in the years ahead.

Unfortunately, the recent Tokyo Audio Fair was also the scene of several product introductions (previews would be a better descriptive term) which may well cause additional confusion, if not chaos, in the audio marketplace. I am speaking of the latest development in audio tape recording, the digital or PCM *cassette* deck. Much to everyone's surprise, a few engineering oriented companies have actually succeeded in developing prototype machines that employ standard sized compact cassettes (the same cassette tape package used in present day cassette decks) and use non-rotating record/play heads to record audio information in digital form. Such stationary-head PCM recording differs from the helical recording scheme used in video cassette decks, where the wide bandwidth needed for either video signals or PCM audio signals is achieved by having the record/play heads mounted in a rapidly spinning drum, thereby increasing the *relative* tape head gap to tape speed. In the case of stationary head PCM digital recording, bandwidth capacity can be increased in only two ways: Either the tape must run at a tremendous linear speed past the stationary tape head, or the digital information must be divided into many tracks across the width of the tape. In the case of the prototype PCM cassette decks which I saw in Tokyo, the latter approach was used by all of those manufacturers who showed such products. However, despite the well known tendency for major Japanese companies to "talk to each other" when it comes to matters of standardization, in this instance, the makers of PCM cassette deck prototypes seem to have accomplished their tasks without consulting their competitors. As a result, there are as many different sets of operating standards for the decks as there were decks on display.

As an example, there was no agreement as to how many tracks should be used to contain the digital information. Pioneer's working prototype PCM deck uses eight tracks, with the tape operating in one direction only. The operating tape speed, in the case of this deck, is twice the standard speed of an audio cassette or 3¾ ips, which means that with a C-90 length cassette tape package, maximum recording time would be only 22½ minutes (remember, the cassette operates only in one direction in this version). Certainly, that's an objection, but Pioneer advised us that, in all likelihood, a C-120 package might be used in the future, since the objections normally cited against C-120 lengths of cassette tape would not apply in the case of PCM digital recording, where physical and magnetic characteristics are quite different from those required of tape when it is used for analog audio recording.

JVC, on the other hand, showed and demonstrated a system in which the standard compact cassette tape was divided into *eighteen* tracks, but in which the tape travelled in both directions, much as it does when used in an analog cassette deck. That made for nine tracks in each tape direction: one control track and four tracks per stereo channel. Sony also displayed a PCM cassette deck, but theirs used thirty-eight tracks across the width of the tape—sixteen per channel plus six control tracks.


Nor was there any agreement on tape speed. Some manufacturers used the "standard" 1-7/8 ips to assist in achieving the recording density needed, while still others used totally "new" tape speeds not previously used in any audio recording format. Even in the realm of purely digital parameters, standards varied from manufacturer to manufacturer. Pioneer's sample deck employed the same sampling rate as that used for the now-standardized compact digital audio disc: 44.1 kHz. As a result, the Pioneer unit boasted a "flat" frequency response extending clear out to 20 kHz (sampling rate, you may recall, must be at least *twice* the highest frequency to be recorded in a digital recording system). On the other hand JVC chose to demonstrate a machine which employed a much slower sampling rate of 33.5 kHz. While this limited maximum frequency response at the high end to 16 kHz, it does permit a longer recording time of sixty minutes per cassette (thirty minutes per side, since the cassette is recorded and played in *both* directions). In subsequent discussions held with JVC personnel in this country (that company displayed its PCM cassette deck at the recently held AES Convention, in New York City) I learned that JVC already has developed the capability to increase sampling rate and thereby improve frequency response, but no one could tell me if, in fact, the first consumer versions of its PCM cassette deck would, in fact, have higher frequency response than this first sample or not. JVC stressed the fact that, in its opinion, any PCM cassette recording system should, above all, use both sides of the cassette tape (record and play in both directions) and should have a total recording time of at least one hour.

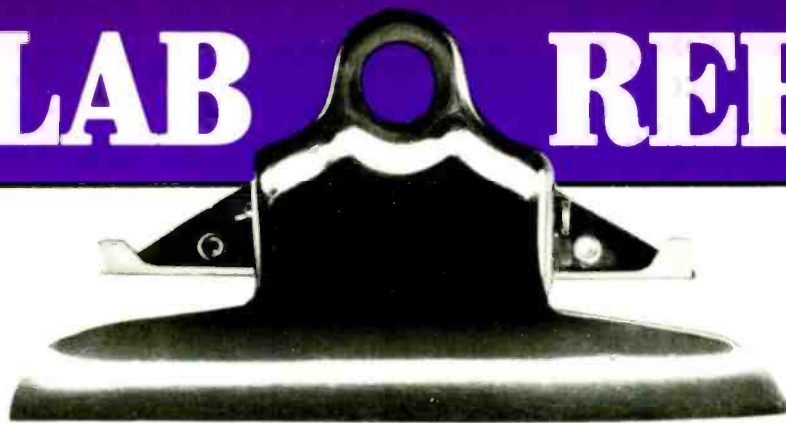
**“... we may end up
with a bunch of
non-compatible PCM
cassette decks in
science museums...”**

With this increased activity in PCM cassette recording taking place in Japan, it becomes increasingly important for the industry to try to arrive at standards for this new type of component before things go too far. It should be pointed out that in the case of digital audio processors that are intended to work with existing VCRs, operational standards were set by the Electronic Industries Association of Japan (EIAJ) some time ago, and those companies exhibiting such VCR-related PCM audio processors highlighted the fact that their units *do* conform to those standards. While such processors have come down in price since their introduction two or three years ago, when you add in the price of the necessary VCR with which such processors must be used, the combination is hardly a bargain—often exceeding \$5000.

Dedicated PCM cassette recorders, on the other hand, while not firmed up in price (we're a long way from even having commercially available mass produced models) are likely to range from perhaps \$1500 to \$2500 in price and may therefore be a relatively attractive item for small recording studios (for mastering or even for original "live" recording, if the "mix" can be done in real-time), as well as for the more serious audiophiles who seek wider dynamic range, lower distortion and total elimination of audible wow-and-flutter for their recording efforts. After all, there are several analog cassette decks and even a greater number of semi-pro or high-end consumer open-reel decks that go for a lot more than that and yet enjoy continuing sales in the marketplace.

None of this will come to pass, however, unless the industry can quickly agree on such things as sampling rate, tape speed, word-bit rate and error correction schemes for the new PCM cassette deck product category. If corporate egos prevail instead of unified industry resolve, we may end up with a bunch of non-compatible PCM cassette decks in science museums and exhibitions around the world. They will be found standing next to examples of 4-channel hardware, wire recorders, binaural playback tonearms and other relics of the past which failed because we couldn't agree on standards, and lacking them, no one would take a chance on a product that was about to be replaced by something better—or different.





NORMAN EISENBERG AND LEN FELDMAN

Cerwin-Vega GE-3 Graphic Equalizer



General Description: The Cerwin-Vega GE-3 equalizer is a dual, 13-band graphic equalizer. Unlike the usual 10-band or 3rd-octave equalizers, the GE-3 falls somewhere in between, adding three more filter bands between the standard octave frequencies in the bass region.

Other features include transformerless balanced/unbalanced inputs and outputs, using XLR or phone connectors. The equalizer features 600-ohm drive capability and separate gain controls for each channel.

As we might have expected, the GE-3 is equipped with active filters which go by various names but which add up to the fact that the unit does not need to employ actual inductors in its individual filter circuits. A block diagram of the circuit path from the balanced input amplifier, through the subsonic and equalization filter circuitry and on to the output non-inverting and inverting op-amps is shown in *Fig. 1*.

Test Results: In *Fig. 2* we have plotted the complete boost and cut characteristics of each of the thirteen bands of the equalizer, as well as its response curves

when all controls are set to their maximum boost or maximum cut settings. As these plots indicate, there was very little interaction between non-adjacent bands which makes the GE-3 particularly easy to adjust. Very little back and forth trimming is required, once a system has been analyzed on a band-by-band basis and proper settings have been applied. As indicated in the Vital Statistics chart, all of the published specifications of the Cerwin-Vega GE-3 were met or exceeded.

General Info: Dimensions are 19 inches wide, 3.5 inches high, 10.24 inches deep. Weight is 13 pounds. Price is \$625.

Joint Comment by L.F. and N.E.: The aspect of the Cerwin-Vega GE-3 equalizer that appealed to us most was its half-octave filter capability in the bass region, below 250 Hz. The additional filters were not just put there to come up with thirteen bands instead of the usual ten, but as a well-thought-out price/performance balancing act between the real-world equalization requirements and a full half-octave or third-octave

graphic equalizer. The fact is, that it is in the bass region that a system is apt to need a greater degree, or more correctly, a finer degree of signal processing and tailoring than in other areas of the audio spectrum. Such a degree of equalization is simply not possible with octave-wide controls and Cerwin-Vega's solution—adding three more filter bands between the standard octave frequencies—solves the problem without adding undue cost per channel of equalization.

The balanced input stage of the equalizer as well as the choice of balanced or unbalanced outputs, plus the ability of the system to drive line impedances as low as 600 ohms, in either the balanced or unbalanced mode, will be appreciated by the professional soundman. The availability of standard 1/4-inch phone jacks make it easy for the audiophile who is not equipped with XLR audio cables to use the equalizer as well.

The peak clip indicators are a welcome addition to the GE-3. Normally, these indicators should not flash, even on peak signals, but during the set-up they can help the user to adjust input and output levels to the equalizer so as to obtain maximum possible signal-to-noise performance of the unit without introducing unacceptable levels of distortion.

We are reminded of Cerwin-Vega's popular slogan,

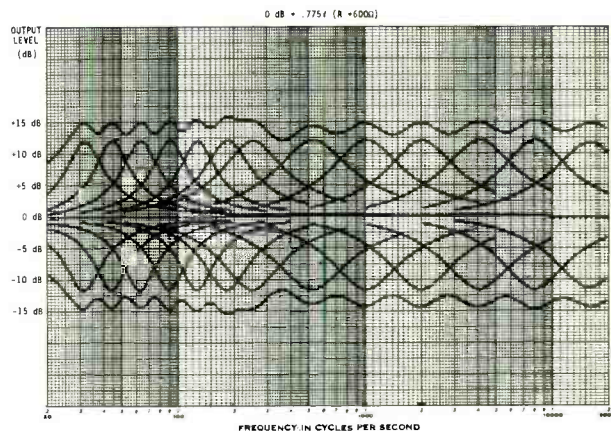


Fig. 2: Cerwin-Vega GE-3: Overall response curve and individual band response range curves of the unit. Upper and lower curves are overall response with all controls set to maximum or minimum.

which sets forth the proposition that "Loud Is Beautiful—If It's Clean." We can't always subscribe to the first part of the slogan, but Cerwin-Vega has certainly seen to it that everything that comes out of this equalizer is clean!

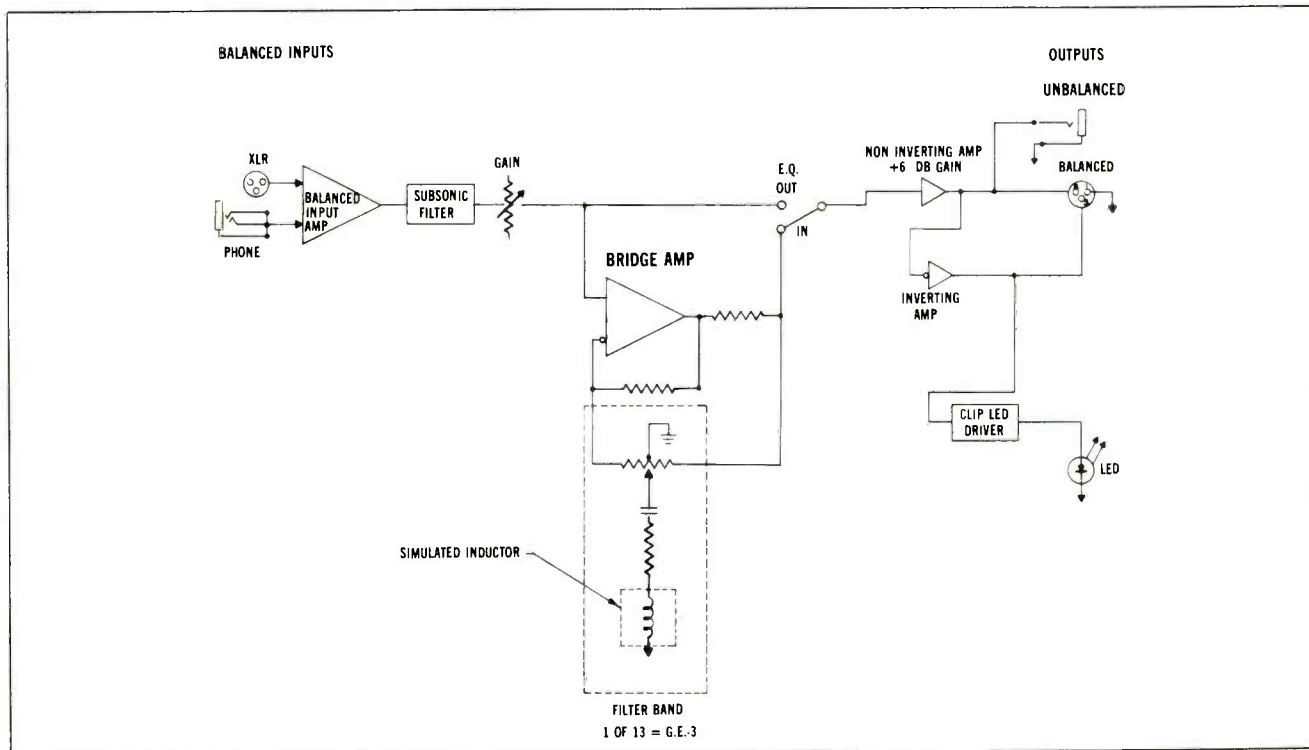


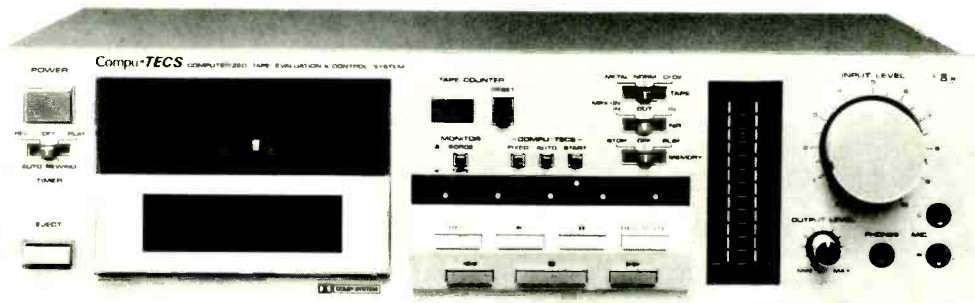
Fig. 1: Cerwin-Vega GE-3: Block diagram of equalizer's signal path.

CERWIN VEGA GE-3 GRAPHIC EQUALIZER: Vital Statistics

PERFORMANCE CHARACTERISTIC	MANUFACTURER'S SPEC	LAB MEASUREMENT
Maximum input level	+ 22 dB (9.75 V)	10.0 V
Input impedance		
Unbalanced	45 K ohms	Confirmed
Balanced	65 K ohms	Confirmed
Rated output level		
Unbalanced	+ 2 dBm	
Balanced	+ 8 dBm	
Maximum output level	+ 20 dBm (7.75 V)	8.0 V
Gain (controls set flat)	Up to + 6 dB	Confirmed
Subsonic filter	- 3 dB at 10 Hz	- 3 dB at 12 Hz
Center frequencies (Hz)	31.5, 45, 63, 90, 125, 180, 250, 500, 1 K, 2 K, 4 K, 8 K, 16 K	Confirmed
Individual filter range	± 12 dB	Confirmed
Frequency response (controls flat)	29 Hz to 20 kHz, ± 0.15 dB	25 Hz to 22 kHz, ± 1.0 dB
THD at rated output	0.005%	0.003% (1 kHz)
THD, any setting below clipping	0.01%	0.012%
SMPTE-IM at rated output	0.005%	0.005%
Slew rate	8 V/usec.	10 V/usec.
S/N, "A"-wd.	100 dB	106 dB
Power requirements	105-125 V, 50/60 Hz, 15 W	12 W

CIRCLE 16 ON READER SERVICE CARD

Nikko ND-1000 Cassette Deck



General Description: The Nikko ND-1000 is a three-head model cassette deck using a direct-drive two-motor tape transport system. The transport features full IC logic control which allows tape function switching without the need to go through the "stop" position. The IC logic also permits all tape mode functions to be controlled at a distance with the addition of an optional remote control unit.

Nikko is certainly not the first company to have come up with a self-adjusting cassette deck that takes care of minor variations in bias requirements between tapes of the same generic family. Furthermore, its self-adjusting capabilities are not nearly as comprehensive

as those introduced in the past by cassette deck companies such as Nakamichi, JVC, Phase Linear and others. But by waiting till the microprocessor chips needed to do this job became sufficiently inexpensive, Nikko has come up with a mid-priced deck that many serious recordists will be able to afford and enjoy.

At the extreme left of the front panel are a push-button power switch, a 3-position auto rewind timer switch and a cassette eject button. The cassette compartment comes next, and to its right is a 3-digit tape counter and reset button. Below this is a tape/source monitor switch. Three tiny buttons are involved in what Nikko calls its "Compu-TECS" system. This system

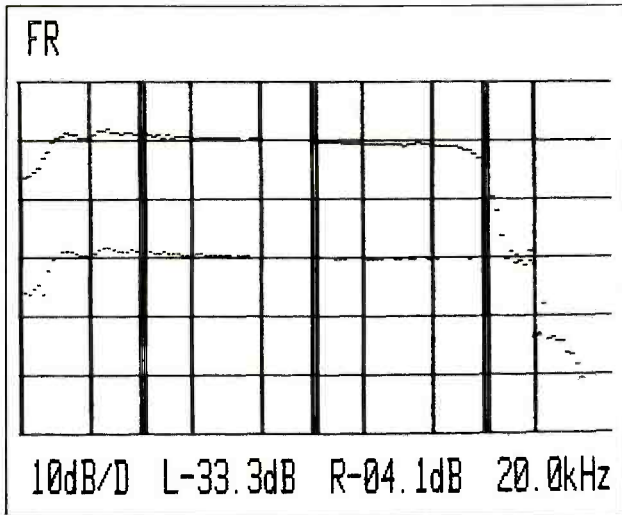


Fig. 1: Nikko ND-1000: Record/play frequency response at 0 and -20 dB record level (Maxell XL-I tape).

(which stands for Computerized Tape Evaluation and Control System) takes care of only two parameters: bias and sensitivity. Recording equalization is, as far as we could tell, not altered during the self-adjust process. Since the record and play tape heads are housed in a single package, there is also no need for auto-azimuth adjustment.

Nikko does provide memory capability for the adjustment bias and sensitivity settings, but that capability is limited to one per tape type.

To the right of the Compu-TECS buttons are a tape selection switch (metal, norm and CrO₂), a Dolby on/off switch with an MPX filter position and a memory rewind switch which include provisions for starting the play sequence automatically after rewind has taken

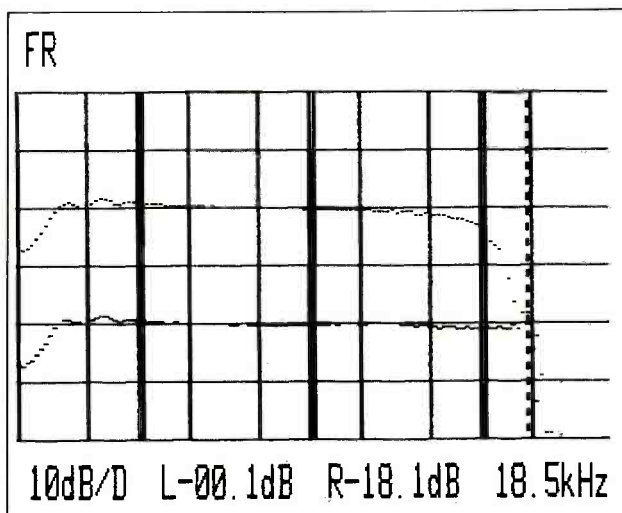


Fig. 2: Nikko ND-1000: Record/play frequency response, 0 and -20 dB record level (Maxell XL-II-S).

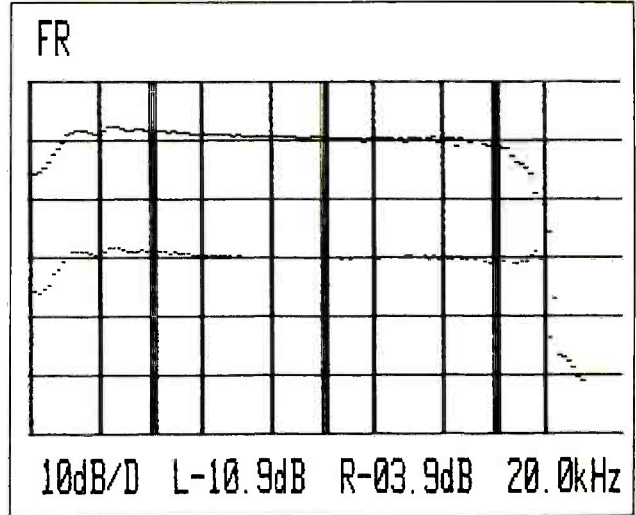


Fig. 3: Nikko ND-1000: Record/play response at 0 and -20 dB record level (Maxell metal tape).

place. Logic-controlled light-touch tape transport buttons are positioned along the bottom section of the front panel. They include the usual "record," "play," "pause," "fast rewind," "stop" and "fast forward" functions as well as a special "record mute" button. This latter switch, when depressed and held, manages to interrupt recording without having to go into the pause mode.

Record level indicators consist of two 12-section LED peak level displays oriented in a vertical direction. Separate left and right master record level controls are concentrically mounted at the upper right of the panel. Below these are a separate output level control, a stereo phone jack and left and right channel microphone input jacks.

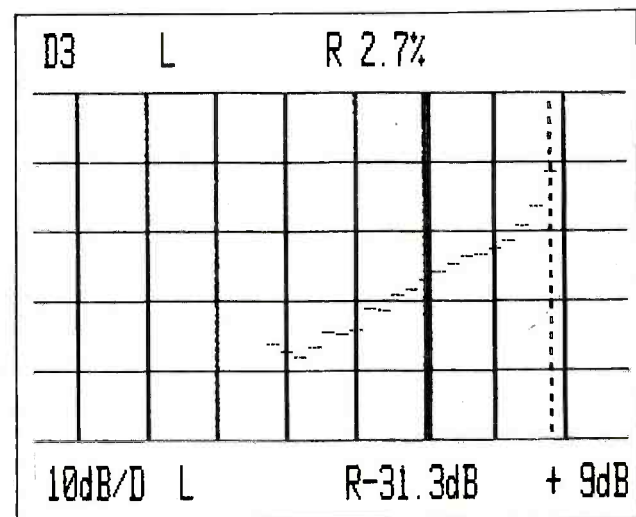


Fig. 4: Nikko ND-1000: Third-order distortion vs. record level (Maxell XL-I tape).

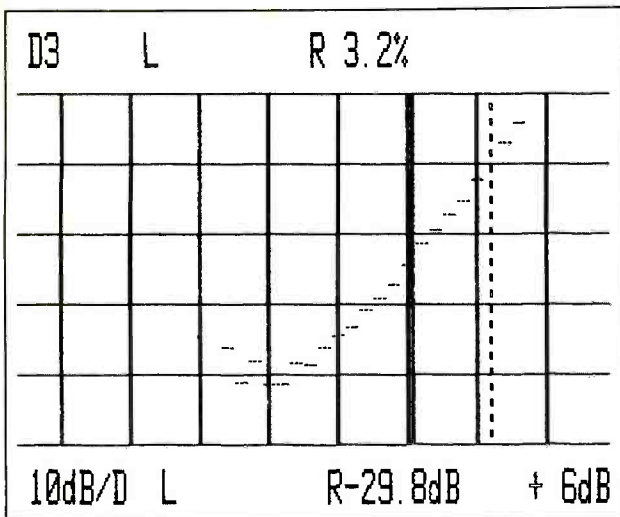


Fig. 5: Nikko ND-1000: Third-order distortion vs. record level (Maxell XL-II-S tape).

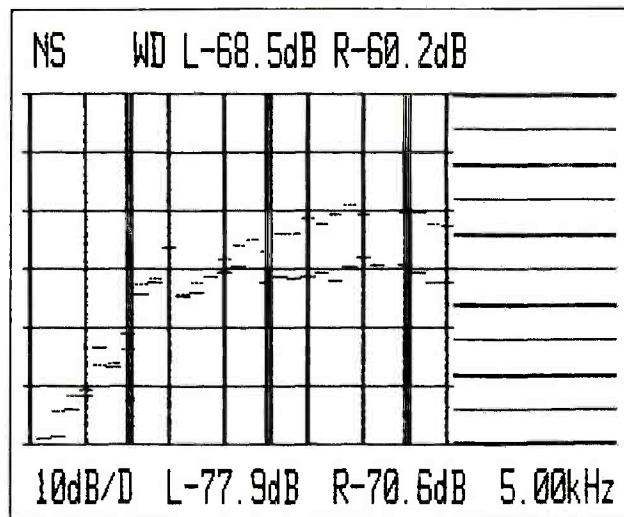


Fig. 7: Nikko ND-1000: S/N analysis using Maxell XL-I tape, with and without Dolby.

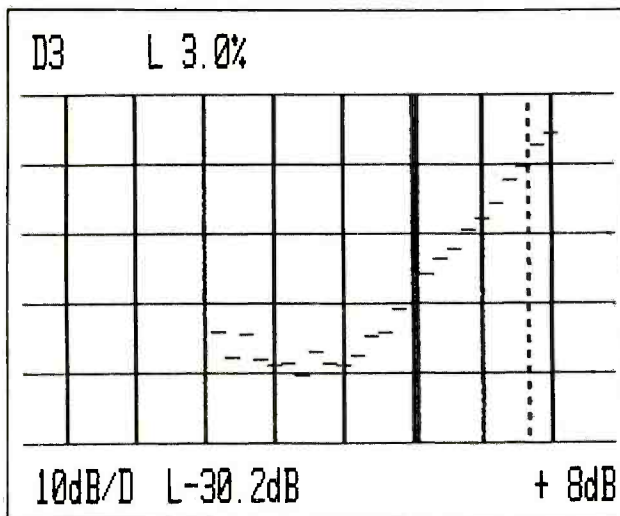


Fig. 6: Nikko ND-1000: Third-order distortion vs. record level (Maxell metal tape).

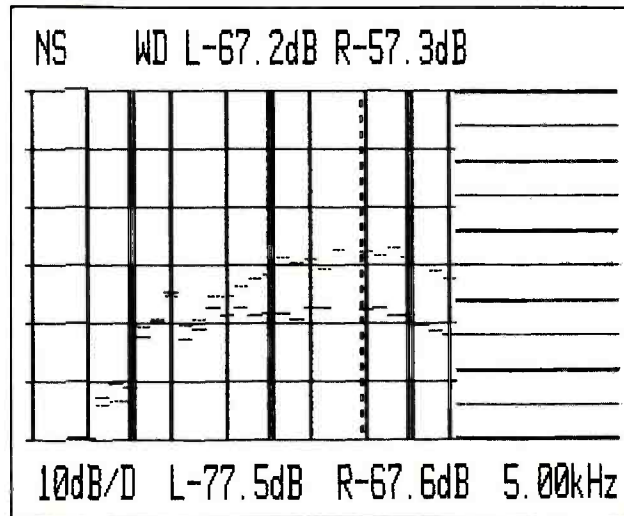


Fig. 8: Nikko ND-1000: S/N analysis using Maxell XL-II-S tape, with and without Dolby.

Test Results: The more basic performance characteristics of the Nikko ND-1000 are summarized in the usual table of Vital Statistics and verified using our now-familiar Sound Technology Recorder Test Set Model 1500A. We used Maxell XL-I tape as representative of ferric-oxide premium formulations; Maxell XL-II-S for chrome-equivalent seventy microsecond equalization tape; and Maxell's metal tape for our metal tape sample. *Figs. 1, 2 and 3* show record/play response at 0 dB record level (upper trace) and at -20 dB record level (lower trace) for all three types of tape. In each of these plots, the vertical dotted line cursor has been moved to that frequency closest to the -3 dB roll-off point for the -20 dB response curve. (In *Fig. 1* for ex-

ample, response is down -4.1 dB at 20 kHz, so we estimated the -3 dB point for that tape sample as being at 19 kHz).

Third-order harmonic distortion versus record level is plotted for each of the tapes and is shown in *Figs. 4, 5* and *6*. Interestingly, as self-adjusted by the deck, the Maxell metal tape sample had the lowest third-order distortion level at 0 dB recording level (0.32%) and almost the best headroom. Maxell XL-I did a bit better with a +9 dB compared with +8 dB for metal. On the other hand, the XL-I tape showed the best signal-to-noise ratio of all three tapes tested with Dolby off (60.2 dB relative to the 3% distortion record level) and with Dolby on (68.5 dB). We can't guess what sort of tape

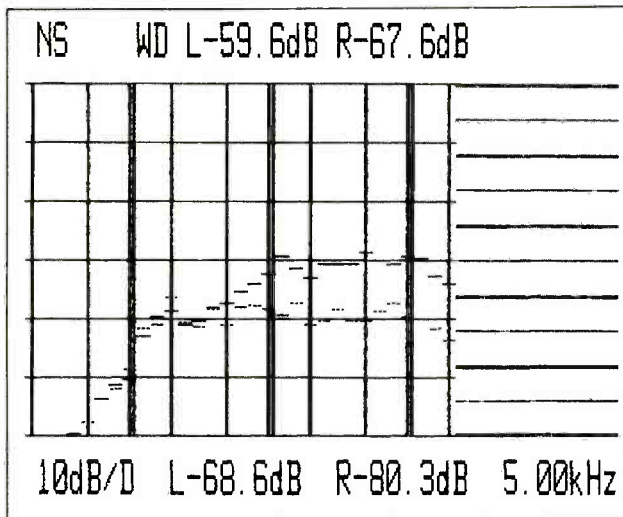


Fig. 9: Nikko ND-1000: S/N analysis using Maxell metal tape, with and without Dolby.

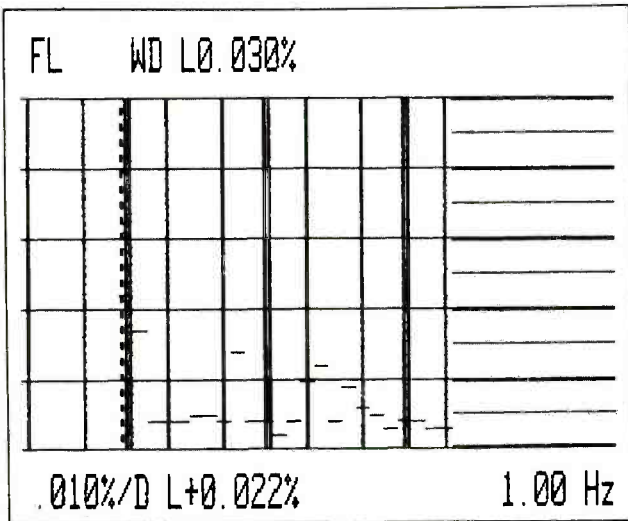


Fig. 10: Nikko ND-1000: Wow and flutter analysis.

Nikko may have used to achieve the 72 dB S/N figure that they claim in their published specifications or what type of weighting curve they used. We used A-weighting for our particular measurements this time.

Our updated test equipment now enables us to present an analysis of the spectral distribution of noise in addition to calculating the overall "single number" S/N ratio in dB. Spectrum analyses for each of the tape types are reproduced in Figs. 7, 8 and 9. Overall S/N figures are printed at the top of each of these displays, with the higher of the two figures representing results obtained with Dolby B on and the lower figure representing results with Dolby circuitry turned off.

WRMS wow-and-flutter is plotted over a frequency range from 0.5 Hz to 200 Hz in Fig. 10 and was an excellent 0.03% as opposed to the published figure of

0.05%. More often than not, the most offending wow component usually shows up at a frequency between 3 Hz and 5 Hz, but in the case of this deck, the greatest component of wow seemed to occur at 1 Hz, as shown in the plot of Fig. 10. That component contributed 0.022% of the total 0.03% shown.

Fig. 11 is a plot of stereo separation vs. frequency (from 20 Hz to 20 kHz) and the cursor has been set to 1 kHz where channel separation measured 45 dB. The vertical scale is 10 dB per division so you can easily determine separation of other frequencies. Double line verticals are at 100 Hz, 1 kHz and 10 kHz in this diagram as well as in earlier Figs. 1, 2 and 3. Speed accuracy was good, hovering about the +1.0% deviation mark for the first few minutes of tape motion shown in Fig. 12.

General Info: Dimensions are 17.25 inches wide by 4.75 inches high by 11.25 inches deep. Weight is 11.6 lbs. Price is \$650.

Joint Comment by L.F. and N.E.: While the tape parameter adjustment and memory features are not quite as impressive as those found on more expensive self-adjusting decks, when you think about it, how many of us actually keep switching from one type of ferric oxide tape to another? Or from one brand of metal tape to another? And even if we did, memorizing and adjusting for an alternate tape within a generic type would take something under a half minute (including analysis and new memorization) which is really not a big problem.

It is pretty obvious from the results obtained for all three types of tape that the self-adjusting feature of this deck emphasizes extended frequency response rather than lowest distortion or best signal-to-noise ratio. That's an approach with which we are not necessarily in agreement, but one which will no doubt appeal to the

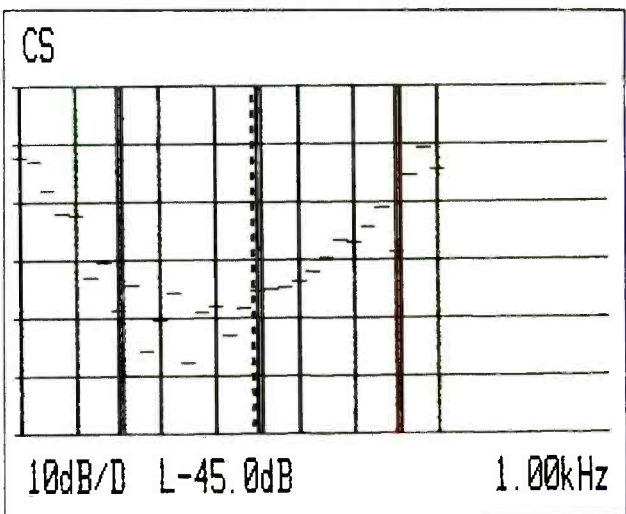


Fig. 11: Nikko ND-1000: Channel separation vs. frequency.

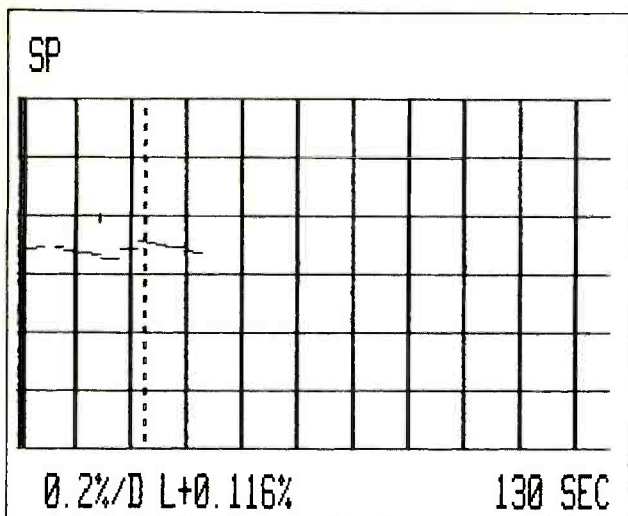


Fig. 12: Nikko ND-1000: Speed accuracy deviation during first three minutes.

audiophile consumer who rates frequency response above all other parameters. We should note, incidentally, that "0 dB" on the LED meters of this unit corresponds to approximately 145 nWb/meter or about 3 dB below standard Dolby calibration level. It's for this reason that the headroom figure (recording level for 3% third-order distortion) seems so high as tabulated in the Vital Statistics chart.

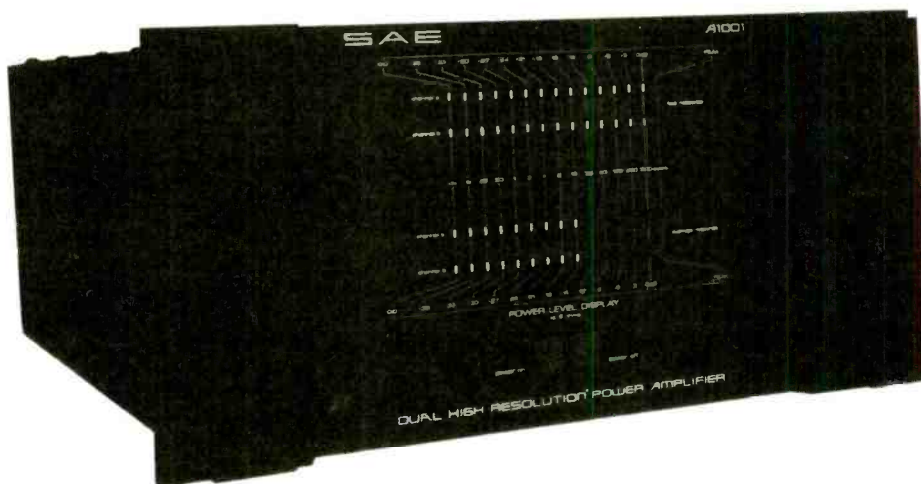
The Nikko ND-1000 handles easily and seems like a well-designed unit both electrically and mechanically. This unit is at the top of the line of cassette decks offered by Nikko this year. As far as we are concerned, it offers excellent value for its suggested price. We do wish that there was a third choice other than auto-adjust and factory-fix bias settings so that we might have been able to favor lower distortion and somewhat better S/N performance rather than ruler-flat frequency response for every application. Still, we're not talking about major possible improvements in these areas; just perhaps a couple of dB here and there.

NIKKO ND-1000 CASSETTE DECK: Vital Statistics

PERFORMANCE CHARACTERISTIC	MANUFACTURER'S SPEC	LAB MEASUREMENT
Frequency response, Hz to kHz, ± 3 dB		
Maxell XL-I	30-15 (no tolerance)	29-19 kHz
Maxell XL-IIS	30-19 (no tolerance)	29.19 kHz
Maxell Metal	30-20 (no tolerance)	27-19.5 kHz
Wow-and-flutter, WRMS	0.05%	0.03%
Speed accuracy	NA	+ 0.116%
S/N ratio, Dolby off (re: 3% 3rd-order HD record level, "A"-wtd.)		
Maxell XL-I	NA	60.2 dB
Maxell XL-IIS	NA	57.3 dB
Maxell Metal	NA	59.6 dB
S/N ratio, Dolby on (re: 3% 3rd-order HD record level, "A"-wtd.)		
Maxell XL-I	NA	68.5 dB
Maxell XL-IIS	NA	67.2 dB
Maxell Metal	72 dB	67.6 dB
Record level for 3% 3rd-order HD (0 dB = 145 nWb/m)		
Maxell XL-I	NA	+ 9.0 dB
Maxell XL-IIS	NA	+ 6.0 dB
Maxell Metal	NA	+ 8.0 dB
3rd-order HD at 0 dB record level		
Maxell XL-I	NA	0.45%
Maxell XL-11S	NA	0.60%
Maxell Metal	NA	0.32%
Line output at 0 dB	450 mV	380 mV
Headphone output level at 0 dB	90 mV	61 mV (8 ohm)
Mic input sensitivity for 0 dB	0.25 mV	0.25 mV
Line input sensitivity, 0 dB	50 mV	37 mV
Fast rewind time (C-60)	90 sec.	85 sec.
Bias frequency (kHz)	NA	NA
Power consumption	22 W	20 W

CIRCLE 17 ON READER SERVICE CARD

SAE A1001 Power Amplifier



General Description: The SAE A1001 power amplifier is that company's highest powered basic amp. It is rated at 500 watts RMS power output per channel into 8-ohm loads and 750 watts per channel into 4-ohm loads. All of the "01" series amplifiers (of which this is an example) are designed to be mounted into a 19-inch rack. The A1001 requires 8.75 inches of vertical space in the rack. Because of its weight (67 lbs.) SAE recommends using #10 size screws and washers in the course of rack-mounting.

The front panel of the A1001 has interlocking power on/power off push buttons located near the lower center with the lower panel dedicated to a rather elaborate dual display system. What may at first appear as a somewhat superficial feature turns out to be very useful indeed. Dual rows of LED power indicators are arranged so that one row shows instantaneous peak power while the other row shows average power to the speakers. The user is therefore given complete visual information about the state of the system when it is delivering high-power levels. Speakers as well as the amplifier itself are easily monitored for overload conditions.

The rear panel provides a choice of inputs for each channel. The "normal" inputs provide full bandwidth frequency response. When these are used, amplifier response is from below 1 Hz to over 50 kHz. The "high pass inputs" are provided for applications where a "01" series amplifier is to be used in a bi- or tri-amplified system, or where extended low-frequency response has proven hazardous to speaker performance or caused acoustic feedback between the speakers and the turntable. These high-pass inputs provide 6-dB-per-octave roll-off below 20 Hz.

The A1001 amplifier uses 5-way binding posts for output signal connections. Amplifier outputs have a common ground connection to the chassis at both black output terminals. Red-colored coded binding

posts are intended for connections to the "hot" or positive terminals of loudspeakers.

Test Results: It almost goes without saying that all of the static published specifications were met and usually exceeded by a wide margin. Referring to our Vital Statistics chart for this unit, we measured a CCIF IM distortion of 0.003 percent (about as low as our test equipment permits). The twin-tone IHF measurement yielded readings below 0.03 percent. Mid-frequency power output was more conservatively stated for 8-ohm operation (550 watts as against a claimed 500) than for 4-ohm operation (770 watts as against 750 watts as claimed). Note, too, that rather than measure frequency response "from DC to channel 5," we have elected to follow SAE's course and report only the deviation from flat response over the useful audio range from 20 Hz to 20 kHz. For those who insist upon knowing how far beyond the audio range the amplifier can handle signals, without significant attenuation, SAE does quote a "-3 dB" frequency response extending from 2 Hz to 160 kHz. We substantiated those claims. Beyond that SAE saw fit to offer a high-pass input for each channel as an alternative. When that input is used, response rolls-off below 20 Hz. So much for what SAE thinks about "response down to DC!"

General Info: Dimensions are 19 inches wide, by 8.75 inches high, by 17.25 inches deep. Weight is 67 lbs. Price is \$1550.

Joint Comment by L.F. and N.E.: Once we got over the shock of seeing just how physically enormous a 500 watt amplifier (750 per channel if you use 4 ohm speakers) can be, we were able to concentrate on the sheer ruggedness and conservativeness of this design from SAE. Accompanying our sample was an SAE

"white paper" dealing with the design philosophy behind all of this company's "01" series amplifiers. We strongly recommend this document to anyone who is confused and bewildered about conflicting claims for what's important (and what isn't) in a power amplifier. We've all been party to the arguments as to whether TIM really matters or whether a super-high slew rate really shows up as an improvement in sound reproduction from a given amplifier. Then there's the question of the importance of DC-coupling (ability of an amplifier to deliver power down to "0 Hz"). We don't want to give away the punch line of SAE's white paper, but if you'll take a quick look at our Vital Statistics chart at the end of this report, you'll notice that SAE (and we) report "slew factor" rather than "slew rate." Obviously, since it's *slew factor* that SAE quotes, it was *slew factor* that we had to measure.

One of the key points made by SAE in the aforementioned "white paper" is the need for a high-powered amplifier to be able to supply large *current* to loads of a varying impedance (such as loudspeakers) which may, at times, dip down to well below 2 ohms. It is this requirement which, no doubt, is responsible for the rather large size of the amplifier. After all, there are 24—count 'em—24 output transistors per channel and the twin power supplies, though deriving their AC inputs from a common massive power transformer, are each tied in with *four* separate filter capacitors. While our tests were limited to 8-ohm and 4-ohm loads, SAE maintains that the A1001 can deliver enough current to produce 500

watts per channel even if the load drops to 1 ohm! We have no doubt that this is true judging by everything else we saw and measured concerning this mammoth amplifier.

What needs to be said, too, is that for an amplifier of this power capability we were pleasantly surprised at just how accurately it reproduced music signals when coupled to our reference speakers. Somehow, we have been conditioned to expect that super-powered amps are going to be brute force designs that place sonic quality below ruggedness and long-term reliability. Not so with the SAE A1001. We could detect no flaw in its sound quality whether listening at nominal 1-watt levels or at levels approaching its maximum power output capability.

Admittedly, this amplifier was not designed specifically for professional applications. Its input jacks are common garden-variety phono-tip types used in home-audio equipment. We would have expected at least quarter-inch phone jacks here, if only for more secure and permanent connections. Accidental loss of a ground return caused by a loose phono-tip plug is one thing when we're talking about 10- or 20-watt amplifiers; it's quite another thing when such a mishap could "zap" 500 or more watts of hum into a speaker's unsuspecting voice coil. For all of that, given the sonic quality of the A1001, and its almost inexhaustible power capability, we would be willing to overlook that minor bit of "unprofessionalism," even if it means tying down the audio input cable with cable clamps to forestall any intermittents.

SAE A1001 POWER AMPLIFIER: Vital Statistics

PERFORMANCE CHARACTERISTIC	MANUFACTURER'S SPEC	LAB MEASUREMENT
Continuous power for rated THD, 1 kHz		
8 ohms	500 watts	550 watts
4 ohms	750 watts	770 watts
FTC rated power (20 Hz to 20 kHz)		
8 ohms	500 watts	540 watts
4 ohms	750 watts	750 watts
THD at rated output		
1 kHz, 8 ohms	0.025%	0.005%
1 kHz, 4 ohms	0.025%	0.007%
20 Hz, 8 ohms	0.025%	0.008%
20 kHz, 8 ohms	0.025%	0.016%
IM distortion, rated output,		
SMPTE	0.025%	0.014%
CCIF	NA	0.003%
IHF	NA	less than 0.03%
Frequency response at 1 W, Hz-kHz (for -1 dB)	20-20 (-0.5)	20-20 (-0.2)
S/N ratio, re: 1 W, "A"-wtd, IHF	90 dB	92 dB
S/N ratio, re: rated output, "A"-wtd	117 dB	118 dB
Dynamic headroom, IHF	NA	1.5 dB
Damping factor at 50 Hz	60	60
IHF input sensitivity	0.11 V	0.10 V
Input sensitivity, re: rated output	2.50 V	2.50 V
Slew factor	3	3.5
Power consumption: Idling, maximum	NA; NA	220 W; NA

CIRCLE 18 ON READER SERVICE CARD



"The EX-18 could well become a classic audio tool"

June 1987 Modern Recording and Music ©1981 Cowan Publishing

That's what Modern Recording said about the EX-18 stereo 2-way/mono 3-way electronic crossover. The same statement could very well apply to the new TAPCO 2210 and 2230 graphic equalizers as well.

The EX-18 provides all the necessary controls and functions for bi-amplifying stereo or tri-amplifying monaural speaker systems and this can be accomplished

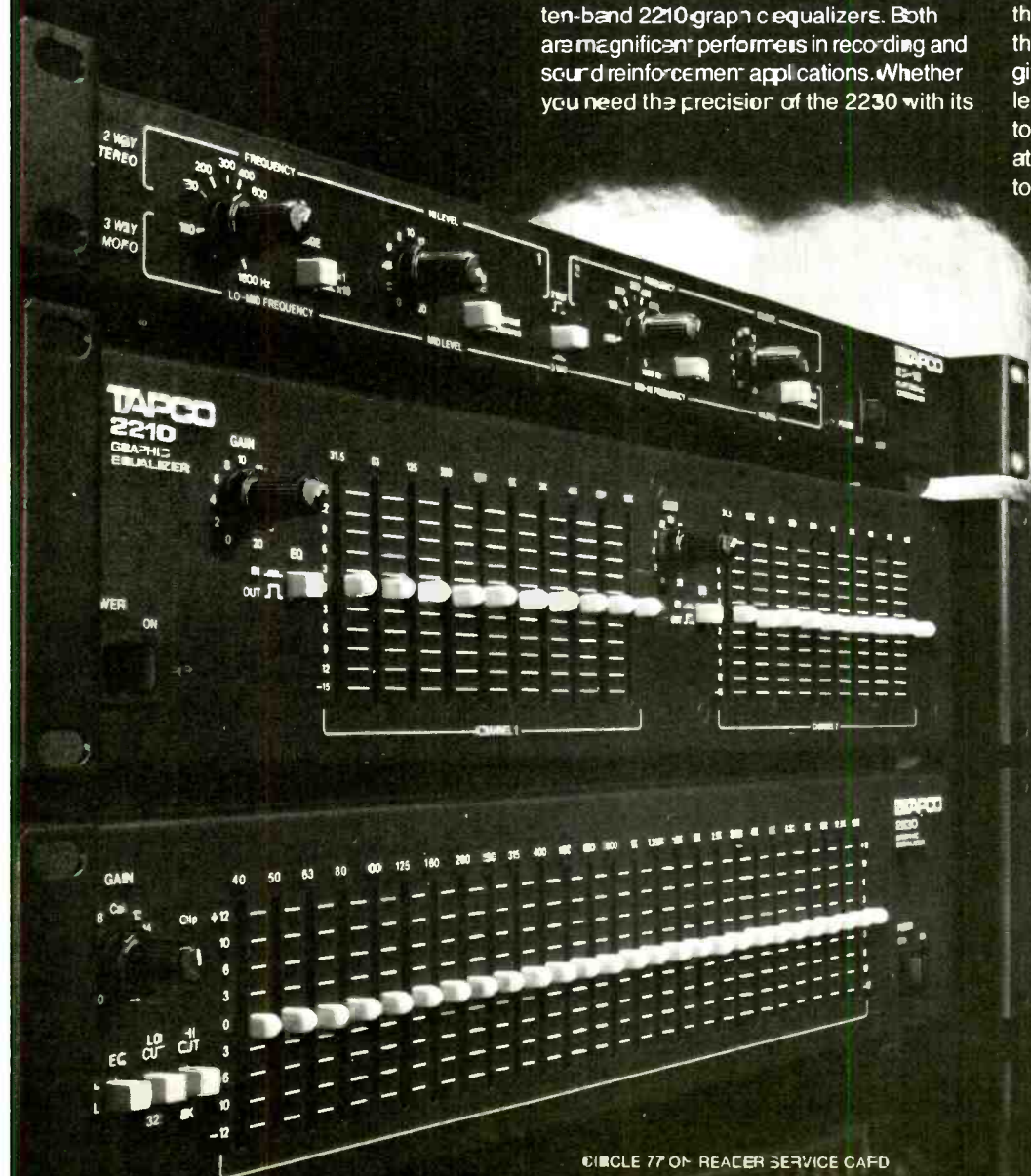
using a unique mode switch so no external patching is required. A single knob on each channel adjusts the crossover frequencies, with a 10X multiplier available for very high frequency crossover operation. It is definitely one of the cleanest and quietest electronic crossovers available.

The same precision design and human engineering found in the EX-18 is found in the one-third octave 2230 and the dual ten-band 2210 graphic equalizers. Both are magnificent performers in recording and sound reinforcement applications. Whether you need the precision of the 2230 with its

combining filter action, switchable high- and low-pass filters and floating balanced outputs, or the economy and flexibility of the 2210, there are simply no better values in today's marketplace.

All three units are equipped with removable security covers to prevent accidental operation of any of the controls once your requirements have been set.

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CIRCLE 77 ON READER SERVICE CARD



GROOVE VIEWS

Reviewed By:
ELLEN ZOE GOLDEN
NAT HENTOFF
JOE KLEE
NORMAN WEINSTEIN

POPULAR

ADAM AND THE ANTS: *Prince Charming*. [Chris Hughes, producer; Ross Cullum, engineer; Nigel Barker, assistant engineer; recorded at Air Studios, London, England, August 1981.] Epic ARE 37615.

Performance: **Formulaic**
Recording: **Cluttered and muddy**

Last time around it seemed like Adam Ant might be the breath of fresh air needed in the stale music mainstream as his tribal rhythms, delirious chants and astute sense of pride pumped vigor and vitality into the collapsed sing-song lung. Unfortunately, the praise seems to have gone straight to his head, as the latest Adam and the Ants album, called *Prince Charming*, takes the excitement of the past and changes Ant Music into systematic and unimaginative fodder.

Adam is still preoccupied with making heroes out of every possible clan ("Scorpions" is a *West Side Story* gang tune with a glitter twist, "Picasso Visita El Planeta De Los Simios" puts the Spaniard "on quality street" and "Mowhok" says the Mohicans are "proud and fair"), but what began as pride has quickly changed to egotism as Adam proclaims greatness in almost every song. Those tunes that aren't pompous fall straight back into the Ant/Sex trap, and cuts called "S.E.X." and "Ant Rap" carry things a bit too far.

Musically, there's more than enough

evidence that these new songs are made up of bits and pieces of styles and tricks that worked so wonderfully last time. "5 Guns West" (just guess what that's about) uses the same type of steely prairie guitar and ho-ho-ho-and-a-bottle-of-rum riff from *Kings of the Wild Frontier's* "Los Rancheros" and "Jolly Roger." "That Voodoo" has a break that urges me to sing the line "Dirk wears white sox" from "Don't Be Square (Be There)." To add injury to insult, producer Chris Hughes, who last time properly layered all of the Ants' going on's, has cluttered the howls, the double drummers, and even Adam's voice to the point where the stereo needle appears to be trudging through mud.

It would be unfair to chuck the whole Ant Music concept out the window, but when the most entertaining cut of this

new collection is "Stand and Deliver," a song previously available as a bonus single to *Kings...*, there's a strong indication that Adam isn't able to progress and grow. More like it though, is that the man became more important than the music, and he better straighten out soon or Adam and the Ants are going to get squashed. E.Z.G.

THE RAMONES: *Pleasant Dreams*. [Graham Gouldman, producer; Lincoln Y. Clapp, Harvey Goldberg, Chris Nagle and Keith Bessey, engineers; recorded at Media Sound, New York, N.Y., Strawberry Studio North, Stockport, England and Strawberry Studio South, Dorking, England; mastered by Melvyn Abrahams at Strawberry Mastering, London, England.] Sire SRK 3571.

Performance: **Pleasant Ramones**
Recording: **Top notch**

With *Pleasant Dreams*, there's no need to bother analyzing and categorizing the music, for this record is, quite simply, a hell of a lot of fun. Granted, it's chock full of messages and innuendos (I don't think the Ramones are kidding when they sing "We Want The Airwaves"), and don't expect any appearances by Judy or Sheena. The bottom line is that you can sing and dance to this collection all night long. Now, ain't that sweet and simple?

Sure, 'cause the Ramones have gone back to playing shorter, catchy tunes without those thick Phil Spector touches that cluttered *End Of the Century*. The emphasis of *Pleasant*



ADAM ANT: Trudging through mud?

Dreams seems placed on cohesive lyrics and a rich melodic rock'n'roll sound, courtesy of new producer Graham Gouldman (of the group 10cc and producer of such wonders as Herman's Hermits, the Yardbirds and the Hollies). The boys themselves are more soulful, a tinge more precise with their tempo changes, and still able to kick shit if they have to.

Lyricaly, the record appears to be divided between the maturing insight of Joey and the ever-lasting childhood of Dee Dee (both of whom take individual credit for the music and lyrics of their respective songs). While Joey writes of love, pain and "How This Business Is Killing Me," Dee Dee chooses to remain a "comic book boy," or so he writes in "Come On Now." Even when Joey rebels with "It's Not My Place (In The 9 To 5 World)," he does it with enough perception to make me wanna quit my job.

With this insight comes definition, and that easily explains the move back to 4/4 ceremony. Most of the musical arrangements this time around exude a new-found confidence that allows the Ramones to build ever-so-slightly on their pleasing primitive style. The raw grit remains (note the album's catchiest number, a friendly ditty called "The KKK Took My Baby Away"), it just doesn't burn so much anymore. And, to tell the truth, this fresh approach is just as hot—and exciting—as anything that came before it. And certainly as much fun. E.Z.G.

BRAVE COMBO: *Music For Squares*. [Producer not listed; Bob Singleton, engineer; recording site not given.] Four Dots Records FD-1005.

Performance: **Boisterous, bold, brazen**
Recording: **A bit lacking in brilliance**

Don't believe the title of this album. This music is for anyone *but* squares. And it is an absolute must for lovers of one of America's most neglected musical genres: the "Tex-Mex" sound. "Tex-Mex" is a polyglot genre consisting of rock, rockabilly, Mexican popular music, swing music, etc. It's a bit like a friend's favorite chili recipe: a little bit of everything but the kitchen sink gets simmered with tons of hot pepper. Translate this culinary metaphor into music and you get groups like the Sir Douglas Quartet,

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"King" Carrasco and the Crowns, and Sam the Sham. I imagine that there are numerous "garage bands" throughout the Lone Star State playing in this tradition. I can't imagine any more charged with energy and humor than Brave Combo.

What Brave Combo adds to this tradition is a passion for old dances. This album features four polkas, a rhumba, a tango, and (are you ready for this?) a cha cha. All are played at a furious and frenetic pace utilizing acoustic as well as electric instruments. Carl Finch (the apparent group leader) plays torrid guitar, piano, and accordion. (Can you remember the last time you heard a tight rock band explore the possibilities of the accordion?). On drums and percussion is Dave Cameron who plays with saucy abandon. Tim Walsh plays extremely tasteful fills on sax and clarinet while Lyle Atkinson plays attentive bass.

Finch and Walsh do vocals with conviction and rough-edged charm. The few lyrics that appear on this record are generally forgettable. The instrumental cuts are my favorites. Their version of "Perfidia" is a riotous explosion of Latin dance rhythms. And their version of the "Peanut Polka" threw me into gales of laughter. They manage to sound like an old German Beer Hall Band circa 1939 playing their hearts out while under the influence of LSD. Every cut on this album is infused with wild enthusiasm and an obvious love for joyous dance music. Can you say as much for the last ten Rolling Stones albums?

The recorded sound, well, no one's perfect. Maybe this was recorded in somebody's garage. The sound could stand more body, more brilliance. I might be asking too much from a low-budget operation. Suffice it to say that a band with Brave Combo's talent deserves a brighter studio environment.

Don't be surprised if you can't find this album in your favorite record outlet (unless you currently reside in Denton, Texas). Write to Four Dots Records, Box 233, Denton, Texas 76201 for ordering information.

Rock in the 70s and 80s has thrived on recycling old styles. I wouldn't be surprised to hear the clarion cry of "Let's Twist Again" from a new wave band. In the meantime, these guys from Texas make me shout (with my tongue well placed in my cheek): "Let's polka!". N.W.

JAZZ

EIJI KITAMURA: *Swing Eiji.* [Eiji Kitamura, Yoichiro Kikuchi, Carl E. Jefferson and Noibuo Oitani, producers; Phil Edwards and Frank Dorrite, engineers; recorded at Coast Recorders, San Francisco, Ca., August 12 and 13, 1980.] Concord Jazz CJ-152.

Performance: **They blow hot clarinet in Japan plus the all-stars from the U.S.**

Recording: **Exceptional**

I'm not going to try to convince anybody that Eiji Kitamura is a better clarinetist than Benny Goodman or Edmund Hall, but the fact that he's worthy of the comparison says something about this Japanese clarinetist who appears here with a typical Concord Jazz rhythm section (Nat Pierce, piano and arranger, Brian Torff on bass, Cal Collins on guitar and Jake Hanna on drums) along with a surprise appearance each by guitarist Herb Ellis, tenor saxophonist Fraser MacPherson and cornetist Warren Vache.

It's a great record to try on a blindfold test. I just can see some of my friends scratching their heads and wondering if it's Peanuts Hucko or Aaron Sachs or Sol Yaged. Like the three above mentioned clarinetists, Kitamura has his roots in the Benny Goodman of, shall we say, the late '40s. Even most of the repertoire is identifiable with Benny of that era. There's a blues, six standards out of the swing litany and one pop tune from a 1953 Doris Day movie, *Secret Love* (and for my money, that's the one they could have left off and I wouldn't have missed it). Eiji is at his best on Eubie Blake's "Memories Of You" which he begins with the release, rather than taking the tune from the top. This cut also furnishes the best playing from the back-up group spearheaded by Cal Collins on guitar in a wonderfully constructed solo.

The three guests (Vache, McPherson and Ellis) show up on one cut each. Even though the liner doesn't label which cut Herb Ellis plays on, anyone who remembers his work with Oscar Peterson's Trio of yore will have no trouble recognizing Herb's work on "But Not For Me." Fraser MacPherson's tenor is heard on "Sunny Side Of The Street" and Vache's cornet joins on

"Undecided." The guests do give an added sparkle and dash and an element of surprise to those cuts they're on. It's a pleasant surprise but an unnecessary one. Yet if it makes a Herb Ellis fan or a Warren Vache fan pick up this record and become an Eiji Kitamura fan, that's not bad either.

Concord Jazz has released this album under agreement from Toshiba-EMI of Japan who have a digital version available there. The sound on the analog recording is plenty good enough. Better than this would just be gilding the lily.

J.K.

ERIC DOLPHY: *Stockholm Sessions*. [ENJA, producer; unknown engineer; recorded at the Swedish Broadcast station in Stockholm, Sweden, Sept.-Nov., 1961.] Inner City IC 3007.

Performance: **Dazzling Dolphy (with fellow players "out to lunch")**

Recording: **Clean**

Dear Eric:

You've been dead for seventeen years and this reissue of your music is the best release I've heard in months. Not only were you the first innovative jazz artist I ever heard, but you were the first to teach me how to be a jazz critic. I learned while listening to your records how to appreciate a brilliant musician who finds himself playing with pedestrian sidemen.

And *Stockholm Sessions* is a perfect example of what I mean. Why did you ever agree to record with such mediocres? Idrees Sulieman's trumpet playing on "Ann" is really an embarrassment. He sounds like Freddie Hubbard on a bad night. A creaky and tinny tone. Drummer Sture Kalin sounds uninspired throughout. Only bassist Jimmy Woode sounds like your peer. I remember those Prestige records you made with Carter and Mal Waldron. They understood that your music extended the vocabulary of Charlie Parker. They knew that you, Coltrane and Ornette Coleman were among a precious handful of innovators who would create the post-bop jazz tradition.

But even with this sadly lacking band you still capture my heart. Your version of "God Bless the Child" on bass clarinet makes this record absolutely essential. Just you and your horn—no backing band heard on that



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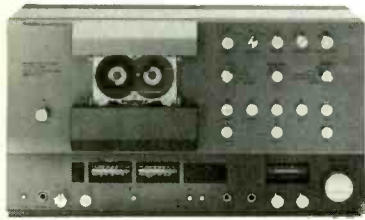
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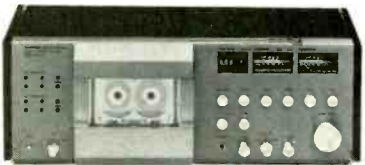
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SOLO FLIGHTS: JIMMY ROWLES AND BARBARA CARROLL

By Nat Hentoff

For a long time, Jimmy Rowles was a continually busy studio musician in Los Angeles, but one day it forcefully occurred to him that this ceaseless round of trivia, well-paying though it was, had hardly been his reason for going into music in the first place. So he left, came East, and in recent years, has achieved renown among his peers, and a considerable number of lay cognoscenti, as one of the subtlest, wittiest, and lyrically haunting pianists in all of jazz.

When Jimmy was young, Duke Ellington—and Ben Webster in Duke's band—were huge influences on him. Posthumously, they still are. Accordingly, what may well be his most fully realized album so far is *Jimmy Rowles Plays Duke Ellington and Billy Strayhorn* on Columbia. It's a solo set, for Jimmy is one of the very few pianists who doesn't need a rhythm section. With regard to his time, as Tom Piazza observes in the notes, "notice...how firm Rowles' tempos are, whether or not they are explicitly spelled out by the left hand."

Furthermore, though Jimmy is nowhere near so fast as Art Tatum was, his harmonic and melodic surprises are so subtle that he's truly liberated as an unconstrained soloist. As well as you may know the Ellington and Billy Strayhorn songs here (one side for each), Rowles continually finds new dimensions of color and line while always retaining and distilling the spirit of Duke and Strayhorn.

The piano sound is a tribute to engineer Stanley Tonkel and his assistant Nancy Byers. It's full and real—an ideal collaboration between the control room and Rowles' free imagination.

While Jimmy Rowles' easeful, probing mastery of the difficult art of solo piano is no surprise, Barbara

Carroll's first solo album of the fifteen she has made is unexpected. She became an invigorating member of the New York scene in the 1940's as a disciple of Bud Powell, and then shaped her own firmly swinging, urbane style as leader of her own trios. But the idea of recording all by herself seemed dangerous to her. If her imagination were to flag, there'd be no one else to ignite it again.

The temptations to try a solo flight grew, however, and the singular, deeply absorbing result is *Barbara Carroll "At The Piano"* (Trend/Discovery). With a provocatively diversified repertory—songs by Cole Porter, Keith Jarrett, Johnny Mandel and herself—Barbara sets and sustains a total mood, a one-of-a-kind microcosm on each track. Her melody lines are silvery clear and never just "licks." (She is one improviser who does indeed compose when she plays.) Furthermore, the intertwining of melody, harmonic textures, and a deep, implicit pulse are remarkably seamless.

Put another way, Barbara's strengths are co-equal; she doesn't have to compensate for thin inventiveness, predictable chords, or an apprehensive beat. In addition, there is humor along with tenderness, and above all, the sheer pleasure of, as she puts it, "getting into" the piano.

The piano sound, while not as warm as on the Rowles' album, is vibrant and crisp.

JIMMY ROWLES: *Plays Duke Ellington and Billy Strayhorn*. [Henri Renaud, producer; Stanley Tonkel, Nancy Byers, engineers]. Columbia FC 37639.

BARBARA CARROLL: *"At The Piano"* [Barbara Carroll, producer; Frank Laico, engineer]. Discovery DS-847.

cut. All of your musical virtues are heard in high relief: your dazzling speed and fluid inventiveness, your precision and grace. And how I cherish your thin yet pretty flute tone on Mal Waldron's "Alone." Every instrument you touched—alto sax, flute, bass clarinet—you brought a Midas touch to. Your sax work on several cuts burns with an existential urgency that is thrilling. How you could create streams of novel sounds using clusters of thirteen or seventeen notes at a time! You always sounded like a man in a hurry—with death breathing down your neck. It was by the time *Stockhold Sessions* was recorded, wasn't it? Perhaps that knowledge caused you to play with anyone the Swedish Broadcasting Company could dredge up. Was there a tinge of ironic humor in titling your final cut on *Stockholm Sessions* "Don't Blame Me?" I won't. Your flute scales musical heights with the power of a condor soaring over mountaintops.

I must express gratitude to the Swedish Broadcasting people for recording you sensitively. The sound on *Stockholm Sessions* is as fine as you would ever receive in your lifetime.

Hope this record sells well (not that the royalties will do you very much good where you are). The following message is printed on the record jacket: "Mr. and Mrs. Eric Dolphy Sr. have authorized the release of this album." They must miss you terribly.

I know I do.

N.W.

CLASSICAL

MARIO LANZA: *The Mario Lanza Collection.* [C.E. Crumpacker, reissue producer; Edward Rich, remastering engineer; original recordings made between 1949 and 1959, in New York, Hollywood, Rome and London.] RCA CRMS-4158.

Performance: **Lanza from beginning to end**

Recording: **Typical pop engineering of the '50s**

It is difficult to realize that all of Mario Lanza's more than 200 recordings were made in a space of ten years or so. He was a prolific performer and if his

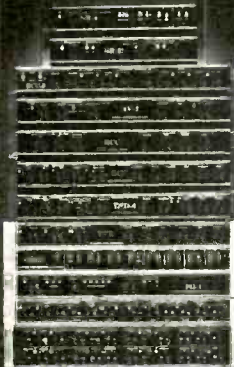
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performances were uneven there was still enough there to be of interest even at the last. The last, presented here at the end of this five LP series, is a mostly orchestral "One Alone" made for a stereo remake of "The Desert Song" album. Certainly the youth and much of the vigor of the earlier recordings was no longer there, but there was still a raw power and the immediacy of a singer who gave everything he had to everything he did. Whether he was singing "Vesti la giubba" from "Pagliacci" or some schlock film tune such as "Boom Biddy Boom Boom" from "The Toast Of New Orleans" he gave it the same commitment.

The accompanying booklet by C.E. Crumpacker is filled with vintage photos and anecdotes, many of them surprising, about the meteoric career of this tragic performer. I had always blamed Lanza for the emphasis on pop music (and much of it rather poor pop music) in some of his films. The liner notes point out the way he was manipulated by Hollywood moguls, like Louis B. Mayer, Jack Warner, and Joe Pasternak, into making films that showed him off at less than his best.

This is by no means a complete Lanza collection. In fact it's a mere drop in the bucket. The hits "Be My Love," "Because You're Mine," "The Loveliest Night Of The Year" and all the others, are here. They are mostly put together on side one and side two coupled with their original 78 RPM or 45 RPM issued second sides. Most of the operatic material is on side nine and it's a formidable recital including his first recording, "Celeste Aida" and climaxing with a wonderfully dramatic "Addio alla madre" from "Cavalleria Rusticana." In between the hits, the film songs and the operatic arias are a good many standard pop tunes either from commercial recordings or from Mario Lanza's famous transcribed radio program for Coca Cola. One of these is particularly excellent. I don't think I've ever heard Lanza sing pop material better than he sang "Temptation" on the Coke show of Jan. 7, 1952.

Beautiful, perhaps not beautiful but certainly magnificent, voice that it was, Lanza's voice was a flawed voice and his technique was an imperfect technique. One need only to listen to his recording of "Yours Is My Heart Alone" (side two) to notice Lanza's tendency to sharp in moments of tension. It may or may not have been a voice that could have been

heard easily in the opera house. I've heard it said by those who heard him in person (I did not) that the voice was so amplified you couldn't tell how much was real, while others have pointed to certain similarities on Lanza's records with some of the great singers of the golden age pointing out that the voice was just as powerful. With a recording it's not easy to tell.

There is at least one fact we know. Mario Lanza sold more records than any other artist who ever recorded for the Victor Red Seal division. He even surpassed Caruso's sales figures.

There's some fine music here...especially "Temptation" (side five), "The Lord's Prayer" (side six), and "Softly As In A Morning Sunrise" recorded live at a London concert in 1958 released here for the first time (side ten). There are some more selections that I wish were here, such as the unaccompanied "Mattinata" from "The Great Caruso" or the "Otello" excerpts from "Serenade."

Unfortunately, perhaps due to his temperament and the subsequent bad publicity it elicited, those of us who lived through the Lanza era got a rather "Peck's Bad Boy" picture of the artist. Now that the ledgers have been closed and two biographers have written books about him and we have this collection of some sixty representative recordings, we finally come to the realization not only that behind the headline-making Hollywood star there was a fine artist, but that the more sensationalistic aspects of Lanza's life were not entirely of his own making. At any rate here is a tenor, however good or bad he may have been, who influenced a generation of movie goers. I bet that if you polled an audience at the Metropolitan Opera today and singled out those who would have been in their teens somewhere during the '50s, more than half would tell you that their love of good music and opera dates from their seeing Lanza on film. J.K.

BACH: The Well-Tempered Clavier, Book One. Mieczyslaw Horszowski, pianist. [Robert Lurie, producer and engineer; recorded at Vanguard Studios, New York, N.Y., December 1978 to December 1979.] Vanguard VCS 10138/40.

Performance: **Personalized Bach**
Recording: **Servicable not spectacular**

Although Vanguard's Cardinal series

is a budget label (\$5.98 as opposed to \$7.98 for the regular series, I believe), it is a label which does occasionally put out first-time (non-reissue) performances. Here is the latest example.

Bach's *Well Tempered Clavier* is too well known to need much comment here. There are five complete versions listed in the Schwann catalog for May. This, presuming that book one will be followed by book two, will be the sixth and a worthy addition to the field. Today Mieczyslaw Horszowski, at eighty years plus, has a personal view of Bach. This is in contrast to so many performers who offer us scholarship without any individuality. This is a committed performance by a pianist who has been playing this music since the age of five and has some definite ideas about how it should be played.

My first acquaintance with Horszowski's playing was a performance of Bach's concerto for violin, flute, clavier and orchestra along with John Wummer, Alexander Schneider and the Prades Festival Orchestra under the direction of Pablo Casals. His recorded repertoire includes concerti and chamber music as well as solo piano performances. Still he is represented by far fewer LPs than his considerable talent deserves. I am glad to see that Vanguard is remedying the situation.

Having established that Horszowski is a personal, communicative pianist who has not been adequately represented on recordings, we come to the question of Bach's *Well Tempered Clavier*. Written down in 1722 for, as Bach put it, "the profit and use of musical young people eager to learn, as well as for special pastime for those who are already proficient in this study," this music has been much in the center of the controversy regarding the preference of the piano or the historical tradition of the harpsichord. According to the Fifth edition of Grove's *Dictionary of Music and Musicians in the 18th Century*, the word "clavier" meant simply a stringed keyboard instrument of any kind. Therefore the notion that "clavier" is to be translated as "Clavichord" does not necessarily follow. It could have referred, as Wanda Landowska asserts, to the harpsichord as well. Grove's takes the view that Bach desired to make his 24 preludes and fugues available to the students and practitioners of all keyboard instruments of the day. That this has been taken to mean primarily harp-

sichord or piano is more in line with the performing traditions of such artists as Wanda Landowska, Edwin Fischer, Wilhelm Backhaus and Glenn Gould than any intention of the composer. This has not prevented arrangers and scholars from tampering with holy writ and full orchestrations, as well as chamber music versions, which do exist on recording. Gratefully, we've been spared versions on the Moog Synthesizer but we may have to come to terms with even that eventually. I feel that far more important is the question of the validity to the *average* listener of music which, by the composer's own admission, was intended as a group of pieces for the study and practice of the performer. I have in past years had to come to grips with listening to the 24 preludes and fugues of *The Well Tempered Clavier* uninterrupted. It's not an easy task and the amount of reward that the listener can expect to reap from such an experience depends largely on the ability of the performer to shade and shape the music with subtlety and variety. Among Bach scholars this practice is frequently frowned upon. The correct Urtext reading which omits nothing and adds nothing of the performer's own interpretation to the music can be a deadly bore. One such interpretation (or lack of interpretation) very nearly had the calamitous consequence of turning me off to this music forever. I'm glad that many years after that painful experience I again found cause to hear this music from beginning to end. I am particularly glad that this cause coincided with a performance as diverse and personal as that of Horszowski.

The recording is certainly pre-digital but more importantly there's a certain tubbiness with which I'm less than really comfortable. A little fiddling with the knobs should eliminate much of this problem but it's certainly not representative of the state-of-the-art of recording quality. The recording was spaced out over an entire year's time beginning in December of 1978 and lasting through most of the following year. It was also one of those rare cases where the producer was also the engineer. It was obviously a labor of love and the recording that has resulted will certainly suffice until one comes along with better sound...but then there's no guarantee that any new digital version will bring as much warmth and humanity to Bach's music as this one. J.K.

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