

John Storyk on Studio Design. Roy Thomas Baker on Producing

# INTERNATIONAL MUSICIAN<sup>TM</sup> AND RECORDING WORLD

JUNE '80 \$1.50

USPS 331-630

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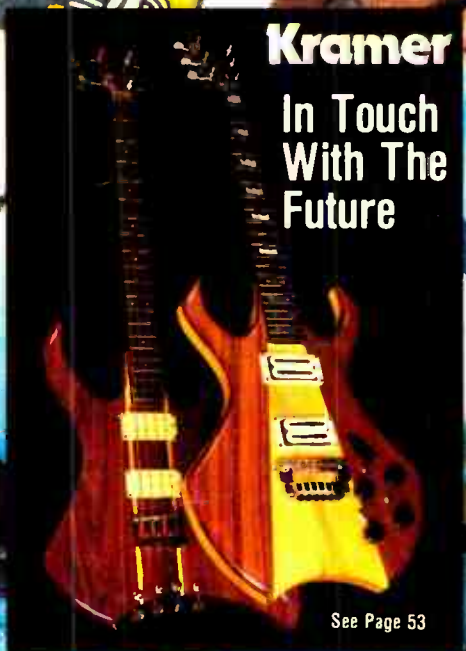
**Nancy Wilson**

**Sanborn**  
que and style

**Cozy Powell**  
In time for solo

**Ray Brown**  
The acoustic bass of jazz

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World Radio History



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# A Personal Look At I.M.&R.W.

One of the most demanding jobs within the international structure of IM&RW is the Advertisement Director of IM&RW/USA. Alan Kesselhaut, who joined the organization in October last year, brought with him a wide range of experience which encompasses both the publishing and musical worlds.

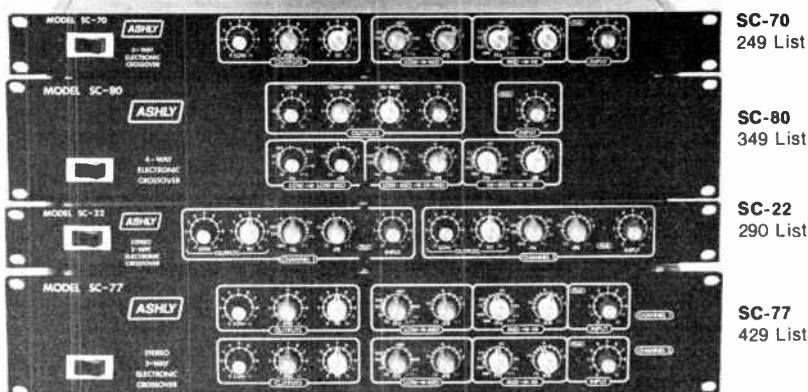
After graduating with a B.S. degree from University of Cincinnati, Alan took up a position with the well-known advertising agency of New York, J. Walter Thompson. Learning the ropes from one of the best in the business Alan soon moved on to Art Director of a major printing company in New Jersey. From these jobs he gained a great deal of experience in printing, advertising and graphic design; so much so, that he moved on to open his own graphic arts studio which by 1976 went public. The success of the studio

enabled Kesselhaut to purchase a printing company. His already good track record of success was not blemished as the operation branched out into commercial printing and the publishing of "how-to" music books.

Although he doesn't like to mention it much, Alan is an accomplished banjo player and a maker of hammer dulcimers in his spare time. This love was undoubtedly a major influence in his launching of the successful magazine *Pickin'* — a monthly publication primarily designed for the acoustic and bluegrass markets.

After two years of successfully steering the publication, Alan joined the IM&RW staff contributing heavily to the overall operation with his in-depth knowledge of publishing and the musical instrument market.

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# Letters



## Kinks Korrection!

I wish to express my grave disappointment over your article, "The Kinks Kollection." The information given about the instruments was sketchy at best, and inaccurate for at least one instrument —

3, listed as a Les Paul Junior, is actually a Les Paul Special. The Junior had only one pickup, whereas the Special had two, like 3 in the p. 40 photo. In addition, the headstock on the guitar shown is like that of an SG Standard or ES-335, employing a crown-like design between the two rows of tuning pegs. Is this an extremely unusual Les Paul Special, or one that has had the headstock replaced? It's impossible to tell from what little information is given. Another guitar, 18, is listed as a Gibson "Custom L5." It is, in fact, a Gibson L-5S, part of the Gibson "Solid Body Series." Its name, as well as design and appearance, distinguishes it from the Gibson "L-5C," a large-body, F-hole acoustic, and the Gibson "L-5CES," a double-pickup electric version of the L-5C. These latter two guitars are both part of the Gibson "Custom Series." Model names are not even given for numbers 5, 7, 9, 10 and 22.

The picture itself is poorly done, with 5, only listed as "Ibanez," invisible, except for half of the headstock. What is it? The Les Paul Artisan listed as 6 is not too much more visible than the Ibanez, although most of us would know it to probably be identical to 11. The Melody Maker, 19, could also have been shown more clearly.

I have a great respect for the Kinks and their music, having grown up with it, but when gathering information from the owners of instruments you should try to get more details and double-check your information for the sake of journalistic accuracy.

David Ragone,  
Box 511,  
Vienna, VA 22180

*In my letter criticizing the "Kinks Collection" article, there is one instance where both the article and I are correct: the guitar listed as a Gibson "Custom L-5" does indeed say "Custom L-5" on the truss rod cover, but is listed in the Gibson literature as the "L-5S."*

8

## Picking up

Lest your readers remain misinformed, I feel it is my duty to correct a few errors in your otherwise excellent magazine. In March's fine piece on the Kink's guitars (page 41), the guitar on the immediate right of Dave Davies is called a Les Paul Junior but in fact it is a Les Paul Special (the Junior had only one pickup). In the same article, Dave says of his Gold Top Les Paul: "that's around 1960" — this is highly unlikely since the model shown (single combination bridge/tailpiece and single-coil P-90 pickups) was made from late 1953 to mid 1955. A limited edition of this model was reissued in 1972.

In February's article on Blondie, Chris Stein (page 35) lists among his guitars a Strat with "a '69 body with a '57 rose wood neck." Any informed guitar fan will tell you that Fender introduced the rosewood fingerboard in late 1959. I realize the possibility of a misprint, but more often than not I hear such comments from musically illiterate guitarists who know every little about the instruments they play. Also, I feel that Stein's remarks on Fender quality are unjustified. My experience has proven that Fender quality has remained consistently high; lastly, my 1972 Stratocaster (with 3-bolt neck) stays in tune extremely well, as opposed to what Mr Stein says. Rock on.

Nicholas M. Athens  
Salt Lake City, Utah

Dear Messrs Ragone & Athens:

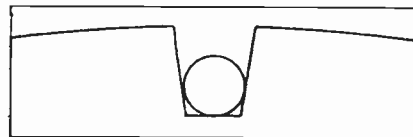
Your well-informed letters confirm that our readership knows whereof they speak and also proves one of my oldest axioms: Never ask a musician about his guitars (especially a survivor of the Sixties and Seventies), ask his roadie! No. 3 is indeed a Les Paul "Special." The Les Paul Gold Top pictured was made from late '53 to mid '55 and reissued as a limited edition model in '72. Mr Athens is correct about Chris Stein's comment concerning a Strat with "a '69 body and a '57 rosewood neck." Rosewood fingerboards didn't actually hit the production line until 1959 although Gregg Wilson of Fender informs us that certain models were made with rosewood "caps" in 1958. Jeff Hasselberger of Ibanez surmises that the mystery Ibanez may in effect be one of the lower-middle priced models in Ibanez' "Recording" series. And, as far as Mr Ragone's "grave disappointment" and convoluted logic about the Gibson "Custom L-5" is concerned; take a break Dave. . .

J-C. Costa

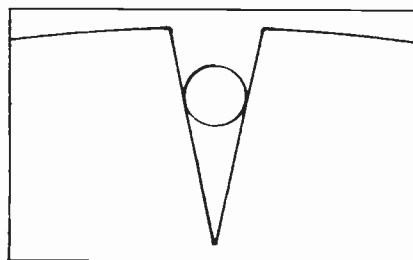
## Fender Makes a Point

I read with great interest Stephen Delft's recent review of the Fender Lead I Guitar. As designer of this instrument (and its companion Lead II), I should like to clarify several points which Mr Delft raised in his article.

The filing of V-shaped slots in the nut of a Fender guitar is not among our standard procedures. These slots are cut using special files which create a square seat to support the string. The resulting slot profile is as shown.

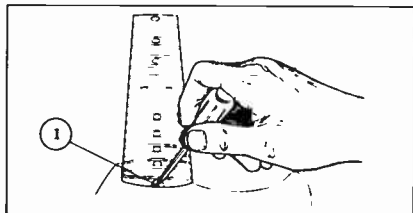


as opposed to the inferior true V-slot.



Mr Delft's point regarding clearance for neck adjustment is well taken. We did, in fact, ship several Lead I and Lead II guitars which exhibited the described problem. This situation was created by an additive accumulation of manufacturing tolerances, and the problem has long since been corrected.

Should any Lead owner encounter this problem with his own instrument, he should refer to his Owner's Manual, which describes neck adjustment procedures using a small screwdriver inserted at an angle, as shown below:



In closing, I should like to thank Mr Delft and guitarists everywhere for their enthusiastic response to the Lead I and Lead II guitars. We at Fender are proud to offer these instruments among our products, and can only be humbly grateful for the overwhelmingly favorable response they have received.

Gregg Wilson, Manager,  
Guitar Design,  
Research & Development  
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# Letters

## Roland Responds

I was rather surprised when I read the somewhat negative review of the Roland RS-09 Organ/Strings by Mr Robin Lumley in the February issue of your magazine. Among other things, I felt that it was rather unfair to continuously compare the RS-09 with the Roland RS-202, since they were not designed to be in the same category or price range. The RS-09 was not designed as a base keyboard, but was designed to become part of a multi keyboard system, or to produce fill-in harmony and orchestration in a recording situation.

In a multi-keyboard situation, where the RS-09 would usually be played with only one hand, 44 keys would certainly be sufficient for that purpose. Fill-in or background harmony would usually not require more keys either. I remember objections raised by pianists about 10 years ago when the 61-key electronic piano was introduced. These pianos have since become well accepted because 61 keys are sufficient for the job electric pianos were designed to do, and in our case 44 keys are sufficient for the job the RS-09 was designed to do. For the consumer, fewer keys can mean a lower cost (which is obviously desirable). While Roland may sacrifice keys to reduce a cost, we will never sacrifice quality for a cost reduction.

Mr Lumley mentions a number of the RS-09's features, but does so with a rather negative undertone due to his "Disappointment." He completely neglected to mention the stereo output, an important feature of this instrument. If he had been a little less negative about the RS-09, he would have presented these features for the merits that they are, instead of as faults. His statement that "there's a master volume control which lets you play very loud and can be turned down to merely deafening" suggests that he probably used the wrong output level.

The RS-09 provides a choice of three output levels as opposed to two levels (offered on previous instruments of this type). The new level is 0dBm, much higher than previously available, which permits the RS-09 to be used with ordinary hi-fi amplifiers. If he used this 0dBm output with an amplifier input designed for an instrument level (such as that produced by the RS-202), the impression he would receive from the resulting distortion would certainly explain his negative feelings. Using the higher level, distortion would be unavoidable because the volume control on most amplifiers comes after the input

stage. His failure to discover such a mistake is somewhat understandable. The distortion would be in the form of clipping which, with string sounds, would be difficult to hear as distortion. The sound quality however, would be greatly affected.

An example of the negative approach Mr Lumley has taken in the review is where he states that the RS-09 "is not a true polyphonic in that it doesn't operate on the channel-assign principle." The channel-assign principle is a reasonable attempt at producing polyphony in instruments such as voltage-controlled synthesizers which, by their very nature, are monophonic. Channel-assign systems are not truly polyphonic because they do not allow playing two separate voices which are *completely* independent of each other. Such a system does not allow you to play a flute part which crosses back and forth over an oboe part, for example. *True* polyphony in a keyboard instrument is possible only with a split keyboard instrument or with separate keyboards, and that's what multi-keyboard systems are all about. The RS-09 is just as polyphonic as a piano or single manual organ. It would be meaningless to apply a channel-assign system to the RS-09, just as it would be to apply such a system to the RS-202 or similar string synthesizers.

To cite one more example of Mr Lumley's negative attitude, we took advantage of a very simple circuit device to expand the flexibility of the control over the tone color of the sound, but he presents this in a negative light by mentioning "a slider-type pot for controlling overall tone content, not terribly sophisticated as it's probably only a treble roll-off control, but no matter." The reader is left feeling that the use of such a simple device lowers the quality of the instrument. I know of several instruments selling for over \$100,000 which employ such devices. I feel that such statements by the reviewer of a product are unfair.

The RS-09 was introduced here in Japan more than a year and a half ago and has become one of our best selling products. It is used by a number of well-known professional multi-keyboard artists and in many professional recording studios. Its success here led us to introduce it onto the foreign market and the initial response has been quite good. We continually depend on feedback from professional musicians from all over the world to help us improve our products, but Mr Lumley's reaction is so different from the reaction of most musicians that I feel certain that there must

have been some misunderstanding between him and the RS-09. We would certainly appreciate it if he would take another look at it.

In closing, I wonder if Mr Lumley took the trouble to read the instruction manual packed with the instrument. I feel that if the RS-09 is connected to an amplifiers with the proper output level that the sound quality would be at least as good as the RS-202, or even better when using the stereo output.

*Ikutaro Kakehashi*  
President

*Roland Corporation (Japan)*



## Steve Howe's Talks Books

Let's clarify my involvement with books at the moment. Immediately I have a folio of eight guitar solos being released by Music Sales Ltd. All these pieces are for guitarists to play alone, including "Mood For A Day", "Ram", "Surface Tension" and five others. In the pipeline is a book concerning my extensive guitar collection. This will also cover aspects of guitar recording, construction and customizing. We are hoping to tie in release of this book with a guitar exhibition in London, possibly connected with a museum. There is a book concerning Yes written by Dan Hedges that was completed last year but I have no information on that.

Concerning my ES, 1750, I bought this guitar new in 1964 and have since played it at almost every concert I have given. This guitar has had very little done to it since then. It has never been re-fretted or repolished, only updated with new Grover machine heads, a deluxe ebony inlaid bridge base with a Tune-a-matic saddle, and original speed knobs which I took from an ES.5 that I own. The only thing I've done to it, almost immediately after buying it, was to turn round the rear pickup so that the pole pieces are an inch further away from the bridge. I would recommend anybody buying a new guitar to look after it, this does mean cleaning it after every concert and cleaning the sweat off the fret board.

*Steve Howe,*  
*London, England*

# MORLEY



ACV and PPA identical to above.

As used by Bob Welch.

## 4 New Pedals

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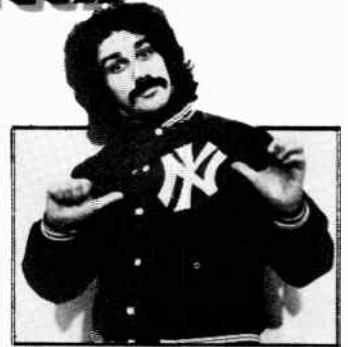
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# On Guitar:



This issue begins a two-part series on pentatonic scales, their usage and the theory behind it. Hopefully, these two columns will provide you with a source of extreme organization for your own thoughts on this most important aspect in developing your abilities as a composer/performer of improvised music. One of the most interesting parts of understanding music theory is its relationship to mathematics... that is to say, there are certain formulas, and as long as you remember the pieces that fit... *It will always work.* Please don't think that I'm saying that great music is mathematical... I am saying, take this information and make music with it, for these formulas will *always* hold true; and when mastered they'll just become so many more colors on your palette.

First, let's define our subject a little better. A pentatonic scale can actually be *any* grouping of five notes. However, as we approach them, we'll be relating to two types, which I'll call the "minor pentatonic" and the "dominant 7th pentatonic." The minor pentatonic will always be made up of the Root, Minor 3rd, Fourth, Fifth and Seventh degrees found in the dorian mode that corresponds to the chord name. So, a D minor chord would derive the D dorian mode (D, E, F, G, A, B, C, D) and the derived minor pentatonic would then be D, F, G, A, C. The dominant 7th pentatonic will always be made up of the Root, 2nd, 3rd, Fifth and Seventh degrees found in the mixolydian mode that corresponds to the chord name. So, a G $\bar{7}$  chord would derive the G mixolydian mode (G, A, B, C, D, E, F, G) and the derived dominant 7th pentatonic would then be G, A, B, D, F. As you should notice, I've chosen two chords where the modes contain exactly the same notes, but there's a crucial one note difference in the two pentatonics. That is, one contains the note C as opposed to B — it's the interweaving of the two that can

really add to your playing. You can certainly hear this kind of "interweaving" at its best on any version of John Coltrane's *Impressions* which features pianist McCoy Tyner, who uses this technique to the ultimate, and that influence has certainly spread to the playing of Chick Corea, Herbie Hancock and Keith Jarrett, and is definitely influencing a generation of guitarists who've listened to these great players. Now, to the "formulas."

### Major Chords:

On any major chord, the player may apply a minor pentatonics built on the Root, 2nd 7th degrees of the major scale (Ionian mode).

### Example:

Eb major 7 use:

G minor pentatonic

G Bb C D F

C minor pentatonic

C Eb F G Bb

D minor pentatonic

D F G A C

As we superimpose the G minor pentatonic (built on the 3rd) over the Eb major 7 chord, the five notes produced give you the 3rd, 5th, 6th, 7th and 9th degrees in the chord; with the C minor pentatonic (built on the 6th) you're getting the 6th, root, 9th, 3rd and 5th; with the D minor pentatonic (built on the 7th) you get a pentatonic feeling which relates especially well to the major  $\bar{7}$  chord form as you're producing the 7th, 9th, 3rd,  $\bar{7}$ , and 6th. Often, you'll find that the lydian mode is preferable to use against a major chord, especially in a more jazz-related context. By the same token, you'll find that, in the context of most country and rock music, the minor pentatonic built on the 6th will sound best against major chords.

Continued on page 192

# How can we say that our MXD-5 is the best analog delay for your needs?

Who do you think you are... a musician, a PA engineer, a home recordist? What do you play... guitar, keyboards, a console? Are you a vocalist? We designed the MXD-5 to be the best value in analog delays for the majority of professional musical applications. The MXD-5's versatility and performance are unequalled in its price range. But whether or not you think it's the best depends on who you are and what you need from a delay device.

## What do we mean by 'a majority of professional music applications'?

The MXD-5 is versatile. It will provide echo from the entire gamut of instruments and mics. With the MXD-5 individual channels for high and low level input signals make it possible to achieve a proper interface which is so important for sonic performance. We know that in order for any signal processor to work without distorting new material or adding unwanted noise there must be a correct matching of levels. Right now you may be working on the road, tomorrow, may be in the studio. The MXD-5 is at

home in either situation. A three position switch allows an optimum interface whether going into a musical instrument amplifier, recording console, or a PA mixer.

## How much delay is enough?

Once again, the answer to this question depends on who you are. You may never need more than 100 ms. of delay time. The MXD-5 offers from 20 to 200 ms. of delay at an astonishing frequency range. It was developed to provide a wide range of delay times, which are practical, while the quality of the audio signal remains extremely clean. This means a remarkably quiet product with a relatively wide frequency range at all delay settings. We feel that this is a very important factor to consider.

## What about, 'how little delay is enough'?

Most other analog delays offer no less than 50 ms. This limits them severely in that they cannot achieve a subtle thickening for instruments or voice. Their delay range starts at a contrived doubling. The MXD-5 can deliver delay from a thick double, to a distinct repeat; in all ranges the performance is superior.

## What kinds of things comprise an echo?

In addition to a single time delay, or repeat, there are other factors which effect the way an echo sounds. The intensity of the signal is an important consideration. In many units the volume of the delayed signal is not controllable. With the MXD-5 it can be regulated from a hint to a wallop. A multi-repeat is achieved by recirculating the delayed signal through the analog circuitry over and over again. In order to get a clean multi-repeat you've got to start with a superior delay circuit. This is what makes the MXD-5 so together.

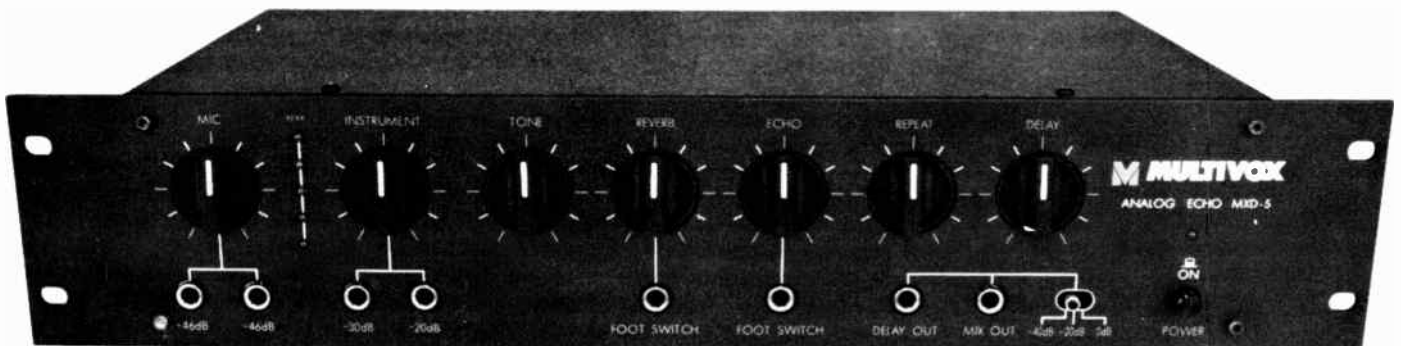
## What qualities exist in natural echo?

Echoes rarely exist in nature without some degree of reverberation. That's why we built in a high quality spring reverb. The sustain time is variable to a maximum of three seconds. The depth is independently controllable. This reverb feature further separates the MXD-5 from other delay units. The MXD-5 can achieve the illusion of natural spacial relationships. The EQ of the echo and reverb signals are adjustable so that subtle variations of the effect are

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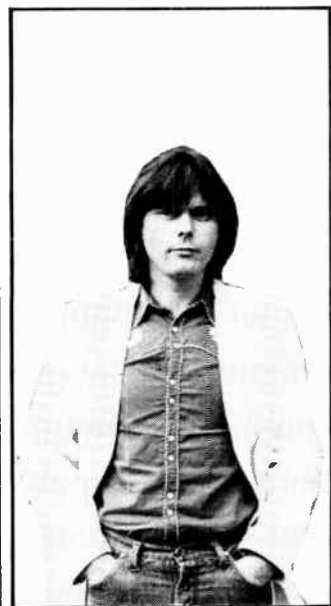
## On Drums:

### Bob Henrit

The NEARY DRUM TORQUE is actually a precision tuning item which the drum world has known to be feasible for some time but it's not until now that a manufacturer has got it together to produce the thing.

Remo's literature for the past five-to-10 years has included a photograph of one of his technicians playing a drum with clock-type pressure gauges fitted to each tension screw.

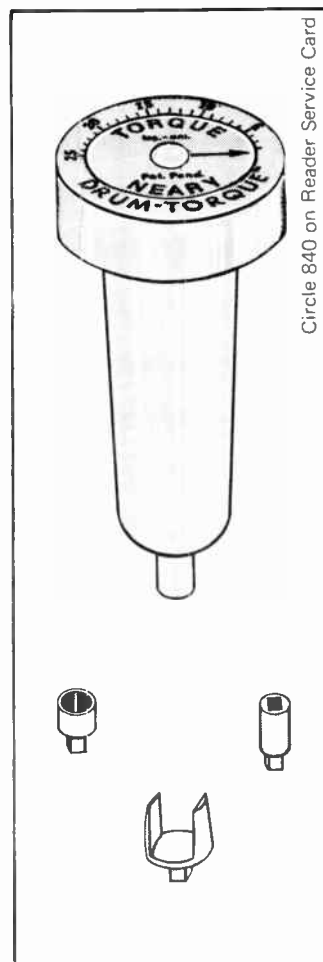
Basically, then, this is a sophisticated drum key shaped like an elongated spinning top which fits comfortably into the hand with a rotary-gauge on top graduated from 0 to 25kg/cm. All one really has to do is read off the number (say eight) and make sure that every other tension screw matches this number. It's simplicity itself to use, especially since the manufacturers supply a chart with the



unit. They also thoughtfully furnish you with a selection of interchangeable, different headed "bits". A square one, screw-driver slotted one and a "U" shaped one to fit a bass drum, "T" handled, tension screw. It is, of course, essential to make sure that the instrument is measuring the head tension and not just the bolt tension and to this end the Neary Company recommend removing each tension screw cleaning and then lightly oiling their threads and bottoms. One then makes each bolt finger-tight and then starts to tension in two kg/cm turns until the desired final tension number is reached. Neary stipulate a slightly different tensioning sequence to what is generally considered the normal one but I found that straight across diametrically and then round one and back again worked fine.

The relative values they give in *their* chart are interesting since in some cases they conflict with standard tuning practice; they list higher than, lower than, and average values, and in each case the tom tom tensions do not match numerically for batter and sympathetic head and appear to vary in a ratio of approximately 3:2. Mind you,

Contd on p. 190



# Tune-up

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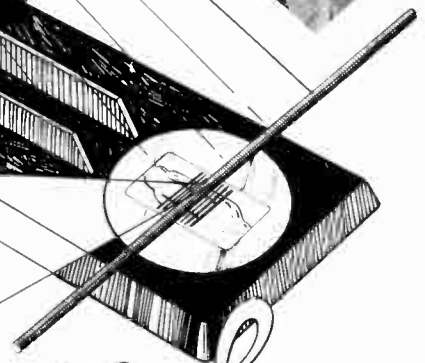
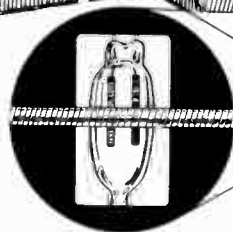
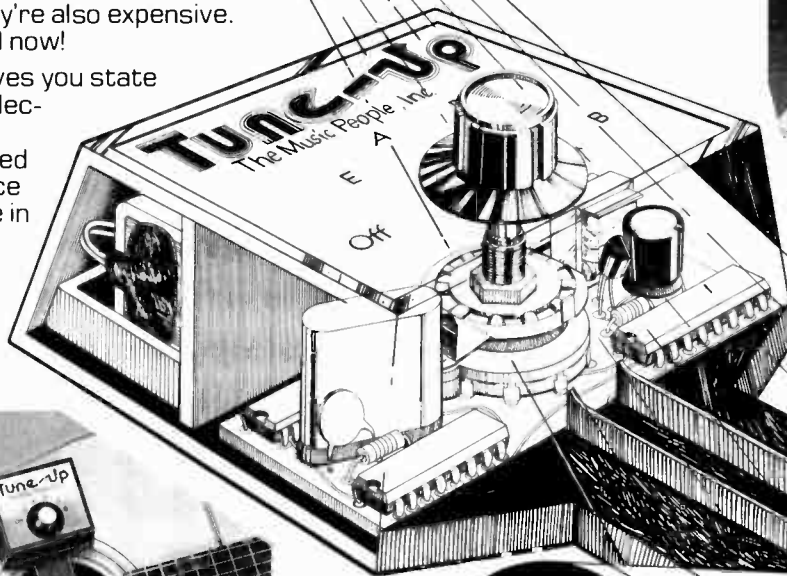
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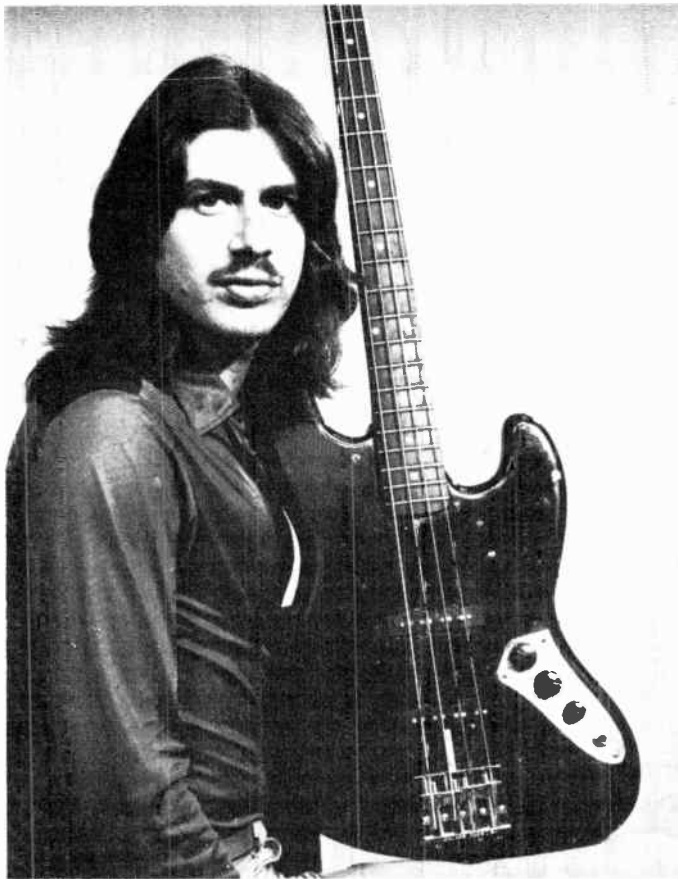


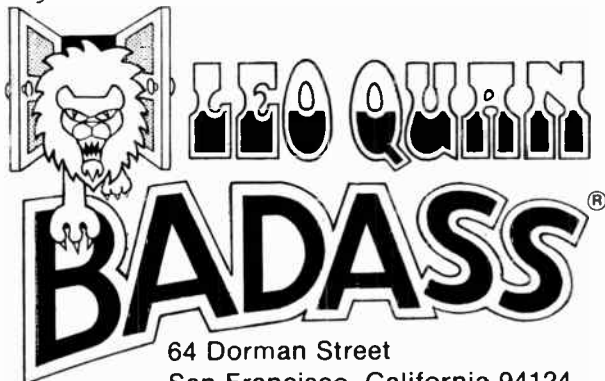
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# OnSax:

## Alan Holmes

The modern saxophone is a complex assembly of intricate parts which relate very precisely if the horn is to operate properly. One of the most important functions of the instrument is to remain airtight no matter what note is selected. Because of the use of small pieces of cork and felt in cushioning the mechanism to stop it clanking, there is a continuous change in the adjustment as the cork is progressively flattened. The operation of certain keys closes more than one pad and the most common cause of leaks is that the two pads operated by one key do not close with the same pressure.

This can be checked with strips of cigarette paper. Place them under the two pads and apply normal pressure to the key. The papers should be both held so that an equal resistance is felt when they are pulled out. This should also be checked at the four quarters of the pads circumference, to check for twisting or closing at the back, caused by knocks.

I will deal with the first aid repairs of damaged saxes at gigs later, but it is easier to have most repairs done by qualified mechanics. However, there are some things that are not too difficult to do yourself, providing you have a repair kit. A very common cause of leaks is the top F pad becoming cut through because of the continual handling of the top of the instrument every time it is used and the crook is fitted. So the vital items in the first aid kit are two high F pads and an E pad.

Repair men use a sort of varnish called shellac to stick pads but either clear glue like Bostik or brown glue like Gloy will work adequately. While on the subject of glue, the new "Superglue" instant epoxy adhesive would be useful for emergency repairs and some Araldite epoxy can also come in handy.

Having glued in the pad, the next stage is to seat it by wetting it till it is dark all over and then tying it down with string



or thin cord for half an hour or preferably overnight. This is a substitute for the repair man's method of seating pads with a torch — a very skilled job if the lacquer on the back of the key is not going to bubble or burn. The tying process works just as well but be careful not to tie round any key rods that might get bent.

The small pieces of cork that regulate the key heights and closure can often fall out or be dislodged while cleaning the instrument, so the next items on the list are a sheet of cork, a single-edged razor blade to cut it with and some fine sandpaper for adjustments after the glue is dry (use Superglue in emergencies). The cork from a Champagne bottle (which doesn't suffer damage from corkscrews) is very useful as a source of thicker pieces and blocks of cork which can be used to wedge keys shut.

It is very difficult to replace broken springs to the right tension so a packet of assorted rubber bands can get you out of trouble till you can get down to the repair shop. But don't be the sort of player who has half a dozen rubber bands operating the sax and boasts about it. Rubber bands are much more likely to break and let you down than steel springs.

# Grace Notes J.C. Costa

## No Future for New Wave?

NYC — The recent demise of WPIX-FM's "New Wave/Oldies" format here in The Big Apple does not bode well for the future of new rock & roll music. Pioneered by former Program Director/DJ Joe Piasek and his wife, former DJ Meg Griffin, PIX's "The Next 25 Years Of Rock & Roll" featured a judicious and imaginative blend of new wave/punk music mixed in with some of the tastier classics from rock & roll past. For those of us who had become resigned to New York's surprisingly — considering its rep as media capitol of the western world — mediocre rock & roll radio programming, WPIX's brave attempt represented a legitimate rebirth of radio's implicit potential as an agent for change.

Unfortunately, the mass radio audience seems unwilling to give up proven FM formulas based on "mainstream" rock staples of the sixties and seventies, "easy listening" rock or disco, and the corporate bottom line at WPIX (not unlike every other commercial FM station) soon dictated a major regression back to a safer, more accessible format. In and of itself, this move has had a disastrous impact on New York's developing cult of new music radio freaks. But PIX's format change has negative implications that extend far beyond the New York city limits.

If WPIX, theoretically a "flagship" for the U.S. progressive/new wave stations, goes down in flames, will the few others following the rocky road of experimental programming also bail out? And now that record companies are jumping on the new wave bandwagon by signing up every raw-sounding young band with a "The" in front of their name, where exactly do they expect to get airplay on these acts?

Certainly not the kind of FM "rock" stations that continue to dominate the nation's airwaves. Promotional hype notwithstanding, most of these are computer-programmed listening "formulas" based on scientific demographic breakdowns of YOU, the listening audience. Which usually adds up to tightly playlisted sets blending platinum-predictable "new" material by groups like The Eagles and Pink Floyd with recycled classics from The Beatles, Stones et al.

There is nothing inherently wrong with this. Most of these bands have produced a



Jimmy Pursey

The Specials



significant body of excellent music that deserves periodic re-examination — it's just that this approach seems so one-sided and backward. Anything remotely fresh like Tom Petty, The Cars or Cheap Trick usually gets on these stations only after having breached the TOP 10 LP charts in the music biz trades (*Billboard*, *Record World*, *Cashbox*), and grudgingly at that. Rawer, less-polished stuff like The Jam, Squeeze, The Buzzcocks, Sham 69, Public Image Ltd. and The Specials, faces a tough road at best. The surprising success of The Clash's double LP set *London Calling* is a hopeful sign, but does not represent any significant concessions from radio programmers. The verdict is still out and the jury looks grim.

And all of this extends beyond the record business over into the world of musical instruments. Many readers of this magazine understandably marvel at every new technological development in the field while taking great pride in the relative sophistication of his or her technical abilities, i.e. "chops." And those of you who take the correspondingly

narrow view that musical excellence is based solely on technical ability are probably cackling with joy at the fact that most of these new wave bands will never get on the air. After all, they're just a bunch of primitive three-chord bashers who sound like they've been recorded in the back stall of a pay toilet. Well... when it comes to charges of *primitivism*, I simply refer you back to the earliest albums from The Stones, The Who, Pink Floyd, Fleetwood Mac and other FM "perennials" — many of these sound as raw as the newest new wavers. The only significant difference is that early-middle Sixties rock & roll drew strength and inspiration from blues and soul music while the newer bands look to reggae and ska for that very same push.

The "re-affirmation" of rock & roll's basic tenets as embodied in new wave music should be interpreted as a healthy sign for a musical instrument industry that seems a mite overextended at this point. Hopefully, the return of the simple four piece band means that young Americans will be encouraged to buy instruments, head for the local garage/rehearsal hall

# Grace Notes

## No Future for New Wave?

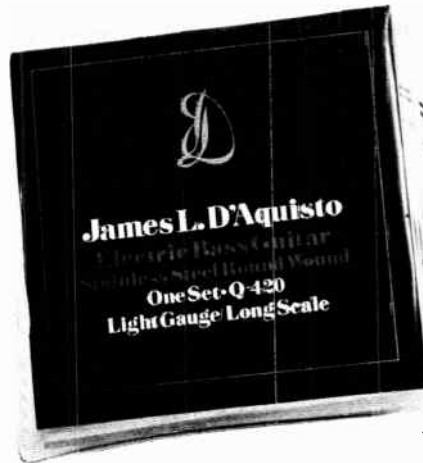
and sweat it out until they hammer out *their* version of the great American rock & roll dream.

The future of rock & roll as America's greatest indigenous art form is built on change and continual replenishment of raw energy. The past two decades did produce some excellent music but who's to say that these bands are the be all and end all? If that attitude prevailed in 1964, the Beatles would have been passed over in favor of Elvis Presley. And who's to say that the music of the Eighties *must* be a more sophisticated, seamless version of mainstream Seventies rock? Technologically, a lot of rock & roll has gone about as far as it can go without reaching the final step of *total synthesis* — something not all of us aspire to.

But rock & roll has always been about mass consumption and that's where you come in. Do you really not want to hear anything new or different coming out of your car radio speakers? Do you just want to hear music you know for the next 10 years? Is there a chance you might get tired of heavy metal "sludge guitar"/fifth generation Art Rock cliches in the months to come? Or are you incapable of listening to an album unless it's been mixed, compressed, flanged and phased into undistinguishable aural pablum? So what's the deal?

If I sound like Crusader Rabbit of the radio airwaves, it's simply that as an authentic "old fart" who's survived the last three decades of rock & roll, I'm often asked by younger colleagues and friends questions like "What were the sixties really like?" and "Will the Eighties be more exciting than the boring Seventies?" The responses to these imponderable questions are as simple and basic as new wave music. If the Sixties represented an unusually stimulating and creative decade (an element distorted by media mythologizing), it's only because people were not afraid to look *forward* and make a distinct break with the comfortable nostalgia of the past. And the relative excitement or boredom of the coming decade will be decided the very same way it was 20 years ago. Boring is as boring does.

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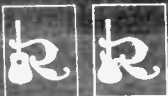
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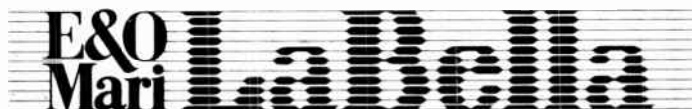
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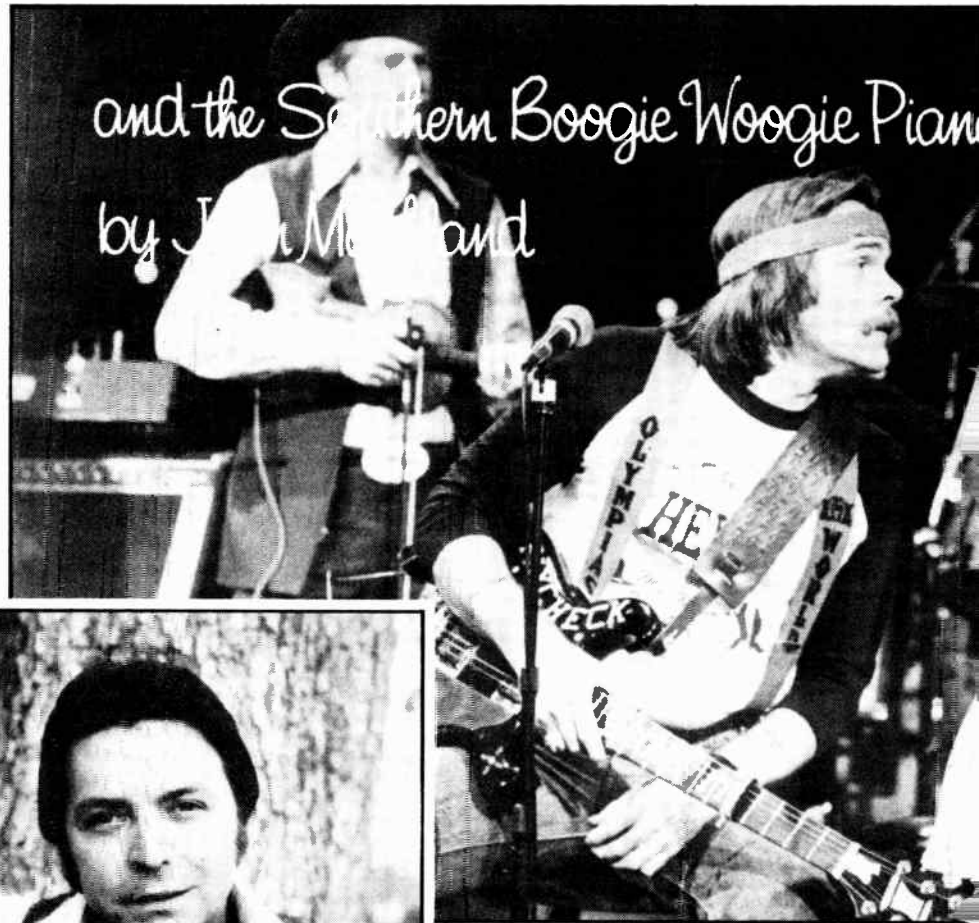
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# MICKEY GILLEY



The three cousins grew up almost as brothers in Ferriday, La. Jimmy Swaggart and Jerry Lee Lewis (who is about six months younger than Jimmy) played piano at the Assembly of God Church. Mickey Gilley (about six months younger than Jerry Lee) filled in a little on rhythm guitar while picking up piano pointers on the side. On weekends, they'd go over to Haney's Big House on the colored side of town and stand under the windows listening to the great bluesmen of the Forties.

But by their mid-teens they had mar-

ried and gone their separate ways. Jimmy went into the ministry; today, he's one of the nation's leading radio and TV evangelists. Jerry Lee moved across the river to Natchez, Miss., to entertain in a nightclub then went on to Memphis to cut such definitive rockabilly songs as "Whole Lotta Shakin' Going On" and "Great Balls of Fire"; he continues rocking today, after 25 years of dizzying ups and downs.

And Mickey Gilley? Well, Mickey went to Houston and became a construction worker. It was several years before he took up singing and playing piano himself, and his music was an eerily faithful imitation of Jerry Lee that made him nothing more than a local star. But in 1974, he scored a fluke country hit with "Roomful of Roses" and his career has been looking good ever since. In addition, his Pasadena, Texas honky tonk, Gilley's, is listed in the *Guinness Book of Records* as the world's





Johnny Paycheck and Mickey Gilley

largest nightclub; it served as the location for John Travolta's new movie, *Urban Cowboy*.

"Roomful of Roses" sounded so much like Jerry Lee that many assumed it was indeed "the Killer" himself. Gilley figures the resemblance has both helped and hurt him over the years. He is quick to credit Jerry Lee with conceiving the rock & roll style that no pianist has been able to improve on in the 25 years since.

"It was created more or less by Jerry as far as the left hand is concerned," he says. "The right hand reflects a lot of the old Moon Mullican licks, back when Moon was doing 'I'll Sail My Ship Alone' and that type of thing. Jerry performed at first without a band, so he had to set up some sort of rhythm pattern to replace drums and guitar. That rockin' boogie beat on the left hand kept time and the right hand played inflections.

"It was more or less a blues style. See, there's been boogie piano almost since the piano was created. Jerry Lee's records called his style 'the pumping piano' because the way he did it, it sounded almost like an organ pumping. I started with a little Vox guitar, which I never did learn much about, and I got into piano playing because it was a lot easier to look at the keyboard than it was to look down the neck of a guitar. So I got my mother to get me a piano, and the thing back then was definitely boogie woogie, you know. If you could play boogie woogie you were in and if you couldn't you were out."

But piano remained merely a hobby for Mickey until Jerry Lee came to play Houston just before "Great Balls of Fire" was released. "I watched him perform," Gilley recalls, "and I decided I'd throw my own hat into the ring.

"But at the time I didn't realize everybody would think I was copying him. I was just playing the music I was raised with. When I started playing, people got off on it because it was a nightclub audience and everybody else was copying Elvis. There were people that could play piano like Jerry but they didn't have anybody who could play *and* sing that close to him. If you had your head turned when I did one of his songs, it was so close to Jerry you'd be intrigued. But I never really tried that much to copy him except for the fact that when I did one of his records I tried to do it exactly like him.

"There's still a lotta people that have a little thing about the situation; they probably think I'm trying to ride off his success. But I don't pay attention to what anybody says because I honestly enjoy doing this type of music."

Throughout the Sixties, Gilley was a Houston nightclub attraction, did a local TV show and recorded a string of Jerry Lee-soundalikes that flopped on small labels. Then in 1970, he went into partnership with Sherwood Cryer, an eccentric, self-made millionaire who opened the club that bears Gilley's name. What began as a roofless quonset hut holding about 70 people has grown into the roaring honky tonk in a region where honky tonks are a way of life. It holds about 5500 people now, and has five bars large enough to require six bartenders each. There's a souvenir stand selling Gilley's

t-shirts, posters, bumperstickers, etc., and such diversions as mechanical bucking bulls (the kind rodeo riders train on), pool tables and pinballs, punching bags and sledgehammer strength tests. In the blue collar Houston suburb of Pasadena, it is the home-away-from-home for young oil refinery workers who suit up in their finest western duds and drink and fight and try to pick up girls. Everybody who is anybody in country music has played there.

So Gilley, as leader of the house band, was already in good shape financially when he finally got his first national hit. The song was recorded as the B-side to yet another local single; he remembers not wanting to cut it at all because it sounded too much like Jerry Lee. "Roomful of Roses" stayed on Houston country charts for six months before getting national distribution. It went on to sell 500,000 copies and to reach No. 50 in the pop charts strictly on sales (since the omnipresent steel guitar made it unacceptable for pop radio play). Since then he's been out on the road so much he gets to play his own club only about once every six weeks. But it's the club atmosphere that continues to shape his music.

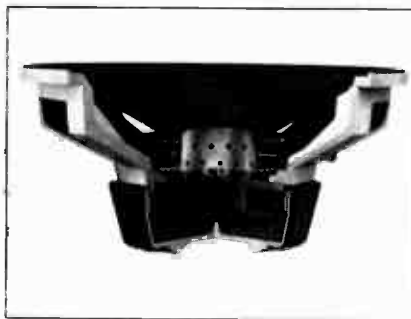
"My idea of doing music, especially when you play a club, is to play music people can listen to *or* dance to. If you do that, then you become successful in the clubs," he says. "I worked one club for 10 years by sticking to that format, and people always showed up, especially on weekends."

Gilley's performance contract specifies that the promoter supply a baby grand piano, but he always carries a portable electric for emergencies, and that's what he was playing at his recent engagement at the Lone Star Cafe in New York City. He kicked his set off with — surprise! — Jerry Lee's "Rockin' My Life Away." For the rest of the evening, he deftly weaved his own hits ("Power of Positive Drinking," "Don't the Girls All Get Prettier at Closing Time," "Lawdy Miss Clawdy" and more) in with country standards and Jerry Lee tunes. It is rather unusual to see a man who's had seven No. 1 country songs in five years rely so heavily on outside material, but Gilley made his point: once a bar band, always a bar band.

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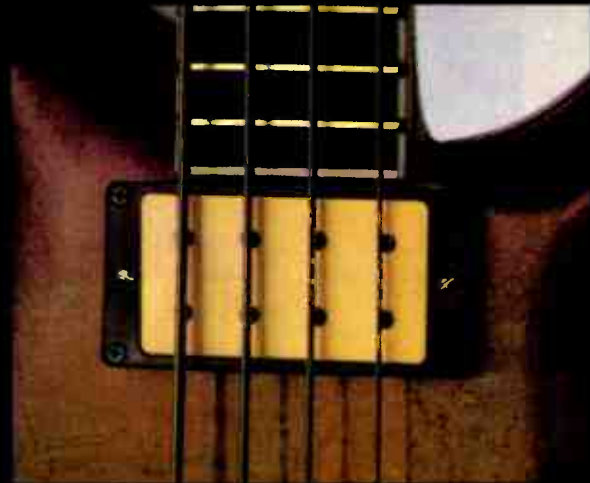
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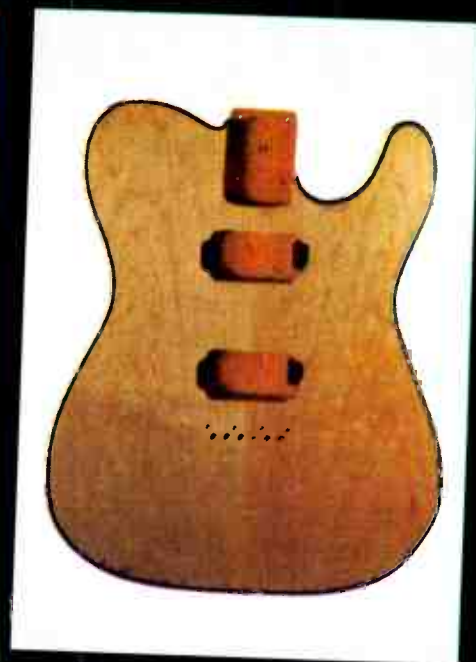
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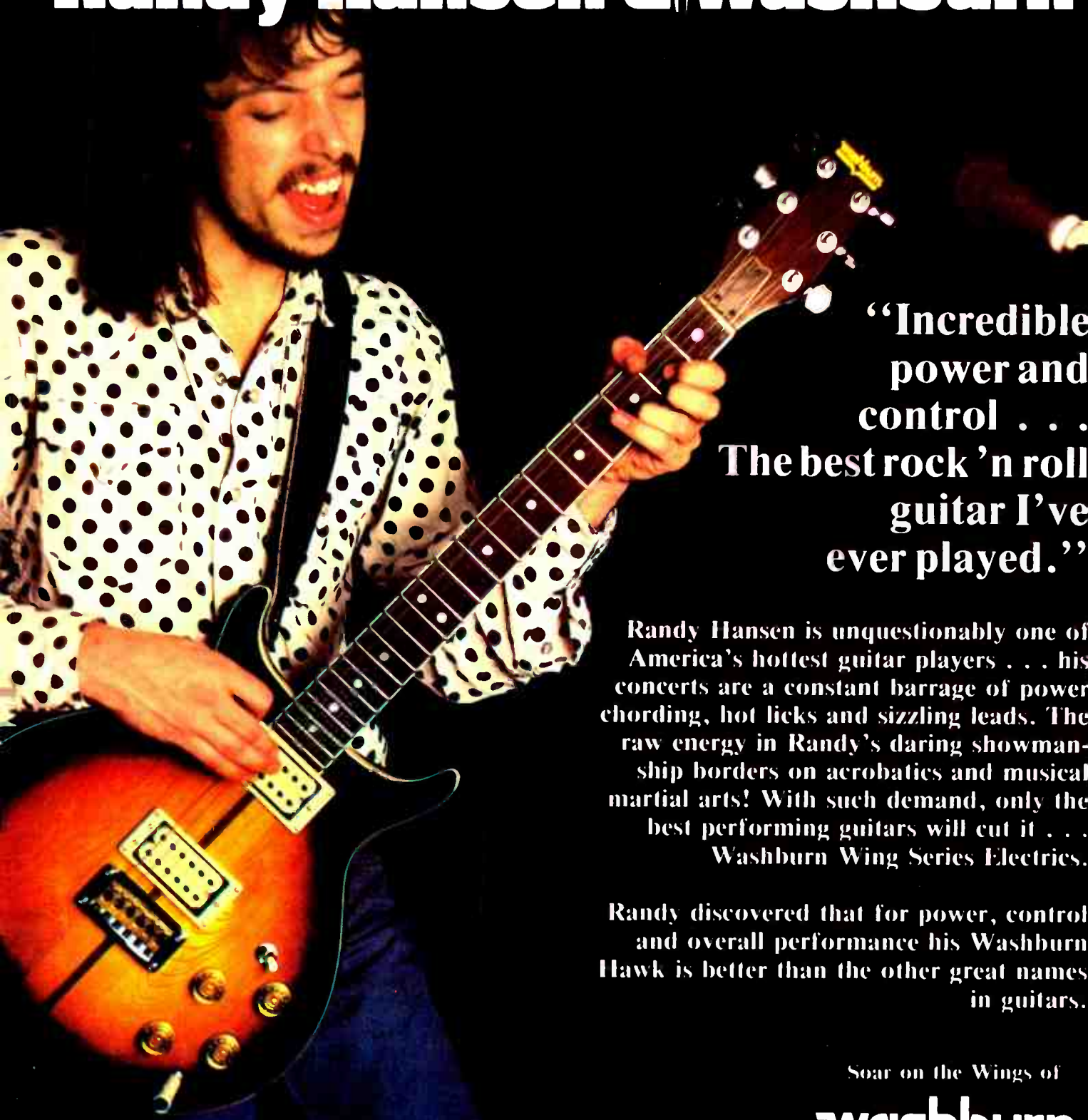
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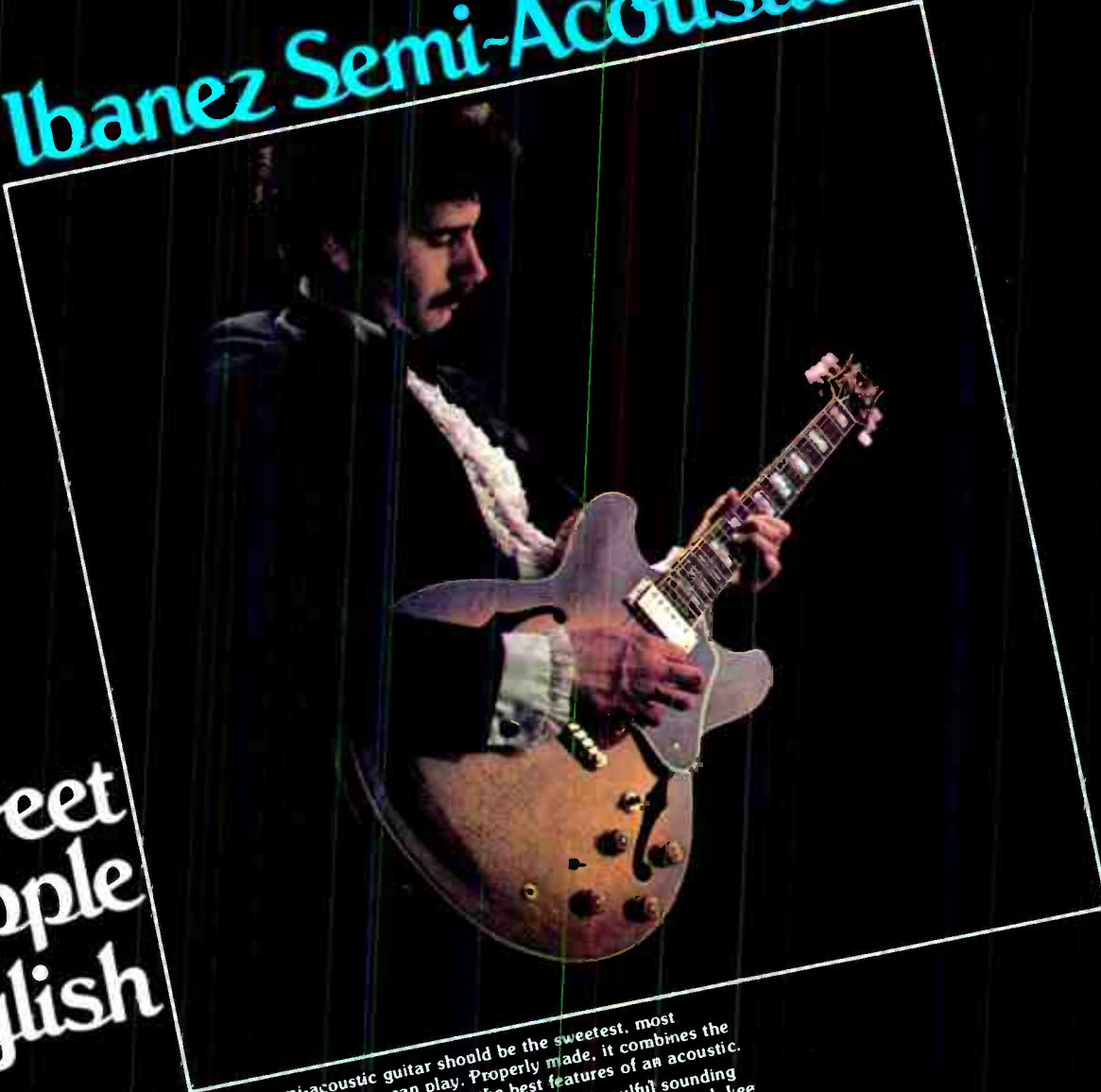
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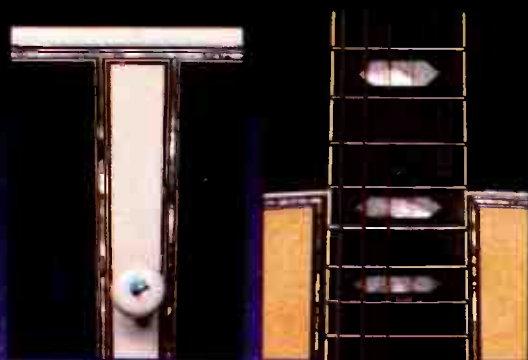
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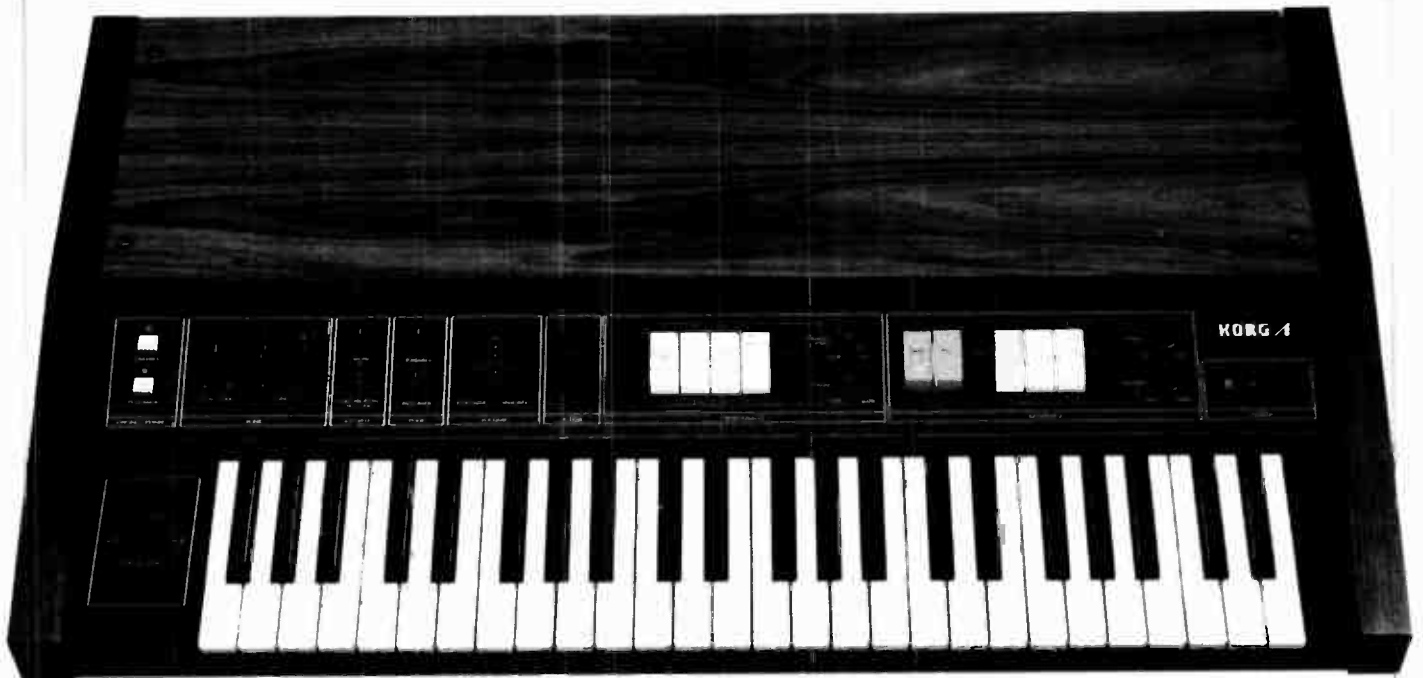
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# LENNY WHITE'S JAZZ DANCE MUSIC

*by Bill Stephen*

Some years ago Miles Davis was playing a date at the Village Gate in New York City. In the audience was a young drummer Miles had invited. With the quartet playing Miles walked off the bandstand and drew the young musician backstage. To retell the conversation Lenny White slipped into his best Miles Davis voice — a harsh, throaty sound squeezed from the lungs, just above a whisper.

"Can you play fast?" asked Miles.

"Yeah," Lenny replied.

"When?"

"Whenever necessary."

And with that Lenny was asked to show up every night for instruction. Miles would talk him through the numbers as the band played saying, "Now, you hear that, and that? That's good, but don't play like that." Within the week Lenny had a sense for the band, the music and the brilliance of its leader.

With a farewell of "I'll see ya," Lenny departed not to hear from the trumpet player for nearly a month. When the phone call did come he was told to get over to Miles's house that day to rehearse for a record date. Lenny showed up at the prescribed time with snare drum and a cymbal and began rehearsing the opening tracks of *Bitches Brew*.

Some years later, Lenny was playing

with the San Francisco band *Azteca*. Chic Corea and Stanley Clarke paid a visit to the Bay Area and recruited Lenny for the missing third of their trio and began an intensive week at a local club producing what Lenny calls "absolutely amazing music." Shortly after this event problems began for *Flora Purim* and *Airto* (RTF's percussion master) leaving *Return to Forever* in need of a drummer. Chic called to recruit Lenny, but reluctant to leave *Azteca* he held on until the demise of the band which freed him to take part in the reformation/redefinition of *Fusion*.

• • • • •

Placing Lenny White at the focal points of two of the most important developments in modern American music is statement enough to his ability as a musician and a visionary artist. With Miles, Lenny honed the traditional jazz style that emerged from his work with Jackie Maclean and other New York bands. But with the development of RTF Lenny had to adapt his playing to the world of electronics which meant a reassessment of his style and his role as a drummer. It is this facility, to be able to assimilate to a form of music without losing individuality, that has been in many ways the cornerstone of Lenny's professional career. "You see," he explained, "my intention has never been to be the greatest drummer in the world, although I wanted to be one of the best. My major goal has always been to be in the best band in the world. This has happened once already (RTF) but it's time for it to happen again."

The philosophy of being "part" of a band has come fully to bear with the formation of his newest group, *Twennynine*; an aggregation of young musicians which Lenny feels "forms the band for the Eighties." "I know it sound pretentious, but I know it's true because these guys (Nick Moroch, lead guitar; Eddie Martinez, rhythm guitar and vocal; Barry Sojourn, bass and lead vocals; and Skip Anderson, keyboards) can play any kind of music and they do it authentically, and that's what I've wanted to do; play something with conviction. And the new album, *Twennynine*, is legitimate, it has conviction; it wasn't done tongue-in-cheek."

With the album reaching well into the upper strata of the R&B charts and a single, "Peanut Butter," that has done far more than respectable, Lenny seems to have found a groove he likes to call "power pop with an R&B base" that will take him into commercial success and deliver him from the often tenuous and difficult jazz world. But the music often lacks the spark and ingeniousness that marked Lenny's earlier work. No longer the frontman or the showcasing musician,

Lenny's individuality has become part of the whole and although possibly not as satisfying musically to some, he feels that he has achieved a major phase in his career: he has learned, with great difficulty, how to "suppress the ego" to allow him to play as part of a unit.

After the breakup of RTF, of which much has been said and little understood, it was difficult for Lenny to find the musicians of the same caliber to work with. It is this that is basically the crux of why he no longer plays *Fusion*, agreeing with comments made by Stanley Clarke in these pages (IM&RW March, 1979) that the reason jazz-rock isn't happening anymore is because the players aren't around anymore. "You see," he explained, "when I was playing bebop I could only emulate what other people had created, they were of the era. And that's what's happening now, people are only emulating what we created."

That the creating stopped is something that still seems to gnaw at Lenny White. The end of RTF left him without a particular direction and some hard times followed, but Lenny's frustration over the breakup is manifested not in anger for its members but in the theft of a fitting creative peak. "It was like being on a mountain climbing expedition and turning back before you reached the top. And it was just messed up by nonsense, ego nonsense. But it's history now, and that's why I don't play it. I played the music with the guys that played it best so it's not fair to the music, to me or anybody else. I'll play the music again when I play it with those guys." A reunion of RTF? "Sure, I'd love to do RTF again because it made a lot of people feel good. And it would be great just to get back and play again."

A reunion of RTF, however, could never yield what the creation of the band revealed, that's not to say it wouldn't produce some thoroughly amazing music. But part of the freshness and wonderment of the band evolved from the growth of each musician with each new album, especially its leading composer Chick Corea. Even a most cursory listen to the albums reveals a change in the feel, composition and direction of the band, each album formed a transition in the band's growth rather than a repetition of their musical abilities. They remained the freshest and most individual of all of *Fusion* purveyors and Lenny explains why. "The thing about the band, and the reason it sounded different from everybody else, is that Chic, Stanley and myself were players who primarily came out of a bebop-esque mode; meaning we played phrasing. This differs from the fusion players now who play licks. There would be a written phrase and then there would be space; even when improvising there would be an eight bar ▶



# LENNY WHITE

phrase. And that's where the difference lies."

One of the transitional factors that is obvious throughout RTF's recorded work is the growth and sophistication of the compositions and their execution. Whereas the earlier work has a raw, live feel, albums from *Hymn of the Seventh Galaxy* are more polished and structural in composition.

"The first albums," Lenny explained, "were mainly comprised of music Chic had written at a particular time between what he had been playing with Miles and how it changed with the introduction of electronics. So it wasn't orchestrated like say, *Romantic Warrior* was." Because of the way the initial compositions took form, Lenny was called on to play high energy drums using a great deal of snare and cymbal, leaving the tom toms for minimal intrusion, but as the compositions progressed his playing had to be altered. "As the work became more orchestrated there was more room and more demand for me to play, using the full kit that it.

"Basically, there was a much more classical influence after the third record, there was no more mystery. They were classical in terms of structure. There was more interplay compositionally and improvisationally. We just all grew up. Chic took on another direction when he introduced electric to his work and if you listen to his first pieces compared to those later on, you see he went through a lot. Whereas Wayne Shorter was the most prolific composer of the Sixties, Chic was the most prolific of the Seventies.

Lenny White obviously holds Chic Corea with some reverence explaining, "I like his music and probably always will. And I'd like to play with him again as I like good music." From Chic, Lenny learned a great deal about composition and about playing fusion in an orchestrated manner. The effect and influence was similar to that of Miles Davis, but Lenny holds his mentor and musical hero in awe and his days with him can still be sensed as possibly the most important in his career.

Lenny followed a succession of drummers who took the same path to Miles' door. "This thing was happening. Jack DeJohnette was playing with Jackie Maclean and then he went on to Miles; Tony Williams had played with Maclean and then he went on to Miles; and of course, I went on to Miles after Jackie's band."

The link up of Miles and Lenny seemed almost inevitable what with the drummers quickly spiralling reputation and the con-

tinual probing of the mutual friends of both of them. When he finally showed up for the first rehearsal it was in the company of Chic Corea, Jack DeJohnette, Dave Holland, Wayne Shorter and Miles.



After the rehearsals they recorded at CBS records for three days and the result was *Bitches Brew*.

Once you had recorded with Miles Davis the word was out and the offers came in. Lenny was called soon after by Freddie Hubbard who offered him a recording date with an all-star band featuring Ron Carter, Herbie Hancock, Joe Henderson and Freddie. On his way to the studio for the sessions Miles called him for another recording gig but Lenny had to turn it down and he thinks now it was probably the sessions for Guiniverre or Jack Johnson. But the result of the Hubbard sessions was well worth the work although it brought up a particular problem for Lenny.

"I had this bass drum a friend had made for me using an old oil drum. It was huge. I used it on *Bitches Brew* and I took it along to the Hubbard sessions but they told me I couldn't use it and I was demoralized. So they brought out this huge bass drum, one of those marching band drums and that's what I played. People used to ask me after that how I got this great drum sound."

One thing that Lenny possesses, and always has, is an amazing cymbal sound, especially his incredibly deft touch on the hi-hat. It's something that came from long hours of practice and a little bit of influence can be attributed to Tony Williams. "I used to take Tony's *Four and More* and put it on. Then I'd go in the corner with just a cymbal and start practicing until I could hear every note I was

playing. This helped me tremendously in my music because I listened closer and often realized that a particular part didn't need a drum but a cymbal."

Some of his friends still remember an old A. Zildjian cymbal he used that cut through everything, it was just incredibly loud. It may have had an influence on Lenny's current choice of cymbals. "Currently, I use all Zildjian's. I have a 24" heavy, hi-buff ride, a 14" hi-buff heavy hi-hats, an 18" medium crash, a 19" medium crash, and a 20" K. Zildjian rivet cymbal.

As to Lenny's kit, he merely terms it "not too outlandish. I have a Tama Superstar kit which is just right for me. It has a 14"x22" bass drum, two floor toms, a 16"x16" and an 16"x18", four mounted toms, 8"x10", 8"x12", 9"x13" and 10"x14", and my snare is a Mastercraft Tama, 6½" deep, seamless metal.

"I use Remo heads throughout. All my drums are two headed. I have to feel the pressure that resonates within the drum. I put clear Remo Ambassadors on (the dots are no good for me because I don't play with a controlled sound). On the snare I use a standard coated plastic head with a Diplomat head on the bottom."

Lenny readily admits that he's never quite liked the idea of a head giving you a controlled sound. "I'd rather be in control of the sound by the way that I hit it, rather than playing a drumhead that I have to choke. I have more options when I do it myself. You see, I may play something that warrants a particular sound at a certain point, and then I need a totally different sound for the next number. I do try to get something that's a common denominator, a sound that's more identifiable with me than the music."

This sense, or feeling that Lenny tries to instill in his drum sound carries over to the way he turns his tom toms. "I do tune them a certain way but it's difficult to explain. Once I tuned them like an augmented chord so that they would play 1,2,3,4,3,2,1. And I did tune them to the piano once. It sounded good but it didn't feel right because the tension wasn't what I was used to playing."

It all comes down to a sense of feel and what is "heard" by the drummer. In this way he explains why his kit is of modest size rather than the immense kits that are more popular today.

"I had a discussion with Billy (Cobham) about this. He has the huge octagonal kit and he asked me why I didn't use one (this was when I was playing just five toms). I told him because I didn't 'hear' them. He argued with me saying that the reason he plays so many is because that's what he hears in his music. And in order to play those drums you've got to hear it in your music. This brings up one of the major fallacies of young drummers today. They think they have to play all these ▶

# LENNY WHITE

drums to be good, rather than just getting a set and adding on to it as you hear it in your music."

Lenny has a few hints on how he obtains his "live" sound: "When working live I use a small pillow in the bass drum and two pieces of tape on my snare. I use a pretty close-in miking system. But a lot of it has to do with the nature of the music. If you're playing breaths its a lot easier to get the sound. I like to use a different mike on every drum. I usually use the basic Shure. If there's not a mike on every drum then there'll be a mike between number 1 and 2 — between 3 and 4 so you can get the ambience from the two drums. You should never mike cymbals. Because what cymbals are, are harnessed distortion. The cymbals are such high frequency that they can get overpowering. If you turn up the cymbals you turn up distortion. I like to have my low toms really come out.

"In the studio I use a lot of different kinds of mikes but I still mike up close. Like for a real rock & roll sound I do ambient miking using one mike back in the corner of a room. But this time I used the same mike on every drum and only tape on the snare drum and I got the right sound in half an hour."

Although the brightness of his kit comes from recording methods he contends that primarily it comes from the way you touch a drum, how you tune it, your technique. It's your concept, from the sticks that you use to the heads you use."

As to his setup, Lenny contends that it's very unorthodox. "I play primarily match-grip. My setup is for a right handed drummer but I play left handed; except for my feet which play for a right handed setup. It's actually the most natural way to play. I don't play rudimentally but from sounds. Everything's based on doubles and singles anyway. If you can play doubles and singles clean enough and adapt them to the set them everything's okay.

"I also play from my feet up instead of from my hands down. So I'll play rudiments between all four limbs as op-

posed to just my two hands. A lot of times it goes unnoticed. I pride myself on my hi-hat touch. People like Steve Gadd and Harvey Mason have picked it up."

If people are picking up things from Lenny White, as they should, they may want to think back to the way that Lenny was influenced in both technique and sound. "I always wanted to sound like Tony Williams, so I would listen to him and try and emulate it. But I took it one step further. I went back and listened to the people he listened to and things fell together easier. I listened to Max Roach, Art Blakey and Roy Haynes. But other things influenced me like certain horn players."

One thing that comes across strong in everything Lenny mentions about the influences on his music is the ingesting of ones personality into anything they do. At the time Lenny felt he sounded like Tony Williams he went along to record and the result showed that he sounded nothing like him. He had channelled Tony Williams through Lenny White and what came out was the interpretation of another person.

"Even when I write songs now I'll hear something somebody else has done and I'll say 'I gotta write something like that.' I'll take something not for not, say a particular Zawinul cliché, and put it into one of my compositions. Somebody will listen to it, say its nice, but will never be able to detect the influence. So as much as you try to sound like somebody else, what comes out is your own personality. Miles did the same thing. He wanted to sound like Clark Terry. He attempted to do that and through that came up with a totally different sound."

When discussing a comment by Tony Williams (IM&RW Feb, 1979) about how difficult it was to shake Miles' influence Lenny responded, "He shouldn't have said that. Musicians don't shake influences. It's an implant, whatever you do after it comes through it. Miles is a permanent influence. He influenced so many people musically; not instrumentally because he wasn't the greatest trumpet player in the world. But he didn't have to be because the way he played was the thing that was brilliant, which makes him a genius in my eyes."

For Lenny White the musical trail has already been a long one and he feels his passage thus far has gone overlooked. "I've never been a media hero on my instrument. Not like Billy Cobham, for instance, who has been attributed with some of the things I've done. I've been an integral part of two very important periods of music but have not gotten the recognition for it. But I'm not one to jump up and down because it doesn't really matter. It will come out. And maybe in 25 years someone will read about it or hear it and think I was alright back then." Indeed. ■

The Difficulty of Life is the Choice.

Take care to get what you like, or you will be forced to like what you get.

— Bernard Shaw

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The Doobie Brothers: (left to right) Chet McCracken, Pat Simmons, Tiran Porter, Keith Knudsen, and John McFee. (Corny Bumpus and Michael McDonald not shown.)

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# NANCY WILSON

acoustic and electric is yet to happen. A song like 'Mistral Wind,' which we do, is pretty close to it. It's real dynamic and it has both elements, and I would really like to do more of that. It's hard to do sometimes, because traditionally they have been opposites."

Musical innovations aside, the personality of Heart clearly comes from Ann and Nancy Wilson. Nancy had some final thoughts before setting out on the first leg of what may turn into a 10-month tour.

"Rock & roll has always been a real fast and rough lifestyle, and women as a rule have more of a nesting instinct, so they're not as apt to want a lifestyle where there are no roots. That's one of the main reasons a lot of women don't do it, or couldn't survive it for long.

"In the beginning with Heart, Ann and I both had boyfriends in the group so it was a lot easier for us. We had sort of family atmosphere. This tour is going to be difficult and we're gonna deal with it by going out for three weeks at a time, followed by two weeks off between each leg of the tour. And also Ann and I are planning to get two-room suites so we each have a room with a common living room area. That way we can support each other. We've always been real close friends, so we're gonna have each other to talk to.

"If I had any advice to give it would be this. For anyone learning an instrument, it's real important to develop your ear and be able to imitate things by ear instead of starting off with lessons or reading right away. The only other advice, particularly for women getting into music, is *don't give up*. Don't let 'em tell you that you can't. If you're a serious musician, it doesn't matter if you're a man or a woman. If you're a free person, that's the main thing. And if you're a creative person, that's what counts. I think the climate is right for women to do things right now. The doors are open."

## Howard Leese-Lead

Howard Leese, Heart's lead guitarist, arranger and keyboard wizard invited me to his estate in Kent, Washington for a look at some of his instruments. We talked about some of his newest acquisitions.

"This year I'm taking mainly custom instruments on tour with me. I usually just bring out my old Fender Telecaster for our live shows, but since we've been off I've acquired a bunch of real nice custom instruments. The main one I'm taking is a guitar called the 'Golden Eagle,' made in Annapolis by Paul Reed Smith. It's made out of a 300-year-old piece of maple, a



dresser top, and it's the first guitar I've ever played that has a perfect vibrato system. He worked on it for ages so it would drop down an octave exactly and then pop back up and never stick at the top, always staying in tune. I'm also taking a Dean Zelnsky guitar and a Washburn.

"I've also got a new guitar made in Seattle by a company called Bunker. It's a real radical instrument where the tuning heads are at the bottom of the guitar and there's nothing at the top. They're fitting it with a synthesizer pickup for me. That's a guitar nobody has seen yet.

"I'm going for a lot of new custom stuff ▶

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# NANCY WILSON

this year because our setup's totally different. We have one less member now and my guitar load is much heavier, so I'm taking out some heavy-duty guitars. My amp setup is also new. We have a new oak system built by the Energy Group in Seattle. All of our speaker cabinets are made from oak and all of our amp racks are in oak cabinets. I always use tube amps; a Marshall and a couple of Music Man amps this year. No effects.

"For the keyboards, I have a Yamaha grand piano, a Prophet Five synthesizer — replacing my Minimoog — a Mellotron, and my two-voice lead Minimoog. The Prophet has so many sounds that I don't need to bring the other keyboards I brought last year. I used to play a lot more keyboards, but since I'm back to playing a lot of guitar I'm using an Arp Avatar guitar synthesizer. So you won't hear any difference in the sound. Like in 'Crazy On You,' where it goes 'da — da-da-da-da' you'll still hear a synthesizer and guitar, but I'll be doing them both at the same time. It's a pitch-to-voltage converter and the guitar has a special pickup on it that goes to the synthesizer. It figures out the number of the vibrations and turns it into a signal to the oscillators in the synthesizer. So when I hit a note the pickup will trigger the synthesizer and give me a sound that has nothing to do with my guitar sound at all. It sounds just like a synthesizer does. I can tune it to a three-voice chord with a moveable third to get a steel guitar sound, or major or minor chords. On 'Crazy On You,' I have it in

A few final notes on Nancy Wilson's and Heart's equipment, from Nancy's personal aide and guitar roadie, Gary Perkins:

"Nancy uses a Music Man 130 watt and a Marshall 100 watt for the electrics, and another 130 watt Music Man for the acoustics. We have switches installed so that any guitar can go through any amp. She switches from the Music Man to the Marshall depending on the sound she wants; the Marshall is dirtier — you can make it whatever you want. I change the settings for almost every one.

"She's got two guitar speaker cabinets with one 12-inch Celestion in each. And one wedge for the acoustics, with two 12-inch Celestions in it. She runs her acoustic direct. We have Scheafer-Vega wireless equipment for the guitars. Each strap has a transmitter built in, connected by an 18-inch cable to the guitar output jack. They're good for up to 300 feet."

unison, with the second oscillator down an octave. I play bass synthesizer, regular voice and my guitar simultaneously. And then I can switch the attack around so it comes out backward. I'll do a couple of solos where I'll just turn my guitar off and play just the synthesizer. And people don't know how I do it, because they just see me playing the guitar. There's even one song where I play flute and we have four other 'real' flute players playing along. I'm the lead flute, but I'm playing it on my guitar. I sound just like they do — it really bothers them.

"We're in a real aggressive musical mood. The new stage show is gonna be real energetic. We have built an 80-foot

stage and a light truss that people aren't gonna believe. It looks like a giant bird, shoots spotlights back onto the stage from up above so you don't have those spotlights beaming throughout the arena. We also have a totally new sound system where, instead of a big stack on each side of the stage, we have one molded stack hanging from the ceiling in the center which is stereo. All of our stage equipment is hanging from the ceiling, monitors and everything, so when you look at the stage you won't see any equipment at all. There're no wires — we're all wireless, so it's just musicians, a few keyboards, and lots of room."

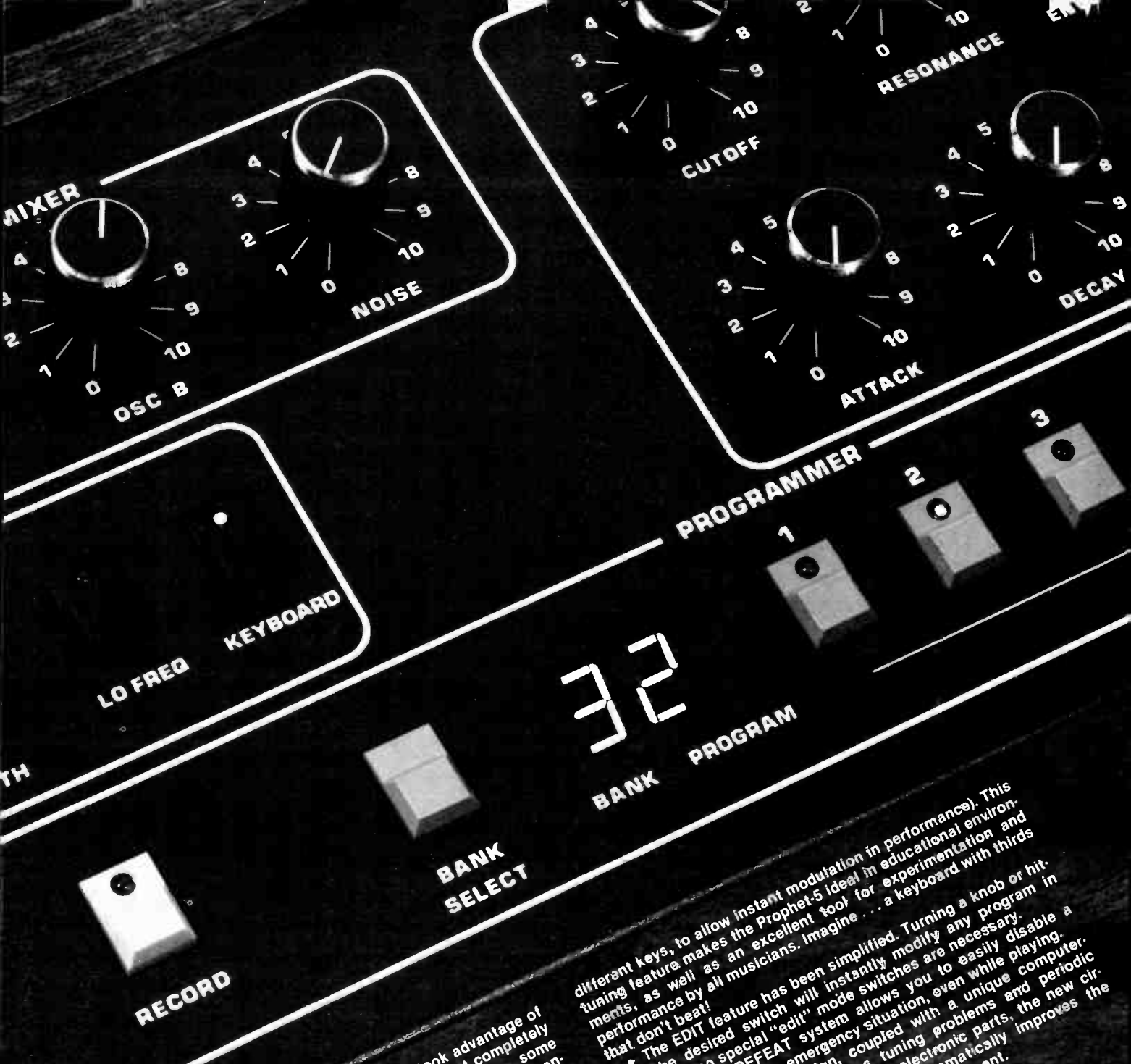
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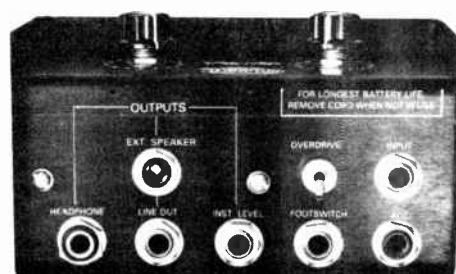
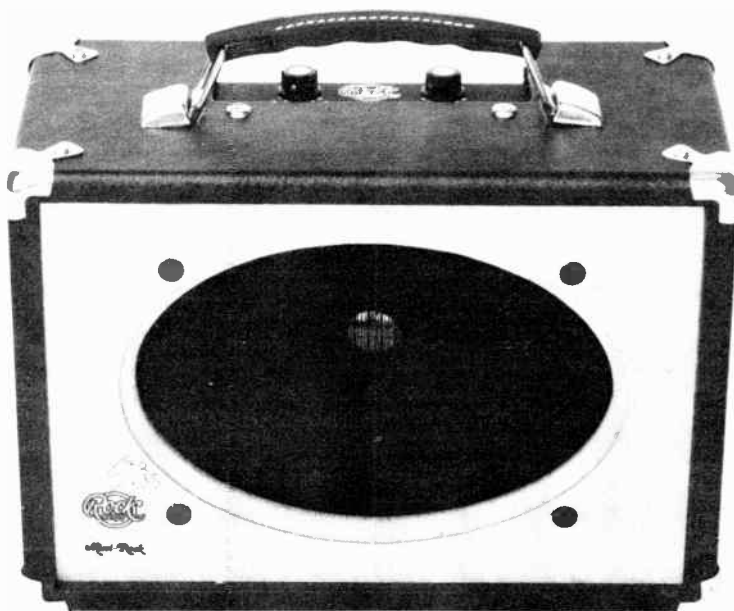


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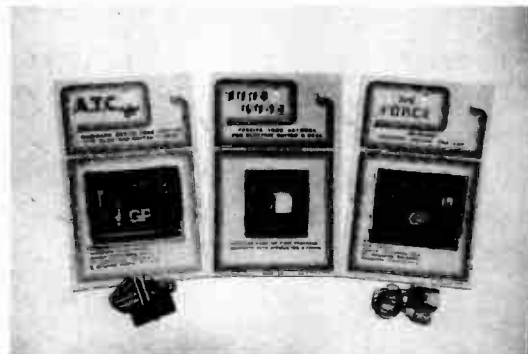
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# Guitarcheck

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When attempting to begin to evaluate this particular instrument it's impossible to ignore the fact that pretty well everything that can be said about it already has been. Also, when I reflect that almost every other bassist whom I particularly admire, plus the vast majority of the rest of the relatively small

percentage of our breed who have been lucky enough to get their hands on one, agree, that it's the absolute ultimate, then another review from me could seem a trifle pointless. I must admit to a slight feeling of guilt, in partly using this exercise as a selfish excuse to satisfy my almost boyish keenness to hold

and play one of these delightful, already legendary basses, but also hopefully it will be of some interest to regular readers at least as a comparison.

Both Series I and Series II of their long scale, four-string basses offer two slightly different shapes. However, this only occurs at the tail, where the self-explanatory "Point" model, under review here, is opposite in shape to the circular cut-out of the "Omega." Circuitry and hardware are identical throughout this long scale range, and the only difference between Series I and Series II is in the number of laminations used in the one piece necks and bodies, and the side body sections. Five piece laminated necks and three piece laminated side bodies on Series I, with seven piece necks and five piece bodies on Series II. A recent addition to this range is a fiber graphite neck model with all the aforementioned shape and body lamination options, known as Series I and II G. The "Point" models are apparently considerably more popular than the Omegas, and as I personally prefer this shape, I chose to review the Series I example.

Having only seen photographs of an Alembic prior to this encounter, I had underestimated the extent to which this company carry their standards of detailed elegant craftsmanship, with fine exotically-grained woods. My first impression when I opened the guitar case, was of a magnificent sleeping beast, waiting to unleash its power. Its sheer size, in terms of length and mass, exudes superiority, and the beautifully decorative interwoven patterns of the many laminations, suggest that this a king among its species. The whole policy of this West Coast manufacturer is to combine the most advanced electronic technology with the highest

standards of wood craftsmanship, in terms of a general concept they undoubtedly produce instruments of the highest possible quality.

The one piece neck, peghead and central body is a work of art on its own. The five laminations of maple and purple heart provide tremendous rigidity as well as an attractive striped appearance and the rear point is the most eye-catching feature of the whole instrument. The beauty of the "fanned out" effect of the five laminations' grains has to be seen in real life to be fully appreciated, although it could be argued that it's impossible to stand this guitar up against a wall safely.

### Construction

I feel that's irrelevant, because any musician with the desire to own an Alembic and who puts up the necessary bread, wouldn't even consider using anything other than a first rate guitar stand, when not in use, outside the case. The scale length is 34 inches, and as with all Alembic guitars and basses, provides a 24-fret double octave ebony fingerboard. The fretwire is nickel silver, and oval shaped Mother of Pearl inlays, mark the 3rd, 5th, 7th, 9th, 12th, 15th, 17th, 19th, 21st and 24th fret positions.

Sterling silver dots mark the corresponding side positions. The rest is a chunk of hand cut brass, and the peghead, incorporating Schaller machines, has an amazing 10 extra veneers, with grains running in the same direction as the lines of stress, providing almost unbreakable rigidity. Two internal truss rods allow unlikely adjustment both above and below the 12th fret, adjustable at the top end of the neck. The cast bronze tailpiece allows fast, easy, slot-in string replacement and the hand made



brass bridge, with stainless steel screws for string height and length adjustment, sits on a half pound block of brass, inset into the body. Although the feature provides amazing sustain and all round response, I felt that a certain amount of "warmth" was missing from the lower frequencies, and maybe this large metal block had something to do with it.

The three piece laminated side body sections are again beautifully crafted consisting of a mahogany core, and dark maple top and back. The central mahogany sections are partially hollowed out, producing quite a loud "boxy" sound when the bass is played acoustically.

### The Electronics

The pickups and tone control circuitry are, for me, a complete revelation in terms of power, frequency range, sophistication and layout simplicity. The all active circuitry offers two separate stereo outputs. A stereo jack output, powered by two 9v batteries located under a round brass plate on the back of the guitar, and a five pin Cannon stereo output, which connects with an external power pack, run off the mains supply.

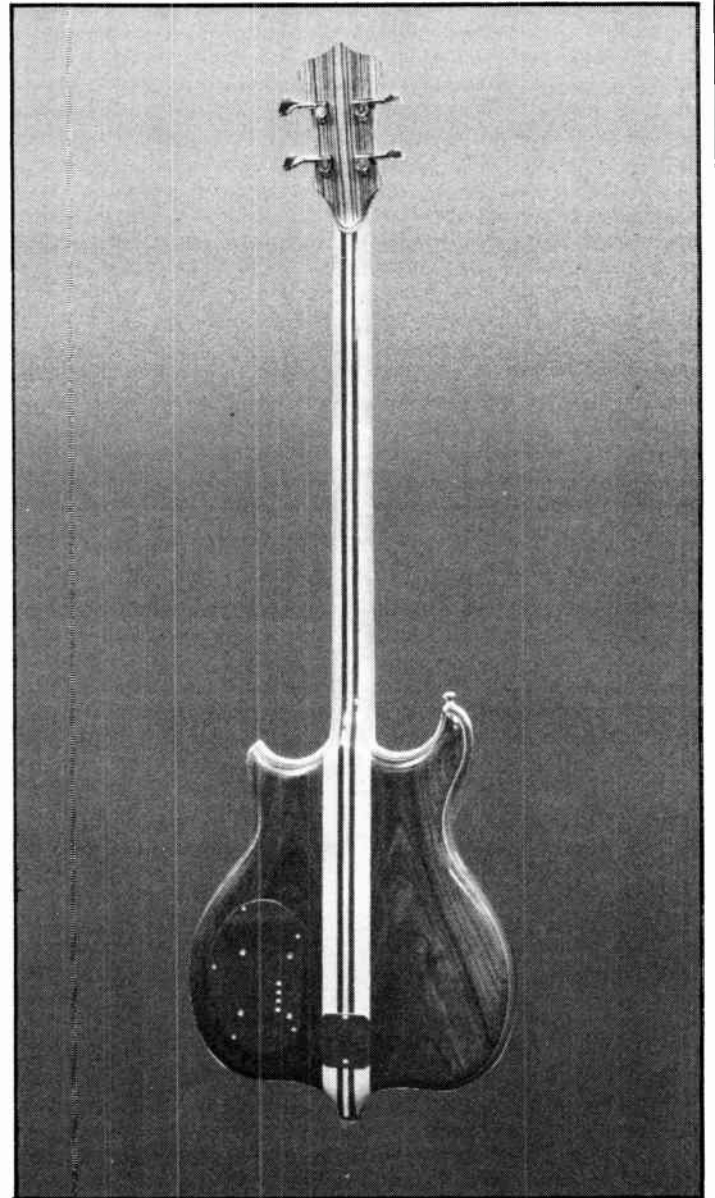
Two outputs from this power pack split the pickups, marked bass and treble, and to use the instrument in mono, a lead from the bass output only feeds the signal through from both pickups. If a mono jack lead is used from the jack output, only the bass pickup will be fed through. Both outputs can be used together if necessary, and on stage I believe Stanley Clarke does this with his Alembic. The mind boggling potential of two separate stereo signals, driving four separate amplified sound sources, with effects on any or all of them, must be heard to be believed, in conjunction with a musician of his vision and stag-

gering ability. Unfortunately, I have not seen him play live since his Fender Precision days, but from informed sources, I understand it's an experience not to be missed with the added dimension of his Alembic.

Visually, the instrument appears to sport three pickups, but the middle one is really a dummy humbucker affecting both active pickups. At the back of the guitar is an oval brass plate with four small holes, allowing screwdriver adjustment, to affect all three front units thus: Any hums or buzzes from either active pickup can be cancelled out completely by adjustment to either of the corresponding inner two screws affecting the dummy Humbucker, and the two outer screws provide sensitivity and gain adjustment to both active pickups, with enough output available to directly drive a power amp if necessary.

The hum cancelling facility is a great idea, and a boon for concert players who have previously been frustrated by hums and buzzes caused by poor wiring in old concert halls where the lighting rig, even though on a separate phase, leaks into the power supply for your onstage gear, causing annoying loud hums throughout. Simply by standing in the most critical position on stage, and adjusting the two inner screws it's possible to eradicate any interference completely from both pickups.

The tone control layout on the front of the guitar is both conventional looking and simple. A four-position pickup selector on the bottom horn provides front pickup only, both, and back pickup only, with a useful off/standby in its fourth position. Individual volume and tone pots for each pickup, as normal, are complemented by two small three-way switches, one for each pickup. In the up position, the desired tone for



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the pickup is determined by the tone pot alone, with a normal straight roll-off. The middle position gives a 6dB boost before roll-off and down position a 12dB boost before roll-off.

When a switch is in either the middle or down position the tone control potential from its corresponding pickup is infinite-

ly more wide ranging and versatile, to the extent that the rotary tone control at around its roll off point becomes hypersensitive in terms of high frequency boost, and in the space of the last quarter turn — to full off or bass position, a pronounced wah-wah effect is obtainable, especially with the 12dB boost.

# GuitarCheck

With this simple, uncluttered, and easy-to-separate circuitry, in conjunction with their single coil very high output wide range pickups, Alembic offer the most versatile sounding, complete bass guitar, in an audio sense, I have ever encountered. I unfortunately didn't have possession of it for as long as I would have liked, and therefore wasn't able to do a studio test, but what I learned from home and live gig scrutiny, convinced me that soundwise, in all situations, it's got to be an unbeatable product.

In a small hall, I tested it stereo, through an Acoustic stack for the bass pickup, and a Hiwatt stack for the treble pickup. The foundations of the building were being threatened by the sheer power and depth of the bass frequencies obtainable, while at the top end, unbelievable screaming treble was easily selectable via use of the Q switches. The warmth factor I mentioned earlier has nothing to do with the actual depth of the frequencies available from this bass but purely a personal observation of a minor deficiency of warmth as a texture to the lower frequencies.

In a purely physical sense, for me, this bass wasn't ideal. The long double octave neck, coupled with the extreme cutaway body made the whole instrument seem longer than it actually was, and a slight neck heavy balance discrepancy added to the difficulty I was already experiencing in comfortably reaching the lowest playing positions. Although the fingerboard is relatively narrow, tapering only slightly from around 2½ inches to just under 1 inch, the neck is quite thick in cross section right down to the nut, making the left hand technique appreciably more demanding in these regions than on a Fender Precision for instance.

The materials used in construction make this probably the heaviest bass I have ever encountered, and only added to my personal, slight incompatibility with this particular model. Here I need to inform non-regular readers, and remind regulars, that my physical stature is by no means average. Being something of a "short-ass" alters the perspective of my comments on the dimensions of this long scale example, because quite truthfully, it's just too big for me. The vast majority of average-to-tall bassists would have no problems, but at the same time I feel they would not find it an in-

stantly easy bass to play. A medium or short scale version—both of which are available—would suit me better, and I may tend to try one when next in the USA.

## Summary

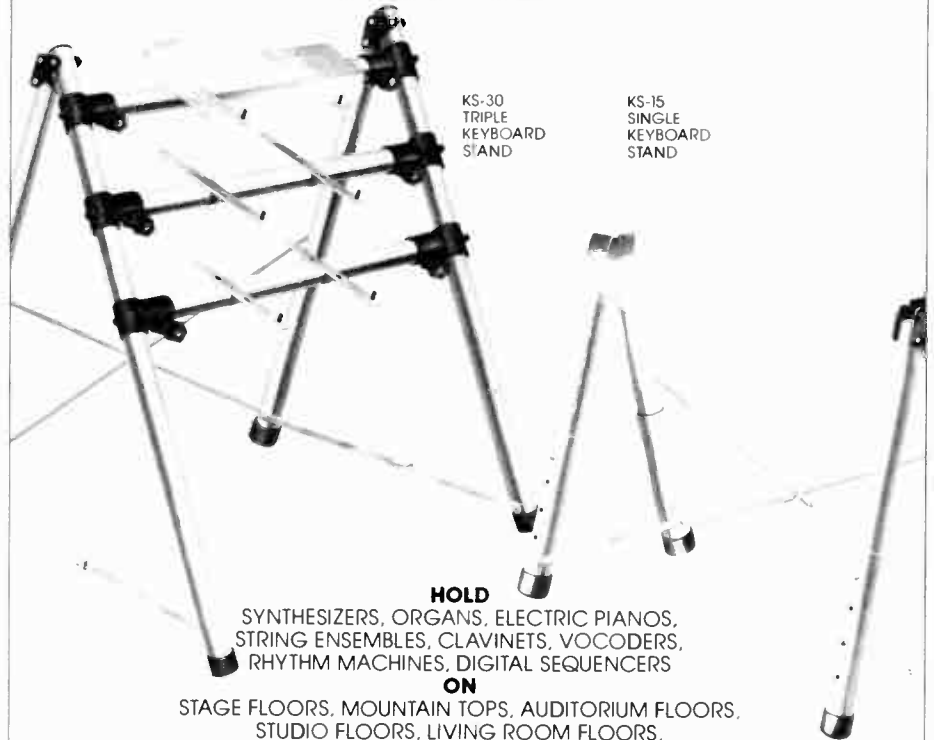
In every other respect though—the instrument lived up to all its claims and reputation. Intonation, response, sustain and frequency range and permutations were all superb, and the highest possible quality and finish throughout the product, convincingly backs up Alembic's claim to superiority in this field. A fair amount of time would have to

be spent on getting used to one, from a technique point of view, as well as familiarization with the sophisticated electronics.

For the discerning professional bassist who wants an all hand built, therefore singularly individual instrument, with outstanding, all round capability and overall design, based on research and craftsmanship of the highest class, and after playing one it *feels* as good as it looks and sounds, then for that individual it is the best possible bass guitar around in my opinion.

Jim Rodford

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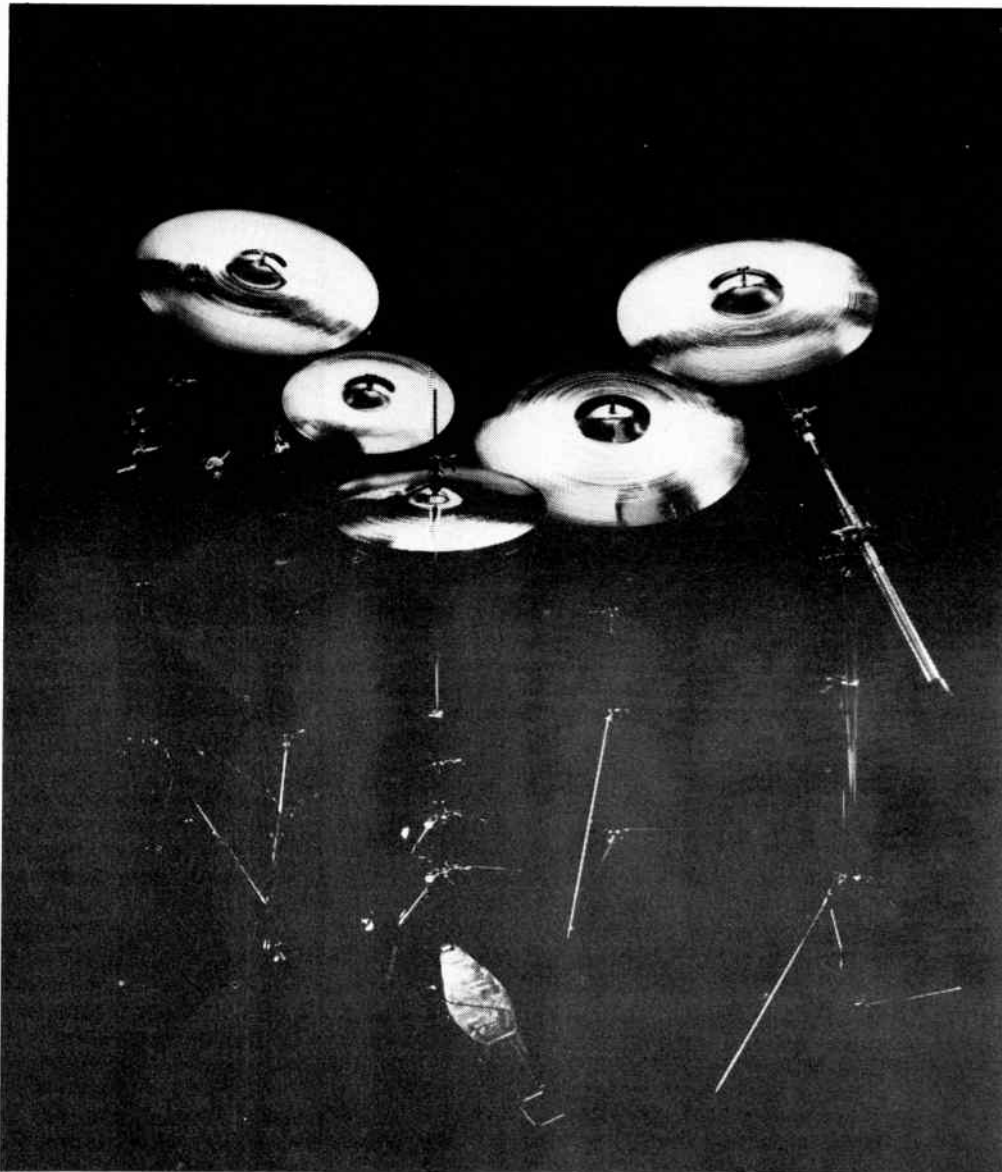


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# Drumcheck

## New from ZILDJIAN CYMBALS



There are quite a few different products available from Zildjian's Boston factory which you may have seen advertised but not really been able to try for yourselves. This month I'll go through their new products one by one so you can be in possession of the facts as I see them.

I heard news about the Zildjian Earth cymbal quite some time ago but the first opportuni-

ty I had to hear it being played was at the last NAMM winter trade show in California. Peter Erskine, Weather Report's drummer, was playing it with Jaco Pastorius. Now Jaco is nothing if not a brilliant *loud* bass player and yet the unamplified Earth cymbal was still cutting through way over the top of everything, yet still with a loud sound. It doesn't have a ping to it, at least not in

what I consider to be the tone sense of the word — it probably could be best described as a *clang*. Don't take this word in the wrong sense either, because it has a very high quality sound. It's just that onomatopoeically that is the adjective that suits best (I suppose one could call it a "heavy ping" with *balls*).

It appears that the Earth was actually developed by the Zildjian company expressly for heavy

music although not necessarily just *rock*. It's certainly a completely new departure as far as cymbals are concerned and doesn't go through quite so many processes. It isn't actually polished, it's simply pressed and annealed after it's casting process. This leaves it a very unusual color for a modern cymbal — it's a smooth tarnished brown.

Since the cymbal isn't panned and so doesn't have any tonal grooves it's quite a lot heavier than a normal cymbal. I have recently used an Earth cymbal on an album and was a little worried that it might have turned out to be too strident — however, once the mixes were done I was more than pleased because it was cutting through *exactly* how I've always wanted the bell of my cymbals to but never up till now achieved. The best way to describe it is that all over its surface it has cymbal-bell-type sounds. It simply doesn't have any normal "crash" sound since it doesn't have the pliability to be really vibrant. Mind you it does have an interestingly different sound when hit as if for a crash. I accidentally used it as a crash on a couple of tracks which I subsequently had to overdub with a "pang" since its own sound was simply not long enough to punctuate. The cymbal I have is a 21" but 20" and 22" diameters are also available.

Zildjians *flat-bats* have been designed especially to have a sharp, cutting sound yet still retain lots of balls. How they have achieved this is to give the bottom cymbal a flat profile like their *flat ride* and so decrease the overtones in it for a tighter sound. They've also drilled not one but five holes in this cymbal to dissipate the air which is normally caught between two conventional hi-hat type cymbals as they clash together. (One of the reasons for having an adjustable angle bottom cymbal cup is to eliminate this problem.) This air cushion which is formed, does



not help the two cymbals to "speak" freely nor to react well with each other soundwise. So, all this air is now forced out of the holes and the result is, I think, a stronger sound.

I tried a pair of 14" flat hats (15's are also available) in the studio but found they spread too much — their overall sound was a little swishy and leaked into all the other microphones which of course simply won't do in the studio. I then played them in a live situation and found they worked much better. I normally use "Rock 15s" on stage and found these 14" ones to be every bit as penetrating but easier to lift up and down. On reflection it was not a great idea to take a brand new pair of *any* cymbals into the studio because new cymbals are notoriously toppy at first.

Another new product from Zildjian is the *deep ride* which is available in a 20" or 22" diameter. I tried out the larger size which I felt to be brighter than the Earth at source but when heard from a distance it didn't have quite such a strident quality. You could perhaps describe it as a *brilliant* Earth — however, there is no such thing. It seems almost as if an Earth cymbal has been *slightly* planished because it's about the same thickness and

weight. It has a slightly sharper bell sound with lots of build and no real crash with, overall, some high tones but the predominant ones are in the middle to lower register which are produced by its flat taper. I found it to be quite a "jazzy" cymbal although other drummers I've played it to have said it would be fine for *their* sort of rock.

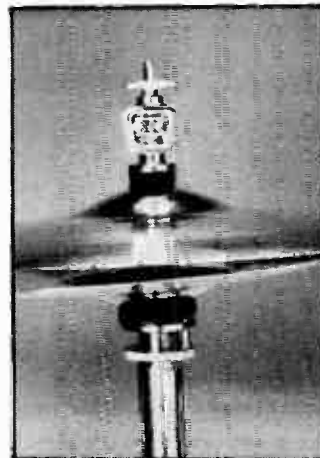
It's now possible to buy both the swish and pang and indeed everything else from A.Z. with a *brilliant* finish. This finish is applied by experts at the Boston factory and is I suppose, basically a polishing process. (I have to say I suppose because the process is patented and a secret.) Anyway the process, for me, makes the cymbals harder and brighter — I have never seen a broken brilliant cymbal.

I tried out an 18" rivetted brilliant swish recently and was impressed. By the way, a swish cymbal is the same shape as an ordinary Zildjian: regular cup, regular bow, but with an up-turned edge whereas the pang has a completely different shape with a flatter edge and a smaller cup. I played the brilliant alongside an ordinary 18" swish and found it had a more definite higher pitched note. Even though it was rivetted I turned it upside down just to see what would happen. The fundamental became more obvious

but the sustain became shorter. (The reason for turning a Chinese cymbal the wrong way up is to create more playing surfaces therefore more varied sounds.)

Zildjian have introduced another special-sound cymbal which I have not as yet seen — it's called a Heavy Swish and is meant to be used mainly as a ride cymbal. It's available in a 22" diameter with a large bell and is fitted with 20 rivets. The 18" "pangs" and "swishes" have only six rivets.

**Bob Henrit**



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# Effectscheck

## MULTIVOX "Big Jam" SE-7 Analog Echo/Reverb \$179.95

The Multivox Company has recently introduced a new series of effects pedals under the name "Big Jam" which feature a host of new technological wrinkles including an LED (two-color) indicator light for instant recognition of operating mode; front-mounted, recessed slide controls; noiseless electronic switch circuitry; easy access battery compartments; rugged die metal casing and non-slip rubber soles.

The "Big Jam" series is extensive — units offered include the SE-1 Phaser, SE-2 Spit Wah, SE-3 Compressor, SE-4 Octave Box, SE-5 Flanger, SE-6 Six Band Graphic Equalizer, SE-7 Analog Echo/Reverb\* (model tested), SE-8 Distortion, SE-9 Bi-Phase, SE-11 Jazz Flanger and the SE-XP Pulse Regulator/Power Supply — and, due to deadline time restrictions, I was only able to examine the SE-7 Analog Echo/Reverb.

This somewhat garishly colored unit (purple, some of the others are even more florid) is indeed housed in a "rugged" die-cast metal casing with an ample non-slip rubber pad on the bottom to prevent unwanted floor movement. The triple function LED — Red indicates pedal is on but EFX are off, Green indicates both the pedal and the EFX are on and a flickering LED indicates a weak battery — is a very helpful feature. The recessed slide controls mounted on the front of the unit make for more precise control and are less likely to be accidentally moved by a careless foot.

But the major plus of this unit to *my* ears is the noiseless electronic switch circuitry. The on/off switch is housed under a

black rubber cap and there is no mechanical "push-pull" action involved to engage the unit. The electronic FET switch under the rubber housing works so efficiently and quietly you *actually need* to two-color LED indicator to tell whether or not the SE-7 is engaged.

Specific advantages of the SE-7 unit include a separate switch for both reverb *and* echo effects. The echo effect is generally a deeper-sounding, more spacious effect while the reverb tends to come off shallower and a little flatter with a "live room" ambient sound. Both of these modes can be further manipulated by using the slide controls for delay time, number of repeats and balance for effects level. With judicious use of these sliders, a very effective array of echo/reverb combination sounds can be achieved and the SE-7 looks like it could stand up to normal road wear and tear with a minimum amount of hassles.

J. C. Costa



### Specifications:

**Input impedance:** 500Kohms min

**Output impedance:** 1Kohm max

**Max input level:** 5dB

**Delay time:** 30ms-200ms

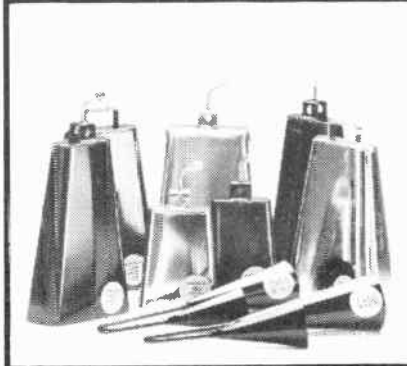
**Frequency response (effect):** 20Hz (3dB typ)

**Signal-noise ratio:** More than 70dB

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| <b>2</b> | Are you sure of the same response at all volume levels?                    | <b>6</b> | Are you effectively patching in effects and/or other amps? | <b>10</b> | Is your amp really portable?   |
| <b>3</b> | Does your footswitch have L.E.D. and memory?                               | <b>7</b> | Can you achieve the tonal coloration you want?             | <b>11</b> | Can you control channel interaction so that when you turn treble up, midrange and bass are not affected? |
| <b>4</b> | Do you have individual channel volume controls and master volume control?  | <b>8</b> | Do your tone controls wash out at high levels?             | <b>12</b> | Can you use reverb without interference from your tone controls?   |

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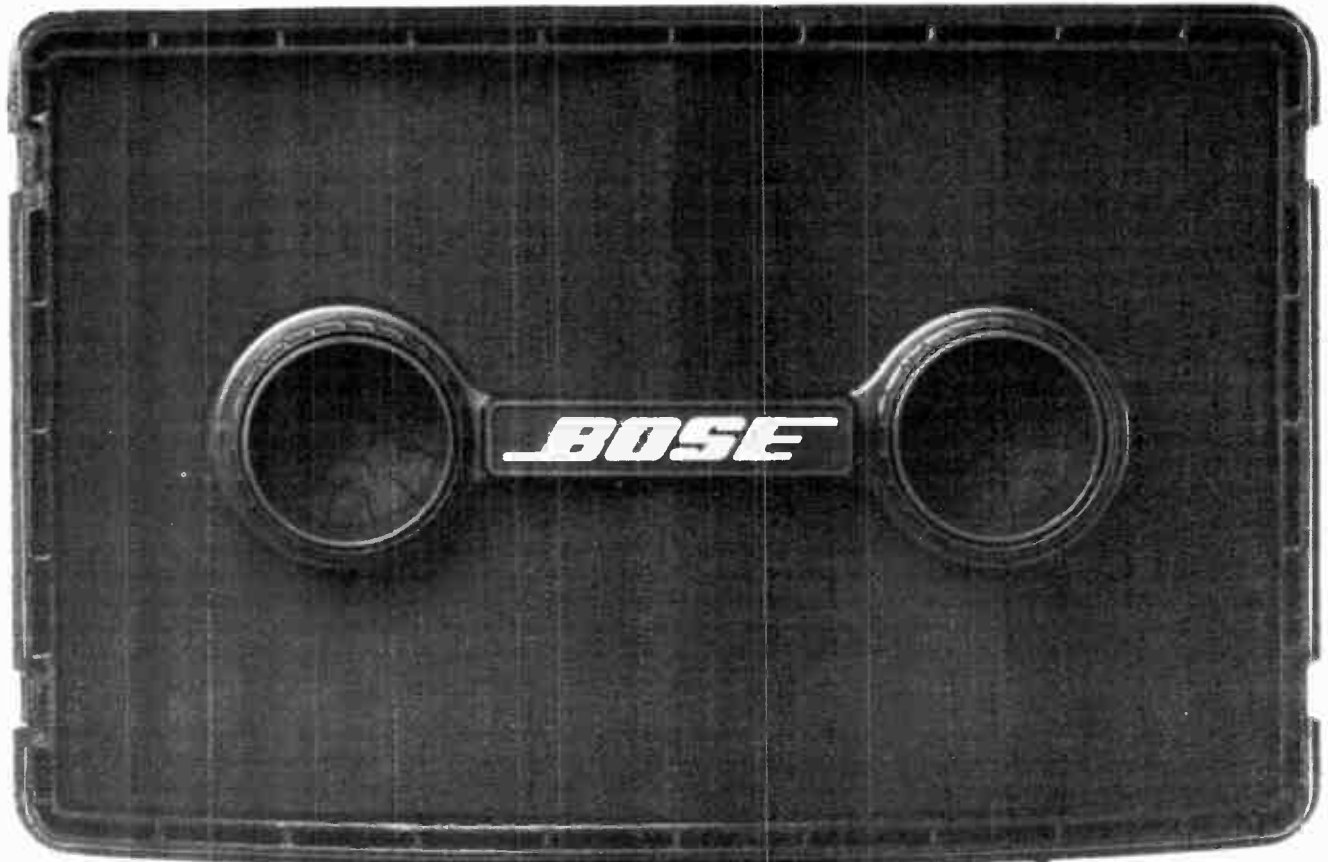
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# KeyboardCheck

## Roland VK-1

Before the advent of the synthesizer (and for that matter the electric piano) the keyboard players main means of expression outside of the piano was the electric organ. The organ was to be found in rock bands, blues bands, pop bands, gospel groups... etc. in other words just about everywhere. If you wanted to pad out your track or make your four-piece sound like six but you can't afford horn or string players, the answer was invariably the Hammond. Although electric organs are still with us in abundance, allegiance has switched somewhat, in favor of all manner of varied keyboard instruments. It is amazing however that being in possession of all these instruments there are still times that only an organ (preferably a Hammond!) will do.

I think the reason a lot of bands stopped carrying organs around was the sheer size and weight and let's face it you could carry half a dozen modern keyboards around using the same space as a Hammond! But wouldn't it be nice just now and again?

That somewhat long-winded preamble leads me to the Roland VK-1, because someone at Roland has come up with yet another winner. You can have your Hammond on stage for those nice 'now and again' things and find it does not take up any more space than your favorite poly-synth. The VK-1 has a 61-note keyboard (starting on a C) and weighs precisely 35.2lbs. There are three presets on it — 1 (ensemble) 2 (full tibias) 3 (theater brass). In plain language, 1 is a reedy chorale sound, 2 is a brassier chorale sound and 3 is something like a combination of the two. The drawbar section of the instrument has a full range of tonal expression and goes from 16' to 5 1/2', 8', 4', 2 1/2', 2', 1 3/5', 1'. Percussion will give you 2nd, 3rd

and 5th harmonics and you can select normal or soft volume and fast decay for additional percussive effects. There is a chorus/vibrato control (two knobs) 1 controls depth and 2 controls speed.

I played the VK-1 through a normal Roland JC 120 amp with the equalisation set flat. The resultant sound amazed and pleased me and if I had any criticism whatsoever it would be to have more control over the chorus/vib. Don't get me wrong, the one on the machine is fine but I could imagine the VK-1 through a Leslie speaker! There is also an output jack so you could in any case plug through to any pedal or box of your choice. The overall controls are volume, brilliance and tuning and there is a choice of output level via a switch marked L(low)/M(med)/H(high).

The VK-1 has the usual high quality Roland finish and regular Roland aficionados will notice the new style keyboard with cutaway keys which give a noiseless and extremely quick action.

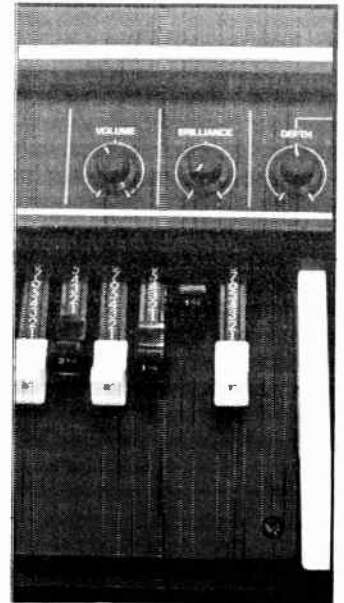
This is all very well you may say, but why pay a fortune for an instrument which really will only do the one thing it's designed for, i.e. give you a good organ sound, and the answer is quite simple, you don't pay a fortune.

The VK-1 is reasonably priced making it a very affordable luxury. Finally, dimensions are — width 44.5", height 5.8" and depth is 17.6".

While visiting the Brodr Jorgensen premises I noticed a structure which would be of great interest to all those who need to rack a number of different keyboards. Called "Ultimate Support Systems" and marketed as the KS30, it is a very strong structure made of light alloy tubes very simply joined together and with a number of options as to the spacing of the alloy strips which support the instruments.

I managed to load up one KS30 with a Prophet 5, a Roland Vocoder, an ARP Odyssey and a CAT synthesizer — all when mounted were easily playable and access to the patch fields at the back of each synthesizer was of course completely unhindered. The whole unit is very lightweight and packs up into a bag which is no bigger than the sort of thing you would use to carry fishing tackle in.

**Mike Moran**



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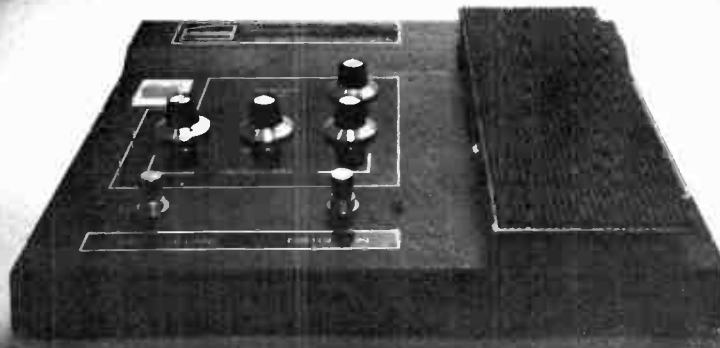
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# Drumcheck

This month I've decided to implement something which I have found to be missing from the drum world and publish a chart of the relative dimensions, weights and densities of our normally available drum sticks.

The idea is staggeringly simple. If your local music shop does not have your particular favorite in stock then you will be able, by consulting this chart

to discover which other stick corresponds to it in shape and weight.

The chart is not designed to say which stick will last longest since so many different factors will (and do) affect the life expectancy.

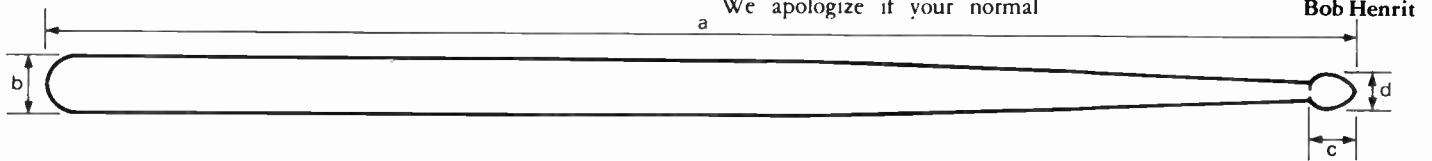
All of the samples we received were of hickory except for the Promarks which are accepted to be of Japanese oak. The density factor is not important between

different companies (although it does make a difference to the feel) but might be significant among the sticks of the same manufacturer if it differed greatly; i.e. one would reasonably expect the company to use roughly the same density of wood for all their sticks. (Here again though several different factors come into play like whether the billet is taken from the original tree or is, perhaps, part of its regrowth. We apologize if your normal

stick is not listed here but we did ask the main manufacturers to send along their 10 best-selling models.

From time to time I intend to update these tables as and when new makes or models appear.

We will be covering some new interesting items from some of the independent manufacturers in the near future, including some aluminium sticks from Verisonic among others.

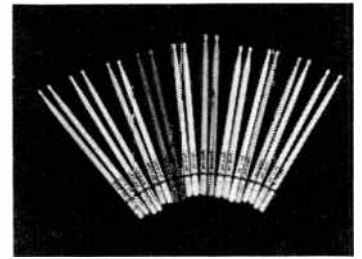


Stick Type	Length a	Diameter b	Tip Length c	Tip Diam. d	Shoulder Thickness	Density	Wght
<b>ROGERS:—</b>							
Roy Burns Model	16"	18/32"	20/32"	13/32"	9/32"	1.13	42g
	406.4mm	14.29mm	15.88mm	10.32mm	7.73mm	g/cc	
5A	15 15/16"	18/32"	20/32"	18/32"	8/32"	1.12	50.5g
	404.81	14.29	15.88	14.29	6.28	g/cc	
Super Soul	16 3/16"	20/32"	22/32"	14/32"	11/32"	1.23	61.5g
	411.16	15.88	17.46	11.11	8.81	g/cc	
2C	15 15/16"	18/32"	10/32"	10/32"	6/32"	1.19	53.6g
2B	16 1/16"	18/32"	20/32"	12/32"	7/32"	1.09	54.5g
	408	14.29	15.85	9.53	5.73	g/cc	
7A	16 1/8"	15/32"	18/32"	12/32"	8/32"	0.89	32.7g
	409.58	11.91	14.29	9.53	6.27	g/cc	
Jazz Rock	16 1/8"	18/32"	18/32"	14/32"	9/32"	1.08	48.8g
	409.58	14.29	14.29	11.11	7.37	g/cc	
3A	15 5/8"	17/32"	16/32"	12/32"	8/32"	1.31	48.7g
	396.88	13.49	12.7	9.53	6.46	g/cc	
Finger Control	16 1/8"	16/32"	17/32"	12/32"	7/32"	1.32	49g
	409.59	12.7	13.49	9.53	5.48	g/cc	
<b>GRETSCH:—</b>							
4A	16"	18/32"	21/32"	13/32"	8/32"	1.22	55.2g
	406.4mm	14.29mm	16.67mm	10.32mm	6.38mm	g/cc	
5A	16"	17/32"	20/32"	12/32"	9/32"	0.972	48.6g
	406.4	13.49	15.88	9.53	7.25	g/cc	
25	17"	20/32"	23/32"	16/32"	10/32"	1.06	75.8g
	431.8	15.88	18.26	12.7	8.15	g/cc	
1A (nylon Tip)	16 6/8"	17/32"	20/32"	15/32"	9/32"	1.10	55.2g
	425.45	13.49	15.89	11.91	7.08	g/cc	
3A	15 13/16"	18/32"	16/32"	14/32"	9/32"	1.1	56.9g
	401.64	14.29	12.9	11.11	7.45	g/cc	
6A	15 9/16"	16/32"	20/32"	11/32"	8/32"	1.15	42.6g
	395.29	12.7	15.88	8.73	6.45	g/cc	
4A	16"	19/32"	20/32"	12/32"	6/32"	1.03	41.4g
Rock Model	406.4	15.08	15.88	9.53	5.25	g/cc	
Nylon Tip							
7A	15 1/2"	15/32"	19/32"	10/32"	8/32"	1.13	32.9g
Mel Lewis Model	393.7	11.91	15.08	7.94	6.19	g/cc	
Nylon Tip							
2A	15 6/8"	18/32"	20/32"	12/32"	9/32"	1.104	49.7g
	400	14.29	15.88	9.53	7.31	g/cc	
9A	16"	16/32"	18/32"	11/32"	1/4	0.986	36.5g
Pencilstick	406.4	12.7	14.29	8.73	6.25	g/cc	
Nylon Tip							
7D	15 1/4"	17/32"	20/32"	12/32"	6.15	1.13	42g
Mel Lewis Model	387.35	13.49	15.88	9.53		g/cc	
8A	15 3/8"	18/32"	19/32"	10/32"	9/32"	1.16	52.5g
	390.5	14.29	15.08	7.94	7.14	g/cc	

Our thanks to David Marsden and Peter Walker of Sunbury College for their help in compiling this chart

**PROMARK HANDMADE:--**

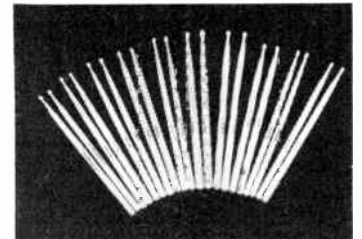
2B	15 7/8"	19/32"	19/32"	12/32"	9/32"	1.08	54.9g
	413.23mm	15mm	15mm	9.53mm	7.12mm	g/cc	
707	16 3/16"	17/32"	16/32"	13/32"	9/32"	1.06	53.1g
	411.16	13.5	12.7	10.32	7.35	g/cc	
727	16 3/16"	16/32"	18/32"	10/32"	9/32"	1.28	47.4g
	441.16	12.7	14.3	7.94	7.27	g/cc	
Profesional	15 7/8"	15/32"	18/32"	12/32"	9/32"	1.04	45.2g
	403.23	11.9	14.2	9.53	7.08	g/cc	
2S	16 7/8"	19/32"	22/32"	18/32"	5/16	1.3	65.1g
	428.62	15.09	17.46	12.7	8.34	g/cc	
5A	16"	16/32"	19/32"	12/32"	1/4	1.35	50.2g
	406.4	12.7	15.09	9.53	6.35	g/cc	
808	15 15/16"	18/32"	18/32"	14/32"	9/32"	1.44	65.1g
	404.81	14.25	14.29	11.11	7.33	g/cc	
5B	15 15/16"	18/32"	20/32"	14/32"	9/32"	1.01	50.6g
	404.81	14.29	15.9	11.11	7.47	g/cc	
Rock - 747	16 3/8"	16/32"	22/32"	12/32"	9/32"	1.42	52.6g
	411.16	12.7	17.46	9.53	7.21	g/cc	
3A	15 4/8"	16/32"	15/32"	13/32"	9/32"	1.46	54.2g
	393.7	12.7	11.9	10.32	7.29	g/cc	



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**LUDWIG:--**

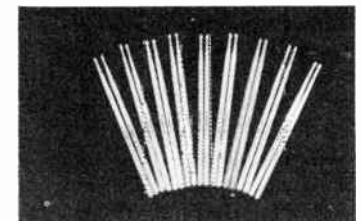
Ludwig	414 mm	16.0mm	15.1mm	7.4mm	11.9mm	0.94	56.4g
1B	16 18/32"	20/32"	19/32"	9/32"	15/32"	g/cc	
Ludwig Jo Jones	377	14.2	12.9	5.2	9.5	0.890.89	44.8g
12A	15 2/32"	18/32"	16/32"	6/32"	12/32"		
Ludwig 2B	398	16.6	16.5	7.5	10.5	0.99	70.6g
Nylon	15 29/32"	21/32"	21/32"	9/32"	10/32"		
Ludwig	425	19.0	17.6	9.9	14.5	0.8	85.0g
35	17	24/32"	23/32"	13/32"	19/32"		
Ludwig 5A	401	14.5	14.3	7.0	8.9	0.84	50.7g
Nylon	16 1/32"	18/32"	18/32"	9/32"	11/32"		
Ludwig 2S	427	16.6	16.6	8.5	12.0	0.98	69.8g
	17 2/32"	21/32"	21/32"	11/32"	15/32"		
Ludwig 3A	392	15.2	15.2	6.2	9.0	0.97	49.8g
Nylon	15 20/32"	19/32"	18/32"	8/32"	12/32"		
Ludwig 3A	396	15.2	12.0	6.2	10.2	0.96	48.1g
	15 27/32"	19/32"	15/32"	8/32"	13/32"		
Ludwig 10A	403	13.0	16.9	6.5	9.5	0.78	35.3g
	16 3/32"	17/32"	22/32"	8/32"	12/32"		
Ludwig 2A	401	16.1	16.1	7.0	10.2	0.80	57.4g
Nylon	16 1/32"	21/32"	21/32"	9/32"	13/32"		



Circle 877 on Reader Service Card

**PREMIER:--**

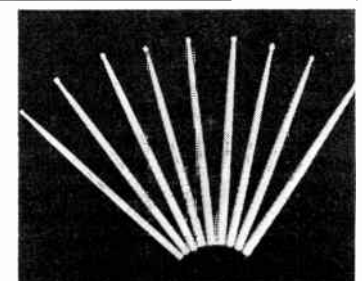
Premier	389mm	13.5mm	15.5mm	8.0mm	6.2mm	0.88	40g
KC	15 16/32"	17/32"	20/32"	10/32"	8/32"	g/cc	
Premier E	402	13.6	14.0	8.4	6.5	0.83	37.7g
Nylon	16 2/32"	17/32"	11/32"	11/32"	8/32"		
Premier J	406	12.5	12.5	8.5	5.6	0.88	44.1g
Nylon	16 7/32"	1 9/32"	16/32"	10/32"	15/32"		
Premier MR	406	14.0	12.5	10.5	7.0	0.89	44.9g
	16 7/32"	17/32"	16/32"	13/32"	9/32"		
Premier CC	400	14.5	14.5	10.0	7.5	0.71	42.9g
	16"	18/32"	18/32"	13/32"	10/32"		
Premier CP	403	15.0	123.5	9.0	7.9	0.88	43.0g
	16 3/32"	19/32"	17/32"	12/32"	11/32"		
Premier M	400	13.2	16.1	9.9	7.0	0.69	31.0g
	16"	17/32"	20/32"	12/32"	9/32"		
Premier L	380	12.1	13.8	8.2	6.5	0.93	36.3g
	15 6/32"	15/32"	18/32"	10/32"	8/32"		



Circle 878 on Reader Service Card

**POWER TIP:--**

AAA	16 13/32"	22/32"	16/32"	11/32"	13/32"	0.9	53.4g
	419mm	17mm	13mm	8.0mm	10mm	g/cc	
AA	16 16/32"	20/32"	16/32"	8/32"	14/32"	0.8	44.2g
	420	15	13	7.3	11		
A Nylon	16 10/32"	16/32"	16/32"	8/32"	10/32"	0.8	41.9g
	416	13	13	7.2	9		
BBB	15 30/32"	23/32"	16/32"	11/32"	15/32"	0.7	55.2g
	406	19	13	9.02	12		
BB	15 30/32"	23/32"	14/32"	10/32"	14/32"	0.8	51.2g
	404	18	11	8.05	11		
B Nylon	15 25/32"	23/32"	16/32"	8/32"	14/32"	0.8	48.7g
	402	15	13	7.37	11		
CCC	15 25/32"	23/32"	16/32"	11/32"	7/16"	0.9	63.6g
	402	15	14	9.03	11		
CC	15 25/32"	20/32"	15/32"	10/32"	13/32"	1.8	51.5g
	402	17	12	8.05	10		
C Nylon	15 25/32"	20/32"	23/32"	9/32"	13/32"	0.6	48.5g
	402	17	15	7.26	10		



Circle 879 on Reader Service Card

# MESA/Boogie FEEDBACK

Send \$1.00 for full information:



P.O. BOX 116 LAGUNITAS, CA 94938

*I have received the amplifier and I am very, very pleased. It looks like a work of art and it sings like a bird. It is, I believe, the only product I have ever purchased that has exceeded my expectations. The craftsmanship, attention to detail and general good sense that is evident in your work should be an example to all other manufactures.*

**Ken Shipley**  
E. Cleveland,  
Ohio

*I've had the Boogie for several months now and I'm still looking for something to complain about. Actually it's more than I expected. Truly versatile—I've just begun to explore its tonal variations. And talk about punch! Don't let me forget to mention sustain: even and almost infinite. My compliments on a beautiful amplifier. It was well worth the wait and the money.*

**Robert Thomas**  
Brewster, Ohio

*Am writing to tell you how pleased I am with the MESA/Boogie amp you made for me. There's only one thing smaller that has more power and that's a stick of dynamite. Better make that two sticks!*

**Michael George**  
Las Vegas,  
Nevada

*I owe a lot to your amp. I do sessions here: commercials and records. And the engineers in town love it when I bring my amp. The producers in town know also and they use me for most of the electric guitar work because I can get any sound for them while they ask for it. Last year my band opened the show for Boston 3 times and Tom Sholtz was absolutely freaked out by how loud that little sucker is.*

**Bruce Gaitsch**  
Western  
Springs, Illinois

*Just thought I'd drop a short line to say again how much I love my Boogie Mark II. The more I play it, the more I appreciate its super tone and amazing presence. Thank you for caring enough to produce the finest amp in the world!*

**Mike Hales**  
Fort Worth,  
Texas

*Hey thanks a lot for the speedy service! Your sending a new reverb chamber really says a lot about your company's integrity. If word of mouth is the best advertising, then rest assured because I love your amp and will continue to proclaim it as the world's best. I can't tell you how satisfying it is to deal with good solid people and products. You're the best!*

**Luke Engel**  
Troy, Michigan

*My compliments to the makers of what I honestly consider the finest piece of equipment I have ever owned. Its versatility is just amazing, as is its ability to sell itself. In the time that I've owned it, I've been approached by a countless number of people interested in the amplifier. Thanks to MESA Engineering for one of the best investments I've had the opportunity to make.*

**Scott Saulnier**  
Downers  
Grove, Illinois

*Thank you very much for the repairs to my amplifier. Your amp is the finest in the World. The only thing that can top your amplifier is your excellent service. In this day and age it's a great feeling to know that someone still backs their product 100%.*

**Jeff Hathaway**

*I felt I had to write and tell you that you people have changed the image of manufacturers in the music industry. With all the celebrities you deal with you still take the time to deal personally with a "no name" like me. Right on!*

**Chris Mall**  
Corte Madera,  
California

*I wanted to drop you a note of thanks for your efforts in getting my amp to me in time for my session work. Your amp is really much like an instrument itself, and is played the same way my instruments need to be. You obviously put a lot of soul into your work.*

**Chris Myers**  
Arlington,  
Massachusetts

*I no longer miss my ..... stack. I keep turning around and looking to make sure that it's really a small Boogie that gives me so much Power! It's really great—it can sound like a stack at any volume!*

**Johnny Carr**  
Milpitas,  
California

*Thanks a million for building me such a wonderful amp! After 3 years of concerts and sessions my Boogie Amp seems to sound better every performance. Keep up the Great work!*

**Barry Richman**  
Decatur,  
Georgia

*This is the first time I've ever written a letter to a manufacturer. I wish to acknowledge your commitment to craftsmanship. The phrase "state of the art" is so often loosely applied. Your work is truly state of the art and speaks for itself.*

**Ed Scannell**  
Torrance,  
California

*My favorite guitarist is Carlos Santana and you cannot imagine the pleasure it has given me to be able to duplicate his incredible tone and sustain. Equally exciting is the amp's ability to produce not only the Santana sound but anything from cool jazz to the most intense rock. The Boogie is all you say it is and more.*

**Paul Drummond**  
Oberlin, Ohio

*I received my second MESA/Boogie last week and it arrived in perfect condition. I want to say that the Boogie amps are without doubt the best amps I have ever used. There are numerous devices on the market that promise tone and sustain but aren't practical for me. The Boogie does just what your literature says: all the controls are actually useful on stage, they aren't gimmicks, they work. I had an old Fender Bassman, a Twin and a Marshall but the Boogie can produce the sound of all these amps at any level of volume desired, plus it can do a lot more. This flexibility makes your amps worth the price. It's great that in this era when musicians take pride in owning fine old instruments, someone is actually building amps that are the best ever.*

**Drennan Jones**  
Liberty Hill,  
South Carolina

Circle 734 on Reader Service Card

# MULTIVOX



# Introducing Big Jam effects pedals from Multivox.

## SE-1 PHASER

Professional quality and our most affordable phasing device. The SE-1 reproduction of low and mid-range frequencies allows for a new sound dimension in all studio or live performance levels. The SE-1 includes separate slide controls for intensity level and speed variation.

Input impedance	500k ohm min.
Output impedance	10k ohm max.
Maximum input level	-10dBm
Sweep speed	0.2 Hz 9 Hz
Sweep range	4 octaves
Signal/noise ratio	-90dB
Controls	Intensity level and speed variation Noiseless electronic F.E.T. switch (effect on/off) Red (effect off) or normal signal Green (effect on)
L.E.D. (2 color)	
Jacks	Input, output, AC adaptor input
Power supply	9V battery (006P) included
Optional accessory	SE-UP AC adaptor



If the music looks and sounds great, chances are Big Jam is underfoot! Musicians at every level are adding magical excitement that only Big Jam effects can create. Big Jam's unique design allows the progressive artist to use his creativity to produce exciting, innovative sound treatments for outstanding audio effects.

Multivox electronic music engineers thought of everything when they designed the Big Jam series. They took into serious consideration the real environment in which effects pedals are used. The result is a superior product line with the latest circuitry, operational features, and body design. Big Jam effects pedals are unmatched for sound reproduction, ease of operation and durability.

## Special Big Jam features:

**LED indicator light:** For instant recognition especially when 4 to 5 pedals are in use. The 3-function LED indicator light permits instant recognition of operating mode. Red indicates pedal is on but effects are off; green indicates pedal on with effects operating; a flickering indicator light warns of weak battery.

**Battery power check:** The LED also serves as a power check for the battery. Thus maximum volume and sound clarity are assured.

**Recessed slide controls:** Front mounted for easy accessibility and visibility. Controls are recessed to avoid accidental movement. The slide settings give the musician precise control of sound reproduction.



**Noiseless electronic switch circuitry:** Eliminates clicking noises common with standard mechanical switches. Since there are no mechanical or moving parts, Big Jam is maintenance free.

**Easy access battery compartment:** Battery can be quickly changed without tools or coin.

**Rugged die cast metal casing:** Provides long time protection of internal state-of-the-art circuitry.

**Non-slip rubber sole:** Avoids annoying and possible dangerous floor movement of instrument.

**Color casing:** Big Jam effects pedals are color coded for fast identification.



## SE-2 SPIT WAH

The SE-2 creates an innovative funky wah effect by use of an envelope filter. Includes an up-down mode selector switch, 3 function filter choice, and separate slide controls for sensitivity and resonance.

Input imp	500k ohm min
Output imp	1k ohm max
Max input level	-20dBm
Signal/noise ratio	-90dB
Sweep level	up 200 Hz-4kHz typ down 3kHz-200Hz typ
Resonance	15dB
Controls	Resonance, sensitivity Filter switch (HP - BP - LP) Mode (up-down) - sweep Noiseless electronic FET switch (effect on/off)
LED (2 color)	Red (effect off) or normal signal Green (effect on)
Jacks	Input, output, AC adaptor input
Power supply	9V battery (006P) included
Opt accessory	SE-UP AC adaptor



## SE-3 COMPRESSOR

Especially recommended for electric guitar or bass players. The SE-3 produces distortion-free sustain and electronically adjusts for varying amounts of instrument input. Includes separate slide controls for sensitivity and level input.

Input imp	500k ohm min
Output imp	1k ohm max
Max input level	-10dBm
Comp range	40dB
Signal/noise ratio	-100dB
Controls	Sensitivity Level output Noiseless electronic FET switch (effect on/off)
LED (2 color)	Red (effect off) or normal signal Green (effect on)
Jacks	input, output, AC adaptor input
Power supply	9V battery (006P) included
Opt accessory	SE-UP AC adaptor



## SE-4 OCTAVE BOX

Specifically designed for the electric guitar or bass player who wants to expand his solo performances by incorporating electronic octave effects into a studio or live environment. The SE-4 includes a 3 mode octave selector and separate slide controls for balance, tone and level output.

Input imp	500k ohm min
Output level	1k ohm max
Min input level	-40dBm
Signal/noise ratio	-90dBm
Controls	Mode 1 - octave up Mode 2 - 1 octave down Mode 3 - 2 octaves down Balance-tone-level output Noiseless electronic FET switch (effect on/off)
LED (2 color)	Red (effect off) or normal signal Green (effect on)
Jack	Input, output, AC adaptor input
Power supply	9V battery (006P) included
Opt accessory	SE-UP AC adaptor



## SE-5 FLANGER w/AC adaptor

The most advanced state-of-the-art circuitry available. The SE-5 sweeps through the entire frequency response of amplified guitar, bass or keyboard instruments. Enhances reproduction of low, mid and high ranges for a total flanging effect. The SE-5 features individual slide controls for manual command of width, rate and a regeneration of frequencies.

Input imp	500k ohm min
Output imp	1k ohm max
Max output level	-5dBm
Delay time	05 ms -16 ms
Sweep speed	120 ms -15 sec
Signal/noise ratio	-80dB
Controls	Manual-width-rate-regen Noiseless electronic FET switch (effect on/off)
LED (2 color)	Red (effect off) or normal signal Green (effect on)
Jacks	Input, output, AC adaptor input
Power supply	SE-UP AC adaptor included 9V battery (006P) included



## SE-6 SIX BAND GRAPHIC EQUALIZER

The missing link in sound reproduction for all amplified instruments or microphones. The SE-6 covers a frequency range which boosts or cuts six different octave bands enabling the musician to contour the sound to specific acoustic environments or personal taste.

Input imp	500k ohm min
Output imp	1k ohm max
Max input imp	-1dBm
Control range	100-200-400-800 1600-3200 Hz
Controls	Noiseless electronic FET switch (effect on/off) -85dB typ
LED (2 color)	Red (effect off) or normal signal Green (effect on)
Jacks	Input, output, AC adaptor input
Power supply	9V battery (006P) included
Opt accessory	SE-UP AC adaptor



## SE-7 ANALOG ECHO/REVERB w/AC adaptor

The SE-7 Analog Delay combines superior sound with a separate reverb effect letting the musician create distinctive sounds at all performance levels. The circuitry of tomorrow in a small compact design, the SE-7 includes a separate switch for echo and reverb effect plus slide controls for delay time, number of repeats and balance for effect level.

Input imp	500k ohm min
Output imp	1k ohm max
Max input level	-5dB
Delay time	30 ms - 200 ms
Frequency response (effect)	20 Hz (3dB typ)
Signal/noise ratio	More than 70dB
Controls	Mode (reverb/echo) Delay-repeat-balance Noiseless electronic FET switch (effect on/off)
LED (2 color)	Red (effect off) or normal signal Green (effect on)
Jacks	Input, output, AC adaptor input
Power supply	9V battery (006P) included SE-UP AC adaptor included



## SE-8 DISTORTION

This traditional effects unit recreates the natural distortion and sustain quality originally produced by tube-type amplifiers when they were over-driven. SE-8 includes individual slide controls for drive, tone and level output.

Input imp 500k ohm min  
Output imp 1k ohm max  
Max gain +50dB typ  
Max output level -10dB m typ  
Gain control +10dB +50dB  
Signal noise ratio 85dB typ

Controls Drive tone level  
Noiseless electronic FET switch (effect on/off)  
Red (effect off) or normal signal  
Green (effect on)  
Jacks Input, output, AC adaptor input  
Power supply 9V battery (006P) included  
Opt accessory SE UP AC adaptor



## SE-9 BI-PHASE

w/AC adaptor

The ultimate phasing device destined to become a leader in design. The SE-9 features a fixed phase shifter circuit and a variable phase shifter circuit that allows the user to integrate two phasing effects simultaneously in one unit. The SE-9 also includes separate slide control for width, rate and resonance.

Input imp 500k ohm min  
Output imp 1k ohm max  
Max input level 5dB  
Sweep speed 2 Hz 8 Hz  
Sweep range 3 octaves  
Signal/noise ratio -70dB

Controls Width-rate-resonance  
Noiseless electronic FET switch (effect on/off)  
Red (effect off) or normal signal  
Green (effect on)  
LED (2 color) Red (effect off) or normal signal  
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Noiseless electronic FET switch (effect on/off)  
Red (effect off) or normal signal  
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# THE NEW WESTBURY MODEL 1000 "DUAL-VOICED" REVERB TWIN.

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Richard Cerniglia, lead guitarist formerly with Hall & Oates, The Illusion, Barnaby Bye



Mickey Marchello, lead guitarist of The 1000 Ft.

Richard Cerniglia reported, "During the blind tests I preferred the amp that turned out to be the Westbury 1000 over the Fender Twin in terms of overall sound-tone, overdrive characteristics, etc. Extended playing tests after the amps were identified confirmed my test impressions."

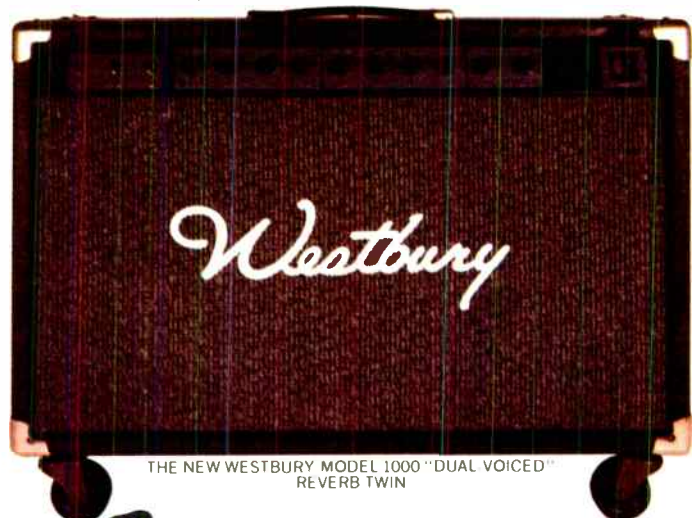
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THE NEW WESTBURY MODEL 1000 "DUAL VOICED" REVERB TWIN

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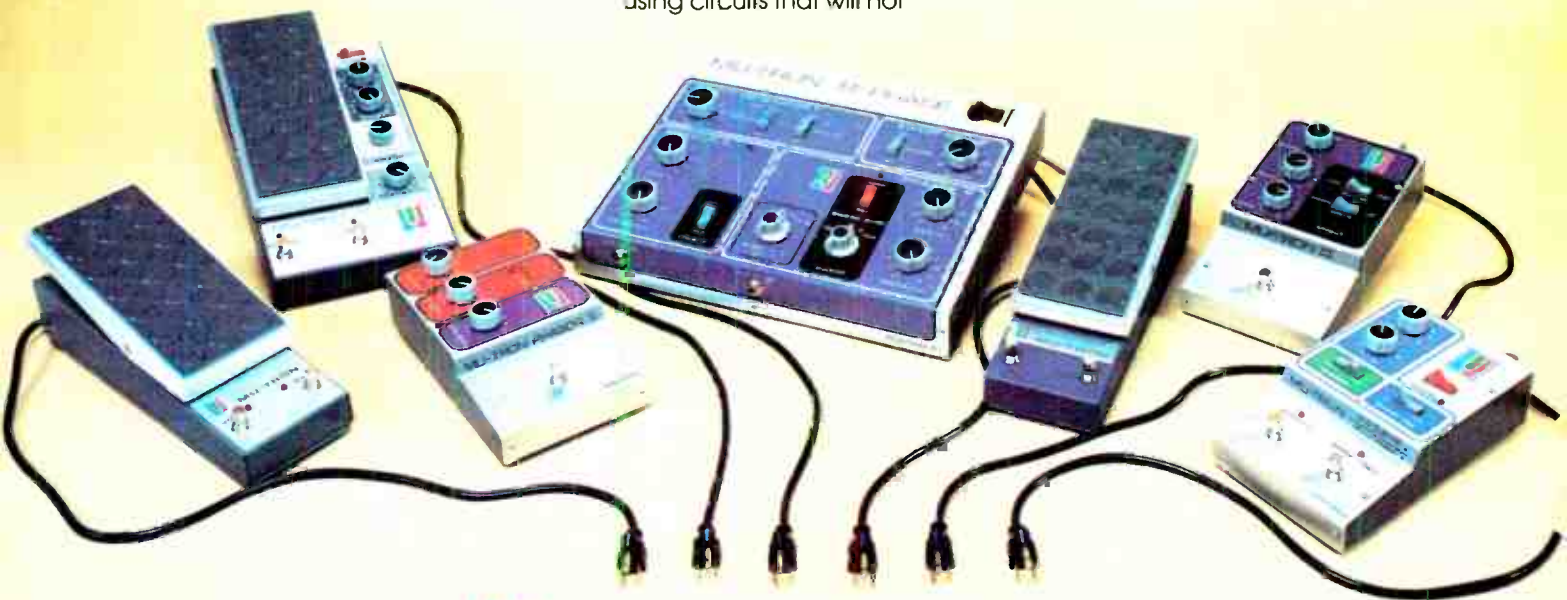
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World Radio History

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*Nancy Wilson*

**Heart guitarist**

**Howard Leese . . .**

"This year I'm taking mainly custom instruments on tour . . . except for my Washburn A-20 which is a stock model. That guitar is great just the way it is!"

*Howard*

**Heart guitar**

**Roadie Gary Perkins . . .**

"Nancy owns 4 Washburns, she's bringing the White Eagle on tour with her . . . it's a lovely stage guitar . . . beautiful abalone inlays, a printed circuit board inside it, Washburn handwound pickups, and coil disconnect switches built into the volume pots. It's got a nice fat Les Paulish sound to it, not too dirty or too clean. In fact I like it so much, I've ordered one for myself!"

*Perkins*

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World Radio History

# Synthcheck

## OCTAVE—Cat

Octave's Cat synthesizer has been very well engineered. When the instrument arrived at my studio for review it arrived minus any technical notes (and a mains plug!) but I still found it a very simple instrument to come to terms with. The overall layout is based on the use of sliders, slide switches and rotary pots. Color coding and visual signs (rather than words) make operation very simple and quick.

**Color Coding:** White sliders control an audio signal level. Grey sliders control 'transient generator' (more on this later).

I find many similarities to my beloved Odyssey in the Cat, e.g. the grouping of VCO, VCF and VCA modules is from left to right to visually correspond with the signal flow, where possible visual signals to indicate functions are used rather than words and size and shape are pretty close too. The Cat's patching system comprises a system of slide switches that select the source of modulation, with rotaries located beneath each switch that adjust the depth of modulation.

**Pitch control:** situated bottom left moves everything up or down approximately one octave. When the slider is centred in the '0' position there is a small area in which there is no pitch change.

**Octave switch:** situated next to the pitch control moves everything up or down by exactly two octaves.

**Glide:** situated next to octave switch has range described between minimum and maximum. There is an optimal on/off footswitch that plugs in the rear of the unit. The glide on the Cat is designed so that even if the note is released the glide will complete its function. Approximate glide time is two seconds per octave.

**LFO frequency:** completes

the bottom left hand corner. This LFO frequency slider determines the repetition rate of the LFO.

**Sample and Hold:** situated on the bottom of the Cat next panel along from the LFO frequency.

**AR and ADSR:** transient generators are situated top left hand corner. Perform the usual envelope functions, but the transient triggering on the Cat is designed so that the retrigger of the ADSR occurs on any key depression — even if more than one note is held down. This promotes quite a fast keyboard action.

**Mono/Poly keyboard control:** situated in the panel above the sample and hold. In the 'mono' mode VCO1 will play the lowest note depressed. In the 'poly' mode it will play the highest note depressed, therefore since VCO2 will always play the lowest note they will assign themselves a note each giving a two-notes at a time feature.

**VCO1:** choice of waveforms are sub-octave square, sawtooth,

triangle and variable width pulse. The tuning range is approximately  $8\frac{1}{2}$  octaves in the coarse position and  $\frac{1}{2}$  octave fine tuning.

**VCO2:** choice of waveforms are sub-octave square, square and sawtooth. Tuning range approximately three octaves.

**Filter cutoff and resonance:** sliders marked FC and Q respectively.

Dimensions of the Cat are: width 24", height 6", depth  $19\frac{3}{4}$ " and weight is 23 lb.

Keyboard is 37-note with gold-plated buss bars and key contacts.

To sum up the Cat, I think it is an attractive-looking instrument, very well engineered, sturdy, simplicity itself to operate yet with a variety of features that make it a good instrument for the professional musician.

It is nice, in these days of synthesizer "saturation", to come across an instrument which is unpretentious, free of useless gimmicks and made in the West. Price, I think is very reasonable.

**Mike Moran**

*Mike Moran is one of Britain's busiest keyboard players. He's scored several films including 'The Greek Tycoon' and 'The Bitch'. Recently he's played on albums by Kate Bush, Cliff Richard, Gladys Knight and the Four Tops. He's toured with Leo Sayer, Maggie Bell and Ian Gillan.*



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# EffectsCheck

## BOSS "Dr Rhythm" DR-55 \$199.50

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The Boss DR-55 is accurately described in the owner's manual as "an extremely small and compact programmable rhythm machine." And the word *programmable* is the key to this unit — 16 different rhythm patterns can be loaded into the memory and will be "retained" even when the power switch is turned off. In addition, the DR-55 offers three basic rhythm sounds — bass drum (BD), snare drum (SD) and rim shot (RS) — with a standard pattern hi-hat sound which can also be added on for more realistic rhythm patterns. An accent (AC) control is also provided to accent certain beats in the measure.

And all of this comes in an amazingly small and lightweight — 21mm (wide) × 116mm (deep) × 53mm (high) — black metal case with all of the control functions clearly laid out on the sloping front panel. Starting in the upper left hand corner, the *Volume Control/Power Switch* controls the volume level and, when turned fully counterclockwise, turns the unit off. Next comes the *Tempo* control which controls the tempo (speed) of the rhythm patterns and a *Tempo Indicator Light* which flashes at the beginning of each measure. In the DR-55 *Play* mode, this light gives a visual indication of the tempo and in the *Write* mode it indicates where the loading of a rhythm pattern can begin.

Under these two controls, there is the *Tone* control which effects the tonal color of the percussion sounds while the previously mentioned *Accent* control controls the dynamic range of the various rhythm patterns.

Moving to the right hand side of the panel, we find the *Hi-Hat* switch for adding the hi-hat sound to the overall rhythm pattern — control setting "8" for eight beats to the measure and control setting "12, 16" for a

sound occurring 12 or 16 times per measure. The *Variation* control (important in both modes!) offers two separate variations — A, B — for each pattern with an "AB" option if you want to play both variations one right after the other in series. When using the DR-55 in the *Write* mode, the *Variation* switch determines which variation memory (A or B) the pattern will enter when loaded. At "AB" two measures can be loaded in series.

The all important *Mode* switch actually determines whether the DR-55 is in a *Play* or *Write* mode — if this switch is not left in the *Play* position when not actually programming new patterns, it will cause the accidental erasure of patterns. The *Sound* switch is used to select the particular rhythm sounds (BD, SD, RS, remember?) and accents when programming a new pattern and the dominant *Rhythm Select* switch on the far right selects one of the six 16-step or two 12-step pattern "slots" for either playing or writing, depending on the mode.

In the *Play* mode, the *Start* and *Stop* buttons — located directly under the *Rhythm Select* switch — control the start and stop of the rhythm patterns. In the *Write* mode, when programming each beat one step at

a time, the *Start* is pushed for steps where sound is to occur and the *Stop* is pressed where *no* sound is to occur. An *Output Jack* doubles as power switch and connective outlet to amplification, *DBS* and *ESQ* jacks are provided for controlling external devices and the Roland FS-1 footswitch can be used with the Dr Rhythm for remote control of the *Stop/Start* function in the *Play* mode.

The *Play* mode of the DR-55 is extremely simple to use given the aforementioned controls. Suffice to say that, played through a larger beefy amplifier, the rhythm patterns have an authentic punchy sound with enough variations to legitimize its role as an electro-mechanical drummer. This unit is especially effective for home multi-track recordings where miking a full set of drums might be problematic — the DR-55 has enough potential for rhythm variations to supplant a drummer or just provide an excellent reference rhythm pulse. The DR-55 could also be used in certain live music applications where a more mechanistic Gary Numan/Kraftwerk approach is called for.

The programming or *Write* mode of the Dr Rhythm is a very logical, step-by-step process which can be easily mastered

with some practice. Without going into an extensive breakdown of each step in the programming sequence, it should be pointed out that the *Rhythm Select* and *Variation* switches should be properly set *before* writing a new pattern since writing a new rhythm pattern into the memory will erase any previous rhythm pattern. As stated before, each measure is divided into either 16 or 12 steps and the rhythm patterns are written into memory *separately* for each sound, one step at a time for one or two (A or B) measures. For purposes of writing, these patterns are always thought of in terms of 16ths.

Setting the *Rhythm Select* at position "7" or "8" activates the 12-step patterns which can be used for triple rhythms such as 3/4 or 3/2. In the *Write* mode, setting the *Variation* switch at "AB" enables the user to write a full 32- or 24-step-pattern which will alternate between variation A and B when played. And if you really want to make the ultimate use of the DR-55's programming function, you can undertake the ultimate variation which is best outlined by the company in the operating manual: "With a little forethought, it would be possible to load various rhythm pat-

# Effectscheck

## BOSS "Dr. Rhythm" DR-55 \$199.50

terns such as an introduction, fill-ins, breaks, etc into the various memory slots in such a way that the rhythm part *for an entire composition* (my italics) could be produced non-step by changing the *Rhythm Select* and *Variation* switches while the rhythm pattern runs. To accomplish this, rhythm patterns at the beginning of the composition should be loaded into the lower numbered places of the *Rhythm Select* switch. (Ex: Into loaded into Pos. 1/Main rhythm patterns loaded into Pos. 3, 4/Close loaded into Pos. 6.) The *Rhythm Select* switch need be moved only one step at a time and the changes in *Rhythm Select* and *Variation* should be

made as close to the bar line as possible for smooth transitions. . . ."

In other words, you can program the rhythm patterns for an entire song (something usually accomplished only with much more expensive and sophisticated units) and, with the help of a friendly dial spinner, play the whole thing back for a song run-through. This kind of flexibility plus the extraordinary variety implicit in all the above-mentioned controls adds up to one of the most adventurous and cost-effective rhythm units on the market today. Keep your eyes and ears open for Dr Rhythm in the months to come.

J. C. Costa

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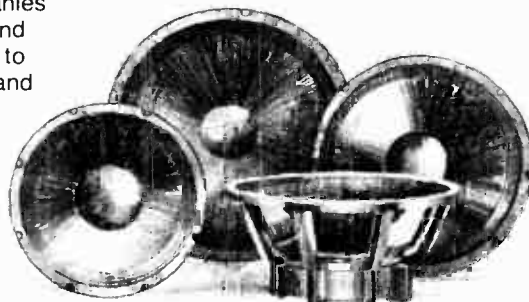
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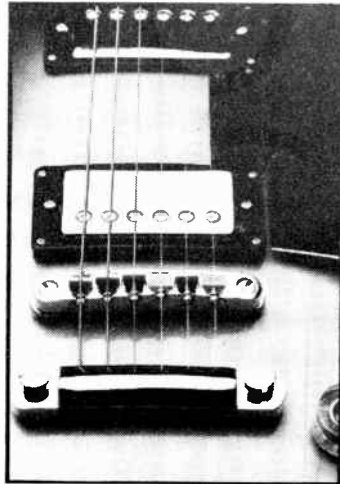
# Guitarcheck

## Lotus L560 \$299

At around \$300, this is hardly an expensive instrument and the performance must be considered in context with the price. I frequently review much more expensive guitars, which are interesting because they often represent the best which a particular maker can achieve in large scale production. However, most of these "ultimate" instruments are beyond the reach of beginning guitar players, and can only be of incidental interest to them. I have also noticed, that while many of these top-of-range imported instruments carry the title "professional" (or some similar word) on their labels, some truly professional musicians, who are my friends and customers, do not take this concept entirely seriously. With the possible exception of television or video work, they seem generally to prefer plain-looking instruments, with simple controls and exceptional performance. Also, it is my experience that while experienced, professional guitarists may have collections of old guitars, they do not often buy new instruments. One is left to speculate just who does buy "professional model" instruments.

With this in mind, it is no bad thing to review, for a change, an instrument which is clearly intended for amateur and beginning guitarists and is priced appropriately for a first electric guitar.

The Lotus is built generally after the style of the Gibson Les Paul models, with a sunburst paint job and gold-finish fittings. The body is of semi-solid construction, with a laminated, arched top on the front of the main body block, partially blocked-in underneath. The main body block is also of laminated construction. The edges of the body, neck and head are trimmed with black and white plastic bindings, and the orange/black sunburst is



continued on the back of the body and along the sides and back of the neck and head. The head is faced black, with Lotus logo in green and pink pearl at the top. The rosewood fingerboard is fitted with nickel-silver frets and inlaid with imitation pearl block position markers.

The electrical fittings are as usual for this style of guitar: two pickups, selector switch, two volume controls and two tone controls. Although the shape of the pickup cases and mountings would suggest that they are humbuckers, in fact, they are single-coil units, with the characteristically brighter and crisper tone of most single-coil pickups. In this respect, the performance of the guitar differs from what one would expect, judging by its appearance. It does not have the usual "humbucking pickup/solid body" sound.

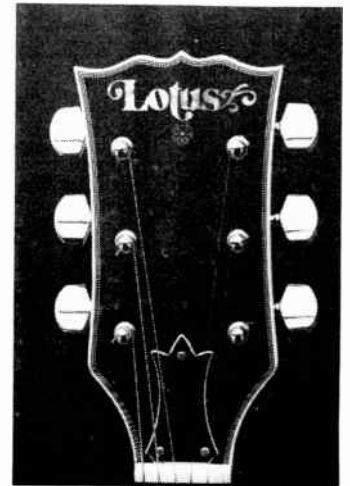
A consensus of several opinions was that the guitar sounds like a cross between a "Tele" and an electric/acoustic Ovation. As such, it is probably more suitable for rhythm playing than for the sort of solos frequently associated with Les Paul-type guitars. It is also close to the sound of an old Gretsch semi-solid guitar which I have at home. As with the old Gretsch,

the pickup output is not particularly high by present day standards, but it is a pleasant sound, and offers some variation from other guitars of this type.

Both the volume and tone controls seem to have their greatest effect between about "1" and "3", and relatively less effect over the rest of the range. Some may recall that this feature of tone controls has appeared, in the past, on certain of Gibson's instruments, so it has an honorable precedent. I still can not see any sense or advantage from it. At least one type of potentiometer has been available recently in Japan, embossed with the name "Noble," which has a smooth and entirely suitable sort of electrical function. There are, of course, American-made potentiometers available with suitable characteristics. Many music stores stock them and it would be a simple job to replace the controls fitted in this guitar. As the control knobs are held in place on the splined control shafts with glue and bits of paper, and the back panels are packed up with Gaffer tape, it is likely that I have been asked to review a prototype or a very early production sample. If this is so, I hope it will be possible to change over the controls without too much trouble.

The pickups, bridge and tailpiece have all the normal adjustments; for string height, intonation, intonation and bridge angle. All of these appear to work correctly and without problems.

The neck appears to be made from one piece of a pale-colored wood, similar to mahogany. It is fairly narrow across the fingerboard, shallow in depth and oval-shaped at the back, rather than round or pointed. This is generally a rather slim neck and would be particularly suitable for players with smaller than average hands. The neck is



"bolted" to the body with the usual four screws and a back plate. With the better Japanese guitars using straight-through necks and many of the "copy" guitars now copying the glued-on neck joint, where appropriate, this bolt-on neck construction is beginning to look just a little dated in a Les Paul-style guitar. On a lower-priced instrument, such as this Lotus, the bolt on neck is acceptable but more appropriate pickups, or a glued-on neck, would come before gold fittings or multiple striped bindings, in my list of priorities. Some of our readers may place the decorative features first, and there is usually no reason why such a neck joint should not be glued inside *as well as* screwed. (Make sure it is aligned correctly before the glue sets!)

When discussing lower-priced instruments it is very difficult to comment on such aspects as fret finishing after examining only one sample. Most instruments in this price range show significant variations between different batches and between individual instruments. You should ideally arrange to try several samples of the instruments which interest you, although I appreciate that this is not always possible.

On this sample the frets are



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reasonably well finished, along the bass side of the fingerboard, but a bit scrappy along the treble side. As the string-spacing is significantly narrower than the fingerboard width, this keeps the outer strings well away from the fret ends and out of trouble. The close string spacing is not so good if you have big fingers, but many Japanese and Korean guitars solve the fret-end problem in this way.

As delivered, the third string on this guitar creaked almost continuously while being tuned up or down. However, taking off the string and replacing it seems to have cured the trouble and it did not re-appear during the period of the test. I was intending to put graphite in the

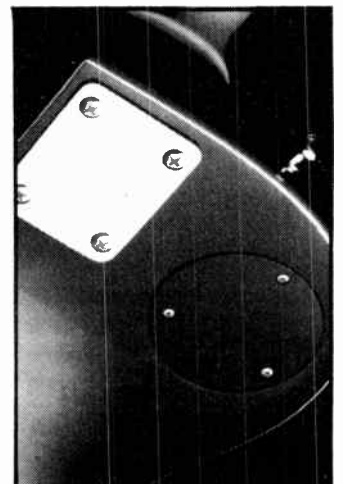
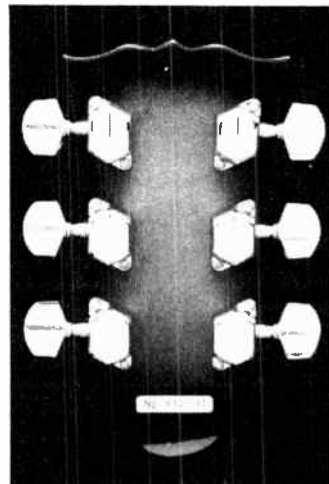
string slot in the nut, but it proved unnecessary.

#### Conclusion

This is an attractively finished budget-price guitar with an adequate performance and a fairly low price. It is likely to please beginning guitarists and casual players. There *are* other electric guitars available in a similar price range, made in Japan or Korea. I would imagine that the success of the Lotus will be influenced by the final street-level price (as opposed to list price) when compared to the actual selling prices of similar instruments. As with most instruments, the best thing is probably to go down to your local music store and try one.

**Stephen Delft**

Review date	April 80
Instrument	Lotus
Serial No. 812231	
Price \$299 approx	
Scale length	630mm
String spacing at bridge	50mm
String spacing at nut	35mm
Fingerboardwidth at nut	42mm
Depth of neck at fret 1	20mm
Depth of neck at fret 12	22.5mm
Depth of neck at fret 15	32mm
Action as supplied	1.3mm Treble — 2.0mm Bass
Lowest recommended action under our standard conditions as supplied.	



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World Radio History

## New Products

### Gollehon S2 Loudspeaker

Gollehon recently introduced the S2 sound reinforcement loudspeaker which is relatively small in size (29" high, 18 1/4" wide, 12" deep) yet still designed to meet any professional sound application. Special attention to driver parameters makes for a flat response and an accurate speaker with a full, smooth dynamic range up to beyond 20 kHz. The S2 is rated at 200 watts RMS and the use of strong, lightweight cones and large, high-flux magnet assemblies contributes to higher efficiency.

The S2 uses dual 12" 2112 woofers for a total diaphragm area much greater than a single 15" speaker. The high frequency section of the S2 a 4690 horn and driver combination which is protected by a 4402 crossover network. The 4690 theoretically "maintains the efficiency, smoothness and clean response to beyond audibility while controlling the dispersion pattern for uniform, wide angle coverage.

All of this is enclosed within a cabinet featuring solid core-plywood construction, tongue and groove fitted panels, steel grille and corner protectors and a fibreglass resing finish.

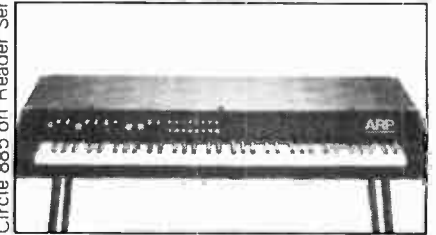


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### ARP Unveils 16-Voice Piano

A 16-voice electronic piano is the newest addition to the ARP range of goods. The instrument is said to offer a wide variety of touch-responsive percussive sounds; including acoustic piano, vibes, harpsichord, harp, electric piano (tone bar effect) and other voices for solo and group performances.

The piano is a 73-note standard wood keyboard with a "specially" designed and weighted maple action which claims to faithfully reproduce the feel and response of traditional grand pianos.

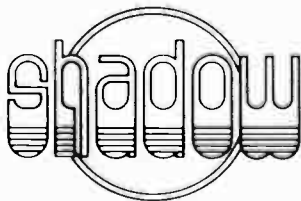


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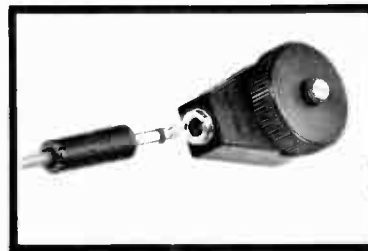
Acoustic guitarists deserve to be heard. But not at the expense of altering subtle notes and overtones by electrification. Shadow transducers give you the widest frequency range, the volume you need and all the pure, natural acoustic sounds your music demands — without making your acoustic guitar sound electric. And you won't need a preamp.

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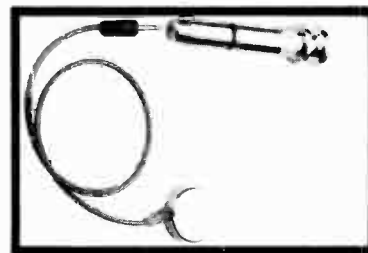
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Invisible Permanent  
Mount Unit
- End Pin
  - All mounting hardware
  - 12' shielded cable

# Albums

## Bob Seger

*Against The Wind* (Capitol)

Featuring a more pared-down production sound than the last few albums, *Against The Wind* gives us more of what Bob Seger does best: solid, meat and potatoes rock & roll and simple, moody ballads brought home with the kind of unerring conviction that has come to be known as the veteran Michigan rocker's trademark.

And even though the album was recorded at both Miami's Criteria Studios and the Muscle Shoals Sound Studios in Alabama with two separate bands — The Silver Bullet Band and the Muscle Shoals Rhythm Section — there is a coherent feeling to all of the tracks probably due in large part to Seger's unified musical vision.

His lyrics and chord progressions may never win awards for their startling originality, but they manifest the rare and blessed virtue of simplicity, they work exceedingly well *together* and, sung with that gravelly "high & lonesome" intensity that Seger brings to all of his material, they convince the listener this man knows whereof he sings.

Standout rock & roll tracks include the tongue-in-cheek "Horizontal Bop," "Her Strut," with a real "down & dirty" principal guitar riff adding menace to the lyric and a chugging train classic entitled "Long Twin Silver Line" which gets nothing but hotter as the Muscle Shoals veterans settle into the groove. Seger takes over lead guitar on the first two of these tracks, delivering the same kind of tasteful and historically correct playing that characterizes British rock & roller Dave Edmunds' approach.

Ballads like the title track, "No Man's Land," "You'll Accompany Me" and "Fire Lake" are built on fairly basic major chord progressions which never fail to resolve in just the right way. The moods projected by these songs are various shades of somber, the words embody basic truths about our life and, as sung by Seger, these tracks are both chillingly honest and unpretentious. Former colleague Glenn Frey and his Eagles buddies Don Henley and Tim Schmidt provide typically flawless backing harmonies to heighten the mood, while other players like Billy Payne (Lit-

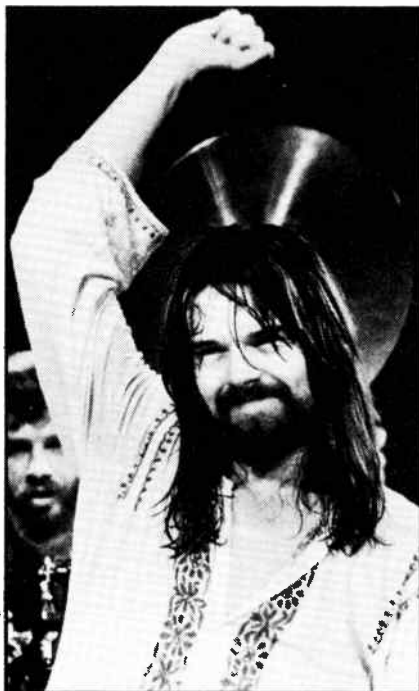
tle Feat), Dr John and Paul Harris help to round out an already extensive instrumental line-up. Luckily all of these musicians use their considerable talents simply to enhance the final arrangements, probably out of respect and an implicit sense of kinship with Bob Seger's music. Something all of us should feel after hearing albums like this.

J-C Costa

*Produced by Bob Seger, "Punch", and  
The Muscle Shoals Rhythm Section*

*Engineered by John Arrias and  
Steve Melton*

*Recorded at Criteria Studios, Miami  
Muscle Shoals Sound Studios*



Bob Seger



Daryl Hall

## Daryl Hall

*Sacred Songs* (RCA)

*Sacred Songs* is both a Daryl Hall solo album and the second part of a three-album trilogy created and conceived by Robert Fripp. Repeated listenings only add to the mystery of why RCA chose to sit on this LP for two years before releasing it — *Sacred Songs* can hardly be termed bizarre and Hall, unfettered and free of any Hall & Oates "type-casting," turns in some of his best vocal performances to date.

Backed by solid musicians like Roger Pope (drums), Kenny Passarelli (bass), Caleb Quaye (guitar) and producer Fripp on guitars and Frippertronics, he wraps his fluid and dynamic vocal style around lyrics (all of the songs are written by Hall) that shows more maturity and a harder edge than the increasingly pop-oriented Hall & Oates collaborations. Tunes like "Sacred Songs," "Something in 4/4 Time," "Why Was It So Easy" and "Don't Leave Me Alone With Her" demonstrate Daryl's continuing obsession with themes like the impermanence of contemporary love relationships and how stardom can change the artist and (more importantly) the people around him — but this time around they probe deeper, locking in on the subject matter with the kind of precision and economy that comes from a lot of hard work and experience. More abstract lyrics like those on the curious "Babs and Babs" show that Hall is also ready to move on into more unfamiliar territory.

Hall & Oates fans may miss the echoey "big" production sound they've become accustomed to, but Fripp's intimate recording showcases Hall's extraordinary voice more effectively than it has been in years. And the built-in hooks and solid minor-chord progressions that are Hall's Philly-Soul birthright are apparent enough to insure *Sacred Songs* a respectable amount of commercial airplay. So what was the problem, RCA?

J-C Costa



# Albums

## Little Feat

*Down On The Farm* (Warner Bros.)

The first song to really hit me on this latest and last offering from Little Feat was "Love Is A Perfect Imperfection." It was followed closely by "Front Page News." In quick succession both "Be One Now" and "Down On The Farm" wormed their way into my synapses — I was singing all four numbers back to back on the way to work, going home, out for the evening.

What's characteristic of these numbers is their water-tightness, completely devoid of a weak chorus, verse or bridge. Every chord in the various progressions in each song displays fresh yet harmonic resolution from the chord preceding it. This isn't a new trait of Feats, but it's good to hear after an album such as *Time Loves A Hero*, which in my opinion wasn't representative of Little Feat at their best.

Naturally, the rhythm section of Ritchie Hayward and Kenny Gradney is totally distinctive, computer-precise boogie with a funky programme, about as potent as a steamroller on uppers.

Above their matrix George's slidework skims and settles tantalizingly, warm and sensual, cool and intelligent, an object lesson in how to do it for a great many imitators.

*Down On The Farm* is the last will and testament from a guitarist who was rapidly becoming one of the premier musicians in the world of rock. George died of heart failure not long after this album was completed, and the band themselves refer to it as "the real last record album." At its best the LP is a *tour de force* of Feat's style of boogie, despite what a lot of their detractors say. Personally, I feel that *Down On The Farm* harks back more to Feats *Don't Fail Me Now*, without repeating any of the musical statements made on that record.

However, not all of this album is my meat, though the bits that aren't hardly poison me. "Six Feet Of Snow" I find unacceptably tainted by more than a dash of country music, likewise "Feel The Groove." As I have a tendency to break out in hives every time a country song presents itself to my ears, these numbers had to go without being raped by my stylus.

Lowell George



It's fairly obvious that Little Feat will never recover from Lowell George's death. Not only did he contribute a great deal of the material but he also produced the band, achieving a distinctive, magnificent sound for the group — rich and full but not devoid of edge and spark.

Little Feat deserved more than they got — especially in the States where their following never got much past the cult status, kind of big support group. America will never know what they've passed up.

**Steve Brennan**

*Produced by Lowell George & friends*

## Lynyrd Skynyrd

*Gold & Platinum* (MCA)

Compilation albums, on the whole, have to draw the line between the tracks that the fans idealized, and those that the band credited as their finest works. Not so with *Gold & Platinum* which splits the two units into separate albums. This has been tried before, but the interface between both the distinctions usually ends up in a poor generalisation of the band's career as discerning musicians, whose opinions and critical appreciation of their own works overrules that of the audience's.

Lynrd Skynrd present a problem for any album of this type anyway, since the band's leader, Ronnie Van Sant was killed in the air crash that also ended the life of the epitome of Southern boogie bands.

Lynyrd Skynyrd



It is pointless to pick too hard at what is essentially a very fine compilation album, since there is no chance of it being repeated. It seems hard to believe that this is not an interim report but the very final farewell. The album should have ended as "Freebird" began: *If I leave here tomorrow, will you still remember me?*

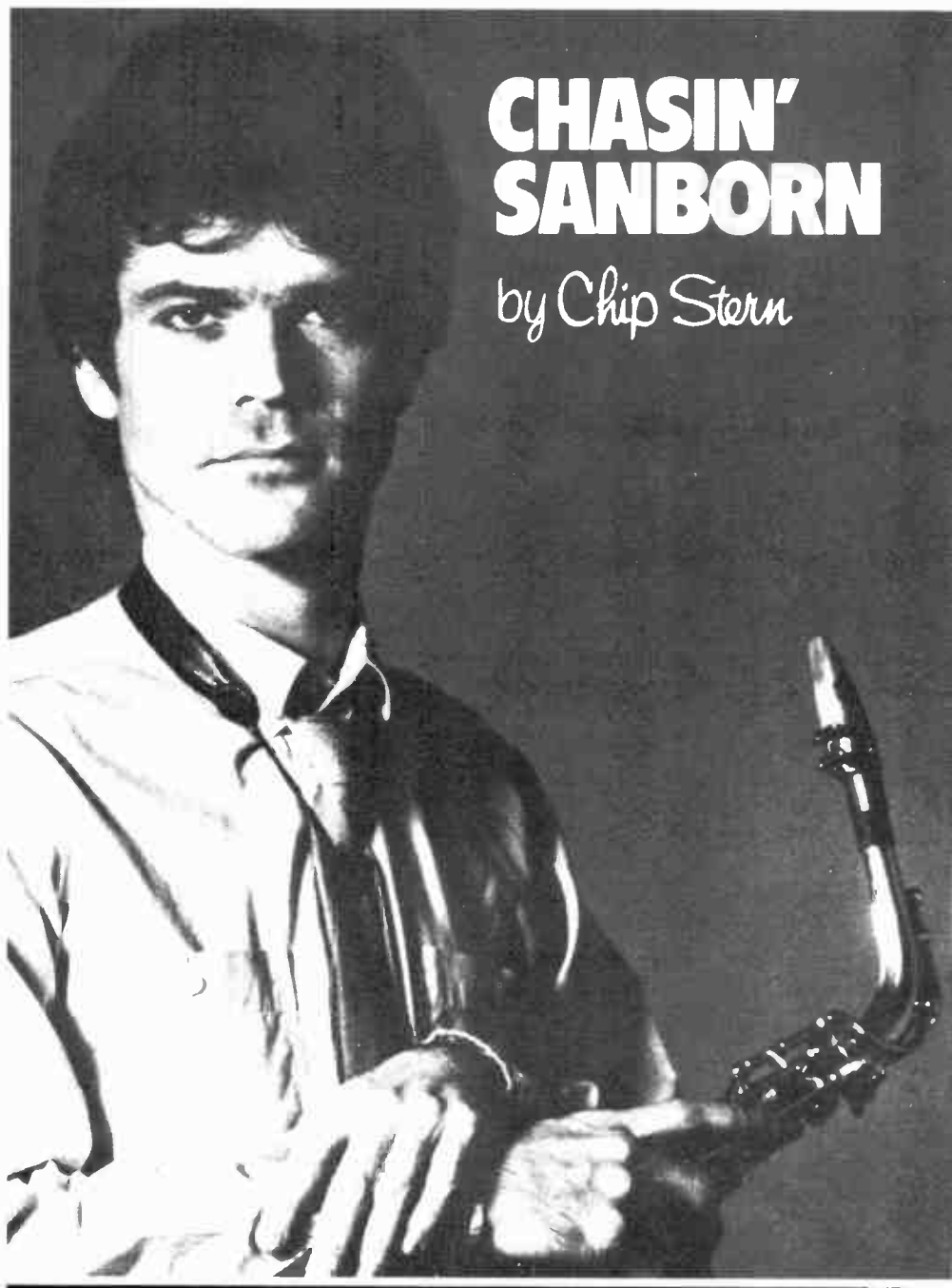
**Tim Oakes**

Through concert appearances and recordings with David Bowie, Carly Simon, James Taylor, Paul Butterfield and Gil Evans, four solo albums on Warner Brothers and his weekly gig with the pit band on NBC-TV's *Saturday Night Live*, David Sanborn has become the most ubiquitous saxophone voice in popular music. With his lyrical phrasing, choppy syncopations and gutbucket vibrato, Sanborn sums up the best aspects of Bebop and R & B saxophone, reconciling the funky, street-wise joy of the latter with the cosmopolitan intelligence of the former — the common bond being the blues.

In reality, Bebop and R & B aren't as incongruous as we've been led to believe, and a case can be made for their mutual development. In a riff-happy, hard-swinging big band like the Count Basie Orchestra of the Thirties, great bluesmen like Chuck Berry and Lester Young could fire up dancers and listeners alike with their different, but in no way incompatible tenor styles: Berry with a brawny, stomping attack that prefigured R & B; Young with a sinuous, behind-the-beat approach that set the stage for Bebop. This might seem hopelessly simplistic, but I'm just trying to give you an insight into the essential unity of American music, while giving you a reference point for the historical events which served to drive a wedge between these evolving musical cousins — conspiracy buffs please take note.

As World War II broke out, American jazzmen like Dizzy Gillespie, Charlie Parker, Thelonious Monk and Kenny Clarke were making the transition to a more rhythmically and harmonically sophisticated style of improvisation. But there are no examples of works-in-progress because a dispute between the musicians union and the record companies led to a recording ban on instrumental music from 1942-1944. Vocalists were allowed to record though, which led to the overwhelming pop (and kitsch) orientation of the modern recording industry. Even more significantly, the government placed a prohibitive entertainment tax on establishments that had a dance floor; this tax, plus rising costs and the scarcity of gasoline, led to the demise of big bands. Club owners suddenly found it more profitable for a small group of musicians to play for listening than for a big band to play for dancing. Anyway, to make a long story short, Bebop developed along more cerebral lines, while R & B emphasized the dancing, blues-drenched aspects of pre-war jazz — a more functional music. David Sanborn's alto playing has always involved an interface of the two styles.

86



# CHASIN' SANBORN

by Chip Stern

"Yeah," Sanborn reflected over drinks, "I think that's the kind of milieu, if you will, that I fit into. As a matter of fact that's a good way for me to pin it down when I think back to my initial experiences with music and what I was most attracted to. My first real memories of music were the Ray Charles band, which is a good example of what we're talking about, because it was a big band format, but with a blues feeling that incorporated a lot of elements that weren't present in Bebop. And his alto player Hank Crawford was the first person to really have an influence on me. I just loved the way he played in that real vocal style. People like Crawford, and Junior Walker, David "Fathead" Newman, Willis "Gator" Jackson and

King Curtis; the whole Texas tenor tradition — that's where that whole style comes from. I didn't make it up, but I'm probably one of the most visible exponents of that style because that's where my roots are. That and organ groups and people like Stanley Turrentine, Gene Ammons, Lou Donaldson, Eddie "Cleanhead" Vinson and Mr Jimmy "Night Train" Forrest; all of those cats are a perfect synthesis of Bebop and R & B, because they're blues players but with that Bebop harmonic sense."

And who would you relate to among contemporary players?

"Oh, Arthur Blythe is my favorite alto player. He just has such a huge sound, and so much feeling. And George

Adams. I've seen him with Mingus when he'd reach for a note and he'd bend back so far his head was practically touching the floor — he'd get to some things just through sheer force of will."

Blythe and Adams are both gut-bucket players with the Bebop sophistication. Since your favorite players all use elements of R & B and Bebop, what are some of the differences and similarities between the approaches?

"That's really difficult to generalize, because I think that good players draw a little bit from *any* stylistic area in order to fit into the context of what they're playing — make it appropriate but not rigid. I look at Bebop as a vocabulary, and my feelings about my ability to play Bebop are based on my command or lack of understanding of the logic that Bebop requires. Because you're operating in a certain idiom that has certain kinds of structural realities, like II/V/I — the chord change reality. And there are certain stylistic ways of moving through changes and manipulating material, like the use of diminished chords. R & B is perhaps more penetratonically oriented; more angular, in a less chromatic fashion."

Less scalar, with more little motifs and phrases, and different kinds of repetition...

"...and blues, a lot of bending notes. And less — for want of a better word — sophisticated in terms of finishing off an idea, whereas in Bebop it would be almost baroque in a sense. The way Charlie Parker would finish a phrase he'd go dubba-dubba, dubba-dubba, ooba-deba bebop, whereas a funk player might go be-ba, bo, be-ah. There's also more density in Bebop because Bird would be filling in all the transition spaces; all the chromatic passing areas."

That's why boppers sound like they're filling in all the cracks in time, whereas R&B players would tend to drop everything right on the one.

"Or the one-*and*. I've found that a lot of R & B, rock and funk music will use *and*-two, while someone like Bird would play a phrase and drop out on the two-*and* or the three-*and*, and let the implications finish in your mind."

So perhaps the challenge of Bebop is to connect the harmonic-chromatic concept with the rhythmic-melodic concept. Learning to play those changes rhythmically. Bird sounds like he'd lay out some melodic ideas then race through them with chromatic and scale ideas to connect the notes.

"Yeah, but the actual melody would still be in there at a slower speed while everything else around it is building up this incredible momentum; maintaining the basic scheme but constructing new ideas through it. And there's a way of playing that without being stiff, and that's the essence of Bebop and that's

what so many of those Berklee School of Music players miss. Lots of cats can figure out Bird's melodic figures, but not with the surprises that Charlie Parker could. That total freedom — transcendent. If you break down what Bird is doing, you find a tonality toward which a whole transitional section of music is moving; here's five over four, seven over six. So when Bird played a melody, if you picked out all the strong resolution points you'd see there was a melody that was true in that sense, but there was also a lot of movement in between. Which is how he connected it up — it just makes it so much more complex when you see the amazing amount of dimension he had as a player, *and he was just playing the blues*. That's all he played, really. And you know who's playing the *new blues* for me? It's Julius Hemphill. I don't care what anybody says — that's the new blues, man.

The blues, the *hard blues*, have been David Sanborn's main inspiration since he was born in St Louis, Missouri 34 years ago. Sanborn began playing alto at 11, and by the time he was 15 he got a gig in the Albert King horn section doing clubs and teentowns on the Missouri-Arkansas-Kentucky circuit.

"I was completely self-taught, and I didn't learn to read until I went to college. As a teen I went to national stage band camps and I was never too good in the big band things where you had to read, but I really did it with the head bands — the riff bands — and that's how I got attracted to some jazz things."

That might explain your attraction for R & B.

"Yeah, because I had some kind of block against learning how to read music. I was afraid it would pull me out of feeling because you see what happens to people that do it. I mean music doesn't go up and down — it's not vertical. Music is horizontal, so that's a trap players fall into, especially when they read chord changes, because they think vertically — they don't hear *through* the changes. Even if you hit a wrong note you're never more than a half step away from a right tone. If you hit a wrong note you play something else to clean it up and make it retroactively correct. The idea is to tell a story, which is what playing a melody is all about. I mean you come up with a lot of interesting things from messing up. That's where a lot of great art comes from — accidents."

Sanborn left the St Louis blues scene in 1963 to study music at Northwestern and the U. of Iowa, moving to San Francisco in 1967 where he accidentally ran into boyhood friend Phillip Wilson, who had just started playing drums with the Paul Butterfield Blues Band. "Phillip Wilson was real instrumental in getting me started in music, and he really stayed

on my case about playing and hearing different things when I was in St Louis. He told me to come on down and hang out at a Butterfield rehearsal, and I ended up playing with the band for five years."

In 1971, Sanborn began two years of touring with Stevie Wonder, playing a much admired solo on "Tuesday Heartbreak" from the *Talking Book* album. The turning point for Sanborn was an opportunity to tour and record with David Bowie in 1973, even as he was touring with Gil Evans's acoustic-electric jazz orchestra. After doing Bowie's *Young Americans* album and a tour (during Bowie's Philly-soul period), Sanborn became active on the New York jazz-rock scene with the Brecker Brothers and was "just getting oriented to Manhattan when I got a record contract in 1975 with Warners." On *David Sanborn, Taking Off, Heart To Heart*, and the current hit *Hideaway* he has mixed his Bebop vocabulary with an R & B sound and phrasing in settings that range from biting funk and big band charts to progressive pop excursions, all the time distilling the David Sanborn sound.

That sound is a sanctified, bluesy approach to melody. "I try and get a broad range of dynamics in the tonguing and the attack. I think of different vowel sounds like ah, eee, ohh, ouu, so you'd go ah-eee if you were going up to a note. I also use a lot of half-fingered notes, like if I'm playing from B to B flat I'll slowly move my finger down, half-holing so I can *slide* to a note; it's like *squeezing* it out with all the increments in between and you coordinate that with your embouchure for the desired quality of sounds. I try not to think about biting the reed and let it come naturally; if I'm just going for a high note I'll bite down a little and squeeze it out and if my determination is strong enough I'll hit it. The embouchure factor is more important in the kind of tonguing attack I'll get. Like a combination of an *ah* throat and a *tab* tonguing for a thick tonguing sound on single notes with a lot of variations. Lately I've been trying to take more of the mouthpiece in because I realized I've only been biting the tip which doesn't give me that range of sound; that's something I learned from watching Arthur Blythe, George Adams and Ricky Ford.

"I have a 16-year-old Selmer Mark VI alto which I bought new. Selmers were — I say *were* — the top-of-the-line, state-of-the-art saxophone, at least until the Mark VII came out, which I don't particularly care for. Selmer was just *the* instrument as far as I was concerned, which was partly based on ignorance and not having the opportunity to try a lot of other instruments. I mean you can play a horn in the store, but that doesn't

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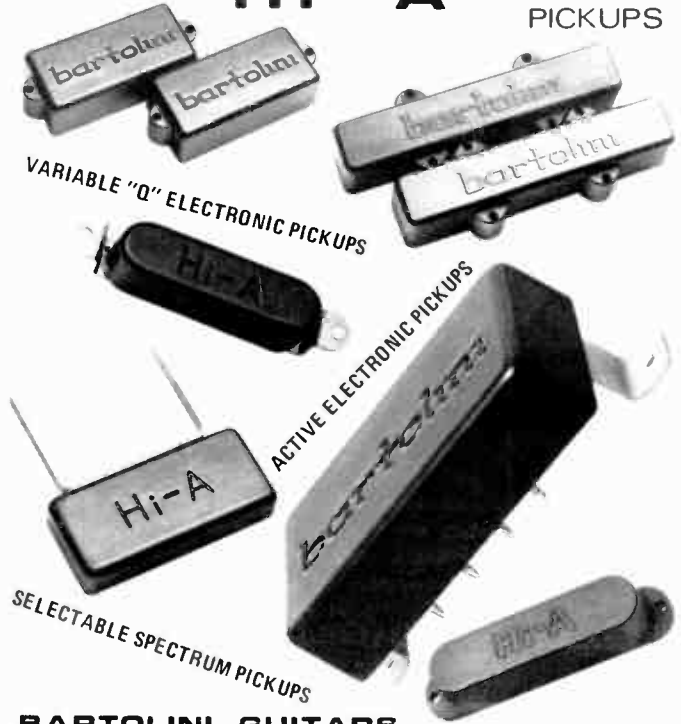
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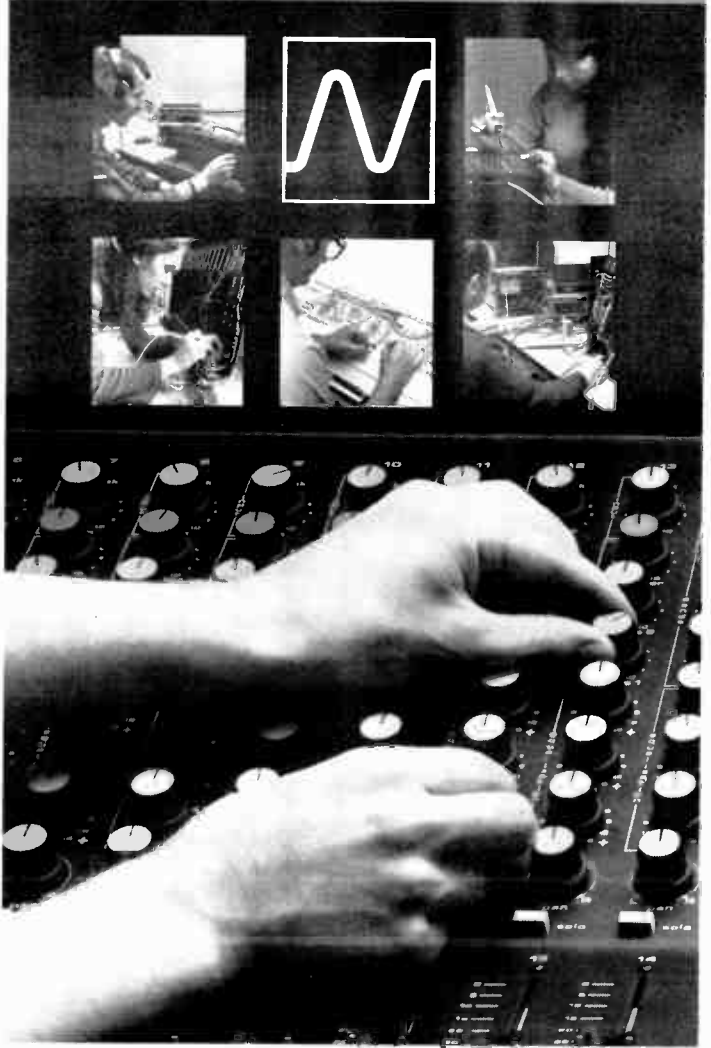
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tell you anything until you get it out in the field. I like the King Super 20, but mechanically the action is more consistent on the Selmer, real smooth and easy and even all over the horn — like an electric typewriter.

"The gold plating on the horn makes it a little heavier and correspondingly the sound is darker. You get a warmer, fuller sound at low volumes; it's fatter, almost approaching a tenor sax, but you don't get the buoyancy you can achieve with a brass plated horn. I have a Bobby Dukoff 8 metal mouthpiece, which gives it a brassy bite and projection — more of a metallic timbre — and the gold sort of caters to a reedy quality and the fullness. Aside from the bite, a metal mouthpiece gives me a broader range of sounds, which depends on the configuration: the bore, the inside chamber, the facing and the tip opening — and an 8 is fairly open. It all has to do with how compatible a mouthpiece is to a horn — it's not standardized, so what works for me might not work for someone else. I mean my whole setup is pretty medium. I use LaVoz medium reeds which tend to be more responsive in that they have a richer sound; they vibrate in more different ways, giving you more overtones and undertones and choices of vibrato. Even so, the quality lately has been rather poor. I might buy a box and not come up with one playable reed."

So as David Sanborn refines his sound and his conceptual approach, his main concerns are to reconcile his lyrical sensibility with a low-down funkiness, to begin to develop his songwriting chops and to avoid becoming merely an imitation of himself; lately some of his performances have taken on a painless quality, and a lot of horn players are starting to sound like him.

"Good. Then I can stop. It's difficult to try and describe...I know exactly what you mean by painless. I know that the hard-edged funk and the melodic thing aren't balanced yet, but like a Smokey Robinson is funky to me, yet he's still lyrical, soft and intimate. The main thing is that I'm a melody player, and on *Hideaway* I'm finding some reference points for what my music is; how to write a song and structure it. And I want to interpret *my* melodies. *Hideaway* was an attempt to get me writing all my own material as opposed to doing cover versions of other people's songs. I played piano and overdubbed saxophone, then overdubbed practically everything else. I think my music is pretty accessible, not that I don't have a jazz sensibility, but whatever my strengths are it's not that. The music that I do

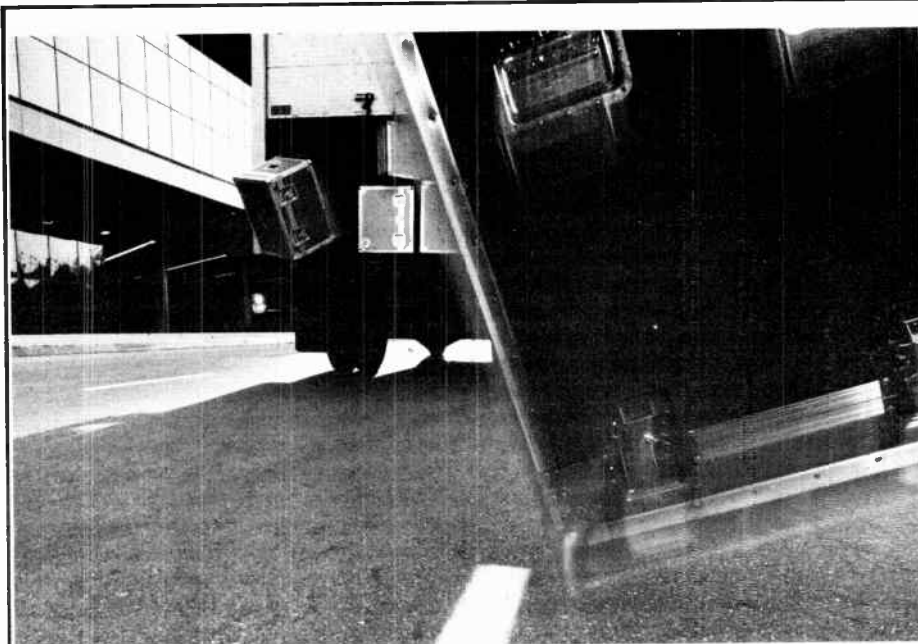
best turns out to be fairly commercial. On *Hideaway* I wasn't pushing the limits, but trying to be appropriate and to crystallize whatever it is that my songwriting is."

But isn't there a danger that in your music, and in the session work you get called for you'll be forced to just imitate yourself?

"Making records isn't my whole life. I don't consciously make concessions to the marketplace, and basically I can choose to accept a job and then run counter to it and lose the gig, which I've done a few times; and I've walked out of a few sessions recently, which is hard to

do because this is how I make my living. I get called a lot to overdub solos, and you have to be musically diplomatic and enhance their music; and to do that at the expense of yourself is a drag. I try not to do that, and I never do more than three takes, because once you lose that bit of spontaneity it becomes so bloodless. If they don't like it I'll tell them how to splice it, and then I don't want to be bothered with it. So I sit at home and practice Bebop and listen to opera; that's what I do these days, because that's what's going to keep my brain functioning."

Chip Stern



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The next time your instruments and sound gear hit the road, protect them with The SHOCK ABSORBERS™ from ANVIL®. To give your gear the extra protection it needs when it's on the road, ANVIL®'s SHOCK ABSORBERS™ Transit Cases are built to exceed rigid specifications established by the Airline Transport Association to assure safe transport of delicate equipment.

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# Fender

T.M.

## 1980-81 Catalog



# Hondo

T.M.

Everyone is concerned about value and getting the most for their money. Certainly buying a guitar or bass is no exception.

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Until Hondo that might have been true. Hondo introduced the first guitars and basses that truly reflect quality and value. This was achieved by a unique combination of our U.S.A. Staff—sound engineers, luthiers, professional artists—and international manufacturing facilities. Today Hondo instruments exceed anything in their price range in appearance, features, sound and playability.

In electrics, one of the best examples of this is our new Hondo Professional Series. Compare the outstanding qualities—DiMarzio pickups, brass nuts & bridges, brass shielding, solid wood bodies & necks, phase switches, coil tap switches, mirror bright finishes . . . the list goes on and on.



Our acoustic line combines excellent sound, overall beauty and reasonable prices. Carefully selected woods, superb finishing, exact tolerances, deep resonance and precise action are some of the outstanding features.

The ultimate test rests with you. All we ask is that you compare our instruments with any others you might consider purchasing. We believe that once you play and price a Hondo, you'll buy a Hondo.

\*All DiMarzio Powered Hondo Pro Series guitars are outfitted with standard DiMarzio Super II™ Pickups. Our model H 1015 Bass features standard DiMarzio Model P™ Bass Pickups.

**Specifications**

**Super II**  
 Inductance—5 Henries  
 Impedance at 100Hz—9.7K  
 Impedance at 1,000Hz—32.4K  
 Impedance at 2,500Hz—76.5K  
 DC Ohms—8.7K

**Model P**  
 Inductance—7.1 Henries  
 Impedance at 50Hz—12.2K  
 Impedance at 500Hz—24.8K  
 Impedance at 1,000Hz—42K  
 DC Ohms—11.3K



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# Professional Series



**H-1010**

Double cutaway contoured body, 2 cream Humbucking pickups, 6-way adjustable thru body chrome bridge, cream "notched" speed knobs, 3 position toggle switch, coil split switch. Rosewood fretboard, 25 $\frac{7}{16}$ " scale. Available in walnut, black and antique brown.

**HD-1010**

Two DiMarzio high performance pickups installed in place of the conventional pickups on the H-1010.



**H-1020**

Comfortable triple contoured single cutaway body. Two black Humbucking pickups, brass nut, gold notched speed knobs, gold adjustable bridge and stop tailpiece, matching design headstock and truss rod cover. Four bolt neck, positive action truss rod. 24 $\frac{9}{16}$ " scale. Available in satin walnut, glossy black, or rich brown sunburst finishes.

**HD-1020**

DiMarzio pickups installed on the H-1020 for high performance.



**H-1030**

Double cutaway, satin finished ash contoured body. Maple neck thru body style with inset walnut stripes, brass nut, brass bridge, gold notched speed knobs, 2 Humbucking pickups, 3 position toggle switch, coil tap switch, excellent quality electronic components. 25 $\frac{7}{16}$ " scale. Available finish shown in photo.

**HD-1030**

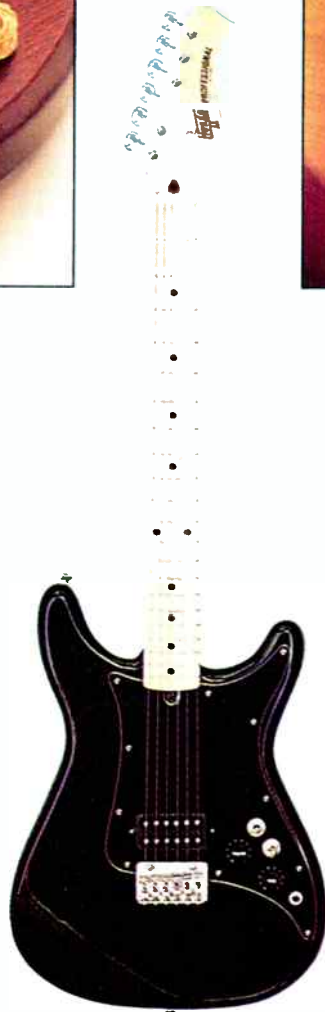
DiMarzio pickups installed on the H-1030. Excellent instrument with very versatile sound performance capabilities.





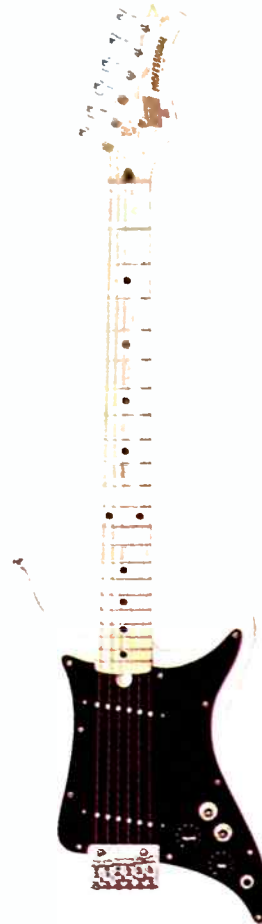
**H-1040**

Electronic sound and tonal effects include 3 position pickup selector, coil tap with 2 phase controls. Custom body design, brass nut, maple neck thru mahogany body. 25<sup>7</sup>/<sub>16</sub>" scale. Available finish shown in photo.



**H-1051**

Slim maple neck, single bridge position Humbucking pickup with both coil split and phase switches for sound versatility. Thru body, 6 way chrome bridge, 6 in-line enclosed chrome tuning machines. 25<sup>7</sup>/<sub>16</sub>" scale. Available in black, white, walnut, and sunburst finishes.



**H-1052**

Two single coil pickups with pickup selector switch and phase switch. Thru body fully adjustable bridge, slim maple neck, 6 in-line tuning machines, 25<sup>7</sup>/<sub>16</sub>" scale. Available in black, white, walnut and sunburst finishes.



**H-1060**

Semi-acoustic, unique in sound and feel from the Hondo solid body instruments. Mid body sustain block, gold stop tail piece and bridge, brass nut, matching headstock design and truss rod cover, set in neck. 24<sup>3</sup>/<sub>8</sub>" scale, available in wine, walnut or dark brown sunburst.



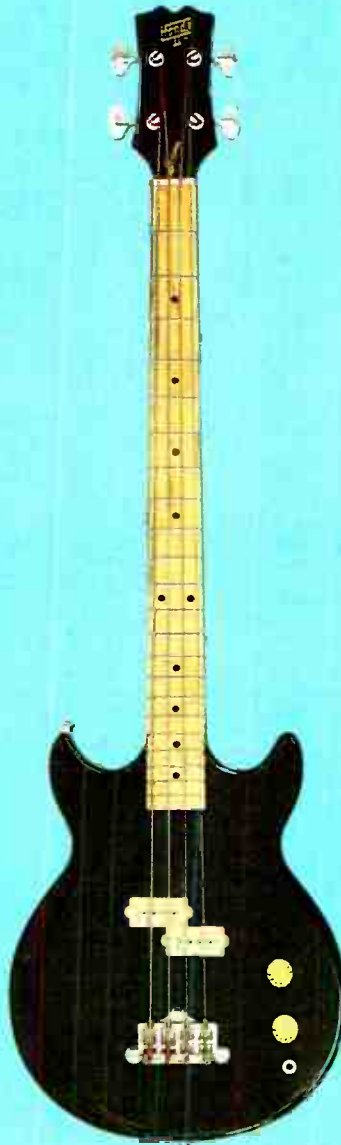
**H-1090**

The weight and feel are a careful consideration in the overall performance and design of the H-1090. Crisp bright sound with a fast maple neck, pickup selector, removable bridge cover. Available in vintage white or golden sunburst finishes.



**H-1100**

Vintage quality specifications, materials and electronic components. Three stage/5 position pickup selector switch for 3 single coil pickups, thru body deluxe tremolo, solid ash body, solid maple neck. Available in white, black and sunburst finishes. Model H-1100 in black may also be ordered with a rosewood fretboard. 25<sup>7</sup>/<sub>16</sub>" scale.



**H-1015**

Contoured double cutaway bass featuring a 32<sup>3</sup>/<sub>4</sub>" scale, maple neck, unique fully adjustable position height and angle bridge, notched speed knobs, split pickup. Available in black, walnut, antique brown or satin walnut finishes.

**HD-1015**

Model H-1015 with a DiMarzio Model P™ bass pickup.



**H-1120**

The parts and performance components usually only found in expensive basses. Precise weight and feel, 34" scale, heavy frets, solid maple neck, solid ash body, vinyl wrapped truss rod, brass pickup and tone control shielding, split pickup, heavy chrome plated bridge. H-1120 Fretless model with rosewood fretboard is also available on a special order basis. Finishes available on H-1120's are black and sunburst.



# Standard

## H-730

Two pickups with 3 position toggle switch, celluloid bound 35 mm thick body, pickguard, stop tailpiece and bridge, 2 volume and 2 tone control speed knobs, single cut away, 24 $\frac{1}{8}$ " scale. Available in black, wine and brown sunburst finishes. All Hondo sid. series electrics have 4 bolt, fastened necks.

## HD-740

High performance version of the H-740 with 2 custom design DiMarzio Humbucking pickups for greatly increased sound quality and volume potential. All other specifications are identical to the H-740. Black and brown sunburst finishes available.

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Powered**



## H-710

Slim, comfortable neck, enclosed individual tuning machines, single cutaway, stop tailpiece and bridge assembly, single pickup, volume and tone control speed knobs. 35 mm thick body, 24 $\frac{1}{8}$ " scale. Available in black finish.



## H-740

Arch top, 47 mm thick body with professional weight and feel. Two pickups, 2 volume and 2 tone knobs, celluloid bound neck and body, individually adjustable bridge, stop tailpiece, individual enclosed tuning machines, 24 $\frac{1}{8}$ " scale. Black, wine, white and brown sunburst finishes available.



## H-760

Three single coil pickups with 3 position pickup selector, one volume and 2 tone control knobs, 6 in-line enclosed tuning machines. 25 $\frac{7}{8}$ " scale, black, walnut, sunburst and natural finishes available.

# d Series

## HD-760

DiMarzio single coil pickups installed in place of the conventional H-760 pickups. Brighter sound with more attack, increased tone spectrum. Available in black or walnut finish.

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## HD-999

All manufacturing and material specifications are the same as model HD-990. The only difference is the pickup arrangement. Two Humbucking DiMarzio custom design models are used with a conventional 3 position toggle switch. Finish options include black, walnut and antique brown.

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## HD-830

H-830 with a split DiMarzio pickup offering greater sound performance capabilities. Scale length and other specifications are the same as the H-830. Sunburst, walnut, black, antique brown, natural finishes available.

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## HD-990

Custom Hondo design for maximum single pickup performance. A DiMarzio Humbucking pickup mounted in the bridge position with a series/parallel selector switch for sound options. 47mm thick body, individually adjustable bridge, 24 $\frac{1}{4}$ " scale. Available in black, walnut, or antique brown finishes.

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## H-830

Standard bass design for reliable quality performance. One pickup, volume and tone controls, fully adjustable bridge, 34" scale, maple neck, sunburst, walnut, black, antique brown and natural finishes available.

## HD-850

Custom HD-830 with a more contemporary look. Features include a fully adjustable brass bridge, speed knobs, 34" scale, black and antique brown finishes.

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# Classic/Nylon String



## H-90N

Standard size, satin finish top, mahogany sides and back, 35<sup>11</sup>/<sub>16</sub>" total length with 9<sup>1</sup>/<sub>4</sub>" upper bout width, 13<sup>3</sup>/<sub>8</sub>" lower bout width.



## H-308A

Concert classic, mahogany sides and back, spruce top, painted body binding, lacquer finish. Body measures 11<sup>1</sup>/<sub>2</sub>" across the upper bout, 14<sup>1</sup>/<sub>8</sub>" lower bout, 39<sup>1</sup>/<sub>8</sub>" total length, 2" neck width at the nut.



## H-310A

Rich, deep brown tone mahogany sides and back, spruce top, black celluloid bound body, polyurethane high lustre finish, rosewood fretboard and bridge, body and neck dimensions same as the H-308A.



## H-330A

2 piece select rosewood back, with matching sides, spruce top, gold tuning machines, uric plastic nut and saddle, celluloid binding, rosewood fretboard and bridge, nato hardwood neck, concert size.

# Acoustic/Steel String



## H-90S

Standard size, 23 $\frac{3}{8}$ " scale, steel string, satin finish, mahogany sides and back, spruce top. Body dimensions 9 $\frac{1}{2}$ " across upper bout, 13 $\frac{3}{8}$ " lower bout, total length 35 $\frac{1}{8}$ "



## H-118A

Concert size, 11 $\frac{1}{2}$ " upper bout, 14 $\frac{1}{8}$ " lower bout, 39 $\frac{1}{2}$ " total length, 1 $\frac{1}{8}$ " neck width at the nut, mahogany sides and back, spruce top, pin bridge, adjustable truss rod, painted body binding, lacquer finish.



## H-119A

Dreadnought measuring 40 $\frac{1}{2}$ " in length with a 15 $\frac{1}{8}$ " lower bout, walnut tone spruce top, matching tone mahogany sides and back, adjustable truss rod, painted body binding, lacquer finish.



## H-125A

Same material specifications and size as H-119A with natural tone spruce top, medium brown tone mahogany sides and back. Pin bridge (featured on all Hondo dreadnoughts), painted binding, lacquer finish.



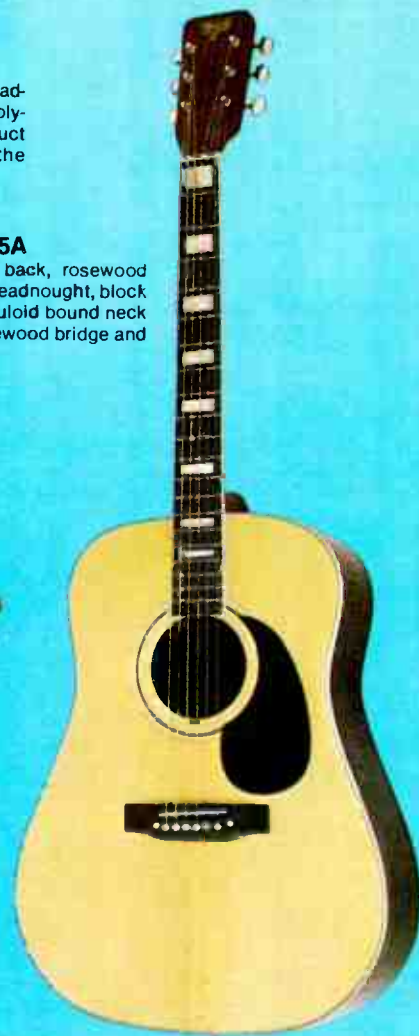
### H-155A

Dreadnought, polyurethane finish, black celluloid body binding, spruce top, nato neck, individual enclosed tuning machines, solid rosewood fretboard, rosewood bridge, mahogany sides and back.



### H-175A

Shaded golden tone sunburst dreadnought, white celluloid binding, polyurethane finish, all other product specifications identical to the H-155A model.



### H-235A

3 piece rosewood back, rosewood sides, spruce top dreadnought, block fretboard inlay, celluloid bound neck and body, solid rosewood bridge and fretboard.



### H-160A

12 string dreadnought, with material specifications like the H-155A. 25 $\frac{1}{4}$ " scale, adjustable pin bridge.



### H-210A

2 piece rosewood back, rosewood sides, spruce top dreadnought, polyurethane finish, pearl dot fretboard inlay, celluloid bound body, chrome individual enclosed tuning machines.



# Banjos/Mandolin Dulcimer

## HB-75A

30 bracket, 5 string banjo, mahogany resonator, tone ring, wood arm rest, sturdy wood body, block fretboard inlay.



## HB-88A

Professional weight 5 string banjo featuring 5 geared deluxe pegs, solid maple resonator in sunburst finish with matching sunburst neck, Remo head, Grover bridge, solid metal cast tone ring, hardwood body, metal armrest, 24 brackets.



## HM-6

Tear-drop F-hole mandolin. Rosewood compensated length, adjustable bridge, arch top and back, 3 ply pick-guard, sunburst finish.



## HD-2

"Sweet Song" dulcimer made from mahogany and spruce. Teardrop shape with clover leaf sound hole design, 4 metal strings, 34" in length, 7" maximum width.



## Cases

Cases are available for all Hondo instruments. Most models are offered with a choice of either economy, semi hard shell or hardshell.

## Service

Service inquiries should be directed from an authorized Hondo dealer to: Customer Service Department, International Music Corp., P.O. Box 2344, Fort Worth, Texas 76102. For all customers outside of the U.S.A., contact your authorized Hondo dealer.

## Limited Warranty

All Hondo instruments are covered by a limited warranty. A complete copy of the limited warranty statement may be obtained from International Music Corp., P.O. Box 2344, Fort Worth Texas 76102.

We reserve the right to make changes in models, materials, parts and specifications at any time without notice.

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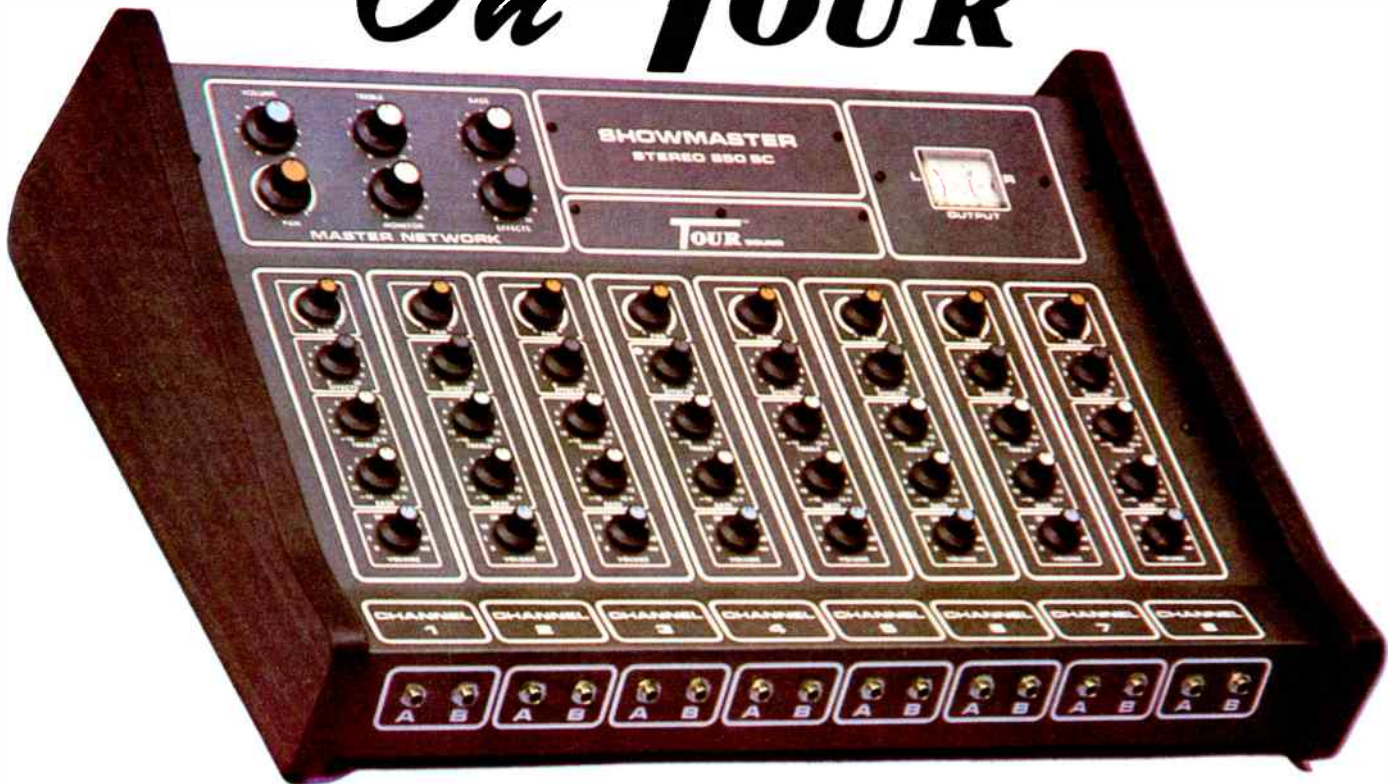
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# On TOUR<sup>T.M.</sup>



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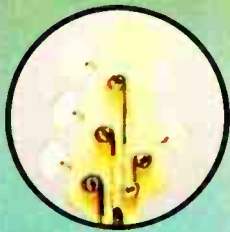
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With such prominent acceptance we could have easily been tempted to leave well enough alone, to sit back and bask in the sunshine of success. But it cannot be. One good thing leads to another. The crisp, tightly defined sound of the StingRay has now been incorporated into a sister model, the Sabre.

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# Viper III

## Three for the road.

Viper III. Versatile and reliable. The performer's guitar. On the road or in the studio, three pickups mean more control and more sound at your fingertips. And the Viper III has the hottest pickups in town...Each pickup is 6db hotter than other single-coil pickups.

Life on the road can be tough. But Viper III is tougher. The neck is equipped with an adjustable steel truss rod, and is shaped from one section of rock maple, making it superior in strength and reliability.

Each Viper III pickup is controlled by its own two-position selector switch, giving a total of seven possible pickup configurations. To ensure continued high performance, electronics are pre-tested before the Viper III leaves the factory.

To develop a guitar that would hold up over the toughest tour, we asked professional recording and stage musicians for their ideas. And we listened to what they had to say. The result is the Viper III, with versatility, reliability and raw power.

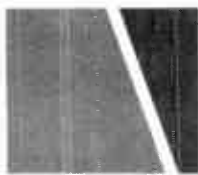
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## Take it from professionals who wouldn't settle for less

A top-quality Shure microphone makes a measurable difference in upgrading sound. Now Shure has added a new microphone designed to upgrade the *appearance* of your act, as well as the sound. The SM63 is a top-quality omnidirectional

microphone with high output and clear, crisp sound quality—an innovative blending of smaller size, handsome appearance, and truly noteworthy broadcast-quality performance. Highly effective pop protection, low handling noise and very low profile (so it won't obscure the performer's face) make it the perfect choice for on-camera applications. Professionals choose, and use, Shure microphones such as the SM63 wherever sound quality, reliability, uniformity, and intelligibility are prerequisites. You'll find more Shure microphones than any other single brand in applications as diverse as live entertainment, radio and TV, hotel and auditorium sound reinforcement, churches and temples, Congress, legislatures and the White House, and public safety—anywhere that sound excellence is a prime consideration. They are the reliable, professional connection between you and the people you're trying to reach. Send for complete literature on all Shure professional microphones—including the new SM63. (Please let us know your microphone application.)

The Sound of the Professionals



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When Jeff Beck's *Rough And Ready* album emerged in October 1971, his considerable following had been starved of the maestro's savage note-bending and volatile imagination for over two years. But the initial impact on eager listeners was the dazzling, high-speed drum that announced the opening track, "Got The Feeling." Though that particular band never gelled into a major force, Cozy Powell's name has ever since been a byword for a style of drumming as skillful as it is ferocious.

Since September 1975 Cozy's abilities have been deployed alongside guitarist Ritchie Blackmore in Rainbow. With "All Night Long," the second single from their *Down To Earth* album, following "Since You've Been Gone" into the UK charts and a sell-out tour winding up, the band were on the crest of a wave when I spoke to the drummer man before the second of their two shows at Wembley Arena.

Rolling Stones biographies invariably relate how Brian Jones was stifled by the sleepy West Country atmosphere of Cheltenham in Gloucestershire and couldn't wait to hit the bit city. Was Cirencester, Cozy's home town, comparable in this respect?

"It was even sleepier than Cheltenham, believe me. It was completely dead and I had to join the school band. I was thrown out of that because I played too loud — broke the drum kit, the whole bit — and I had to go to Bristol, where I joined a band. Then we went to Germany. When I was in Germany, the rest of the lads wanted to go home and I said 'No, I'm gonna stick it out.' I met this other band, The Sorcerers, who were in need of a drummer and they liked the way I played, so it all went from there."

*Sandy Nelson's supposed to have been an early influence.*

"Yeah, a little bit. Obviously, Sandy Nelson was in vogue at that time (1960) because he'd made a drum single, but if there was anybody I listened to, it was more like Louis Bellson, people like that.

"None of my family were musicians at all and I wanted to play the gutiar at first. They were very good, they just let me bash away in the bedroom with a little drumkit. Must have driven them mad!"

*The Shadows were among the first people in pop to feature drum solos. I remeber Tony Meehan's "See You In My Drums."*

"The Shadows' Brian Bennett and The

Hollies' Bobby Elliott were the two guys that influenced me when I first started. Funnily enough, Bobby came to the Manchester show about four days ago and I said 'You realize it was you that started me.' He's a fine drummer."

*Just because he's with a "songs" band like The Hollies, people don't really talk about him.*

"Right. They underestimate him. Same with Brian Bennett. He's a fantastic drummer — I mean, the stuff he does with The Shadows is a little bit... (pulls a face) but that guy can really play."

*I saw him grinning all over his face on the BBC's "Top Of the Pops" this week, playing synth drums on "Ghost Riders In The Sky." Have you used them?*

"They brought along some for me to try in LA and I thought they were too gimmicky. I think they've been used quite nicely on some records, but although I'm into gimmicks as far as putting the drum sound across, I'm not into gimmicks as far as the drums themselves are concerned."

Cozy temporarily left The Sorcerers for Casey Jones And The Engineers in late 1963, a month after a young guitarist called Eric Clapton had left the later for The Yardbirds. On his rejoining, the band became Youngblood, then the Ace Kefford Stand, fronted by ex-Move bassist Kefford, now turned lead singer. Sessions brought the drummer into contact with Jeff Beck, whom he joined in early 1970 after a brief interlude with Big Bertha.

*What kind of music did these early bands play?*

"The Sorcerers was like all Hollies stuff. Drifters, Casey Jones ripped off everybody. With Ace Kefford, the idea was to sound like a poor man's Cream. We imitated them completely. Big Bertha started and then the call came through from Jeff: you just don't turn that sort of job down."

In the year that elapsed before Beck re-emerged with a working band, he took off with his new recruit to record an instrumental album of Motown classics at the company's Detroit studios. Though fruitless in that nothing was ever issued, it must surely have been an education playing with the resident session men?

"No doubt about it. You have to remember that we were the first white guys in a black studio, playing *their* music, and the first day we were in there James Jamerson, the bass player, was deliberately tapping his foot out of time trying to put me off!

"Then, when we'd proved ourselves, they went 'Hey, you guys are alright — welcome to the fold' — then it was great. They would do anything for us at all, they couldn't have been nicer."

*That Rough And Ready intro was quite a way of introducing yourself...*

"I thought if you're gonna make a statement, make it at the very beginning of the record, on the very first cut. That's what I did."

*Why did that band never quite gell? I thought you and Beck were made for each other in the same way as Jimi Hendrix and Mitch Mitchell were.*

"Jeff was a little unsure of where he was going. One day he wanted to be in a rock & roll band, next day he wanted to be in a jazz-rock band, next day he'd want to play Motown — he just never really gave it a chance.

"They're a strange breed, guitarists — I'm sure they'd say the same about drummers. I was with Jeff longer than any other drummer, I've been working with Ritchie nearly as long as Ian Paice and I've played with Frank Zappa and Clapton and all these other people. If you can find out what they want, you never have any problem. They always want it their way and there's no way you're gonna talk 'em out of it."

*Is that not because they're traditionally leader of the band?*

"Possibly, yes. Beck was totally unpredictable. One night he'd be amazing, the next night he'd be terrible, out of tune — just playing abysmally.

"Ritchie's been pretty consistent over the years. This tour, he's been a little erratic some nights he's played great, some nights he's played pretty poor. I'm sure he'd be the first to agree with me."

*After the Beck Group disbanded, Johnny Winter made an immediate offer for your services.*

"It was just gonna be like the Jeff Beck Group all over again: spend a year looking for musicians. I'd have made a lot of money playing with him."

After a short stint with the least distinguished Spirit line-up and 18 months of mediocre heavy metal with Bedlam, 1974 saw Cozy Powell become a latter-day Sandy Nelson. Once "Dance With The Devil," recorded as a one-off, had made the UK top ten in late '73, Cozy Powell's Hammer was formed and two more hits followed. He has few fond memories of this period and quit the music business for several months to go



# COZY POWELL:

## BECK TO BLACKMORE

motor racing, achieving Formula Two standard.

*What did Hammer play live?*

"We ended up doing Deodato numbers, Chick Corea stuff to kids that wanted to hear pop. We were very self-indulgent."

And so to his current band. To be honest, I wouldn't grieve overmuch if I never heard Rainbow again. When playing largely his own material, Blackmore resembles a mediocre blend of Beck and Jimmy Page. The group is shaped entirely by his playing: *Down To Earth* was already being recorded, without a vocalist, when a tape of Graham Bonnet singing was played to the others over the phone. Like most drummers, Cozy doesn't dictate musical direction, but merely makes an unquestionably impressive noise. I only wish he was making it for somebody else.

The first Cozy Powell solo album *Over The Top*, came out in October last year and suffered from indifferent material. Enlivened by some characteristic drum flourishes, it is basically an inferior version of what Jeff Beck was getting into on *Blow By Blow* and *Wired*. Cozy did, however, achieve a life's ambition by playing with Jack Bruce, whom he describes as "the finest bass player."

*Do any others stick in your mind?*

"They fade away, up against Jack. It's a joy to play with him. Roger (Glover) is a much better bass player than we've (Rainbow) ever had before. He's much more solid, lays it down — no messing about. He plays just what is needed in Rainbow."

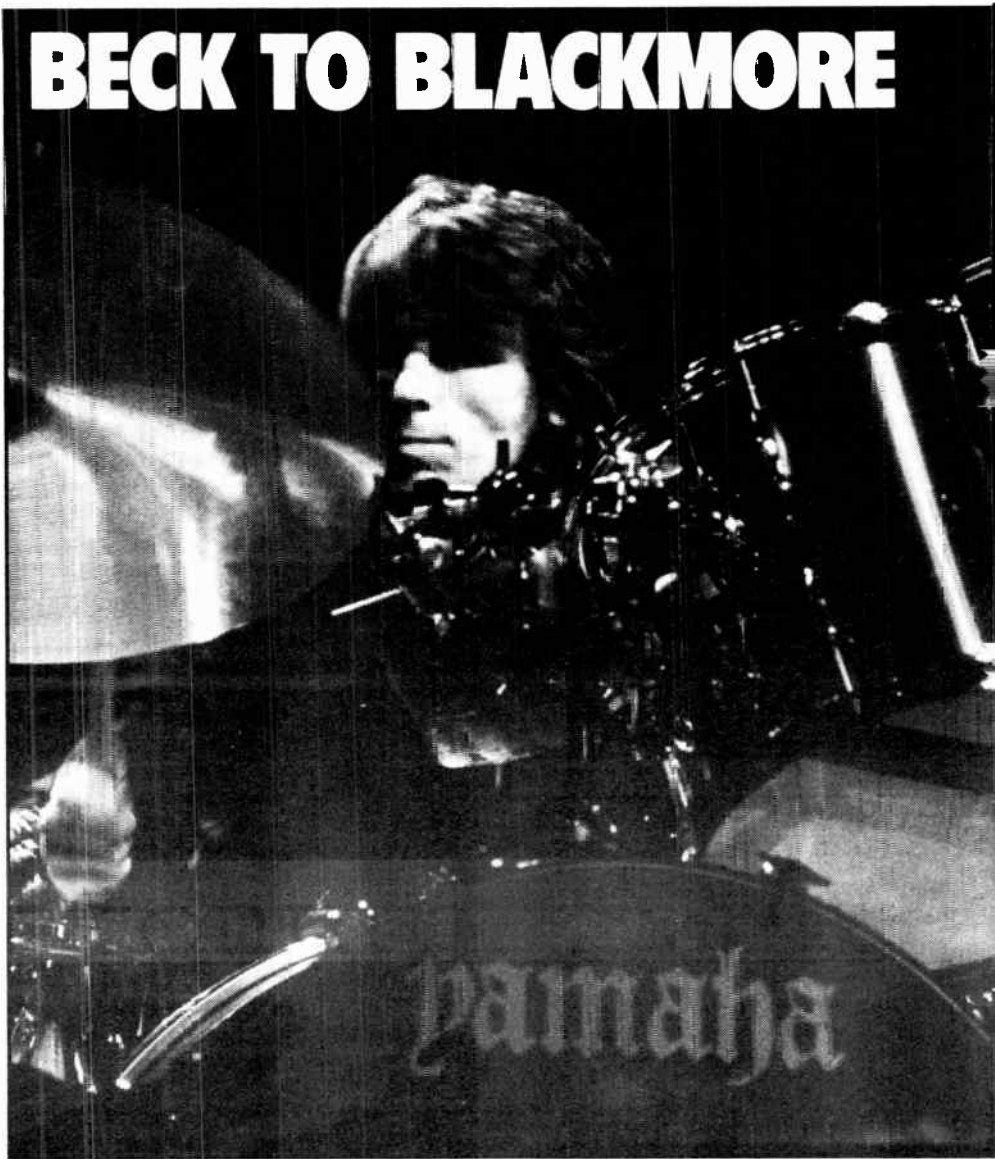
*What you do is pretty strenuous. How do you keep in shape?*

"I don't practice when I'm at home — I don't believe in it. I prefer to go on stage limbered up, but not with the practice, knowing that I might blow it. For me that's more of a challenge than going on having played paradiddle upon paradiddle upon practice pad."

"These people who spend hours and hours a day doing all these rudiments from a manual are wasting their time. They're not being themselves, they're not distinctive in anyway. Once you've learned the basics, you should develop your own style from there."

"I did a lot of boxing when I was a late teenager and since then I do all the training that's required. When I'm home and I'm not working I run five miles a day. If you don't keep fit, if you get lazy, you just won't be able to do the job."

Harry George



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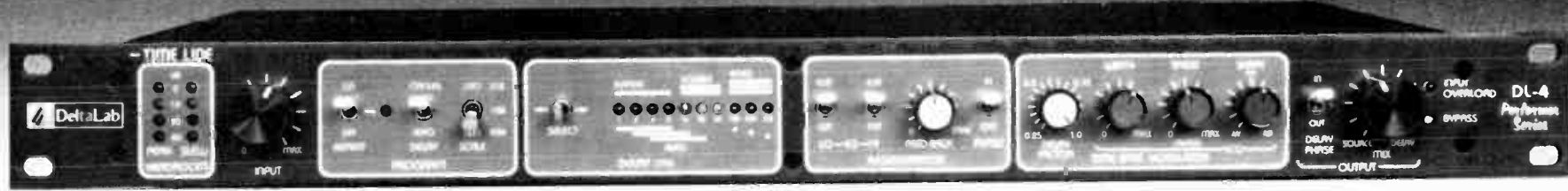
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To any playing situation, Ray Brown brings over 40 years experience. His first instrument was the piano, but he switched to bass at age 14, because he "thought it would be easier." His first gigs were with alto saxophonist Jimmy Hinsley's quintet, followed by work with Snookum Russell's band.

Next came Dizzy Gillespie's small group in New York City with Charlie Parker, Bud Powell, and Max Roach, followed by Gillespie's big band, then a trio with Ella Fitzgerald (to whom he was married for four years) and the famed "Jazz At The Philharmonic" tours.

Ray's most well-known association, with the Oscar Peterson Trio, lasted 15 years until 1966. He has been a regular winner of many jazz polls, including those in Downbeat, Esquire, Playboy and Metronome magazines, and his composition "Gravy Waltz" was greatly popularized by Steve Allen, who did the lyrics.

In 1966, Brown moved to Los Angeles, where he was immediately accepted into the inner circle of top studio musicians, and where he is now the most in-demand string bassist.

Recently, Brown joined the staff of the Bass Institute of Technology in Hollywood, where he will design and direct the Acoustic Bass Program.

Was there much music consciousness in your home as you were growing up?

No. My folks bought a piano for my sister but she never did do anything. She took some lessons, but didn't pursue it. So I started fooling around with it, picking stuff out, and they decided I better have some lessons.

Was that a financial strain on the family? What did your folks do for a living?

No. My father worked at the Post Office, then he left and went to the steel mills, which is typical of working in Pennsylvania, especially western Pennsylvania... coal mines and steel mills. We weren't on welfare and lessons must have been about 25 or 50 cents.

What made you switch to bass?

I thought it was easier.

Is it?

Hell no.

How did you happen to choose jazz?

Well, my roots are in jazz. There were

jazz records at home. There used to be a jazz group that rehearsed next door to me, so I'd be there whenever they had rehearsals. Also, Count Basie came to town for a couple of months in the Thirties. My uncle was an elevator operator down at the hotel, so I used to go down there every day and sneak in and sit under the piano and listen to the five o'clock broadcast. So it's (jazz) been there a long time.

Did you have a role model at the time, a bass player you idolized?

Oh yeah! Jimmy Blanton.

Is there someone who stands out as giving you something special, something you still carry with you, or who caused a turning point?

Well, having traveled on the road until I was 40, I had it set up so I took lessons in most of the major cities. I had a teacher in each town. In my home town, when I moved back there, I started studying regularly with Herman Gement in Pittsburg and wound up doing most of my studying with him. He was in the Pittsburg Symphony back in the Twenties. In your "Jazz The Philharmonic" days, what was your impression of the music you were playing? Some critics have called it just honking and screaming.

Oh, there was a little honkin', because of the rivalry for applause between Flip Phillips and Illinois Jacquet. It was sort of show business. But before they got into that, they would play. Jacquet would play four or five good choruses before he got into that other bit. The majority of the people, like Lester Young, Coleman Hawkins, Dizzy, Bird, Roy Eldridge, Bill Harris, they never catered to that, they just came out and played. But the tenor saxophone was the thing at the time. Norman Granz figured he had the best collection of musicians in the world and I don't know whether he could be doubted, because he had everybody who was anybody. If you go over the roster — Ben Webster,

Coleman Hawkins, Lester Young, Johnny Hodges, Willie Smith, Bird, Sonny Stitt, Stan Getz, Hank Jones, Oscar Peterson, John Lewis, Buddy Rich, Gene Krupa, Kenny Clarke...

Could you relate to those people as people? When I read about all those legendary characters, they're almost like saints to me.

Well, I was young at the time. JATP was like a big family. When we first started, we used to travel either on a bus or in a car, and it was just a lot of fun. Everybody knew everybody, we were together for eight or nine weeks, sometimes twice a year. So it was more like a baseball team gets to be, that type of atmosphere.

How about the racial scene at the time? Wasn't Norman a real crusader?

Oh, yeah, definitely. We had problems in Texas and New Orleans, you know. He would just insist that they mix the audience.

What kind of effect has that had on you personally?

Well, I'd been through that all my life. It wasn't a new thing. I had been on the road in the South with Snookum Russell's band, with "white only" drinking fountains and toilets. But when you're enamored with music, it wipes out a lot of distasteful things. They go by, and you know about them, but you're so involved in your music that it doesn't have the effect that it might have were you not in music.

Along with "Jazz At The Philharmonic," there was Oscar Peterson. I have the impression that you didn't solo much with Oscar, though now you are an accomplished soloist?

No, I had plenty of solo space. First of all, we had a trio without drums, which made it essential that we have a very tight knit group, which meant a lot of arrangements and a lot of rehearsal. The arrangements were more elaborate and more fulfilling sometimes than the solos. ▶

## RAY BROWN INTERVIEWED

Tim Bradley

Photo by David Redfern

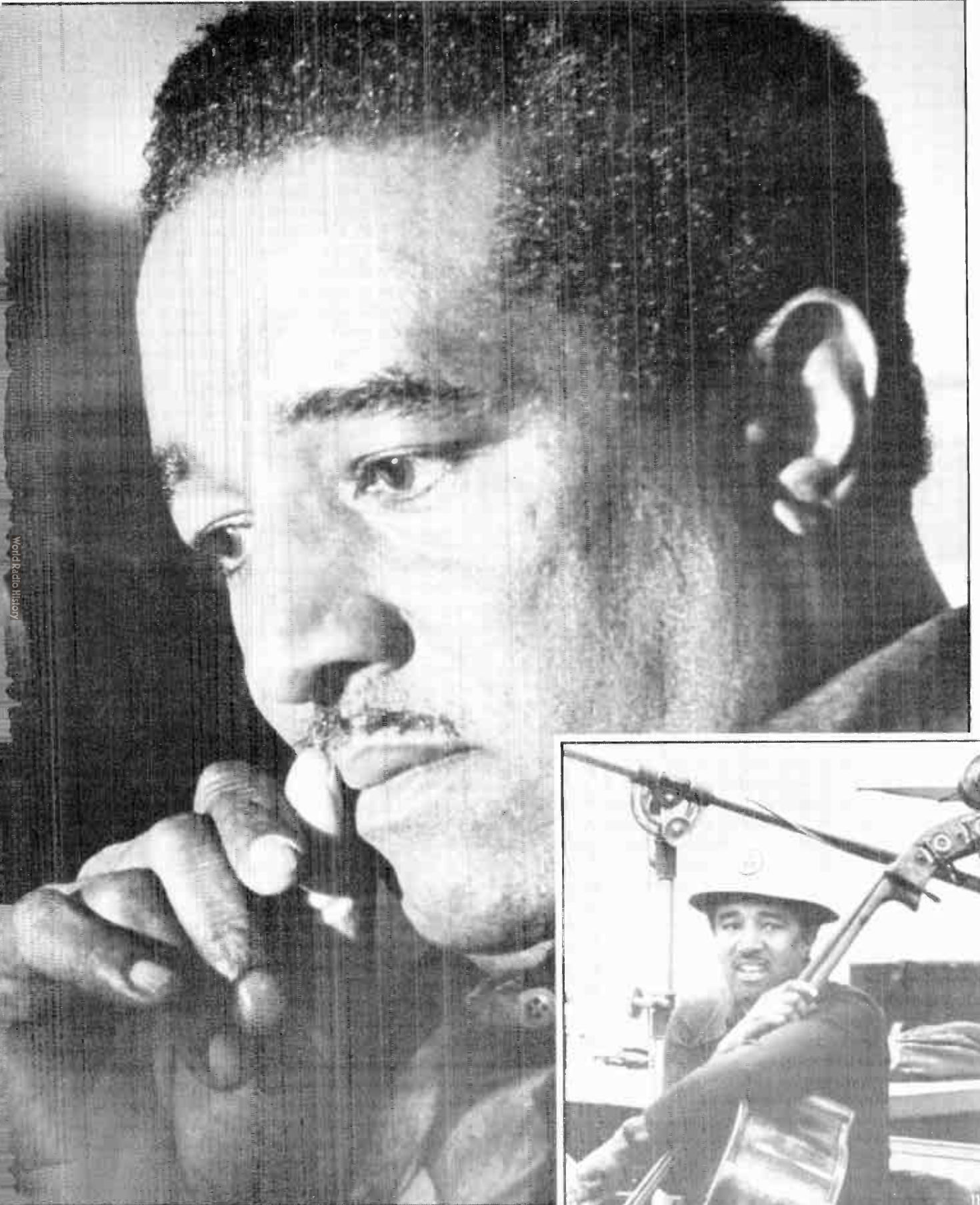


Photo by Phil Stern



We had like 200 arrangements, and all kinds of tempos and all kinds of everything. And we had to memorize the whole thing, we didn't get to read it. But I got enough solo space.

I guess the best thing that happens to you playing with a trio is that you learn how to play time, without leaning on anybody. It's just self-sufficient time. I'm not saying this is good or bad, but if you work with a trio without a drummer for five years, it makes you an independent time player — you're forced into it. Your time has to be strong to hold up a group of that nature.

*How did your playing change when you replaced the guitarist with a drummer (Ed Thigpen)?*

We had to go through a big shift. Some things that lay good with guitar, didn't lay good with drums.

*Did you become more harmonically oriented as opposed to rhythmically oriented?*

No, just the opposite. We were more harmonically oriented when we had to work on voicings for guitar and piano. That took a lot of rehearsing, to work out the voicings so it didn't sound clumsy.

*And the addition of the drummer — was that another big burdle?*

No. We took a lot of the stuff we had and just re-tailored it. It was a lot of rehearsal time for the drummer. You have a time in your life, I think, that you can rehearse long hours and it doesn't bother you. But once you do it and go through it, it gets more difficult to go back. You can't keep going back to it.

*Did you play cello at one time?*

Oh, that was just a little fun thing that started with Harry Babasin. Oscar Pettiford made it famous by recording on it. Some of the guys used to play with it. It was strictly a solo vehicle. I did a couple of albums with it.

*After Oscar, you came off the road and headed for the studios. Did you have to go back and relearn how to read?*

You can't keep reading up, unless you're in a situation where you have to read. Even if you're in a big band. You get a chart and you read. You can only get so many charts, so you end up memorizing them. You're really not

reading them. You put it in front of you, but you don't look at it. Once in a while you black out, then you make reference to it. Reading in the studios is more *application*. It's something you have to do every day and it gets easier as long as you keep doing it. You have to do a certain amount of the studying so that you can get through a certain portion of the music. But it's difficult to be on the road and practice reading.

*Was it a difficult time in 1966 to break into the studios, or were you "known" enough at the time that it was easy?*

I was as well-known as I was going to get, so it wasn't really a big problem.

*Do you have any feelings about the electric vs. acoustic "controversy?"*

There really shouldn't be any argument. They're two separate instruments. The only similarity is they're in the same clef. They're each used for different kinds of music — each one has its place. The only argument I could see is about the merits of carrying an electric bass on the road.

*What kind of a relationship do you have with other bass players?*

By and large, bass players have a sort of a fraternity. I'll tell you how bad it was. When I moved out here (bassist) Red Callender gave a party for me, and most of the bass players in town were there. I can't think of any bass player I don't get along with. They're a great bunch of guys.

*How about the new group of young players, like Stanley Clarke, Nils Pedersen, how does their playing strike you?*

Oh, marvelous! Are you kidding? You'd better like that! The young wave of bass players coming along now are doing *amazing* things on the instrument, things I never even dreamed would happen. It's always good to see the instrument being played so well, so proficiently.

*Are the studios a frustration of your talent?*

Well, when you first start in the studio, it's a challenge because you're having to do different things, but after you do it for 15 years a challenge only comes every six months or so.

*Is it boring?*

It's just becomes a job. A bus driver? *Describe a typical day in the life of Ray Brown.*

Well, they're not too typical. In terms of being busy, they're typical. Let's say yesterday — I went from 8:30 in the morning until 1:00 in the afternoon doing "Charlie's Angels." Then I went to another studio at 2:00 o'clock and did about three hours of telephone jingles. I came back to the office and made a few calls and caught up on business. Three or four days a week, I'd go to the Merv Griffin show after that, but we just came back from Las Vegas, so we're off this week.

*Do you have a special approach to improvising?*

From the time I started playing solos on the bass, I started copying Jimmy Blanton and Slam Steward. That was great, and I copied some Oscar Pettiford. Then I discovered I really wanted to play things like Dizzy and Bird played on their horns, so I went through a switch there. Bass players are at first enamored with other bass players, somebody playing the same instrument, but I think ultimately they wind up emulating a horn or keyboard because they have more fluidity and freedom. Or even guitar. When you say "bass player" that covers a lot of ground. Usually if a guy is a renowned soloist, he's generally not a renowned time player. There are some exceptions, like Nils, and George Mraz. Playing *great* time, you have to concentrate just as much as somebody playing solos. There's something beautiful about that. I try to impress on young guys the importance of playing good notes, in turn, playing good time, and knowing chord changes and songs. If you can do that, you will *always* work.

A lot of bands or a lot of groups don't need soloists — they need somebody to play some great time and great notes, and an occasion solo. There's always room for both. You take a guy like Stan Getz. Every two years he comes up with some young bass player who's fantastic. But he'll be a fantastic soloist first. That's what Stan feels. That's what he wants. On the other hand, I think a guy like Dexter would prefer somebody that

## RAY BROWN

can lay down some real good time first, before he gets to solo. And Rufus Reid, who's with him, can do both. A good time player and a good soloist. Ron Carter is another exceptional time player and exceptional soloist.

*Have you ever tried a two-bass lineup, like Ron's?*

No. We had some things here with Fender bass, with Carol Kaye playing. That was a nice collaboration.

*The Bass Institute of Technology won't be your first association with a school. There was the Advanced School of Contemporary Music in Toronto during the early Sixties, and more recently extension courses at UCLA. Do you have a particular approach to teaching?*

I think anyone who teaches any in-

strument has a particular approach. The fact that you are who you are, you may use somebody else's system or book, but you teach it in your way. It's like having five conductors come down and conduct the same piece. I think the orchestra's going to give you five different ways. I don't want to really sit here and spell out a system. I want to turn out a bass player who can play string bass and Fender bass, if he so desires, at BIT. We want him to play both instruments. I want him to be prolific on the instrument. He doesn't have to be a great soloist. If he is, we'll help in that area. Mainly what we want to do is give him a good solid foundation in music and bass playing.

*How do you like the idea of a "voca-*

*tional school" for bass players?*

I don't think you can do any better. *What plans do you have for the curriculum?*

I'm meeting with the bass teachers (Bob Magnusson, Steve Anderson, Paul Farnen), who've been there a while, to get their input in working out a system. *How did you become affiliated with Howard Roberts?*

I met Howard when I first came out to L.A. We've worked together in the studios and had some business dealings together, and now we'll be working together at the Bass Institute.

*Is there any playing experience that stands out as a very special moment or day in your life?*

I think all the stages of a person's musical life are exciting. You pick up an instrument and start trying to play it in high school, when there's your first paid job, maybe while you're still in school. That's a big step forward, and it's something you don't forget and there's a certain amount of excitement attached to that which can't be replaced. For me, the next big exciting thing was my first job out of town, working in night clubs, where all the bass players in town are coming by to see *you*, and you go around to see them. That's exciting. Then there's the first record date. And for me, one of the BIG excitements was when I went up to Dizzy Gillespie's house for my first rehearsal — it was Dizzy, Charlie Parker, Max Roach and Bud Powell.

I think if I had known more about them at the time, I probably wouldn't have shown up! I knew who Dizzy was, mainly through his work with Billy Eckstine's band and some records he'd made. Charlie Parker I had heard on some Jay McShann Records, but I didn't know very much about him. Max I didn't know at all. I had seen him with Benny Carter's band. Bud Powell was the only one I really knew. That was because I played hooky, I think four out of five days to hear him in Pittsburg when he was with Cootie Williams' band. He was really cooking. Every musician in town was there.

*And nowadays, young bass players might be looking at Ray Brown, thinking* ►



# RAY BROWN

"He's the boss" or "He's on top of it." What are some of the frustrations you face?

Well, we all have one frustration which is good and bad at the same time. The bad part of it is getting old. The good part of it is you can't get old if you died young. I really don't have any frustrations except that I always want to play better. Or I hear my records and think I could have done something better. I saw in the paper a couple of weeks ago where General Motors recalled 500,000 Cadillacs or something. I said to myself, "Jesus Christ, I'd like to recall some of my records! And some of the notes I've played, and get another shot at it."

Do you still have a practice routine?

Yes, but it's not as steady now. It's in spurts.

In the tune "Swinging Till The Girls Come Home" as sung by Lambert, Hendricks and Bavan, is that a pretty fair representation of your soloing? (In the tune Lambert and Hendricks vocally imitate the styles of various bass players.)

I really don't know. I think the best soloing that I do is in unaccompanied ballads. It's hard to assess your own playing, yet we get mad when critics assess us. I think whenever anyone does something you've done, it's a form of flattery.

Are you still composing?

Yes, but not as much as I want to. I get spurts of that, too. But I'm still doing it.

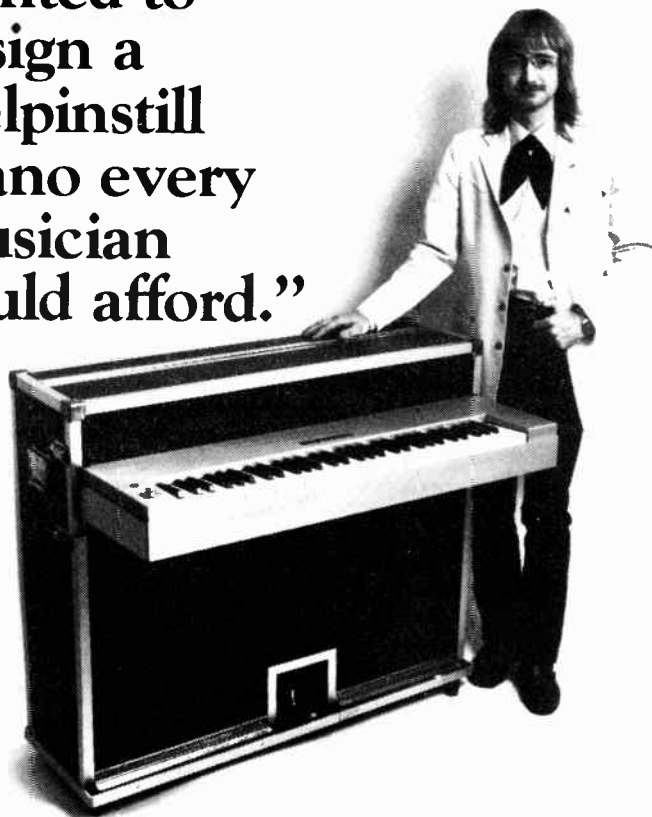
How many basses do you have, and what kinds are they?

I have three. One is a German 5-string I use only for movie work. Another is French and I don't know what the third one is. Usually, guys my age want to get basses that are somewhere between 150 and 300 years old if they can. They're better sounding instruments. I think the only problem that you have with a real good instrument nowadays is recording. A lot of studios you go into, you find young engineers who don't know too much about the string bass. They started with the electric. If they see a pickup on the bass, they want to take it "direct." (Brown's bass has a Polytone pickup on it.) That tells me that they don't want to take the time to find out how to get the sound. You have to remember, this is a different era we're talking about. Equipment changes every time you go into the studio. Usually, they put a mike on the bass and also hook up the pickup and take it direct. Then they tell you they're going to mix the two to give you a blend. If you don't watch them, you get mostly electric. It's easier for them to deal with.

What kind of amps do you use?

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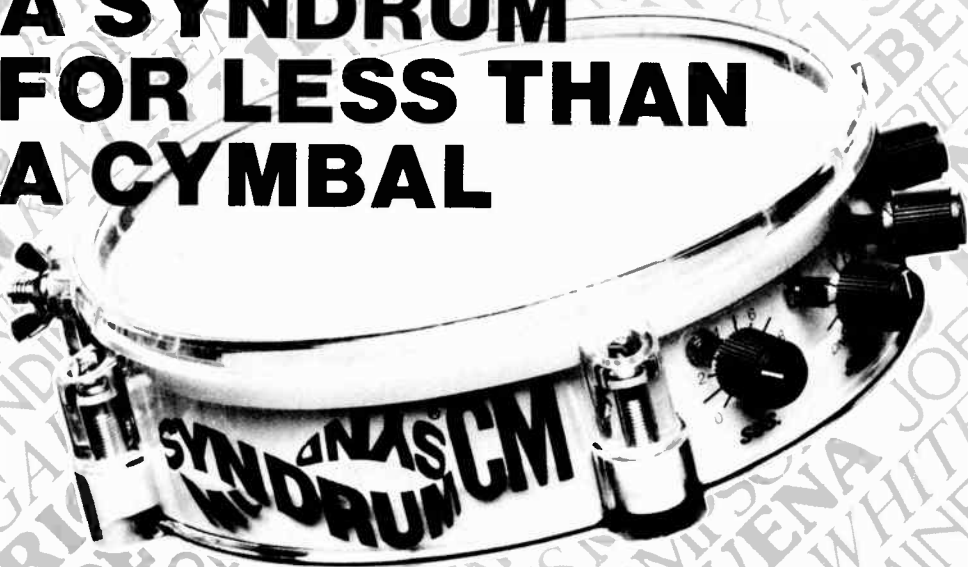
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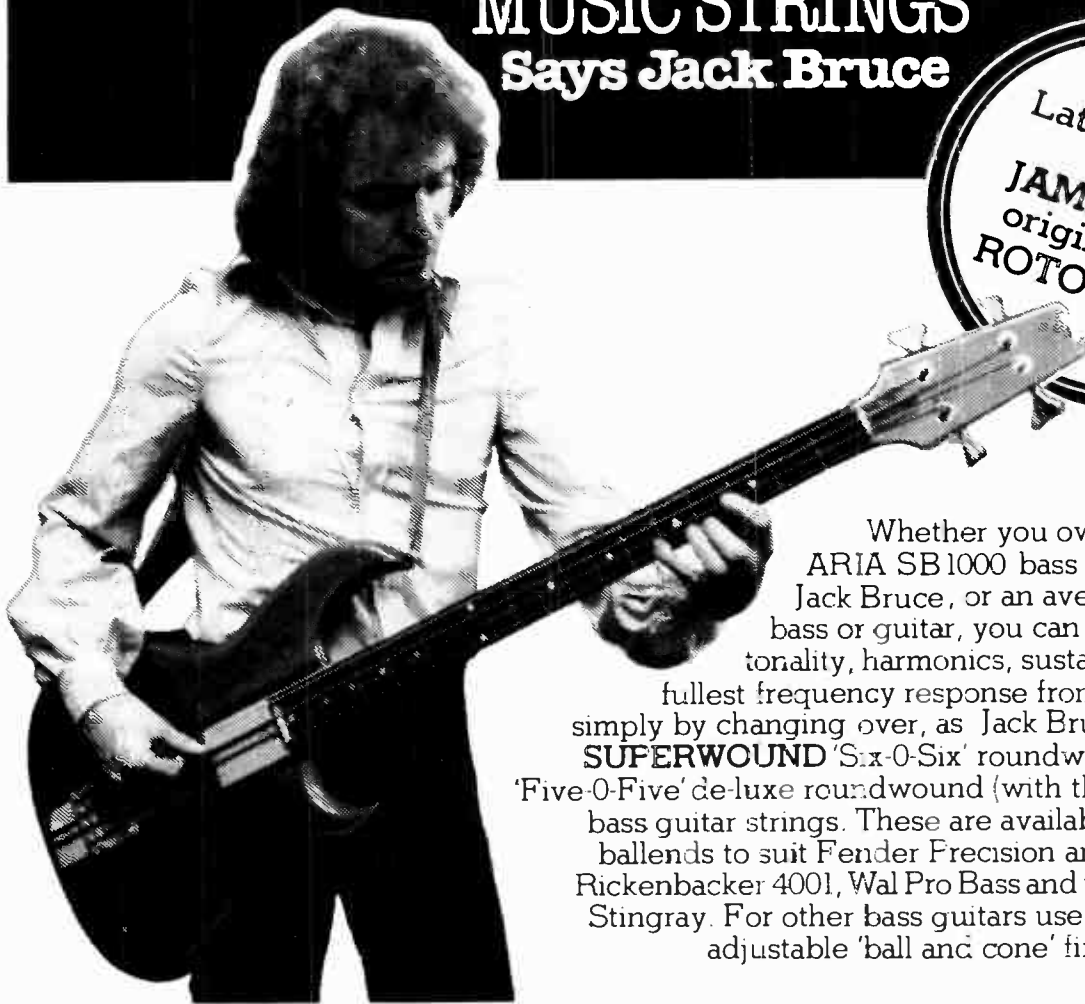
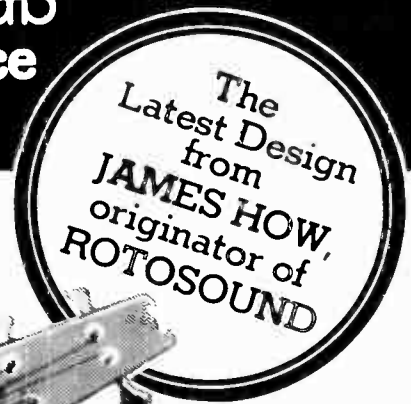
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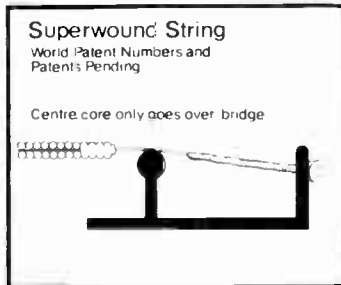
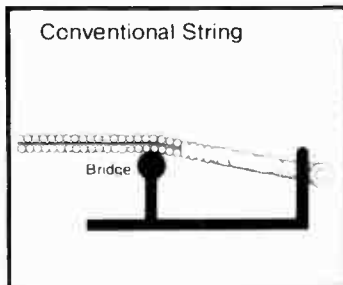
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Says Jack Bruce

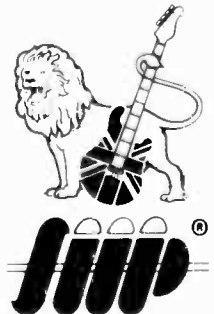


Whether you own an ARIA SB1000 bass like that of Jack Bruce, or an average priced bass or guitar, you can improve your tonality, harmonics, sustain, and get the fullest frequency response from your instrument simply by changing over, as Jack Bruce did, to the **SUPERWOUND** 'Six-O-Six' roundwound and the 'Five-O-Five' de-luxe roundwound (with the **LINEA**\* finish) bass guitar strings. These are available with fixed ballends to suit Fender Precision and Jazz Bass, Rickenbacker 4001, Wal Pro Bass and the Music Man Stingray. For other bass guitars use our patented adjustable 'ball and cone' fixing.



The difference between **SUPERWOUND** and a conventional string is shown in these diagrams, thus giving you the above qualities.

\***LINEA**. This special finish makes a roundwound string feel smoother. It is not 'ground'. Therefore keeps its original sound.



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Imported into CANADA by EFKAY MUSICAL INSTRUMENTS 6355 Park Avenue De Parc, Montreal P.Q. H2V 4H5 Tel. 279 7303  
Sole Manufacturers: SUPERWOUND LTD., Morewood Close, London Road, Sevenoakes, Kent, England.

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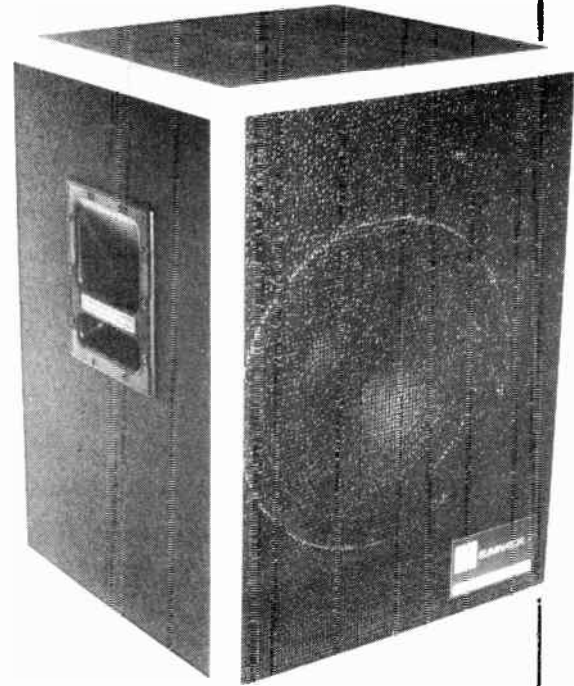
World Radio History

# The Consumer Electronics Show



Every summer the masses gather in Chicago for one of the biggest conventions in the United States, the Consumer Electronics Show (CES). A summer marketplace (June 15 to June 18), it is an event that draws from a host of industries including radio, television, Video Tape/Disc Systems, Personal Computers, Video Games and a plethora of other products.

The convention is so large that it requires three facilities, McCormick Plaza, McCormick Inn and Pick Congress Hotel, with a combined area of 50,000 square feet. Over 1000 exhibitors will be on hand to display their wares and stun the crowds with the latest in the technology for the home, industry and entertainment.



## Acoustic Research, Teledyne

Located in the Convention Center, this company will have on hand a full display of its acoustic suspension loudspeakers along with a few surprises.

## Acoustic-Phase, Inc.

This company will undoubtedly turn some heads when they display their newest line of loudspeakers.

## Audio Dynamics, Corp.

Forging into the hi-fi market, ADC will unveil its line of magnetic phonograph cartridges, tone arms, preamplifiers, amplifiers and speakers.

## ADCOM

Always providing interest at the show, ADCOM will have on hand its full line of loudspeakers, record care products, phono cartridges and electronics.

## Advanced Speaker Corp., Inc.

Hi-fi speaker models A-11, V-11, D-11 and A Plus will be part of this inventive company's display.

## Advent Corp.

Continuing along the line of their excellent products, part of the stand will include projection color TV, high fidelity electronics and loudspeakers.

## AIWA America Corp.

Always displaying a multitude of products, this year will be no different as they include stereo cassette decks, receivers, turntables, preamps, tuners, nine-components and portables.

## Allied Artists Video Corp.

Plugging in on the latest craze in video, the company will offer a wide variety of full length feature films for video machines.

## Altec Lansing

Always a major name in the world of electronics, Altec will continue to uphold its reputation with a display that will include a new line of speaker systems.

## American Lighting Specialties, Inc.

You can dance to the music but you need light to the beat and this company will provide a full range of disco lighting and record and tape storage products.

## Ampex Corp.

Needing no introduction, this company will offer a line of audio and video blank recording tapes, combination head demagnetizer/cleaner and a host of other accessory products.

## Arista Enterprises

Wrap your ears in a pair of their headphones and test their line of microphones and you'll know exactly why their at the show.

## Atari, Inc.

For all those video game fanatics, the newest of the new will be on hand along with a range of personal computers, the next frontier.

## Audio Dynamics Corp.

Within their comprehensive line of magnetic phonograph cartridges, they will also have tone arms, preamps, amps and speakers.

## Audio-Technica U.S., Inc.

Phonograph cartridges and microphones are only a small part of the roll of this company plays in the industry. They will also adorn their stand with stereophones, audio accessories and audiophile recordings.

## BASF Systems

One of the leaders in the tape industry they will continue their strong line by introducing to the public cassettes, reel-to-reel, 8-track and video cassettes.

## Beyer Dynamics

Part of Burns Audiotronics, they will be putting forth a wide variety of equipment ranging from infra-red and electro static headphones to microphone stands and adaptors.

## Bose Corp.

The Bose 901 Series 4, will be part of the speakers units on the stand which will also display an auto stereo system and a spatial expander.

## BSR (USA) Ltd.

Single play, multi-play and computerized control turntables will be highlighted on the booth as will a variety of other items including sound mixing systems and accessories.

## The Cable Works, Inc.

Caprice brand radios, stereo receivers, calculators, plus novelty AM band radios are only part of the very large range of products the company offer.

## Casio Inc.

It's always a wonder what "tiny" item Casio will come up with and I'm sure that this show will be no exception as they offer

to the consumer a full range of calculators and watches.

## Cerwin-Vega

As part of their expanding lines, the company will put on display a variety of home speakers, electronics, car speakers and disco equipment.

## Crown International

Always renowned for the variety of their equipment this company will be offering a line of power amps and other accessories.

## DBX, Inc.

A dynamic range enhancer, tape noise reduction system and signal enhancement processors will be part of the booth, but look for new things from DBX.

## Dolby Laboratories

Another name synonymous with success, the company will have their FM processors, licensing of Dolby Noise Reduction, and HX headroom extension system as part of their display.

## Electro-Voice

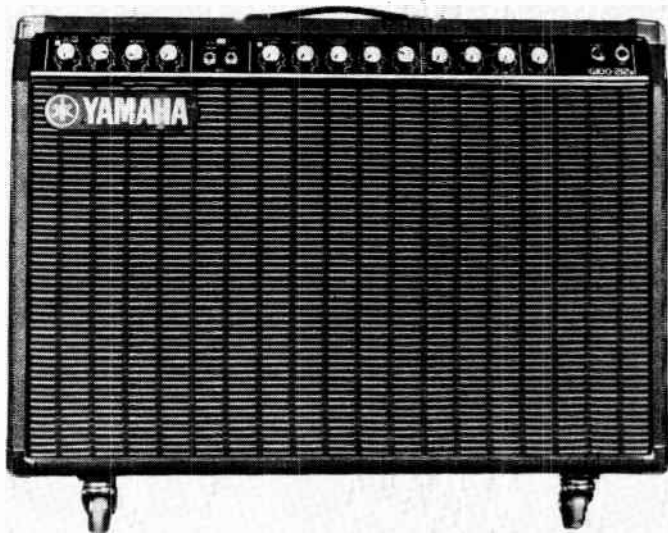
Interface speaker systems and EVS speaker systems will be the highlight of this company's offering at the show.

## ESS, Inc.

With a full line of loudspeakers available, the company should draw well considering their quality and price.

## Fuji Photo Film USA

Never mind the film, check out the cassette tape, 8-track cartridge tape, open reel, video tape and Beta & VHS.



### G.L.I./Integrated Sound Systems

Mixers, preamps, dwarf speakers, and disco consul cabinets are only part of the GLI booth, look for more items to unfold.

### Hitachi Sales Corp.

With an enormous range of products on hand, they will surely draw a lot of attention due to their lines of hi-fi components, speakers, tuners, amps and pre-amps.

### Jensen Sound Labs

Receivers, car speakers and home speaker systems will highlight their stand which will also have a few surprisers.

### KEF Electronics

With the high percentage of speaker units at the show, these should prove interesting as speaker kits, speaker and drive units will be displayed.

### Kenwood Electronics

Part of the Kenwood display will include a range of receivers, amps, turntables, cassette deck, speaker system and accessories.

### Lux Audio of America

Turntables, tuners, preamps and amps will adorn the booth as will a variety of other products including graphic EQs and cassette recorders.

### Maxell Corp of America

The company will have an interesting line of goods such as watches, calculators, photo silver oxide batteries and digital magnetic media.

### Memorex Corp.

Ella Fitzgerald won't be on hand but a selection of blank tapes and record and tape care accessories will be on display.

### Mordaunt-Short

A full line of various hi-fi loudspeaker systems will be on the booth along with a lot of technical expertise.

### MTI, Inc.

This small company will be displaying its very successful line of Matrix switching systems.

### MXR Innovations

As part of their sophisticated systems, the company will primarily be showing their graphic EQs and noise reduction systems.

### Peavey Electronics

Always priding itself on the quality of their work, Peavey will be revealing its speaker systems and power amps for the audio market.

### Pioneer Electronics

For the automobile, Pioneer will have its car stereo, car speakers, portable cassettes and compact home units.

### Sansui Electronics Corp.

Stereo and 4-channel receivers will be part of their range as will amps, tuners, speaker systems, racks, accessories and graphic EQs.

### H.H. Scott Inc.

Hi-fi receivers, amps, tuners, cassette decks, turntables and loudspeaker systems will all be part of the very large Scott display.

### Shure Brothers

To complement their fine line of microphones, Shure will include in their display a range of hi-fi components, sound systems and related circuitry.

### Sony

Hi-fi products, stereo receivers, turntables, speaker systems, cassette decks and accessories will add to the already excellent line of Sony products.

### Stanton Magnetics

Courting a fine product line, this year will also contain a display of headphones, turntables, preamps, record care products and stylus wear gauge.

### TDK Electronics

Industrial and consumer magnetic tape products and accessories will be highlighted on the company's booth.

### TEAC Corp.

As always, TEAC will unveil some new products to complement their existing line of hi fi and consumer electronic gear.

### Technics

Within the realm of their hi-fi line they will offer receivers, integrated amps, power amps, tuners and miniature components, as well as a host of other products.

### 3M Company

A full range of tapes and cassettes will be on display along with a few other surprises.

### Unitronix Corp

A full range of hi-fi loudspeaker systems will highlight the Unitronix stand.

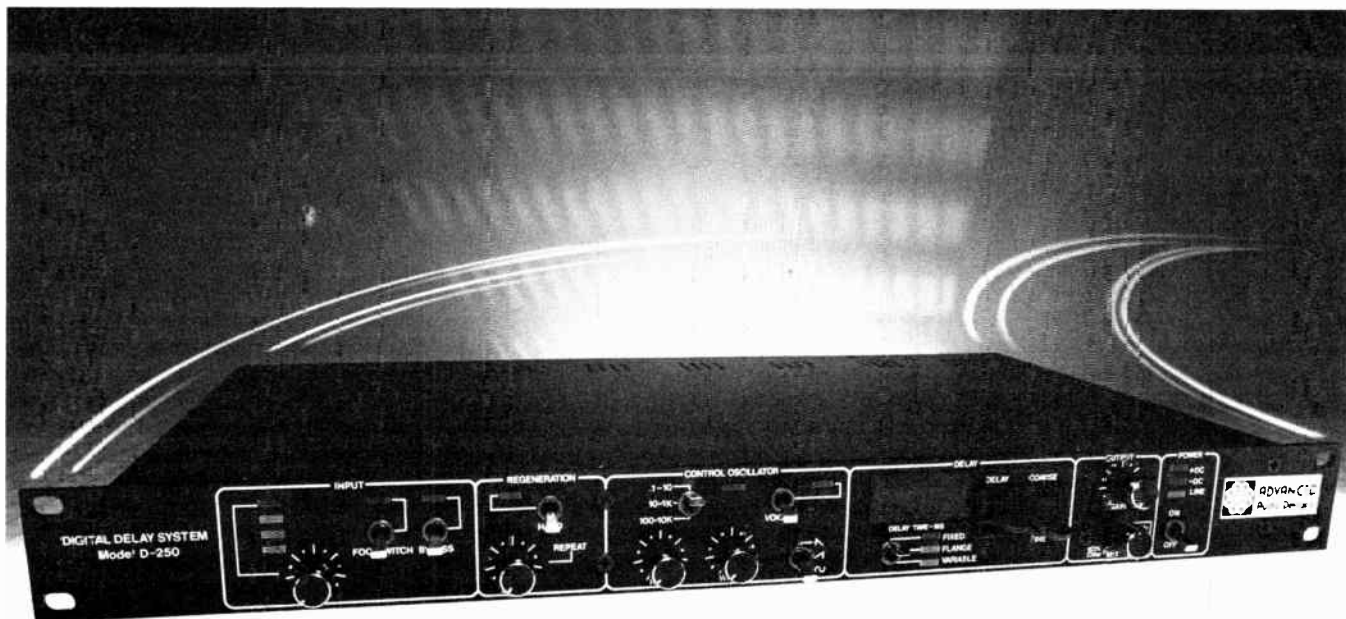
### US Pioneer

The stand is sure to be overflowing with product and just a few items of note will be the amps, speakers, headphones, reel-to-reel and cassette tape decks.

### Yamaha International

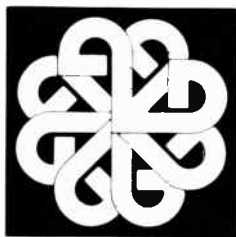
Always a stand worth dropping by, the booth will be adorned with a full range of the company's audio and accessory products.

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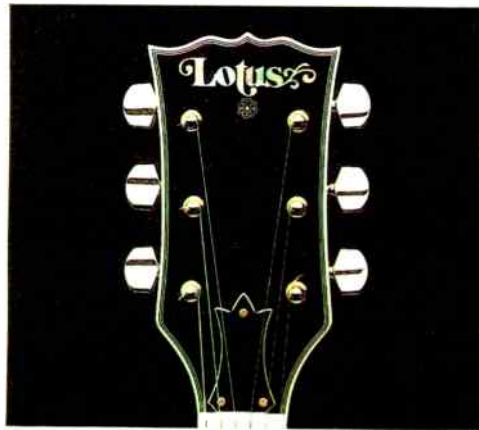
# Lotus



# Lotus

## Quality at a price you can afford

Lotus acoustic and electric guitars provide quality at a price that's highly affordable! Built to the highest standards by traditional instrument making methods, the Lotus range has as much to offer the professional musician as the student.

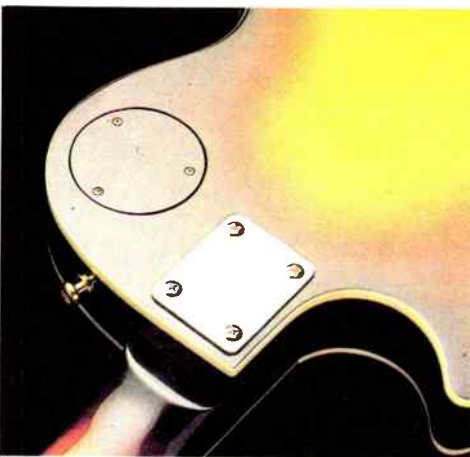


All instruments bearing the Lotus name and emblem feature "invisible" quality construction as a standard item, but individual models in the range allow the player to choose the guitar that is precisely right for his requirements.

The "top of the range" Lotus electric, the L1000 (see over) offers highly original and attractive styling and incorporates fine features designed to ensure long life and a very high standard of playability. A one-piece thru-neck ensures excellent sustain characteristics and the high output twin coil pickups provide both subtlety and power.

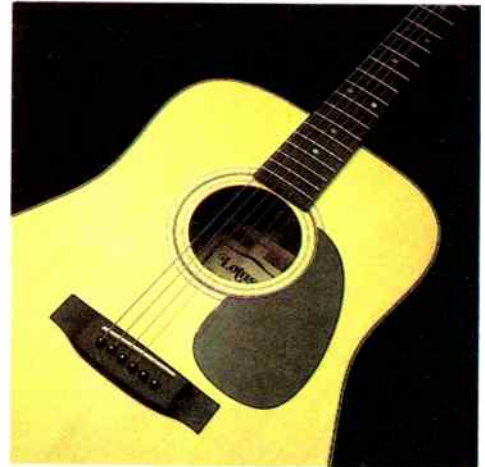


On the L1000 and several models in the range a "tune-o-matic" style bridge allows the player to pitch and tune each string perfectly and bad intonation becomes a thing of the past. As you would expect on a guitar of this quality all metal parts are heavily plated and every fitting is made from the finest materials.



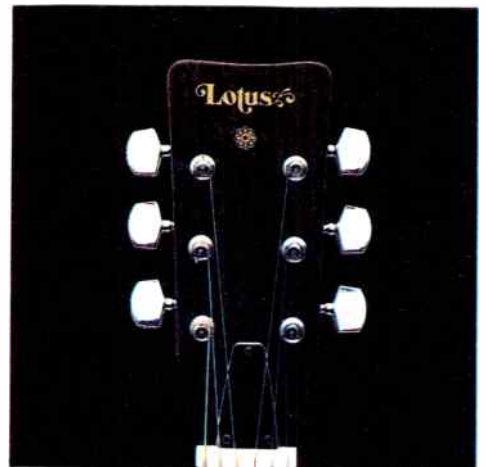
The Lotus acoustics have rapidly become accepted as providing a unique combination of tone, playability and value. Over the last year, thousands of players have discovered that it is possible to find an acoustic guitar that is built well, sounds good and doesn't cost a small fortune. The L102 (shown here) is a dreadnought style guitar built with the finest materials by traditional methods. A spruce top forms the perfect

resonator for the sound produced inside the rosewood-sided body. A rosewood fingerboard and nickel-silver frets are standard. Naturally there is high quality decorative marquetry and binding on



the instrument and many players who rely on the tone and reliability of their instrument for their living have discovered that a Lotus acoustic fits the bill perfectly.

Whether music is your living, your hobby or your dream there's a Lotus guitar that's right for you. It is unwise to consider that two guitars that superficially look alike are alike. Insist on seeing a Lotus, you'll be glad you did. For your information all Lotus instruments are exclusively distributed in the U.S.A. by Midco International.



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In IL. Tel: 800-252-9265  
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**MUCH  
MORE  
FLEXIBILITY.**

Presenting Yamaha speaker components. Some have been available only in Yamaha-designed enclosures. The rest are brand new. All are designed to deliver outstanding performance, reliability and durability.

And now, with this full range of Yamaha speaker components to choose from, you have the flexibility to design a sound system that meets your specific needs.

**Low frequency drivers: JA3882 & JA3881**

The new JA3882 low frequency driver is specifically designed for high-efficiency sound systems. Its very high sensitivity level enables it to produce high SPL with less amplifier power. With large edgewound copper voice coil, durable cone assembly, and stiff compliance, the JA3882 produces clean, powerful low frequencies.

- 15" diameter cone
- 102dB SPL/1 meter/1 watt sensitivity
- 30Hz to 4kHz Frequency Range (maximum recommended crossover, 800Hz)
- 8 ohm [JA3882] and 16 ohm [JA3882(B)]

The new JA3881 is an excellent choice for use in stage monitors, keyboard speaker systems, or for 2-way systems. Its flexible suspension and lightweight edgewound aluminum coil give the JA3881 a usable response up to 5kHz.

- 15" diameter cone
- 97dB SPL/1 meter/1 watt sensitivity
- 40Hz to 5kHz Frequency Range (maximum recommended crossover, 3kHz)
- 8 ohm [JA3881] and 16 ohm [JA3881(B)]

**High frequency compression driver: JA6681B**

With high sensitivity and high frequency handling capacity, the JA6681B high frequency driver makes an excellent mid-to-high frequency reproducer for use in 2- or 3-way full-

range, high-level

sound reinforcement or monitor speaker systems. Its unique S-shaped beryllium/copper suspension system and quality construction ensure long life.

- 145dB SPL reference sensitivity, 1 watt, using 1 inch plane wave tube
- 108dB SPL at 1 meter, 1 watt (using Yamaha H1230 horn)
- Nominal 800Hz-12kHz, usable down to 500Hz
- 16 ohms nominal impedance

**Combination high frequency horn & driver:**

**JA4280B/H1400** This high frequency reproducer's versatility enables it to be used as the mid and high frequency reproducer in a full-range stage monitor, keyboard monitor, or general sound reinforcement system. Or as the upper midrange reproducer in an ultra-wide-range system.

- 90° H x 40° V dispersion
- 106dB SPL at 1 meter, 1 watt
- Aluminum horn with damping
- 16 ohms nominal impedance
- Nominal 1,500Hz-16kHz, usable down to 800Hz.

**Compression tweeter: JA4281B**

This new tweeter is a high-sensitivity, integral horn/driver unit designed to handle the uppermost portion of the frequency spectrum. It is an excellent super-tweeter for use in 3-way or 4-way full-range, high-level sound reinforcement systems when used in conjunction with our JA6681B high frequency compression driver. Its superb on/off axis response and absence of diaphragm resonances also make it a fine choice for studio monitor systems.

- 120° dispersion pattern at 10kHz
- 108dB SPL at 1 meter, 1 watt
- Nominal 7kHz-20kHz
- 16 ohms nominal impedance

**High frequency radial horn and throat**

**adaptors: H1230, AD3500 & AD3502** The new H1230 aluminum radial horn is designed to provide controlled dispersion (90° H x 40° V) of high frequencies in high-level, wide-range systems.

The AD3500 throat adaptor is used to couple the horn to the JA6681B driver to produce 108dB SPL at 1 meter with 1 watt input. Use the AD3502 throat adaptor to connect two drivers for greater output.

That's the lineup of Yamaha speaker components that leave the system design up to you. So now, with Yamaha mixers, power amps, signal processors, and separate speaker components, you've got the total flexibility you always wanted. From the people who know what music sounds like—Yamaha.

For complete information, write:  
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(In Canada, write: 135 Milner Ave.,  
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**Because you're serious.**



**MUCH  
MORE  
CHOICE.**

Yamaha speaker systems. From intimate club settings to concert arenas—and everything in between—they've got you covered with a choice that can fill your need. Covered in sound that's loud, clear, and dependable.

Each system is designed and built so that both enclosure and components work together perfectly. And work dependably, so you don't have to think about them. All you've got to do is decide which one is best for you.

**Multiple enclosure systems: S6215HT-3 & S6115HT-1.** The S6215HT-3 consists of the S6215 double 15" bass bin (with two Yamaha JA3882(B) woofers), the 6115H mid-range horn (with a Yamaha JA6681B driver, AD3500 adaptor and H1230 horn) and the 6115T-3 triple tweeter (with three Yamaha JA4281B's).

The S6115HT-1 system consists of the S6115 single 15" bass bin (with a Yamaha JA3382 woofer), the 6115H horn, and the 6115T-1 single tweeter (with a Yamaha JA4281B).

The bass reflex enclosures have computer-generated Thiele-Small aligned designs to give optimum mid-efficiency and superior low frequency loading.

In the mid-range horn enclosure, the bottom, sides, and top are integrally tied to the horn and driver for maximum stiffness and light weight.

All the cabinets are made of 9-ply 3/4" maple. All joints are lock-mitered and glue-blocked. All hardware on the rear panels is recessed. All handles are also recessed and are located at balance points for easy handling. And all the enclosures (except the single tweeter) are the same width



for compatibility in stacking and interconnecting in any combination.

It all adds up to heavy-duty, roadworthy modular systems that are loaded, painted, have feet and grilles, are thoroughly tested and ready for high-performance sound reinforcement.

**Single enclosure systems: S4115H, S0410H, S0112T, S0110T & S2115H.** The S4115H is a two-way, ruggedly constructed, full-range system. The low frequency section (with a 15" Yamaha JA3803 woofer) combines the benefits of a front-loaded horn with a ducted-port bass reflex enclosure. The high frequency section consists of a Yamaha JA4201 combination radial horn and compression driver.

The S0410H is an efficient 2-way system with four 10" JA2511 woofers and a JA4204 combination short horn and driver in a lightweight, ported reflex enclosure. This particular system offers what we feel is surely the best sound of any column-type system on the market. Regardless of price.

The S0112T speaker system utilizes two woofers (a 12" Yamaha JA3061 and a 10" JA2507) and four 2" Yamaha JA0554 tweeters in a portable bass reflex cabinet.

The S0110T utilizes a 10" Yamaha JA2511 woofer and a JA0556 tweeter in a heavy-duty ported enclosure offering high sensitivity and very compact size.

The S2115H stage monitor system uses the same components as the S4115H in a low-profile enclosure. The 100 watt RMS power rating handles all the power needed for most monitoring situations.

All the single-enclosure systems are ruggedly built, highly portable, and ideal for a wide range of applications including PA's, keyboards, and vocal monitoring.

That's the lineup of professional speaker systems from Yamaha, the company that knows what music sounds like. The choice is yours. But whichever you choose you get the performance, reliability and durability that Yamaha is famous for. For more information, write to P.O. Box 6600, Buena Park, CA 90622, or in Canada, to 135 Milner Ave., Scarb. Ont. M1S 3R1.

Or better yet, visit your Yamaha dealer.

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# MUCH MORE CONTROL.

Presenting five signal processors from Yamaha that put you in charge of your sound: the F1040 and F1030 frequency dividing networks, the E1010 and E1005 analog delays, and the Q1027 graphic equalizer.

They offer the control, reliability and durability that are as professional as you are.

#### **The active crossover networks:**

**F1040 & F1030** These frequency dividing networks offer the superior sound and control of bi-, tri-, and quad-amplification. They also offer better specs, better frequency response, and more

headroom than lower priced competitive models.

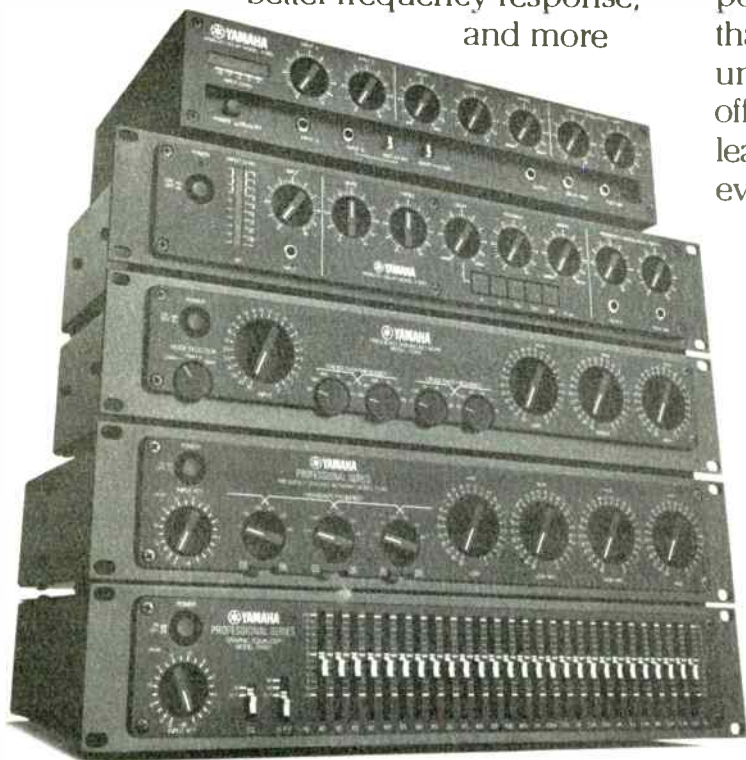
**The analog delays: E1010 & E1005** The creative applications of these two analog delays are almost endless. They offer echo, flanging, reverb, time delay, and double-tracking—just to name a few. And being analog, these delays retain the original audio signal for a true musical sound.

**The graphic equalizer: Q1027** The Q1027 monaural  $\frac{1}{3}$  octave EQ provides virtually infinite tonal control, from subtle to dramatic. A center detent position on each filter control removes that filter from the signal path, eliminating unnecessary phase shift. The Q1027 offers many attractive features, not the least of which is its reasonable price. It even includes rack-mount and acrylic security cover.

All Yamaha signal processors are designed to give you total command over your sound system with accurate, repeatable set-ups. The quality components, quality control and rugged construction assure you years of trouble-free operation—either on the road or in fixed installations.

For complete information, write: P.O. Box 6600, Buena Park, CA 90622. In Canada, write: 135 Milner Ave., Scarb., Ont. M1S 3R1.

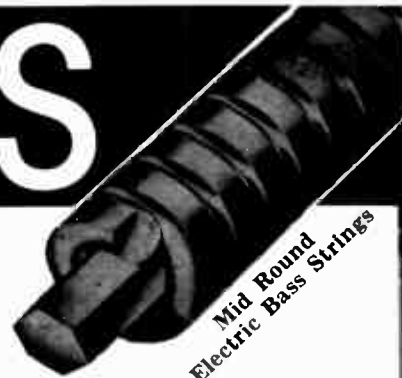
**Because you're serious.**



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# GALLI® STRINGS



Mid Round Electric Bass Strings

Art.	SELECT GAUGES	DIAMETERS					
		1	2	3	4	5	6
N. PHB 10	Extra light	010	014	023	030	039	047
N. PHB 20	Light	012	016	024	032	042	053
N. PHB 30	Medium	013	017	026	035	045	056



## PHOSPHOROUS BRONZE STRINGS

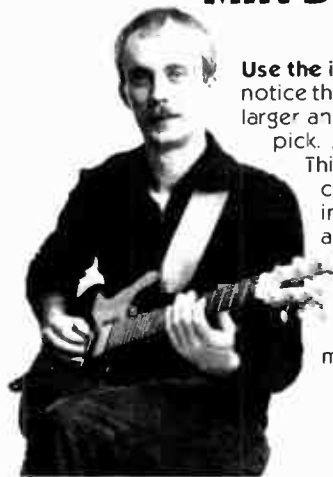
Strings in phosphorous bronze produce a brilliant and lively sound and a better harmony. These strings have surpassed other types because each winding of phosphorous bronze wire is subject to a special treatment. We have found that this special treatment gives the strings a better flexibility and an excellent durability. It is a fact, phosphorous bronze strings, wound with other alloys last longer.

Here it is! the string you have been looking for for years, studied and perfected by Galli technicians to give your guitar a revolutionary sound. Take our word, the Galli PHB is the string for tomorrow. Remember that our experience in the field of guitars is always at your service.

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INSTRUMENT YOU USE AND MARK			
<input type="radio"/> ACOUSTIC Guitar	<input type="radio"/> Classic Guitar	<input type="radio"/> Bass Guitar	<input type="radio"/> Electric Guitar
<input type="radio"/> 12 String Guitar			
STRINGS ACTUALLY USED			
ADDRESS			

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Use the incredible stone pick. You'll notice the difference immediately. It's larger and heavier than the common pick. And for a good reason — This larger pick gives you greater control. It feels different but in one evening's play you'll be amazed at how it can actually improve your sound and technique. You'll play better... fuller, richer chords... more power... greater versatility... increased speed.

**The MIN'D PICK won't wear out — ever.**

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## BLAST INTO THE '80s



In 1948 the first production solid body electric guitar hit the market. It revolutionized the music industry and the sound of music for years to come. Rightly so, but what about 32 years later? Over 99% of the guitars made today have the same old passive electronics that those of 1948 did. The difference between today and 1948 is that there's something you can do about it. Power Pots offers a line of on board active electronics that make your guitar an instrument of the '80s. With the addition of a Power Pots booster, you'll get low impedance output (which allows use of up to 150 feet of cord), revitalized highs (eliminates interaction of cord, as a capacitor, with pick ups), boosted output (effects work better and amps sound better), and uncompromising circuit design which utilizes the latest in IC techs to insure low battery consumption and low noise levels. Power Pots products come with everything needed for installation, including wiring diagrams and a five year warranty. So contact your local music stores and ask for Power Pots by name — or send for our free pamphlet.

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# Building-a-Solid Guitar

## Part 16 Finishing the Frets

This segment has to be done in two parts: the rough levelling and trimming of the ends is done now, before any lacquer is applied. After lacquering, the final fret finishing, which usually requires some oil on the frets, may be completed. It would be very convenient to do the whole operation before applying the lacquer, but any oil which found its way onto the neck or body would prevent the lacquer sticking properly.

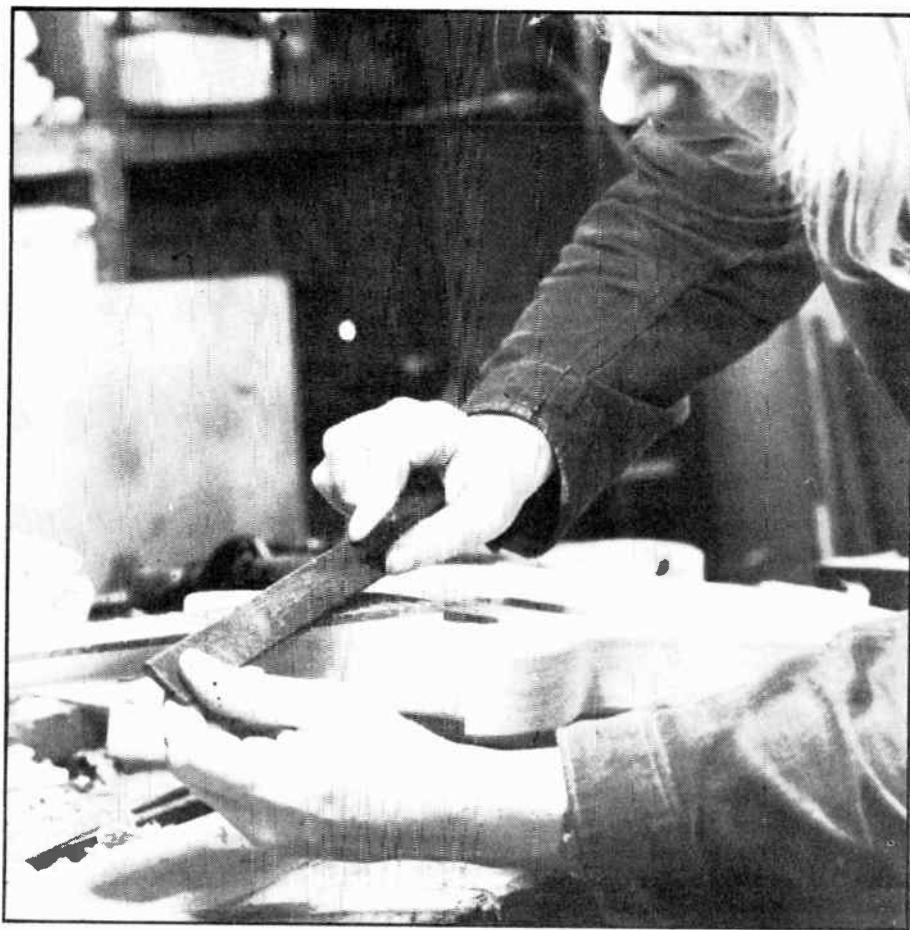
For rough fret trimming, you will need a 10-inch Mill File. This is a large fine file with rounded edges and "single-cut" teeth. Such files are used for sharpening large circular saws, and for this application it is not necessary for them to be made absolutely straight. However, for filing frets, you need a file which is as straight as possible, on at least one face. You will almost certainly need to look through one or two boxes to find a good one.

The only makes which I have found satisfactory are P.S. Stubbs and Nicholson, and you will still have to check these for straightness. It is possible to buy very good and straight files from specialist merchants, but these are usually double-or triple-cut and the resulting teeth do not seem to work so well on fretwire. There is a definite art to using a single-cut file, and if you practice on a piece of soft brass, you will find that you can adjust the cutting qualities by turning the file at a slight angle to the direction in which you are pushing it. A good file of this type is very sharp, and will cut with gentle down-pressure when you have the best angle to suit the material and hardness of your frets.

If you look at the top picture of last month's article, you will see that I am cutting off the frets at an angle of about 60 degrees.

This will leave small barbs projecting at the bottom of the tang at each fret end, and these may be removed, either with a small fine file, or with the same fret cutters held against the edge of the fingerboard. I prefer to use cutters, but they have to be sharp and truly "flush-cutting."

After this is done, check that you have not loosened the ends of any frets. If any are raised a little from the finger-



board, put the neck back on its pile of books and neck support and gently tap the fret ends down. If tapping gently doesn't put them into place, hitting harder will probably make matters much worse.

Check that the slot is deep enough at the ends to take the fret tang. If not, gently pry up the fret, deepen the slot, and fit a completely new piece of fretwire. If there is room for the tang, and the fret can be pressed into place but will not stay there, you have several choices.

If you generally seem to have no trouble with fretting, first try another piece of fretwire, paying particular attention to the pictures last month. If this fails, or if the whole process has been a struggle for you, work some white glue or,

preferably, liquid hide glue, under the fret(s) and clamp the ends down under pieces of soft wood such as Cedar or Obeche, until the next day.

### Fret Ends

The fret ends can now be trimmed at 45 to 60 degrees to the axis of the fret with the Mill-file, as shown in photo No. 1. The 45 degree bevel makes it easier to produce smooth and inconspicuous fret ends, but may require the guitar strings to be a little nearer together, to prevent the outer ones from slipping off the ends of the frets.

Always file along and partly downward. If the file has any upward movement, it may pull out the fret ends, and it should be lifted away from the frets for each return stroke. It is likely that the file will



cut one side of the frets more harshly than the other, requiring caution when you start on the second side.

The file could be used so far in an ordinary handle, but for levelling the frets, which comes next, you will need to make and fit a side handle as shown in the photograph. This is a small block of wood fixed to one side of the tang to provide a hand grip. I usually soften the tang and about 20 mm of the end of the file and drill and countersink for three number three woodscrews. Sometimes the tang is soft enough to permit drilling two or three holes, but there is now a drill available which seems to be able to cut straight through a file without softening, although you will need a larger drill of the same type or a high-speed grinding point, to make the countersink.

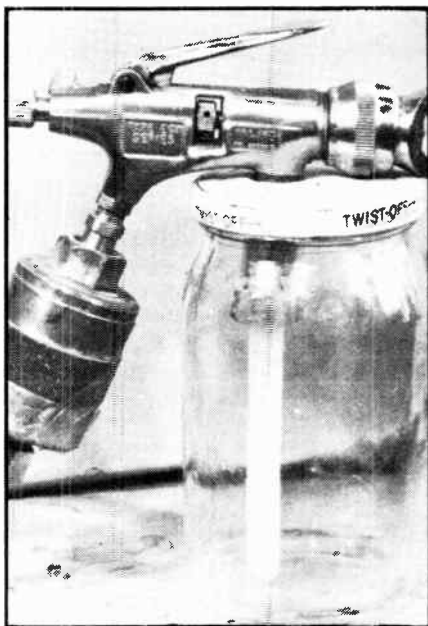
The drills are distributed in the UK by ASBO UK, 119a High Street, Teddington, Middlesex. I have not actually used one of these myself, but I have seen a demonstration which certainly cut repeatedly through a file. I am relying on memory for the details of the supplier, but I think the address is correct. You will only need to buy the smallest size; also one just larger than the screw head if you don't have a grinding point. Alternatively, softening the end of the file allows the use of ordinary drills and countersinks, or you could *glue* the handle on with epoxy.

#### Even Support

Ideally, the neck should be supported evenly all along, but it is usually sufficient to use the sort of support shown in the fretting pictures, with the neck holder around the 5th fret and the body lying quite flat on the pile of books. With the help of a straight-edge and someone to hold the guitar body, file down the tops of the frets until they are all level and you have just trimmed the lowest part of the lowest fret. That is all the fret work needed at the moment.

Give the guitar a final sanding all over, and inspect it for dents and blemishes under a strong light. Use a cloth moistened with cellulose or polyurethane thinners to remove as much color and gum as possible from the edges of the fingerboard. When no more color comes off on a clean bit of moist cloth, allow one hour to dry.

There are many ways of finishing guitars and I would refer interested readers to my previous articles on re-finishing an old American guitar. The most forgiving material which will be easily available to you is cellulose. Any good quality, "non-bloom lacquer for wood will do. You can buy cellulose for brushing, but application



is tricky.

It is well worth hiring a small spray gun and compressor. It must be spotlessly clean inside the gun, with no trace of old color, if you want to use clear or white lacquer.

You should ask for equipment for spraying cellulose, and for advice on proportions of lacquer and thinners needed for that gun. Also ask the lacquer supplier for the same information. The answers may differ, but somewhere between the two will probably work. Take the advice of the lacquer manufacturer on suitable fillers or undercoats for his own materials. Don't try to use dye or transparent colors until you have had plenty of practice. Stick to clear lacquer or opaque paint colors.

If you want a more complicated finish, which will wear better, or if you have to brush on the lacquer, find your nearest International Paint store. International products are very popular with people who have small boats and ocean-going yachts, so you should look for Marina shops and Ships Chandlers. International make two-pack polyurethane varnish, or two-pack polyurethane paints if you prefer an opaque color, and suitable grain fillers, undercoats and polishing compounds to go with them. Order 2-pack varnish, together with grain filler: to match your guitar wood or, alternatively, 2-pack paint and recommended undercoat. In either case, order an equal quantity of thinners.

You will also need either a spray outfit or a good varnish brush. Leave small elec-

tric sprayers which buzz when operating, entirely alone. Some of the better ones are great for painting houses and boilers, but rather crude for spraying guitars. One of the ultimate spray guns for guitar makers and repairers is shown in Photo 2. It comes from De Vilbiss who have branches all over the world.

You are unlikely to find one offered for rent, but if you are taking instrument-making seriously you could always buy one and rent a suitable compressor when you need one. Rented sprayguns have a very hard time, and there is a lot to be said for buying your own gun. You will notice a cylinder attached between the gun and the airline. This is a filter. One of the best is the De Vilbiss "Dryfit." It is worth every penny of its modest price, as it catches minute drops of oily gunge which may be hiding in the air line, waiting to leap on to your guitar. You still need one even if the compressor has got a proper air-cleaner.

#### Other Possibilities

As the finishing progresses, you will also need a "Tack Rag" and some 400 and 600 Wet and Dry paper. If your supplier doesn't see the need for a tack rag, either he can't get them, or you have the wrong sort of supplier. Try automobile re-finishing shops... which brings me to the next point. You could always ask *them* to spray it for you. The snag is that auto-re-spray places often fail to appreciate exactly what is important in finishing a guitar. On the other hand, really good sprayers are artists in their own right.

No-one is likely to tell you that he is only fair at his job, so if you plan to have a commercial spray shop finish your guitar, you should ask to see some examples of work other than straightforward auto-re-sprays. You might also consider taking your completed instrument to a local guitar repair shop which offers a repair and re-spray service. Again, you should ask to see samples of re-finishing work, and if possible, speak to other guitarists who have had guitars re-finished by the same company.

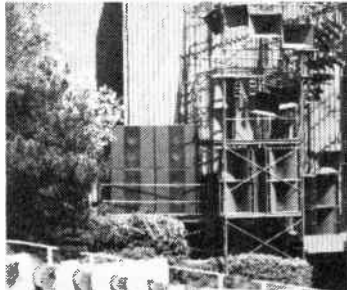
Most such guitar repair shops offer a very good service, some will provide different standards of work for different sorts of prices, and a few have produced rather more disasters than could be accounted for by the law of averages. Some vary from year to year, according to who is working for them. So ask to see *recent* samples of work. Allowing for the possible difficulties, paying a professional to spray your guitar is still a realistic and economical course of action if you have

# Stanley Screammers

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Stanley Screammers are brand new at Altec Lansing. But don't be surprised if they look familiar. They've been touring with Stanal Sound backing up literally hundreds of professional entertainers for fifteen years. You've seen and heard 'Screamers in action at major concerts with Neil Diamond, Bob Dylan, John Denver, Dolly Parton, Waylon Jennings, Mac Davis and Rickie Lee Jones among others. And at installations such as the Universal Amphitheatre and Greek Theatre in Los Angeles.

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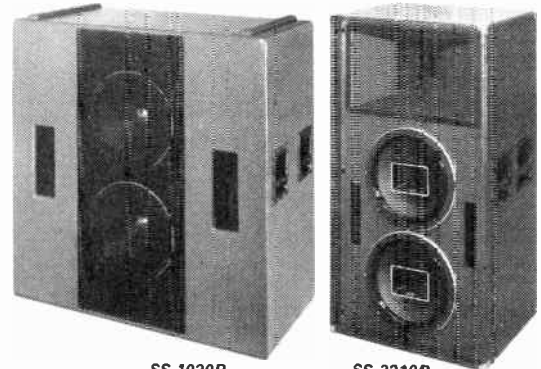
**Stanley Screammers Model 1020-R Dual Subwoofer System** includes two Altec Lansing 421-BLF low frequency, high power, sound reinforcement loudspeakers. High output: 20 Hz to 80 Hz. Dimensions: 48"H x 48"W x 23 1/4"D.

**Stanley Screammers Model 3210-R Three-way, Tri-amp Ready System** includes two Altec Lansing 604-HPLN 15" duplex loudspeakers (less network); one 291-16B high frequency compression driver with Tangerine Radial Phase Plug and low mass magnet; one Mantaray Constant Directivity Horn, dispersion 90° by 40°. A High Output, Extended Range System with Triamp Ready Inputs. Dimensions 51"H x 27"W x 21"D. Comes with recessed protective lid.



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SS-1020R

SS-3210R

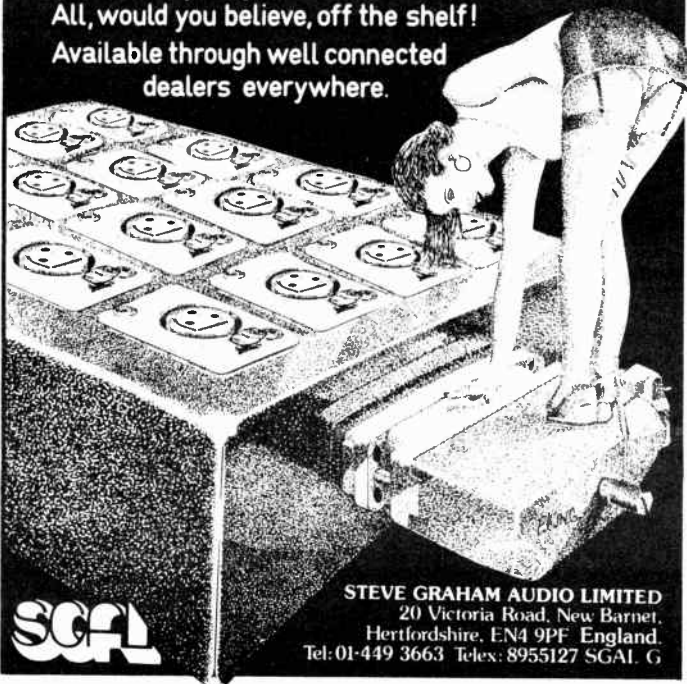
For more information on Stanley Screammers Loudspeaker Systems for Entertainers, write: Stanley Screammers, P.O. Box 3113 Anaheim, CA 92803, Attention: Gary Rilling

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## Part 16 Finishing the Frets

neither equipment nor experience in this field. Always obtain a written quotation of cost and clear description of the agreed job before anyone starts working on your guitar. Then everyone knows where they stand.

If you deliver the guitar nicely sanded, and spotlessly clean, wrapped in a plastic bag and then in a cardboard box or a guitar case, you are more likely to get a spotlessly clean (and lacquered) guitar returned to you. You can't really blame the sprayer if you find *your* dents and fingerprints under *his* lacquer. Equally, if the guitar is soiled or damaged *while* it is being finished, any reputable shop will have the damage made good to your satisfaction and the instrument refinished at no additional charge. It is possible (and not unreasonable) that an automobile spray-shop may not show the same concern over very small blemishes as you would expect to find in one of the better guitar repair companies.

You may feel, as I do, that it is more satisfying to complete the job yourself, or you may have no alternative. Here are some materials which you could use to finish your guitar but I DO NOT RECOMMEND THEM. If you turn your guitar into a sticky mess with one of these, I don't want to know about it, and I certainly shan't offer any words of sympathy. This list of *un*-recommended finishes is probably not exhaustive, but it may protect at least some of you from sad mistakes. Do not use:— Household paint, something unknown which happens to be left in the spraygun, Spray cans, unless the instructions state *on the can* that it is a cellulose material — (*Not Enamel!* — even if it does dry in 5 or 10 minutes), Boat varnish, Spar varnish, floor paint, car paint, tile paint, Linseed oil, Wax polish, Furniture polish, Guitar polish, Metallic paint, Artists paints (although some acrylic colors are compatible with some polyurethane and acrylic lacquers if you want to paint "Red dawn over Gatwick" on the back of your guitar), Teak oil, French Polish (unless you happen to be an experienced French polisher), also, on principle, beware of the latest heavily-advertised "instant wonder" (This may vary according to the country in which you live.) There are some other 2-pack polyurethane lacquers and/or varnishes

which could be used, but it is most necessary to use materials for base coats and top coats which are compatible with each other, and which continue to adhere even when the guitar gets a few dents. As I cannot speak for other materials in other countries, and as I have quite a large collection of expensive, but incompatible, and therefore, to me, useless materials, I strongly suggest that you use the recommended "International" products.

You can at least reasonably assume that they are going to be fairly resistant to moisture. Also the same "International" products seem to be available in a large number of countries and the 2-pack polyurethanes are particularly good if you have to apply them by brush. You can spray them equally well if they are thinned properly to suit your spray equipment, but each coat will take rather longer to dry than with cellulose materials. As with many 2-pack materials, there is a re-coating "window." That is to say, you have a minimum and a maximum waiting time between coats. It might, for instance, be not less than six hours and not more than two days between coats.

This will vary according to local climatic conditions, and sometimes on the amount of thinner and the method of application. The main International distributor in your own country should be able to advise you. You can re-coat outside the advised time, if you rub down with wet and dry paper and the lacquer company's recommended lubricant, until you have a completely matt surface. Any small dents or corners which would normally remain glossy, will have to be roughened with a corner of abrasive paper on a bit of cork or rubber, until no gloss remains anywhere. Under these circumstances, new polyurethane lacquer will usually adhere to older, hardened coats.

Within the re-coat "window" time it is usually only necessary to "flat" the previous coat lightly to remove minor surface imperfections such as drips, dust and hairs. This is obviously far less work, and should be followed where possible. In England and Northern Europe, the English language directions supplied with the lacquer and hardener seem to be quite satisfactory as regards re-coat times. Cellulose lacquer can be re-

coated at almost any time as long as the previous coat is clean, dry and also Cellulose. This makes repairs to the lacquer film much easier — especially if you have one of the Badger model-makers' air brushes. The number 200 seems to be good value for this sort of work. On the other hand, cellulose lacquer is more likely to need minor repairs than carefully applied two-pack polyurethane. There are some other two-pack materials which can rival polyurethane lacquers and I do not wish to criticise them by omission, but I have to limit this discussion to one or two materials which I happen to find useful and which are likely to be available in the same form, in many different countries.

I shall provide some more pictures and instruction on finishing your guitar next month.

by Stephen Delft

All lacquers you are likely to meet are flammable and represent a potential fire hazard if handled carelessly. The same applies to some base coats and most thinners. Keep cans sealed when not in use, and in a cool, safe place. Do not smoke or allow naked flames or glowing electric heaters. Provide adequate ventilation. People are designed to breathe air, not lacquer fumes. Some lacquers, particularly polyurethanes may cause respiratory irritation. Protect hands and eyes, and wear a suitable respirator mask. A clear shield for the whole face, some thin plastic gloves and a charcoal filter mask cost less than a week off work.

# NAMES AT NAMM

## A Music Industry Preview For The Eighties

### Advanced Audio Design

Advanced Audio Design will be introducing their new D-250 Digital Delay system and Model T-300 Reverb Chorus at the upcoming Chicago NAMM.

### AKG Acoustics

Along with their usually excellent line of recording and sound reinforcement equipment, AKG Acoustics will be debuting their new D-300 Series Dynamic microphones.

### Ambico

Ambico's comprehensive line of straps for guitars, assorted fretted instruments and woodwind instruments will be supplemented by a display of the latest Camber cymbals and Camber and Ace drumsticks.

### ARP Instruments

The full line of both ARP and Mutron products will be displayed at the Chicago NAMM show, along with the largest group of accessories ARP has ever introduced.



### A&S Cases

A&S Cases will be exhibiting a full line of heavy duty cases designed to meet the musician's every touring need.

### Ashly Audio

Ashly Audio will introduce several new lines at Chicago — the latest in Equalizers, Electronic Crossovers, a brand new Peak Limiter Compressor and Keyboard Input Processor.

### Aspen Pitman & Assoc.

Along with its renowned "Groove Tubes" system, Aspen Pitman will be premiering their new "Mainline" digital audio microphone transformer system.

### Barcus-Berry

Barcus-Berry will be debuting two new guitar transducers at Chicago NAMM — the "Super Dot" and the "Model 5400 Balanced Phase" for manufacturer's OEM.

### Bartolini Pickups

Bartolini Pickups of San Francisco will be displaying their typically excellent line of active electronic pickups at the upcoming Chicago NAMM show.

### B.C. Rich

B.C. Rich will have their full line of exotic, hand-made electric guitars on display and will be introducing their new "Night-hawk" and "Pheonix" guitars, featuring bolt-on necks.

### Biamp Systems

Biamp will have their complete line of sophisticated audio products on display.

### BKL International

BKL International will have their complete Kramer line of guitars exhibited for the Chicago NAMM show.

### Bose Corporation

Highlighting Bose's excellent audio line will be the introduction of the 802 Series speakers, the 1800 amplifier, the new PMZ power mixer and XM6 "Extramixer".

### Bunker Systems

Bunker's already extensive selection of radically innovative electronic guitars will be displayed along with the new "Pro Star" guitar line, and the "Pro Bass" bass guitar line.

### Calzone Cases

Calzone will be introducing a new addition — the new "Pro-Line" economy flight case line — to their already impressive repertoire of heavy-duty cases.

### CBS Musical Instruments

CBS Musical Instruments will have the full line of Fender guitars, amps and PA's, Rogers drums, Rhodes keyboard instruments and Paiste cymbals.

### C.G. Conn Ltd

C. G. Conn will be exhibiting a full line of their very latest instruments at NAMM,

including Director, Century, Artist, Constellation and Conn brands.

### Conquest Sound

Conquest will have their comprehensive line of audio cables and audio-related products on display.

### D'Andrea Manufacturing

D'Andrea will be featuring their high quality line of guitar picks, guitar cases, band instrument cases and other accessories at their Chicago NAMM display area.

### DeArmond Inc.

DeArmond Inc. will have a complete line of pickups and accessories on view at NAMM.

### DiMarzio Musical Instrument Pickups

DiMarzio's influential line of guitar pickups and replacement parts will be supplemented by the new guitar and bass replacement necks as well as some special guests and surprises to be announced at showtime.

### DOD Electronics

DOD's excellent effect line will be on display and the company will also be introducing a new Flanger Model 670 and Chorus Model 690 plus some surprises.

### Dougherty-Miller

John Dougherty, "the world's fastest (self-proclaimed) guitarist" will be joined by the gifted jazz guitarist Pat Martino to help demonstrate the revolutionary "Min'd Pick".

### Jim Dunlop Manufacturing

Dunlop's popular line of guitar picks will be displayed along with "Scotty's" Pick Dispenser, String Winders and Glass Slides.

### Elger Co.

Elger's display will be highlighted by the new Ibanez "Destroyer 2" solid-body and semi-acoustic "Artist AS-50" guitars (double cutaways, reduced 335-style proportions and hot pickups), and the new TAMA Mastercraft bell brass Snares (1/2" x 14").

### Evans Drum Heads

Evans normal line of drum heads will feature a new addition — the racy "Black Gold" (black colored heads) heads.

### Fretted Industries

Accompanying their extensive line of Washburn guitars will be the new "Stage" series electric guitars and the new "Festival" series acoustics.

### Furman Sound

Furman Sound will be premiering their new Model TX4 stereo/3-way/mono four- or five-way tunable crossover.

### Guild Musical Instruments

Guild will be exhibiting their world-renowned line of acoustic and electric guitars — with special emphasis on the new S-400, B-401 and B-402, M-80 and S65D solid bodies.

### International Music Corporation

IMC will be displaying their extensive line of Hondo II guitars, Hondo percussion instruments, Pro-line cables and mikes, Aspen banjos, Texas amps and pickups and Black Diamond Bass strings.

### JBL

JBL will be introducing their new E-Series musical instrument loudspeakers and "Cabaret" series stage monitors to add to their excellent audio line.

### Kharma Bodies

Kharma Bodies will be featuring their well-known line of exotic guitar replacement bodies for P-Bass, Teles and Strats, along with a full array of brass replacement parts and the new Explorer-style and V-style guitars.

### Kustom/Gretsch

The full line of Kustom/Gretsch musical instruments will be on view, as well as the ODE banjo line and the legendary SHO•BUD pedal steel guitars.

### Dean Markley Strings

A complete selection of Dean Markley guitar and bass strings will be on display.

### MCI Daion

To add to their Daion guitar line, MCI will be premiering the New Model 80 acoustic guitar with dreadnought body.

### Mesa Boogie

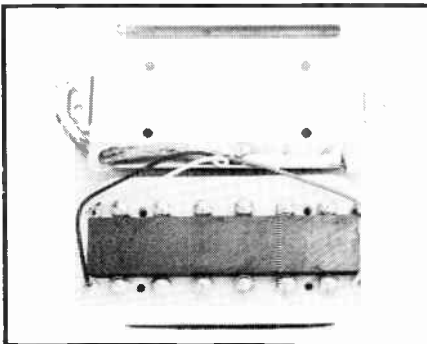
The mystery continues...

### M. Hohner Inc.

M. Hohner will have a new keyboard line on display along with a complete line of 800-900 "Arbor Series" guitars.

### Mighty Mite Manufacturing

Mighty Mite will be exhibiting their comprehensive line of pickups, replacement parts and hardware and will also be debuting a new series of custom instruments tailored to a dealer's particular requests.



### Morley

Morley will be introducing their new "Fast-tune" pedal, the "Bigfoot" pedal/amplifier, and their new five-channel volume control.

### Multivox-Sorkin

The innovative "Big Jam" effects line, a new digital Polyphonic Synthesizer and a new line of Multivox amps will be the stars of the show at the Multivox display booth.

### Music Technology Inc.

A new line of keyboards and the revolutionary "Auto-Orchestra" will be displayed by Music Technology Inc. at NAMM.

### MXR Innovations

MXR will be featuring the usual line of signal processing devices along with a new Rack-Mounted Limiter and a new power

### MXR Innovations

MXR will be featuring the usual line of signal processing devices along with a new Rack-Mounted Limiter and a new power supply for their battery-powered units.

### Nady Systems

Nady Systems will be debuting their new cordless, black microphone transmitter to accompany their line of wireless microphone and instrument systems.

### Norlin

Norlin will be showing a full range of Gibson and Epiphone guitars, Pearl drums and some new surprise products.

### Octave/Plateau Electronics

Octave/Plateau will be introducing their brand new "CatStick" synthesizer controller along with a host of other electronic goodies at NAMM.

### Ovation Instruments

Ovation will be exhibiting their Adamas, Applause and Ovation guitar lines along with the Takamine line of acoustic and electric guitars.

### Peavey Electronics

Peavey Electronics will display a new line of compact guitar amps, mixers, a new PA enclosure and new "square-frame" speakers.

### Peterson Electro-Musical Products

Peterson, along with their extensive selection of strobe tuners, will be premiering a new bass pedal unit for guitars and keyboards.

### Pignose Industries

The Pignose line of amplifiers will be supplemented by the new 150 R112 + R210 "Crossmix" amplifiers and the new 30/60 R reverb.

### Pollard

Pollard will have the Syndrum, Duraline Super Sticks and Duraline heads on display at NAMM.

### Pro-Mark Corp./Remo

Pro Mark/Remo will be featuring a new drumstick fixture, a new line of brushes, the "Petite" drumstick necklaces and the "Goodtime" drumstick line.

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# NAMES AT NAMM

## A Music Industry Preview For The Eighties

### Randall Instruments

Randall Instruments will be debuting a new line of mixing consoles, a new line of self-contained PA systems, new PA enclosures and a new line of musical instrument amplifiers.

### Rock Amplifier Co.

Rock will have their 21 standard products on display plus a new line of accessories.

### Roland

Major items on hand will be the Jupiter 8-am eight-voice polyphonic synth and various sequences and effects.

### Ross Musical Products

Ross will be exhibiting the full line of KEAS sound equipment.

### SAGA Musical Instruments

Adding to the extensive Saga line of kits, guitars and banjos are the new Gold Star "J.D. Crowe" model banjo and the KM-1000 Master model mandolin.

### St. Louis Music

St. Louis will be displaying their new Crate bass amp Model CR1B, the CR65C dual channel amp, the CR65DLC deluxe amp and the new CR2H power head and six new Alvarez "resonant wood" guitars. They will also debut two new electrics, the Electra X270 EQ and X960 MTC guitars.

### Schecter Guitar Research

Schecter will be displaying a complete line of pickups following up on the Z+ design, as well as "Vintage P-90" replacement pickups, "Super-rock" pickups (three different colors) and onboard Active Electronics with Parametric EQ. Also, a new line of Custom bodies with exotic finishes and colors will be displayed.

### Sequential Circuits

Sequential Circuits will preview their newly revised Prophet 5 synthesizer to go along with their full line of products.

### Sescom Inc.

Sescom will introduce their new parametric equalizer Model PM-100, their new stereo headphone amplifier Model SH-100, the Model SHB-10000 stereo Headphone junction box, the Model PC-100 foot pedal compressor and the Model LD-100 noise gate line driver.

### Shure Brothers

Shure Brothers will have their extensive line of mikes and accessories on view at NAMM.

### Viking Cases

Viking will introduce their new "Norseman" case line at NAMM.

### Silver Eagle

Silver Eagle will be featuring their new "Tres Amigos" wood care products (8oz size lemon oil, Carnauba wax) and new polishing and wiping cloths and kits. They'll also have their new "Dr Song" leather-like guitar straps on display.

### Slingerland

Besides the irreplaceable Louis Bellson who'll be guesting at the display, Slingerland Drums will be introducing their new TDR snare drum, the fiberglass TDR parade drum, new fiberglass "carriers" for marching percussion, the Deagen wide-bar vibe and the new Deagan 41/3 octave marimba.

### Star Cases

Star Cases will have new lightweight cases, new lightweight transport cases for road use along with their complete line of rugged flight cases on exhibit at NAMM.

### Star Instruments

Star Instruments will be featuring the new Synare S3X, the Synare 4, Electronic Timpani, and electronic tom tom, an electronic bass drum and a new bass drums-tand and cases at NAMM.

### Sunn

Sunn will be highlighting their new SPL line of amps as well as the standard "Alpha" and "Beta" series amplifiers.

### Tangent Systems

Tangent will be displaying their complete product line including the new "AX series" and the new "Series 4" recording and sound reinforcement console.

### Teac

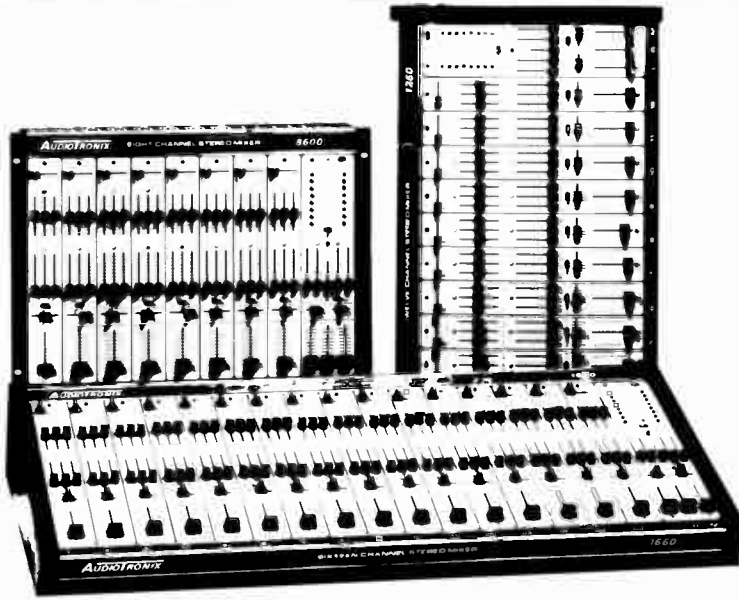
Teac will be debuting their new Model 8516, 144 and 22-4 tape recorders and reproducers at NAMM.

### Unicord

Unicord will display the new line of Westbury amplifiers, the new CX-3 Korg organ and the new Korg "Delta" polyphonic string section along with their usual line of products.

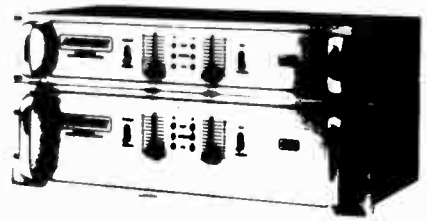


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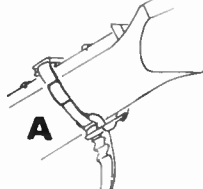
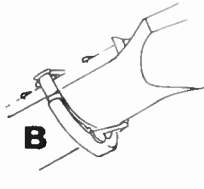
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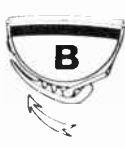
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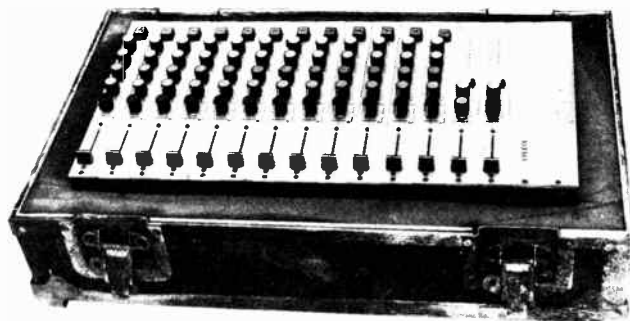
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# CALZONE... WHEN "STANDARD" ISN'T GOOD ENOUGH!

Cases...



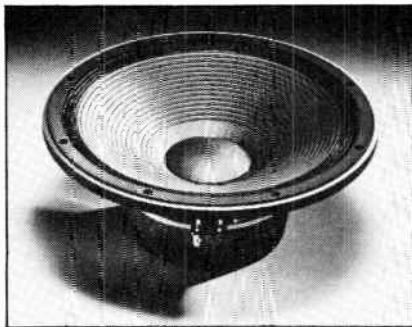
As we were cruising the Indiana toll road on our way to Washington from a White House gig in Seattle, a tow truck caught us and flagged us down. Smoke was billowing from the back of our truck. As we opened the cargo door, flames welled out at us. A trucker who had stopped to help, yelled, "Get back, the gas tanks are gonna blow!" We moved back and stood helplessly watching all our equipment burn. It took 20 minutes for the fire department to get there. The heat was so intense that our aluminum ladder completely melted. We were certain all our equipment was destroyed. Later as we were clearing out some of the charred remains, we discovered the blackened CALZONE case containing the mixing board. The case was in one piece and the board looked okay inside the case, so we took it out and tried it. It worked! Thank God for CALZONE.

*George Spalding, Events, Inc., Washington, DC*

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# On the Road

## New Products



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### TAD TL-1601 Low Frequency Loudspeaker

Technical Audio Devices' (Div. of U.S. Pioneer Elec. Corp.) TL-1601 is a low frequency loudspeaker unit (woofer, to be specific) with a fundamental resonance of 28 Hz and a frequency response up to 1,000 Hz.

Largely made by hand, the TL-1601 features an edgewise-wound, long-travel coil with maximum permissible input of 300 W (rated input: 150W) and a high (97 dB) output sound pressure level, measured at 1 kHz at one watt from a distance of one meter. The coil (7 $\frac{3}{8}$ " or 23mm wide) moves completely within the magnetic gap, even with peak-to-

peak excursions as long as  $\frac{5}{8}$ " (16mm). The TL-1601's low-distortion, high-efficiency circuit features a high-efficiency Alnico ring magnet (3 lb, 10 oz or 1.65 kg) and the cone is made of a newly developed tough and lightweight material capable of withstanding high amplitude inputs. The TAD-designed corrugated cross surround features positive piston action at high amplitudes and the surround is extremely linear and coated with specially developed damping material to ensure proper internal loss. The TL-1601 is mounted in a rugged aluminum alloy diecast frame to support the heavy magnetic circuit.

### Tensimount Microphone Mounting and Isolation System

"A device of particular interest to musicians and sound reinforcement specialists," Brewer Instruments' new Tensimount is reputedly "the world's first *universal* microphone mounting and isolation system."

The Tensimount System permits isolation of all mike sup to 1  $\frac{3}{8}$ " in diameter at greater than 20 dB, complete standardization of microphone clamps,

instantaneous switching of microphones without disturbing the stand set-up, emergency mounting of mikes where space or number of stands are limited, and isolation of vocal mikes which must be unclipped and hand-held by the performer. Going on Brewer Instruments' assumption that "all microphones used in love music applications should be isolated," the Tensimount seems to be a very useful item.

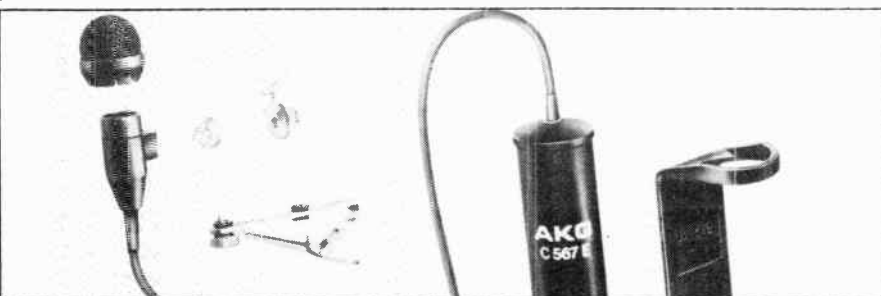


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### Emilar EH-500 Wide-Range Exponential Horn

Designed to direct full spectrum audio exactly where required without the "spray" effect of horizontal diffraction found in other horns, Emilar's EH-500 Horn theoretically "has no perceptible distortion, no resonant ringing and, coupled with an Emilar driver, it provides uniform and distortion-free dispersion of sound in diverse acoustical environments like those found in concert halls, discotheques, theatres, outdoor arenas and studios."

Specs include a Cut-off Frequency of 500 Hz; a Throat Diameter of 2.0" (5.08 cm) or 1.0" (2.54 cm) with EE 1-2 adapter and a Net Weight of 9.5 lbs (4.31 Kg). Made from cast aluminum and painted black, the EH-500's Distribution Pattern is Horizontal = 90° and vertical = 40°.



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### AKG Electret-Condenser Lavalier Microphone

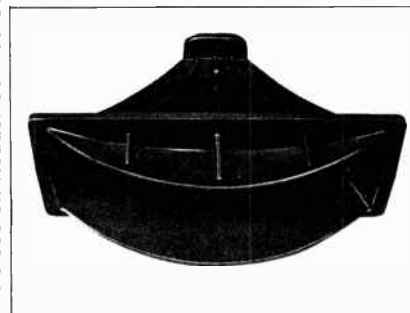
Known as the "almost invisible" microphone, AKG's new electret-condenser lavalier microphone — the C-567 — is reputedly "the smallest lavalier obtainable with comparable professional acoustical quality and mechanical ability."

With a field replaceable transducer system, the C-567 is designed for "inconspicuous use" in applications such as TV news and interview shows, motion picture work, on pulpits and lecterns and in the recording studios as a clip-on mike for "tight" instrumental

sounds. The microphone head and output module feature all-metal zinc for maximum durability — both are chrome-black plated for an attractive yet totally non-reflective and unnoticeable appearance.

The C-567 can be phantom-powered from the mixer or recorder (no batt compartment) or powered by any of the AKG external AC or battery-operated phantom power supplies. Accessories include tie bars for one or two C-567 mikes, a single-mike tie tac, belt clip and a wire mesh windscreen. The C-567 is omnidirectional with a frequency range of 20-20,000 Hz.

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# On the Road

**THE JOE ELY BAND IN CONCERT  
FOR  
BBC TELEVISION'S 'ROCK GOES  
TO COLLEGE'**

**JOE ELY**

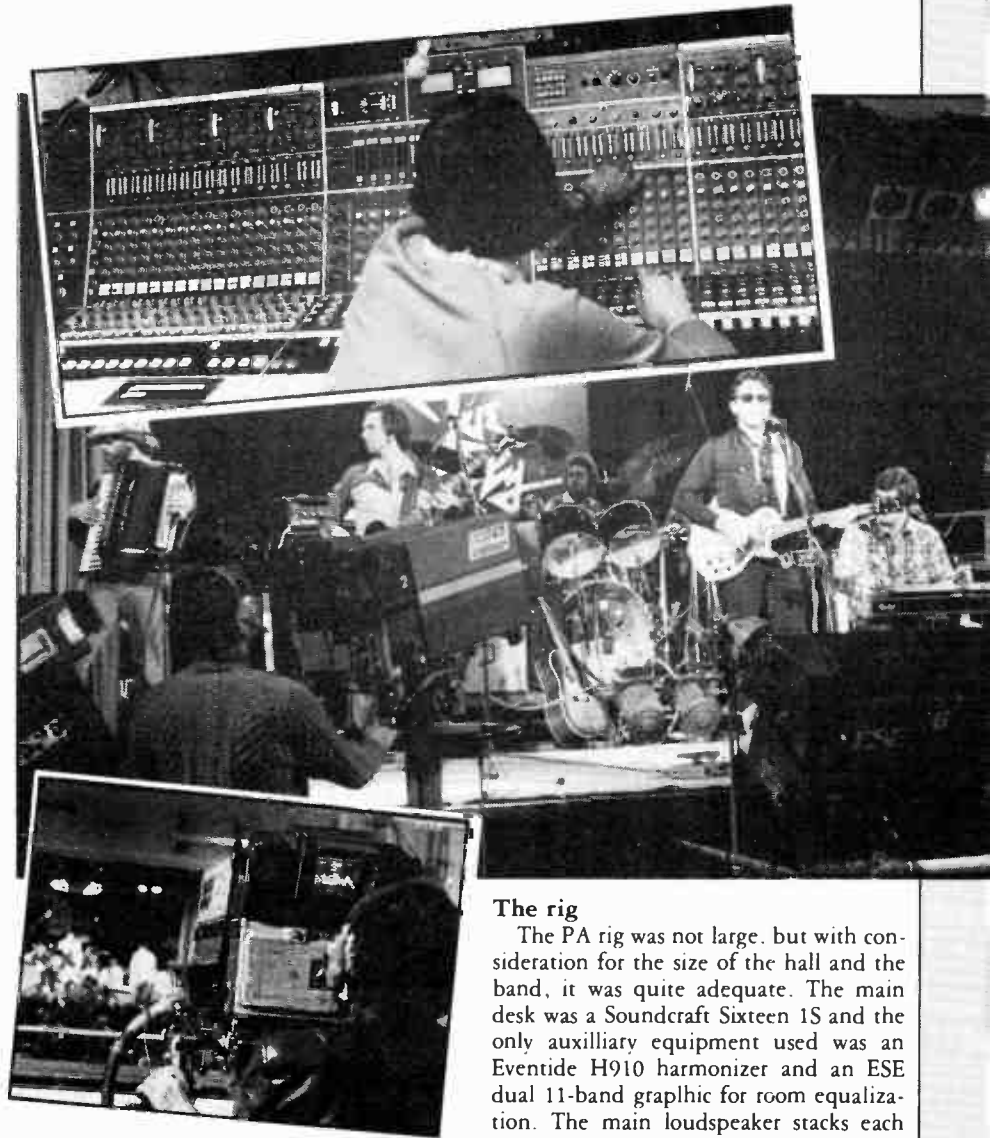
*Venue: Middlesex Polytechnic Students'  
Union, London, England.  
(in concert for 'Rock Goes to College')  
1980*

*Hire Company: E.S.E., Maidstone, Kent,  
England*

The Joe Ely band hail from Lubbock, Texas and were in the UK in February primarily to play as support band to the Clash tour, but had also managed to fit in one or two gigs of their own. Their musical style is very individual and is something of a hybrid between American country music and rock & roll. In the band's own words, they call themselves a honky-tonk rock & roll outfit and the line up is Joe Ely on lead vocals and rhythm guitar, Jessie Taylor on lead guitar, Lloyd Maines on pedal steel, Ponty Bone on electric accordion, Gregg Wright on electric bass and Robert Marquam on drums.

The band play very tightly and have more than their fair share of characters — not least of which is their own sound-man-come-general-dogsbody, Wayne Hatchell, or "Hatch" as he likes to be known. For all his outward idiosyncrasies, Hatch is, in fact, a very together guy and was most helpful to us when we arrived about an hour before the sound-check was scheduled to cover the gig.

In fact, just getting to the gig was easier said than done, as the quadrangle which fronts the Union building was totally taken up with no less than eight large BBC outside broadcast vehicles and after having picked a way through that lot and avoided tripping over the multitude of cables which criss-crossed the roadway linking the BBC trucks to each other and to the building itself, we eventually managed to find the hall, where by this time, most of the setting up was done and most people involved were hanging around while the BBC set up cameras and adjusted lighting. The basic set-up was that all stage equipment, the PA and all broadcasting apparatus and control units were being



## The rig

The PA rig was not large, but with consideration for the size of the hall and the band, it was quite adequate. The main desk was a Soundcraft Sixteen 1S and the only auxilliary equipment used was an Eventide H910 harmonizer and an ESE dual 11-band graphic for room equalization. The main loudspeaker stacks each consisted of two ASS 2 x 15 bins fitted with HH 1500E drivers for bass, two 4560 type bins fitted with JBL K140's for lower mids, an ESE 'copy' 2355 and 2350 radial and a genuine JBL 2395 lense, all powered by JBL 2482 compression units provided the upper mids and eight JBL 2402 'bullets' provided the highs.

## Crossover

Crossover was four way active by means of the Soundcraft EX4S and with the exception of two HH S-500Ds powering the 2 x 15 bins, all the power amplifiers were Amcron DC-300As (Acrcon is the UK brand name for Crown equipment). A second Soundcraft 1S desk, rigged so that

powered from the BBC generator trucks working at 240 volts single phase at 150KVA. This ensured that there were no problems due to mains voltage fluctuation and that all equipment being used was fed on the same phase and on a common low impedance earth.

Soundwise, the PA was quite independent of the broadcast sound except that common microphones were used and fed to the PA desk and the BBC's MSCR (Mobile Sound Control Room) via splitter boxes. Apart from these two link-ups, the live sound was operated in just the same way as for any other concert.

both main outputs, both monitor outputs and the echo send channel were all used as single channel outs, provided a 16 into 5 monitor desk and fed a total of seven monitor cabinets via three more Amcron DC-300As.

### Monitors

The monitor cabinets were of the slant-back variety rather than the more usual wedges and each contained a JBL K140 15" bass unit and a JBL 2390 folded plate lens with 2440 compression driver fed from a JBL 3001 passive crossover. These were positioned with two in an overhanging cradle over the stage apron feeding the front line, two as side fills, two on the drum rostrum and one feeding Scottie Wright on the monitor desk itself.

### Microphones

All vocal mikes were Shure SM58s, and the kit was miked using the prescribed AKG D12 on the kick drum, Neumann KM 841 condensers on the tom toms and AKG D224s on the hi hat and snare. I was interested to see that Robert Marquam was playing a Gresch single skin kit and that the mikes had been positioned right up inside the shells. The BBC had supplied the Neumanns and had directed the mike placements as well, as far as the kit was concerned. It certainly provided a very good drum sound — very clean with lots of attack.

### The Backline

Joe Ely's guitar was a Gibson acoustic fitted with a Barcus Berry and a Lawrence pick up. The Barcus Berry was routed via its pre-amp straight into a DI box and fed straight to the PA and monitor desks while the guitar fed a Fender Super Reverb 100 fitted with four JBL K110 10" drivers via a Morley volume pedal and a Roland DC30 Analog Echo.

Jessie Taylor's guitar was a Les Paul Custom playing through a Peavey Deuce combo using a Boss Chorus Ensemble and a Ross Distortion Unit. Jessie prefers to use an Ampeg VT22 amp but could not get one in the UK for this tour. He seemed quite happy with the Peavey though. The pedal steel was a Showbird 10-string twin-neck and was played straight through a Peavey Session 400 and a Fender Vibrasonic Reverb combo fitted with JBL K130 loudspeaker unit.

Gregg Wright's Gibson RD77 Artist Bass was also played straight but this time through an Acoustic 370 amplifier head and an Acoustic 301 1 x 18 "W" bin. The

sound crew were not too happy with this cabinet as they thought it had too much "throw" and not enough "spread" on stage with the effect that it was usually turned up too loud and caught the audience in the guts at the front of the auditorium.

Lastly, and certainly not least, we come to another character, Ponty Bone who plays a large Petosa electric accordion, the treble side of which is fed to a Boss Chorus Ensemble 1 and an ESE 7-band graphic to a second Peavey Deuce Combo and the bass side is fed direct to the other channel of the Peavey. For certain numbers, he played a small conventional piano accordion which was simply miked up into the PA. Quite an interesting line up of musical instruments and amplifiers among that lot.

### Television link-up

The BBC used four cameras for TV coverage. Two of these were positioned out front between the front row of the audience and the front of the stage, set fairly low to provide "worms-eye shots" from either side of the stage; one was at the front of the balcony and the fourth was alongside and slightly to the rear of the drum rostrum on stage left directed forwards to the rear of the musicians and facing the audience. The setting up of the cameras and adjustment of the television lighting seemed to be a particularly involved process and seemed to take a considerable amount of time.

It is interesting to see the difference between the viewing angle of a camera lens and the natural field of vision of the naked eye, for the camera shots (ah I saw flashed up on the monitors in the mobile control units gave a totally different concept of the hall and the stage layout to that which I had observed by being there. These guys really know what they are doing and how to get just the shots they want. It's more a matter of artistic interpretation really rather than showing what is there as it really is. The operators decide how they want the show to come over and that is how it is — they use video in just the same way as a musician will use a synthesiser, phaser, DDL, etc to colour and alter to achieve a desired effect. All clever stuff.

Getting back to the TV sound side, the BB MSCR vehicle was fitted out with something like £80,000 worth of Neve 44 channel 8 group mixing console, a Studer A80 16-track two inch tape machine, two Studer B62 quarter inch half track tape

machines, an Eventide H910 harmonizer, an AKG BX20 studio reverb unit and a pair of amazing quality monitor loudspeakers that are of the BBC's own design. Most of the circuits within the MSCR are routed via patch panels so that the facilities that are provided within the vehicle, and many more which are not provided as standard but can be obtained from a central stores for special occasions, can be inserted as and where required. In addition, there are two vision monitors — a colour "on air" monitor and a black and white preview monitor and a number of intercom channels so that all production and technical personnel are in audio contact with each other. On this occasion none of the on-board tape machines were being used as the fully balanced and mixed sound was being fed to video tape recorders in the MVTU (mobile video tape unit) parked next down the line and recorded straight onto the sound track of the video tape.

### The Soundcheck

During the sound test, each channel is carefully set up for level and equalisation and compressors and/or limiters are patched in as and where required. In rockmusic, the vocals invariably end up compressed and so do many of the individual instruments. The BBC sound engineer, Keith Harlow — impeccably competent with this large desk — seemed to appreciate the guidance being offered by "Hatch" in respect of the tonal quality of each instrument and the overall balance of the band during this setting up procedure and it was obvious that Hatch knew exactly what sound the band wanted.

After the basic setting up has been accomplished and the band played through some of the set, certain of the lead instruments — first the lead guitar, then the pedal steel, then the electric accordion, became very distorted as the levels on stage started to go up. This was eventually traced by the BBC engineers in the hall to the fact that all the ESE DI boxes on stage were being overloaded by the instrument amplifiers and so the Beeb had to replace all these with their own DI boxes to overcome the problem. It is amazing how even the slightest amount of overload or distortion can be heard and identified on those BBC monitor loudspeakers.

By the time all was ready, the Students' Union bar had opened and while refreshments were being taken, the

BBC crew produced a large charcoal grill from one of the tenders, proceeded to grill rump steaks for all the crew on the grass verges of the quadrangle, and on went the coffee pot. These guys really had got it together and no messing!

The show was due to start at about 8.00, but it was at least quarter past before the band came on stage. After playing a couple of warm-up numbers — which of course gave Keith and the rest of the BBC crew a last opportunity for final adjustments, the video tap machines were started and the show was on. In the hall, the sound quality was good considering the somewhat live acoustics. For a change, the vocals were adequately projected despite the surprisingly high sound pressure levels coming off the stage from the backline amplification and being reinforced by the DI's over the PA considering that the band is semi-traditional in its instrument line-up.

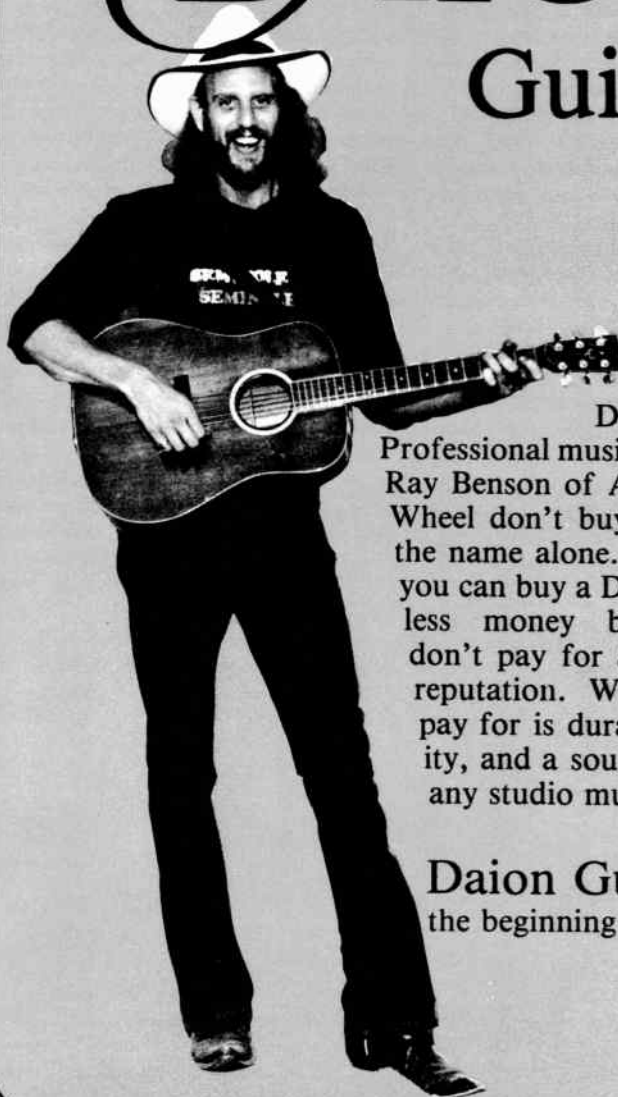
Although the live performance mix was quite acceptable, the mix in the mobile sound control room was much tighter, with the vocals well forward of the band and the band itself well integrated with the kit well forward in the band mix. I heard most of the 45-minute performance over the monitors in the MSCR and I must admit that I liked what I heard very much indeed. The Joe Ely band is very different to the usual country music band — their music is unmistakably their own and their whole approach is very professional.

I have so far only mentioned two of the BBC's eight trucks. Briefly, besides the mobile sound control room and mobile video tape unit there was a very large CMCR (color mobile control room). This is a self contained OB unit with a 20-channel sound control facility, 10-channel lighting facility and 5-camera vision production room, thereby providing all that is required for a smaller scale outside broadcast in one completely self-contained unit. On this occasion however, only the vision production facility was being used, with sound being handled by the MSCR and lighting by an outside specialist contractor, Lee Engineering. A fourth truck was a Transcription Recording Unit and this was being used to make a separate sound only programme for the BBC's overseas service and for sale abroad. This unit has its own sound mixing console and operates quite independently of the television outside broadcast units. The remaining four trucks are the two AC power generators and two camera tenders, the latter simply providing transport for the mass of hardware and cables that are required for an outside broadcast and which cannot possibly be carried in the CMCR, MSCR or Mobile VT units.

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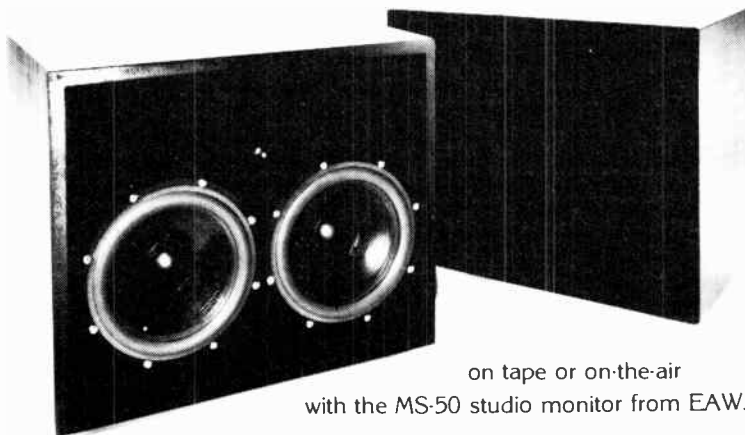
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## Compression Drive Units Part 4

This is the fourth and final part of our investigation into the performance capabilities of compression drive units and we round off with a mammoth review of no less than five drivers from JBL and two unadulterated JBL copies from DAS in Valencia, Spain.

All the details of the tests we apply and discussion of a number of salient points — such as driver-to-horn coupling arrangements, crossovers, etc. — have already been included in earlier articles in the series. To conclude, I will take a summary look at the results we have published to see how the various units have fared on a comparative basis.

If, say, an Electro-Voice 1823M sells at about one third of the price of say a JBL2440 in the UK it is probably reasonable to assume that a similar price relationship exists in the USA. Similarly, if a driver is imported into the UK from some *other* country than the USA, then the relative costs of importation into the UK and the States is likely to be of a similar order. So the ratio of prices should be representative.

The only problem area is when UK product is imported into the USA, as these units will be more expensive here than over in the UK, just as American drivers are more expensive in the UK. (This is why UK-based PA rental companies send vans across the Atlantic so that they can buy JBL, Gauss etc. direct and bring them back to the UK at a considerable price saving as compared to the "official" UK distributors prices.)

When selecting a drive unit, the first consideration must be — *what do you want it to do?* What level of sensitivity do you

actually need, and what part of the frequency spectrum do you need to cover? Most horns, for example, offer little adequate dispersion control below about 1kHz even though the cut-off frequency may be well below that. Also, most compression drive units are far more efficient than cone drivers and it is not unusual for five or 10 watts of high frequency power in a compression drive unit with horn to provide adequate level to complement a 100 or 150 watt bass driver. High sensitivity and extended downwards frequency response add considerably to the cost of a compression drive unit, so it makes sense to buy only what you need. If you are running kilowatts of power into stacks of bass bins, then OK, you *will* need the best sensitivity you can get (out of the mid and high frequency section) to avoid using horns piled to the roof. If you have a 1 × 15 club PA, then a much less-sensitive drive unit will be far easier on the pocket. Even if you did use a highly sensitive driver for that purpose, you would in any event end up by padding it down to about one tenth of its power-handling capability in order to get a balanced sound!

So you should carefully consider your actual needs and select a driver accordingly — not just pay out two or three hundred dollars for an expensive unit on the basis that the most expensive is best.

To look first at the more general purpose and usually less expensive types of drive unit we reviewed in the March issue, we find the following products were tested: Electro-Voice 1823 and 1823/M; Celestion DC50 and DC100; Vitavox 'Musicmotor'; Emilar EC-175 and RCF TW101.

With the exception of the Emilar, all these units have the European standard screw-thread throat coupling, whereas the Emilar has the Altex pattern one inch flange. The sensitivity figures obtained ranged from a low of 103dB for 1 watt to a high of 109dB with the upper frequency response limit about 10kHz except for the E-V products (which due to being intended as mid-range drivers, tended to tail off well below that figure). With only two exceptions all these units exhibited a similar pyramid-shaped frequency response characteristic centered on about 1kHz or 1.5kHz. It is my opinion that considering its high sensitivity at 109dB and wide uniform frequency response between 800Hz and 10kHz the Emilar EC-175 driver is outstanding at its price in this category. In fact, its frequency response characteristic is better than that achieved by many units in the professional category! Thus, it can be used for practically any purpose for which its useful response range is suited.

The RCF TW101 also made 109dB sensitivity but without the smoothness in response and with higher-than-average distortion. Equally sensitive, but with a frequency response over a rather lower register was the Electro-Voice 1823. The two Celestion units came up with a good set of results at a considerably lower price than any mentioned so far, with the DC50 returning a sensitivity figure of 103dB and the DC100 at 107dB. At its price, and in view of its lowish sensitivity of 103dB, the Vitavox Musicmotor, although a very nicely made unit offering a usefully uniform frequency response curve, does not stand up to the Emilar — with

which it must be compared on price grounds and intended application.

The E-V 1823/M has sacrificed some 4dB of sensitivity when compared to the original 1823 in exchange for an extension of useful response to 6kHz. This unit should not be compared directly with the other units tested as it is specifically intended for use as a mid-range driver between about 800Hz and 3.5kHz, and as such, it fully complies with the maker's specifications. In fact, all these units gave a good account of themselves, subject of course to the specific strengths and weaknesses as discussed in the individual reviews and selection must depend upon your needs and finances.

I am moving on now to the professional category. No less than 14 drivers from seven manufacturers were tested and these included the Electro-Voice DH1012; Vitavox S3; Coral M103 and M-100; TAD (Pioneer) TD-2001 and TD-4001; Altec 808-8B; DAS M-201 and M-401 and JBL 2410, 2420, 2440, 2470 and 2482.

If we are to assess on the basis of performance alone, then there can be no doubt that the TAD (Pioneer) TD-2001 and TD-4001 represent the current state-of-the-art in compression driver technology. Their smoothness of frequency response — almost ruler flat to 20kHz and beyond, coupled with high sensitivity and superb engineering quality is a combination unequalled by any unit we tested. However, these TAD units are very expensive indeed at around \$300 for the TD-2001 and around \$600 for the TD-4001.

The very well established



**DAS M-401 (Spain)**

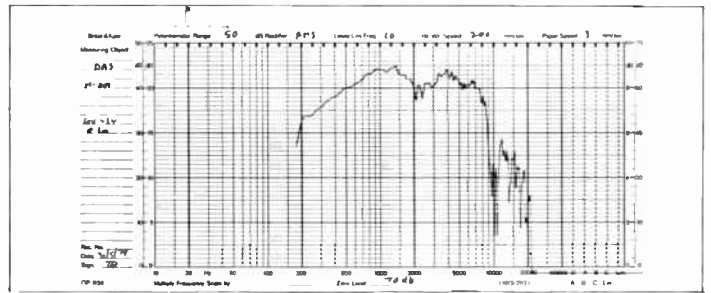
Mounting: 2" flange, 4 bolts, 0.25" x 20tpi on 4" pcd

Parameter	Manufacturer's Rating	Test Result
Power	60w unqualified	See text
Distortion	Not stated	6% above 500Hz, rising to 20% above 3KHz at 12w RMS sine wave
Sensitivity	110dB at 1w at 1m coupled to DAS D-301 horn	112dB at 1w at 1m averaged between 700Hz and 7KHz
Resonance	Not stated	Not clearly defined
Impedance	16 ohms	13.5-20 ohms
Recommended c/o Freq	500Hz or 800Hz	Above 500Hz
Useful Freq Response	500Hz-12KHz unqualified	200Hz-9KHz at -12dB — see graph

**DAS M-201 (Spain)**

Mounting: 1" flange, 3 bolts, 0.25" x 20tpi on 2.25" pcd

Parameter	Manufacturer's Rating	Test Result
Power	30w unqualified	See text
Distortion	Not stated	10% at 10w RMS sine wave above 800Hz
Sensitivity	106dB at 1w at 1m coupled to DAS D-301 horn	109dB at 1w at 1m averaged between 600Hz and 5KHz
Resonance	Not stated	700Hz coupled to standard test horn
Impedance	16 ohms	10-16 ohms
Recommended c/o Freq	800Hz	Above 800Hz — see text
Useful Freq Response	800Hz-20KHz unqualified	400Hz-12KHz at -12dB — see graph



range of JBL drivers also delivered the goods, with the 2410 producing an almost flat response to 15kHz with useful energy beyond at an incredibly high sensitivity of 118dB, and this is the second highest sensitivity figure we found. Surprisingly perhaps, this is one of JBL's less expensive drive units.

The legendary 2440 fully confirmed the maker's figures with an exceptionally smooth response to 10kHz at 112dB sensitivity, but it should be noted that since we conducted our tests, JBL have introduced a new 2441 version with extended HF response and, we are told, improved sensitivity. The 2441 diaphragm assembly is interchangeable with the 2440 unit thereby permitting existing users to bring existing 2440's up to the new spec.

Two other units with particularly good sensitivity figures were the Electro-Voice DH1012 — which recorded our highest sensitivity yet measured at an amazing 119dB for 1 watt at 1 meter, and the UK-made Vitavox S3 at 117dB. Of the two, the Vitavox has the more uniform frequency response curve and is considerably less expensive than the E-V unit.

I thought that the two Coral units performed very well, especially when the very competitive prices are considered. From our results, it would seem that the less expensive M-103

has the higher sensitivity and the smoother frequency response.

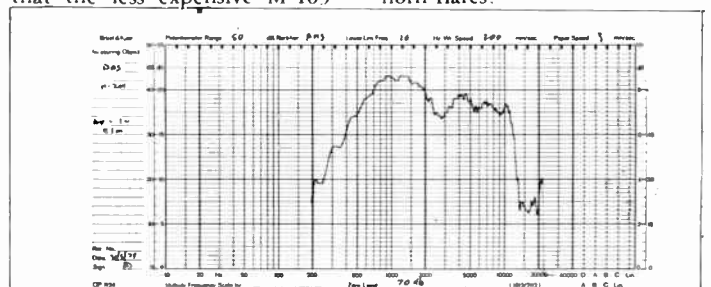
The Altec 808-8B came up with a useful response to 12kHz, but at 106B is considerably less sensitive than some of the competition, although, of course, it is also considerably less expensive than say the JBL, Electro-Voice, Vitavox or TAD units.

The results of the DAS units are good, but as I mentioned previously these are so similar to the JBL units that I fail to see any justification for marketing another product at all. If JBL performance were being offered at half the price, then there *would* be some purpose, but as performance is not quite as good at almost the same price, there seems to me to be no point.

Well folks, that's just about all for the time being on the subject of compression drive units. I hope that this will have been of assistance to those of you who are building PA's or loudspeaker cabinets for other purposes and that our results will have clarified some of the ambiguity usually found with manufacturers' published literature.

Anyone who has any further queries is welcome to write to our *Queries* page and we will try to help on an individual basis.

Next month, we shall take a fairly logical step forward and take a look at the performance of horn flares.



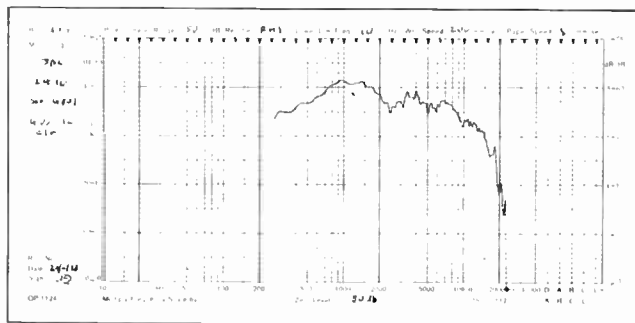
# Speakercheck

## JBL 2410

Ser. No. 4807

Mounting: 1" flange, 3 bolts, 0.25" x 20tpi

Parameter	Manufacturer's Rating	Test Result
Power	30w cont. prog.	Just confirmed at equivalent sine wave power of 3w RMS above 500Hz
Distortion	Not stated	12% @ 3 as above
Sensitivity	117dB @ 1mW @ 30ft	118dB - 1w @ 1m averaged between 500Hz and 8KHz - see graph
Resonance	Not stated	1.5KHz coupled to std. test horn
Impedance	16 ohms nominal	9-19.5 ohms
Recommended c/o freq.	500Hz minimum	500Hz
Useful freq. response	800Hz-15KHz unqualified	250Hz-15KHz @ -12dB - see graph



Since these units were tested, JBL have introduced a new version of the 2440, known as the 2441. The only difference is in the diaphragm design and gives a better high frequency performance. 2441 diaphragms are interchangeable with existing 2440 drivers.

With just one exception, JBL have submitted a sample of every compression drive unit in their catalogue, and not to be outdone, we have risen to the challenge and reviewed the lot. In fact, we always get an enthusiastic response from this manufacturer to our requests for samples and usually we are invited to subject these products to any trial we care to impose and publish our findings whatever the outcome — such is the manufacturer's confidence in his own product, this confidence is generally justified, as previous results have shown, and the

of the 2410, 2420 and 2440 units, are also of aluminium, as these units are intended for wide-range applications.

The diaphragm assemblies fitted to the 2470 and 2482 are of a phenolic impregnated linen, and these are intended for high power applications without the risk of diaphragm break-up. All diaphragm assemblies are easily replaceable on the road with just a screwdriver, and are self-aligning.

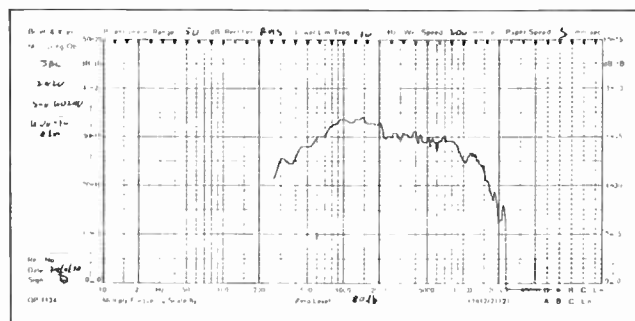
A cast rear cover is fitted, which serves both to protect the diaphragm assembly and to provide an acoustically damped chamber in which the diaphragm operates. This basic mechanical arrangement has been derived from the compression drive units used in cinema sound systems from the 1940s, and is one often adopted by other manufacturers. The overall engineering

## JBL2420

Ser. No. 40240

Mounting: 1" flange, 3 bolts, 0.25" x 20tpi

Parameter	Manufacturer's Rating	Test Result
Power	30w cont. prog.	Just confirmed at equivalent sine wave power of 3w RMS above 500Hz
Distortion	Not stated	12% @ 3w as above
Sensitivity	118dB @ 1mW - 30ft	110dB @ 1w @ 1m averaged between 500Hz and 8KHz - see graph
Resonance	Not stated	Not clearly defined
Impedance	16 ohms nominal	8.5-14 ohms
Recommended c/o freq.	500Hz minimum	500Hz
Useful freq. response	800Hz-20KHz unqualified	300Hz-15KHz @ -12dB - see graph



compression drive units submitted here are no exception. The general design and construction of all five units is virtually identical, and vary only in dimensions and materials used. Therefore, we have grouped them all together in a single, mammoth review.

The relatively large proportions of all these units is due primarily to the fact that the substance of their construction is a massive Alnico V magnet with a tapered hole through its centre. This, in all probability, also accounts to a large extent for the comparatively high prices.

The front face of this magnet is drilled and tapped to receive the mounting bolts and is fitted with a cork gasket for direct coupling to the throat of a horn flare. The rear face of the magnet carries the diaphragm assembly which, in the case of the 1" throat units, is 1.75" diameter, and on the 2" units, is 4" in diameter.

All voice coils are wound with aluminium ribbon, and the diaphragm themselves — in the case

quality and standard of finish and presentation is the usual, immaculate JBL standard, and in the JBL livery of grey crackle stove enamel. Termination in all cases is by means of a pair of color-coded, spring retaining terminals, and the JBL 5-year professional products warranty applies to these units.

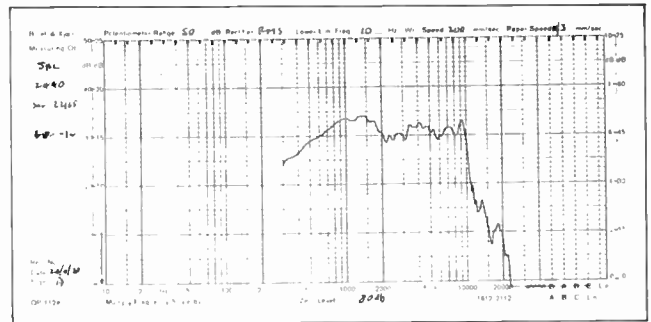
As can be seen from the results tables published and from the frequency response curves, all five units returned an excellent set of figures — the only possible room for improvement being in terms of second and third harmonic distortion. This aspect seems to be a problem with all drivers of this type, and none of the units tested in this category have shown distortion figures of less than 10 per cent. The frequency response curves are incredibly smooth over very wide ranges in every instance and sensitivity is of a very high order indeed. Note particularly that in the case of the 2440 we have been able to quote a useful frequency response that to all intents and purposes, confirms the maker's figure at just 6dB

## JBL 2440

Ser. No. 22165

Mounting: 2" flange, 4 bolts, 0.25" x 20tpi

Parameter	Manufacturer's Rating	Test Result
<b>Power</b>	60w cont. prog.	Confirmed at equivalent sine wave power of 6w RMS above 500Hz
<b>Distortion</b>	Not stated	10% — 6w as above
<b>Sensitivity</b>	118dB @ 1w @ 30ft	112dB @ 1w @ 1m averaged between 500Hz and 10KHz — see graph
<b>Resonance</b>	Not stated	Not clearly defined
<b>Impedance</b>	16 ohms nominal	11.5-17 ohms
<b>Recommended c/o freq.</b>	500Hz minimum	800Hz
<b>Useful freq. response</b>	500Hz—12KHz unqualified	450Hz—10KHz @ -6dB — see graph



deviation — as compared to the 12dB criterion usually permitted. Note that in most instances we have been unable to establish the system resonance with any accuracy. This is due to peculiarities on the measured impedance curve from which the resonance figure is taken. Although to a large extent the problems are outside the useful range, we have found resonances over a wide part of the frequency spectrum and without further investigation, cannot be reasonably sure as to which of these is the fundamental electrical resonance.

These are without doubt superb compression drive units, in terms of performance and manufacturing quality, and fully justify the prestigious reputation they hold. They are, however, very expensive, and one should justifiably expect something special at these prices.

consideration, it would seem that they have now opted for the JBL pattern 1" and 2" flange systems and this must be a good start if only for the sake of compatibility.

Both units gave a very good account of themselves indeed, with high sensitivities, usefully wide frequency response — even if the maker's figures were not confirmed in this respect, and acceptable distortion figures. The published power ratings are presumably continuous music power rather than indicating the total system rating. Both units seemed quite happy at the tests we applied, and the M-401 withstood 24 watts of sine wave power without complaint, although distortion did rise to 20 per cent at this level.

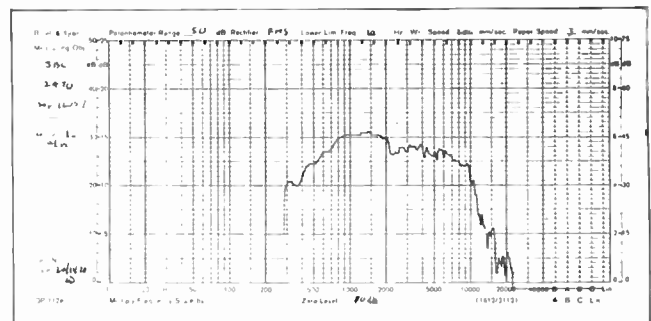
For professional applications, the peak in response of the M-201 would cause some concern, but the M-401

## JBL 2470

Ser. No. 12057

Mounting: 1" flange, 3 bolts, 0.25" x 20tpi

Parameter	Manufacturer's Rating	Test Result
<b>Power</b>	50w cont. prog.	Confirmed at equivalent sine wave power of 5w RMS above 500Hz
<b>Distortion</b>	Not stated	10% @ 5w as above
<b>Sensitivity</b>	117dB @ 1mW @ 30ft	108dB @ 1w @ 1m averaged between 600Hz and 6KHz — see graph
<b>Resonance</b>	Not stated	Not clearly defined
<b>Impedance</b>	16 ohms nominal	16.5—20 ohms
<b>Recommended c/o freq.</b>	500Hz minimum	800Hz
<b>Useful freq. response</b>	500Hz—12KHz unqualified	300Hz—11KHz @ -12dB — see graph



Looking through the new DAS catalogue, one might be forgiven for thinking that it was the JBL catalogue instead, for among the new DAS product range are a whole range of horns, compression drivers, cone loudspeakers, lenses, high-frequency units, bins and crossovers that seem to be virtually identical to the more popular models from the JBL product range.

The M-201 and M-401 are no exception, and unless one was particularly familiar with the JBL compression units, the M-201 could easily be mistaken for a 2410 or 2420, while the M-401 would be hard to distinguish from the JBL 2440, or 2482. Such is the similarity!

Both are of the usual construction, built around a large Alnico/Alcomax type magnet, with the diaphragm at the rear. Manufacturing quality is good, and the finish is in standard 'JBL grey'.

Hitherto, DAS have preferred to use their own, non-standard flange mounting arrangements, but in the case of the items now under con-

is comparable with the best in this respect. In fact, this massive unit has an overall performance characteristic that is very similar indeed to that of the JBL 2440.

I must confess to some puzzlement over these two units. They are obviously undisguised copies of a very well established and well respected product. Even if they are of equal performance capability — which the M-401 would seem to be — the prices are so close to the established product that there is no justification for change. After all, the DAS is offering nothing new whatsoever, and while the market is generally prepared to pay for the JBL name, and all that this represents in terms of quality and reliability, it will be a very long time before DAS can hope to assume that prestigious position in a very competitive market. Even so, and to be fair, it must be said that these are a pair of nicely made units, capable of a high performance specification, if somewhat on the expensive side when the competition is examined.

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- 6  Singer 7  Sound engineer

Your age

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- D  30-40 E  41+

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- 1  Amateur 2  Semi-professional
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# Recording Synthesizers

By Tony Horsman

## Part 1: Multi-Track Recording

### Introduction

In this new series of articles, I am going to explain step-by-step how you can use a synthesizer to produce your own multi-track recordings. In contrast to the previous series (*Understanding Synthesizers*) which was primarily concerned with how synthesizers work, this series will explain how to go about using a synthesizer to record your own or anyone else's music, even with relatively modest recording equipment. Although better results will, of course, be obtained the more sophisticated the equipment you have available, a surprising amount can be achieved using just one monophonic synthesizer and two mono cassette recorders. So don't be put off from the start by the thought that you have to have very expensive tape recorders to produce anything worthwhile!

The synthesizer is really the perfect instrument for producing multi-track recordings, although it was far from the first to be used in this way, largely because synthesizers are a relatively recent development. There are many examples of early multi-track recordings by just one performer, such as Wout Steenhuis on the electric guitar. However, the advantage of the synthesizer over the guitar in this respect lies in its versatility; the synthesizer player can produce literally almost any sound from the one instrument, so he can easily create recordings containing several very different sound qualities. However, this series is not written for synthesizer players to the exclusion of all others! The techniques I will be describing can readily be adapted for other instruments, so apart from those sections which refer specifically to sound synthesis, the series will hopefully be of interest to most performing musicians.

**A FOUR-PART SCORE**

BAR LINES

**PARTS:**

1. MELODY  
eg lead guitar
2. RHYTHM ACC.  
eg piano
3. BASS  
eg bass guitar
4. DRUMS

Fig. 1 A score with four parts: melody line (top), rhythm accompaniment, bass and drum parts. Notice that the bar lines for all parts are aligned vertically, so by glancing down the page you can see what every instrument should be playing at any particular time.

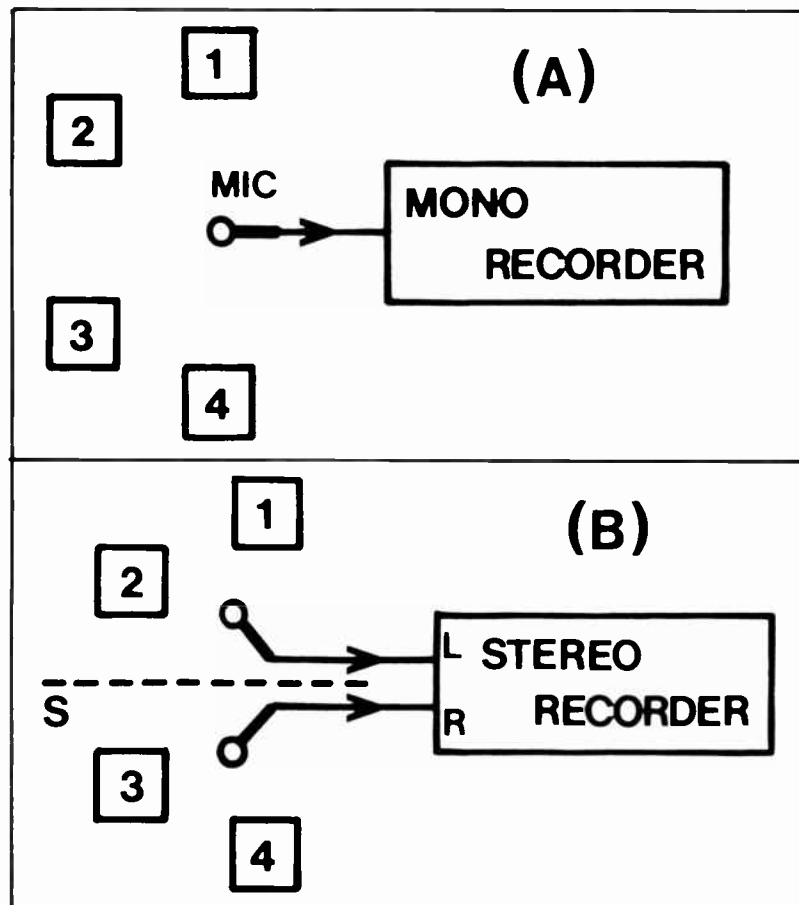


Fig. 2 Two of many possible ways of recording four instrumentalists. (A) All play into one microphone; no adjustment of the relative volumes of the instruments can be made during playback of the resulting 1-track recording.

(B) They play in pairs into two microphones connected to the left and right inputs of a stereo recorder, producing a 2-track recording; during playback, the volumes of instrumentalists 1 and 2 can be adjusted relative to the others. Better results are achieved if an acoustic screen (S) divides the players.



## A Musical Score

As a starting point to get across the idea of what multi-track recording is all about, let's take a look at a musical score, which is the written music a composer or arranger produces first, containing all the various instrumental parts which together constitute the arrangement. Figure 1 shows the first four bars of a score written for a four-piece band, with drum and bass parts at the bottom, the melody line at the top and the "rhythm" part (which might be written for piano or electric guitar) in between. Each part runs across the page (containing the notes for just one instrument) and the parts are laid out with the bar lines vertically above one another; so by glancing down the page the band leader, or whoever is reading the score, can tell immediately what notes every instrument should be playing at any particular time. Reading a score is quite difficult because so much has to be taken in all at once, but fortunately this is rarely required of the performers, each of whom is usually given his own part on a separate sheet.

## Recording a Four-Part Arrangement

A performance of a four-part arrangement could be recorded in many different ways. The simplest approach is shown in Figure 2a in which four musicians play together into one microphone, the output of which is recorded on a "mono" tape recorder. Once that recording has been made the relative volumes of the instruments (called the "balance") cannot be altered; everything depends on correctly positioning the players around the microphone in the first place.

A more flexible set-up is shown in Figure 2b in which the same four musicians are now grouped in pairs in front of two directional microphones. They all play at the same time, and the outputs of the two microphones are recorded on a "stereo" recorder, one on the left and one on the right hand. After the recording has been made, the volume of instruments 1 and 2 can be adjusted relative to instruments 3 and 4 during playback, because the sounds produced by the two pairs of instruments are preserv-

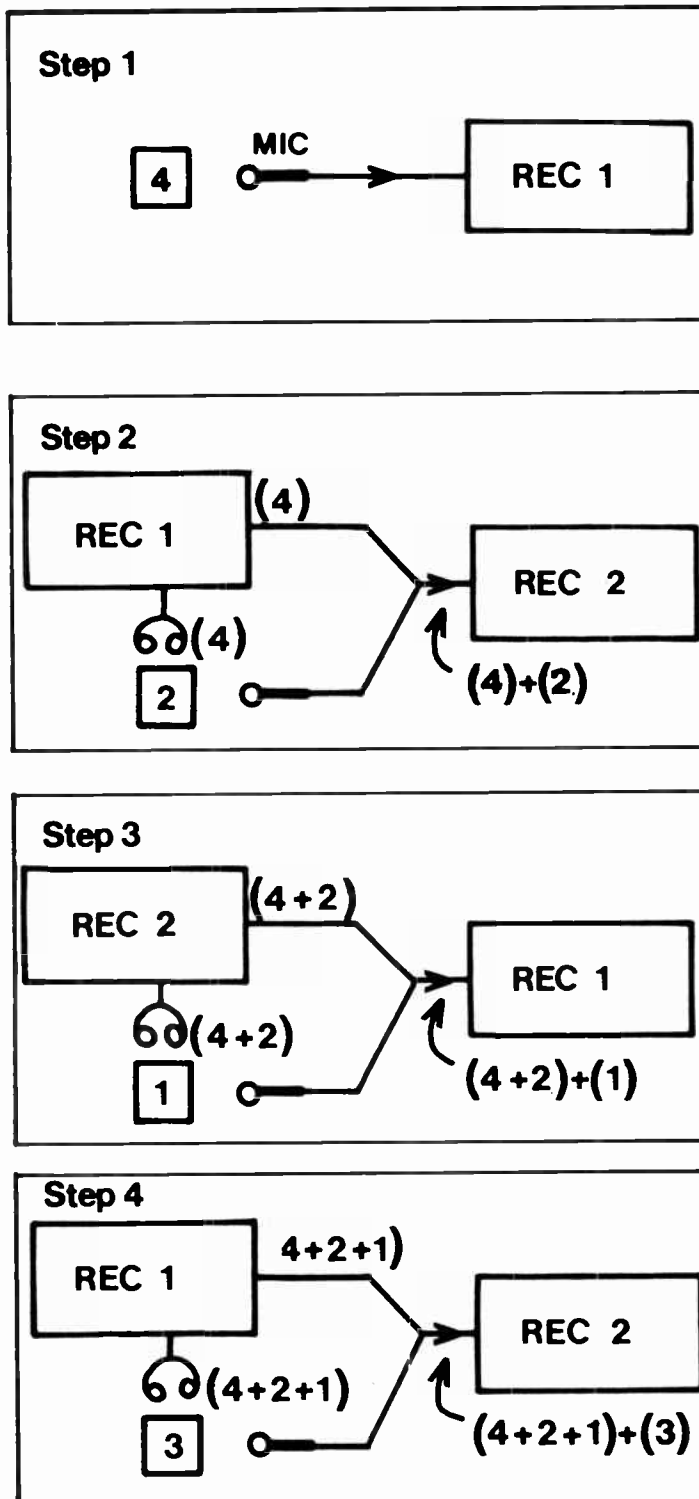


Fig. 3 How just one musician can produce a recording based on a four-part score using two mono recorders. Step 1 involves listening to the drum part through headphones while playing the rhythm part (part 2), both being recorded together on recorder 2, and so on.

ed on two separate tape tracks. Obviously, to produce a recording in which the volume of every instrument could be adjusted independently during playback would require a tape recorder having four tracks; in other words, to keep as much flexibility in a recording as possible, there should be at least as many tape tracks as there are parts in the score. However, this approach, although ideal in some respects, is often prohibitively costly in terms of equipment; outside professional studios, a compromise is usually made by sharing tracks along the lines indicated in Figure 2b, or by splitting the process of recording into a number of stages, as described below.

## A Different Approach

It is possible to produce a recording of a four-part score without all the musicians performing at the same time; in fact, if he was sufficiently versatile, one musician could, in principle, produce the entire recording alone. Figure 3 shows how this would be done using two mono tape recorders. The first step would be to record, say, the drum part on recorder 1. Next this recording would be played back through headphones while he performed, say, the rhythm part; both the new rhythm part and the drum part would be recorded together on recorder 2. Then recorder 2 would be played back through the headphones while the melody line was performed and recorded along with the drum part and rhythm part on recorder 1... and so on.

Given a stereo recorder with sound-on-sound facilities, or the luxury of a four-track recorder, this whole process becomes much easier, although the basic idea is the same however the end-product is achieved. The score is performed one part at a time, the recorder(s) being used to superimpose the parts during playback.

This then is really what the series is about: producing multi-track recordings one part at a time using a synthesizer as the main instrument. Next month I will be saying more about tape recorder and track numbering before starting on the more musical aspects of producing and recording the score.

# Recording Studio Design

## ABOUT R.S.D. INC.

Recording Studio Design Incorporated is the U.S. arm of a British company founded over ten years ago. The company was started by Paul Dobson, an ex-sound engineer, to build custom recording consoles and PA systems for some of the world's most famous bands.

Among the long list of users of R.S.D. equipment are: Wings, The Kinks, Darts, Suzi Quatro, Average White Band, Rick Wakeman, Stockhausen, Genesis and Abba.

Today R.S.D. has evolved into a highly sophisticated manufacturing organisation building professional recording desks for use by musicians and studios all over the world. R.S.D. Inc. on Dynamics, Anaheim, CA 92806, is the arm that serves US musicians. From here R.S.D. desks are distributed throughout North America and full sales and service back is available nationwide.

The range of R.S.D. equipment available on the US market encompasses mixing desks, power amplifiers and crossovers and, in the near future, several exciting additions will be made to the range.

## MONITOR MIXING WITH THE R.S.D. 20/8

The R.S.D. 20 into 8 mixer is designed to do one very specialised job extremely well, it is the ultimate MONITOR MIXER.

R.S.D.'s long experience in building desks for "live" situations has provided the development research vital for building a successful monitoring desk and the 20/8 has the facilities for providing up to eight SEPARATE monitor mixes.

The mixer accepts 20 separate inputs (usually taken in parallel with the main P.A. mixer) and each of these separate inputs may be routed to as many of the eight output channels as required. Individual gain controls are provided for all eight channels. The result is that the incoming signal (for example, lead guitar) may appear at any chosen level in any of the eight separate mixes leaving the board. This system allows total "on stage" monitoring control and, from a side stage position, a sound engineer can effect the various

monitoring changes that are necessary during the progression of most performances.

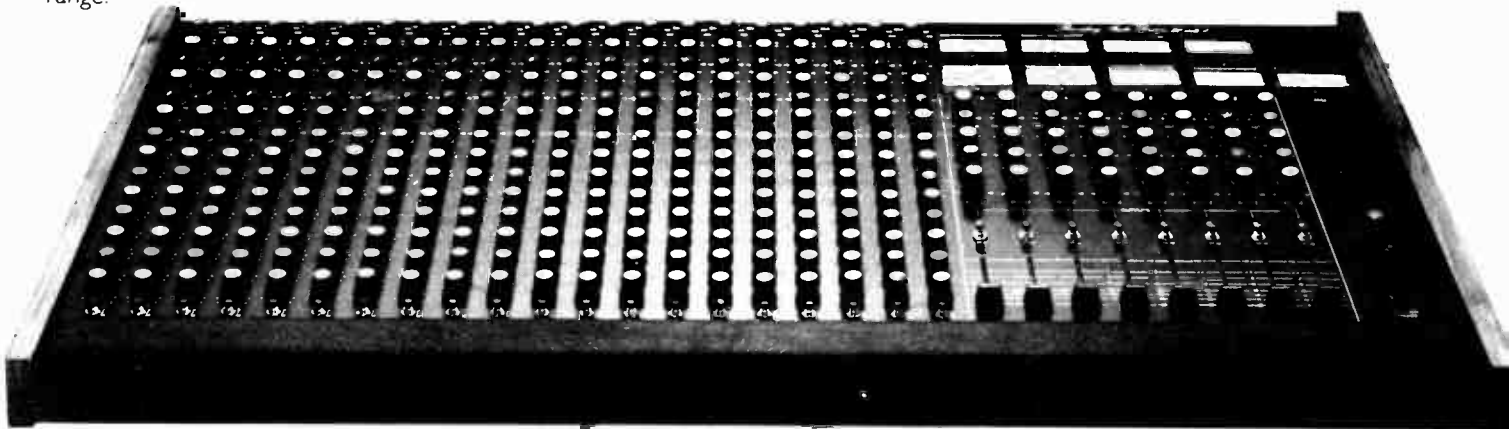
Each input channel is flexible enough to take mike or line inputs and PARAMETRIC equalisation offers almost total control over the frequency shaping of each of the 20 incoming signals. Rotary controls on each of the 20 main input modules allow routing to the eight output channels and, at this stage, the engineer may set up the level at which any particular incoming signal will appear in the separate monitors. To make life easy R.S.D. have built a PFM (Pre Fade Monitoring) button at the end of the incoming signal chain and pushing this button allows the engineer to mute all other channels and listen to that channel only – useful for EQ adjustment!

PARAMETRIC equalisation is also provided on each of the eight output channels. This allows the engineer to shape the overall frequency curve of

each monitor and as well as providing the musician on stage with the type of sound he likes to hear it also allows the engineer to "iron out" any peaks which might produce premature feedback and thus reduce monitoring levels.

Meters are provided for all eight output channels and slide faders govern the exact signal levels sent to monitor amps. An additional VU meter is provided for checking the levels of individual channels or groups when necessary.

The R.S.D. 20/8 Monitor Mixer is a unique product, designed to perform a unique function. It is superb at its task and provides any stage act with a totally efficient and reliable method of hearing themselves on stage.



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# R.S.D. CROSSOVERS

In high sound level situations, the right crossover is vital to gain the maximum from your speaker system and amps, and to ensure component protection.

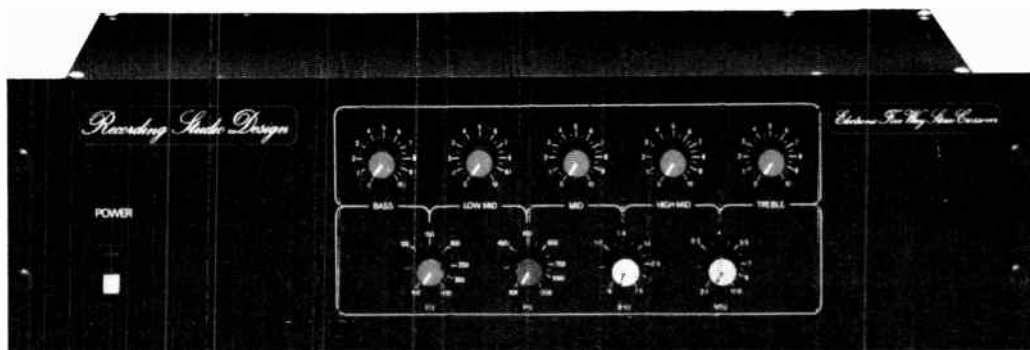
R.S.D. have a long history of producing high quality electronic crossovers and the current three or five way systems offer professional sound users reliable control over this difficult area.

Both crossover units appear immediately after the mixer in the sound chain, splitting the overall outputs to three or five separate power amps (depending on whether the three or five way Crossover is in use). Both units are stereo and accept stereo inputs.

On the R.S.D. Five Way Crossover the sound segments are split as follows: High Frequency, Treble, Middle, Low Middle and Bass. Each segment would be amplified separately and the individual levels controlled. The points at which each segment starts and

stops are variable by rotary controls on the front of the rack-mounted crossovers. On the Three Way Crossover the sound spectrum is divided into Bass, Middle and Treble with full controls governing the point at which each segment starts and stops

Both Crossovers have been proved "in the field" for several years with many thousands of units in regular use around the world. They are quiet, efficient and totally reliable. They are professional tools for the professional soundman.



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# R.S.D. POWER AMPS

Power amplifiers have one main responsibility in life: RELIABILITY! After that they must be quiet, efficient, able to perform to their specifications and be economically acceptable. R.S.D. Power Amplifiers pass all these tests.

The R.S.D. 400C and the 800C are Power Amps built to withstand life on the road. They're designed to be rack mounted, but all necessary protection has been made internally and, with R.S.D. amps, the sound man can always be sure of the right result when the mains switch goes to red.

The two models offer a choice of power levels and sophistication. The 400C is a stereo amp offering 200 watts into 4 OHMS each channel (RMS of course) with a THD figure of .007% at 1kHz, full power before clipping. Twin VU meters on the front panel

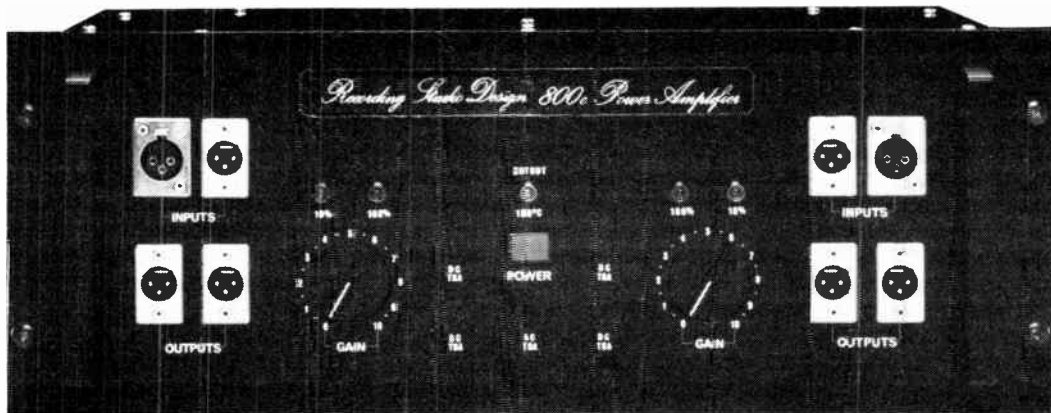
provide a visual output indication and all fuses and connections are mounted on the front panel.

Protection systems cover short circuits, wrong loads and general fault protection "pulls" the amp out of line briefly protecting the speaker systems

and amp itself. Thermal protection is incorporated, although the force cooling system built into the R.S.D. power amp range reduces the likelihood of requiring such protection to a minimum.

The 800C offers 400 watts per channel into 4 ohms

with a similar THD figure. On the 800C, additional features include status LEDs which show thermal cutout operation, 10% of full power indicators and clipping points. Rotary control allows manual adjustment of individual channel output levels.



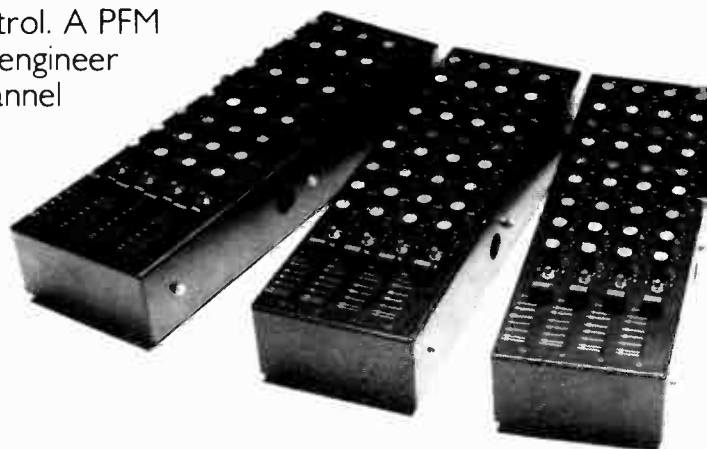
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The R.S.D. 12/2 mixer is a professional desk design to provide close control over sound in small situations. Unlike most other desks, however, you don't have to junk the R.S.D. 12/2 when the venues get bigger and the money gets better. The R.S.D. expander modules allow you to add four channels at a time. You could end up at the Hollywood Bowl with a 32/2 R.S.D. desk still using the same basic R.S.D. 12/2 mixer you bought a year before (if only it really happened that quickly!).

The 12/2 offers input attenuation allowing you to provide mike, D/I or line input into any of the channels, full equalisation on each channel,

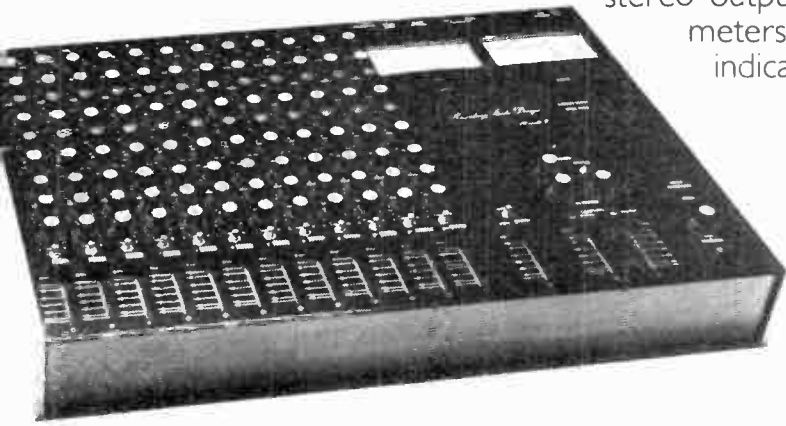
foldback mix facilities, effects or echo send and return and full stereo pan control. A PFM button allows the engineer to listen to any channel on its own at the touch of a button and naturally there are separate



# ONE STAGE



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Los Angeles, California 92806.**



slide faders for each input channel, fold-back and the stereo outputs. Twin VU meters offer a visual indication of levels.

If all this sophistication sounds a little heavy for a small

12/2 mixing board, remember that the basic concept is EXPANDABILITY. Every R.S.D. 12/2 desk that's produced is fit and ready to become a 32/2 the next day if required:— Without any increase in noise, without any loss of facilities and without costly "main frame" work becoming necessary.

The benefit to you is clear. Start with a professional mixer that's the right size for your performances. As you grow it can grow with you and instead of accepting insulting trade-in terms for your old mixer you'll always be able to keep control of your sound *and* your costs.

# AT A TIME

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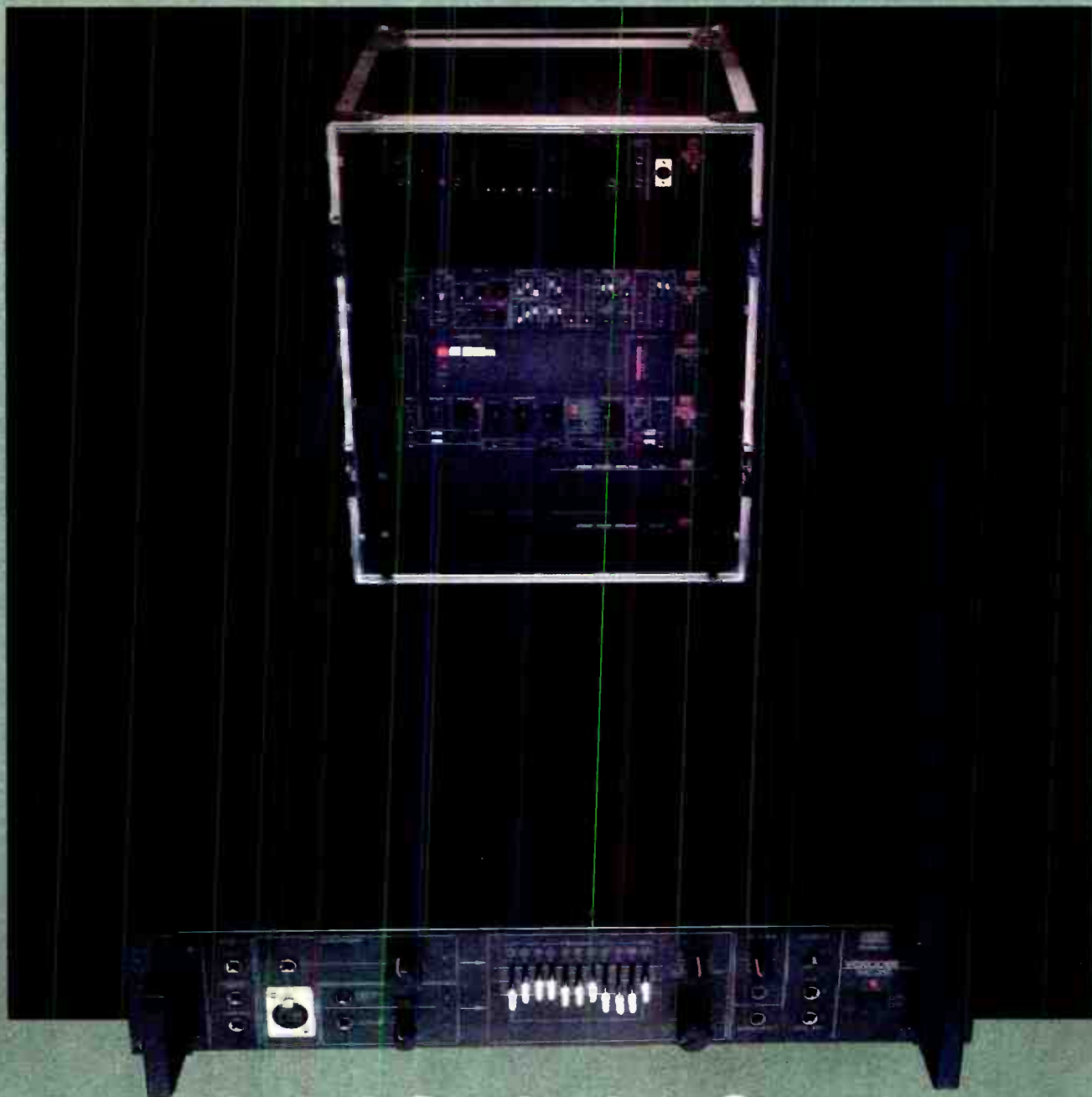
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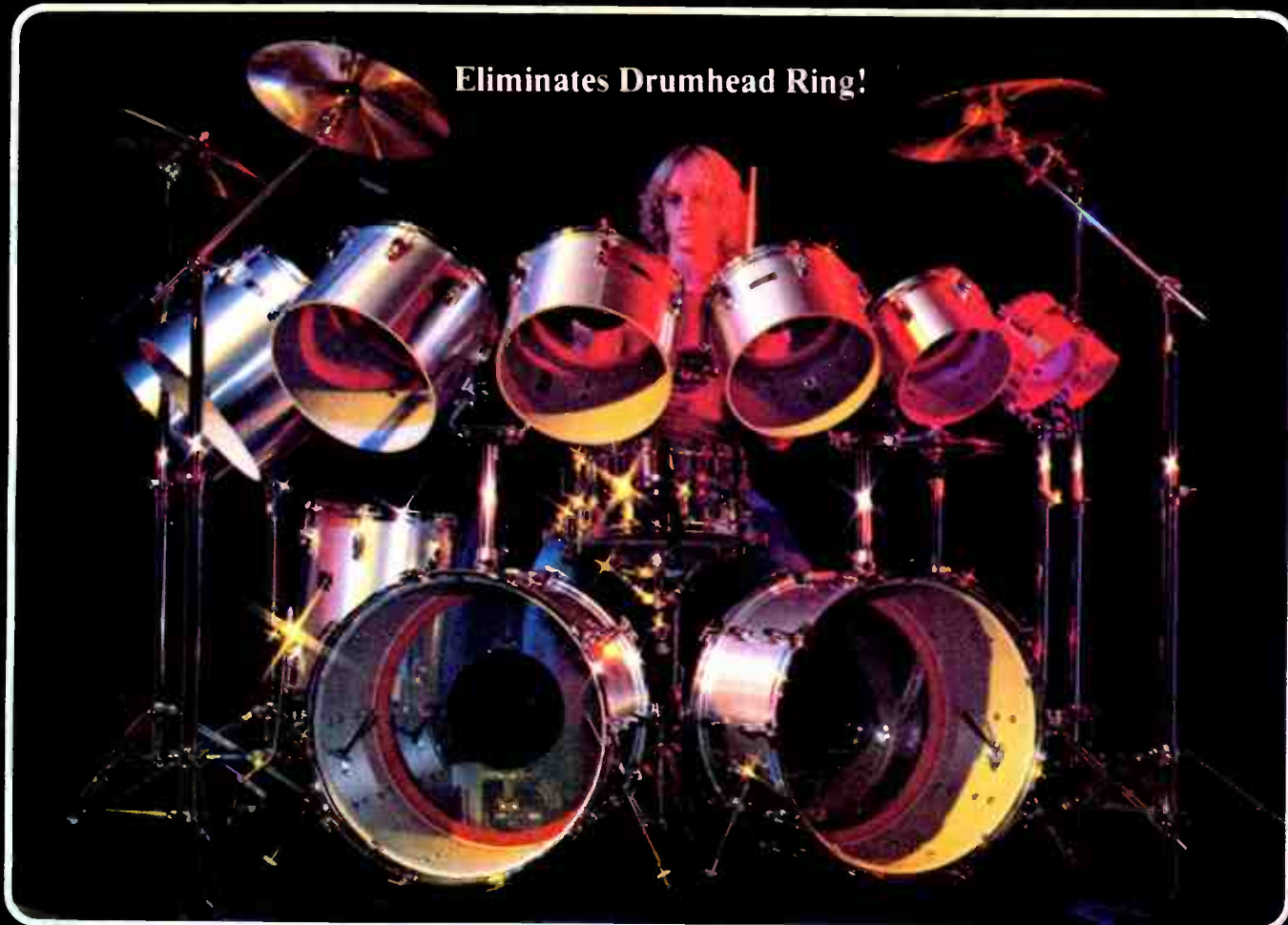
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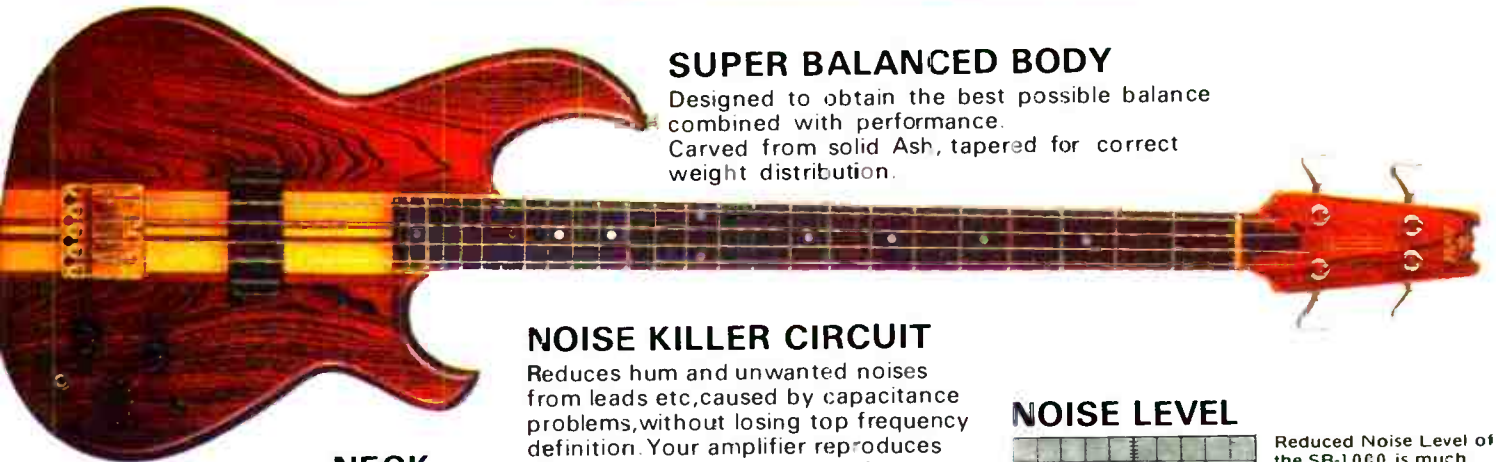
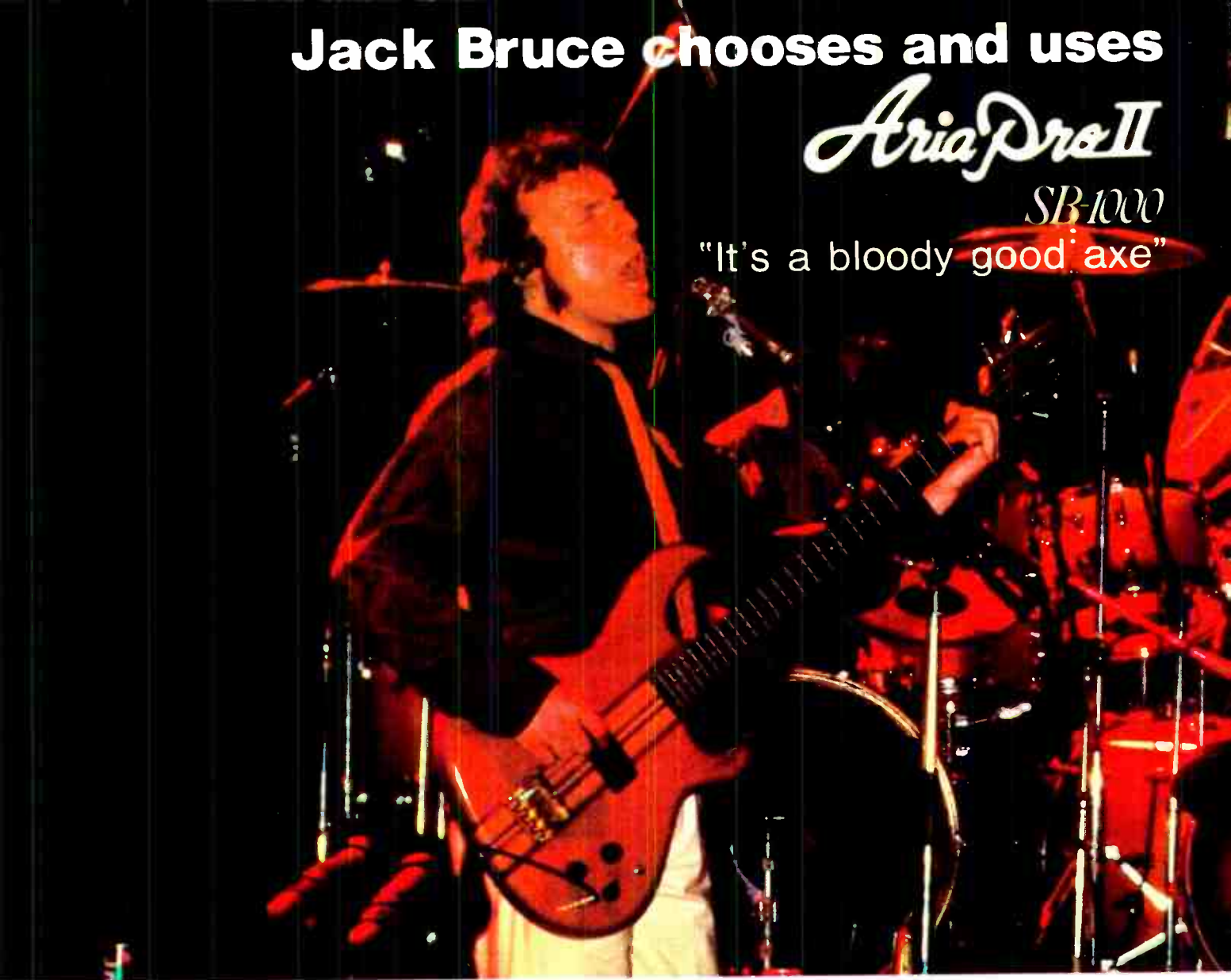
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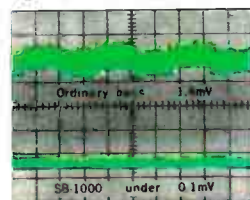
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## On The Record

### New York

New York's Sound Ideas studios hosting Evelyn "Champagne" King (new RCA LP). Ron Garrison (Life/Galaxy). Ryo Kawasaki (jazz LP for CBS Intl.) and Sigahura Muhai

The Rolling Stones are still finishing up tracks for the new LP at Electric Lady studios. Also in from time to time are The Clash (Epic), the Ellen Shipley Band (Champion/RCA) and guitarist Earl Klugh (United Artists). At Atlantic Recording Studios, several Atlantic acts are in working on LPs in various stages — AC/DC, Ben E. King (remixing), Wee Gee, Chic, Roxy Music and Kenny Rankin (mixing).

In at Chelsea Sound: The Revlons and Joey & The Pets (Atlantic), two new groups being recorded by Blondie's imitable keyboardist Jimmy Destri. The 80s with producer Peter Ker. Producer Mike Chapman mixing Blondie's title track for "The Roadie" soundtrack.

At Record Plant Studios: A&M artist Joan Armatrading (producer Richard Gotterer), producer Jack Douglas working on a special Cheap Trick EP for Epic under the supervision of manager Ken Adamany. The "busy" Record Plant Remote Unit (headed by David Hewitt) recording shows by Tanya Tucker, Dionne Warwick, John Hammond & The Nighthawks and Ornette Coleman. The Remote unit was also on hand to capture Father Guido Sarducci's "audience" with students at New Jersey's Douglas University for an imminent Warner Bros LP.

Secret Sound Studios hosting Suzanne Ciani (performing and producing her own electronic composition), Rich Look and Cathy Chamberlain (working on "Happy Birthday Gemini" soundtrack for UA) and The Shakers with producer Chris Kimsey.

### Los Angeles

The advent of the spring/summer months coincides with a marked increase in recording activity for L.A.'s many studios. At Westlake Audio singer Franny Golde (CBS) and keyboardist George Duke (Epic) have been working on new LPs. Also in are Angel City (a new Australian band on CBS) and Taste of Honey (mixing).

Elton John is recording a new LP with



producer Clive Franks at Sunset Sound. Sunset is also hosting The Doobie Brothers with producer Ted Templeman. The Motels (mixing engineer Warren Dewey), Cher and producer James Newton Howard, and The Average White Band with producer David Foster at the console.

At the Record Plant: Eddie Money recording a new LP with producer Ron Nevison, James Aire, Livingston Taylor and a new band named American Noise on Planet Records. Larabee Sound is hosting a new group called Air Supply (mixing), the Temptations/Smokey Robinson (rhythm tracks for a Motown LP), disco whiz Paul Jabara, and the one and only Chuck Berry.

Capitol Recording Studios hosting a wide variety of talents including: Eddy Del Bario (Capitol), Sun (mixing), Maze (mixing), Player (mastering), Urban Cowboy soundtrack sessions for Elektra (mastering) and Capitol's own Moon Martin (mastering his new single).

At Hollywood's historic Gold Star Recording, producer Paul Wexler recording a new group called The GoGo's, another new band called Zilch (recording a 10-inch disc), Jackie De Shannon, Karen Reed, Jessie Cutler and Phil Everly. Over at Cherokee Studios, hot new producer/keyboardist Jai Winding is recording with LaRoux (Capitol), the Firesign Theater is recording a comeback effort for Mushroom Records, Scott Wilke making his debut LP for Warner Bros. America is in with producer Fred Molin (Capitol) and Alice Cooper has just finished an LP project with producer Roy Thomas Baker.

At A&M Studios: The Carpenters, Herb Alpert and Gladys Knight (LP for Columbia). At Wally Heider/Filmways:

Stephen Bishop and Yvonne Elliman doing overdubs for "The Roadie" soundtrack. Gary Myrick & The Figures (Epic), Barry Mann (Casablanca), Olivia Newton-John (soundtrack for upcoming TV special) and The Babys (recording for D.I.R. broadcast. Also, conductor David Blumberg working with an 111 piece orchestra on Neil Young's score for the film "Where The Buffalos Roam."

At Salty Dog Recording in Van Nuys, Gloria Gaynor's engineer Lewis Peters producing Mandy Phillips (Spirit Records), disco group Good News and RCA artist Linda Seals with producer John Florez (Helen Reddy, Johnny Mathis) Mama Jo's hosting Neil Larsen (Warner Bros) with producer Tommy LiPuma at the controls. Saxophone ace John Klemmer is in with session heavies like Harvey Mason, Abraham Laboriel, John Tropea and Dave Grusin, working on a new LP for Elektra Records. Also in is Gospel recording artist Andre Crouch working with some very important players on a new Warner Bros LP. At Eldorado Recording, bassist extraordinaire Tom Peterson of Cheap Trick working with drummer Thom Mooney (Nazz) on a solo project assisted by engineer Dave Jerden. Finally, at Santa Barbara Sound, Sue Saad and The Next recording their "Double Yellow Line" for The Roadie soundtrack.

### Around The Country

Miami's landmark Criteria Studios hosting songstress Barbra Streisand, working on a new LP with producers Barry Gibb and Karl Richardson. Jimmy Ruffin is in with producers Blue Weaver and Robin Gibb, as well as the Henry Paul Band (recording a new Atlantic LP with

# ROY THOMAS BAKER

"I never rated myself as an engineer," said Roy Thomas Baker, and, sitting there in front of him, you'd never have figured he'd had anything to do with such tedious stuff as laboring over a control desk through hours of overdubs, checking levels and pushing levers.

In fact, he looked more like some sort of international playboy, tidily ensconced in his suite at one of the poshest Manhattan hotels. He readily lived up to the plush decor; clad in leather jumpsuit and ascot, his gently-rounded face adorned by large-framed eyeglasses with tinted lenses.

But, not much of an engineer? Let's face it, Baker forged a distinctive recorded sound that has been an integral part of the vinyl identities of two major bands, Queen and the Cars. Is he kidding? No way:

"I won awards and set trends, but to me engineering was just a stepping stone.

---

## "I never rated myself..."

---

an apprenticeship." Speaking of trends, one of the most memorable he helped establish was one of engineers becoming producers, particularly in England, where A&R departments usually trained their own people to produce. "They'd have them sit next to the producer and time songs, fill out musicians' union forms — be an assistant producer. At Decca, where I started, one of their downfalls was taking their producers from the company instead of using all the talent they had in the studio, like myself, Bill Price and Gus Dudgeon, to name but a few."

Roy Baker had been determined to be a producer since he was 12 years old. "It wasn't just a musical thing. I was intrigued to find that records had different sounds. In those days you could actually hear where the records were recorded; there was the Tamla-Motown sound, the Phi! Spector sound, the New York and LA studios, and Nashville and all those other funny places. Now you have to look on the label to see where they're recorded."

In any case, Baker was into the thick of recording by the time he'd hit his middle teens. "They wouldn't hire anybody over the age of 18, and you'd start as teaboy and work up through the ranks to become a second engineer. My case was different.



The Producers



Not everybody wanted to do classical, most wanted to do pop sessions, but I quite liked Classical, so my first sessions was as a second engineer," which meant that he assisted and learned from the tape operator, who in turn assisted the engineer. By the time the Merseybeat boom rolled around, he'd become an assistant engineer, and eventually he found himself working with bands like Ten Years After and Savoy Brown as a proper engineer.

Unfortunately, that was a cul-de-sac, and he soon moved on to the independent studios, briefly stopping at Morgan and then settling at Trident. (This was '60-'70, when he worked on Free's second album and the *Fire and Water* follow-up at those studios.) "Trident was the first eight-track studio in Europe — but it was an American machine, an Ampex, and it had a 60-cycle motor to be powered by our European 50-cycle mains." But ways were found to make it work out well, and Baker's reputation was further enhanced. Meanwhile, the desire to be a producer hadn't died.

At Trident, Baker worked alongside other engineers who later became producers like Ken Scott and Robin Cable. Both have had success as producers, but neither can match Baker for his distinctive sound and its commercial impact. Why?

"I disregarded engineering and they haven't. They worked to be both engineers *and* producers. I didn't. For some people, engineering is the only route to becoming a producer, but when they actually get to be one, all they're doing is selling their engineering talents and crediting themselves as producers. I now have Ian Taylor to do the engineering for me." But it was through pooling his interests with Cable that Baker came into contact with Queen.

He'd already produced one album, Nazareth's second. After engineering their first LP and finding the band had no one lined up to do the second, he offered his services to them on the grounds that he'd engineered for them, knew them as people, and "in those days, I came cheap!" The resulting *Exercises*, however, was too apt a name, for all the potential it displayed. However, with only the one production under his belt, Baker had formed a production company with Cable and others, tagging along when the latter

went to look in on a demo session. "It was funny, he was going down to see the band and I was along to see the studio!" But the band was Queen, the song they were taping was "Keep Yourself Alive," and Baker thought they were simply amazing.

"They didn't have a deal at the time, or even a manager. We recorded the first album on downtime at Trident, and the studio wanted to shop the album around. What happened, though, was that they brought in this pseudo-flash American guy to do it, and he came over mainly for another artist that Trident was attempting to make an album with, Eugene Wallace, and so he was actually shopping the Wallace tape and just happened to have the Queen tape along — 'as long as I'm here, give this a listen too!'"

EMI went for it, of course, and the rest is history. "The first two Queen albums gave us the opportunity to let out every conceivable idea we'd ever had," recalled Baker, and even though the records had their flaws, the realization that Queen was a band to be reckoned with was not long in coming. By the time *Sheer Heart Attack* was released, even the generally unprogressive US mass market had begun to take the band seriously, and when Baker produced *Be Bop Deluxe* and gave them that same edgy, nervous sound, people began to talk about it as belonging to Roy Thomas Baker. What was the story behind that unique, high-ended sound?

"Ah! That's distortion," he chuckled. "A lot of that was me and a lot of that was Queen letting me do what I wanted because they liked it. I love treble. I love treble and bass, I hate middle. Americans were all going for that middle sound at the time, and in fact it took that bloody gadget, the Aphex Aural Exciter, before Americans learned to put treble on records. It was the 16 to 20K (kilocycle) end. People say you can't hear above 16K, but it has a harmonic effect on all the other frequencies down.

"But it was not just a case of engineering sounds, it was a sound concept. I was working toward a way of expressing myself and Queen wanted that sound, they wrote and arranged for it too. We used to call it 'crystal' — 'Shall we have more crystal on that?' — but I never really thought about the technical specifics of it at the time."

But even a producer as creative as Roy

Thomas Baker must alter his approach. *Sheer Heart Attack* had not yet broken Queen as a major act when Baker produced *Rhinos*, *Winos and Lunatics* for the Welsh band, Man. "I'd mixed their previous album and took a turn at producing them the next time." Man's ever-shifting line-up hardly changed the essential character of the band, which mixed simple, bar room rock & roll with dual guitar (and sometimes a keyboard as well) improvisation, almost like a somewhat progressive, slightly tougher version of Quicksilver Messenger Service. Quite a change from what Baker was used to working with, but "I like to tailor my approach, to be as sympathetic as possible to the artist. I never go into the studio without having several talks with the artists involved."

This approach enabled him to meet the challenges of producing such diverse talents as Ian Hunter (*Overnight Angels*, unreleased in the States for *business* and creative reasons) and Dusty Springfield (a lushly orchestrated comeback album). No doubt it stood him in good stead when he came to the States and began working with bands like Journey.

Journey had lots of musical talent, and there was no reason they couldn't write good enough material on which to focus their hard rock attack, "but they had two albums out that were really boring" — not to mention that they were commercial stiff — "and I put them on the right track." It wasn't easy; the band was evidently attached to doing things their way on their own turf, where they were always well-received. And so Baker soon found himself recording them in a Bay Area studio called His Master's Will, which had *rats* — it was an oversized warehouse-type affair. Luckily for Baker, he got his way when the mixing was moved to Cherokee in LA. How come? "His Master's Will blew up!" He cut the next Journey album at Cherokee from start to finish.

"I like Cherokee, and also the A&R Studios in New York. Every studio has these flat speakers, Eastlakes and Westlakes and flat sounds, and I like studios where the sound isn't built in to and sounding like everywhere else. Cherokee and A&R don't."

Baker's instructions certainly helped Journey, who began to rise into chart con-



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## ROY THOMAS BAKER

attention with the Baker-produced LPs. "Even now that I'm no longer working with them, they're still writing more immediate songs and curbing the showy, lengthy solos. My training, you know."

Meanwhile, while in New York overseeing the mastering of the first Journey LP, Baker was asked by Elektra to rip up to Boston for a look at a band called the Cars. "I met them at the hall in the middle of this blizzard. They'd had lots of record company people and producers up there to see them, and all of them had said no. I agreed to produce them on the spot. The songs were basically there, they just needed to be re-arranged slightly — a chorus put in here, a verse taken out there and the speed had to be adjusted — but apart from that, they were excellent." Once again, that nervous, trebly Baker sound emerged; true, it was another variation, but acutely keyed to the Cars' slightly out-of-kilter, on-the-brink sensibility.

A larger adjustment had to be made with Ronnie Wood's *Gimme Some Neck*. "It was sort of a put-together thing. We had a castle and stuck some equipment in it... it was a fun album. It couldn't be approached with an eye to having 'X' number of hit singles on it, since it was basically a biography of a member of the Stones at that time of his life. The Stones just don't take all of it that seriously, so you can't either."

Baker listens to lots of tapes sent him by various labels. "The way I listen to any new tape is I set my little JVC up by the shower in the morning. I'm hung over, I'm tired, I'm feeling groggy — the worst possible conditions to listen to tapes under. But, if it cuts through that, it'll cut through anything." That's how Baker latched onto his latest project, an album with Hilly Michaels for Warner Brothers. "Warners, as do other companies, sends me tapes for second opinions, and I listened to the one of Hilly they sent in my usual way. Then Ian Hunter rang me up and said, 'Oh, I've got to tell you something,' and I said, 'Tell me later. Now, what's this Hilly Michaels about?' and he said, 'That's what I called to tell you! He was the drummer on my tour, and he's got all these good songs'."

Dan Hartman ("Instant Replay") is involved, with the playing and arranging, but lest anyone get the wrong idea, Baker characterized the record as having "Abba-like songs, but with more of a rock beat." (Abba is one of Baker's favorites, but he

mourns their move toward disco.) "basic rock that you can dance to."

In closing, we spoke of generalities. Kilocycles aside, Baker aims for a sound that jumps out of the speakers, and arrangements that never let up, "even when there's a quiet bit, there's always power and tension behind it. Continual movement." It's not always easy, but he wants to get the best out of the artists he works with. Sometimes it means coming down to confrontations, but, as he laughingly noted, "I took a course in child psychology. Seriously, I don't really have that much trouble with musicians. They are often simply too close to their music, but usually they are more than willing to try my suggestions." I wondered why

more English musicians didn't seek him out now, and he said that he thought his name was near to mud in Britain these days, as though he'd sold out by having moved to the States.

Finally, I asked him how successful he thought he was. Admittedly his own harshest critic in some ways, he declined crediting himself with great success: "Successful means having the top five albums." Demanding? "Oh, I suppose success as a producer means that in five years people will be able to look back at one or two of the things I have worked on, like 'Bohemian Rhapsody,' and say that they still stand up. Just like people have said I was a good engineer now that I'm a producer, they'll say I was a good producer of records in the next phase of my career."

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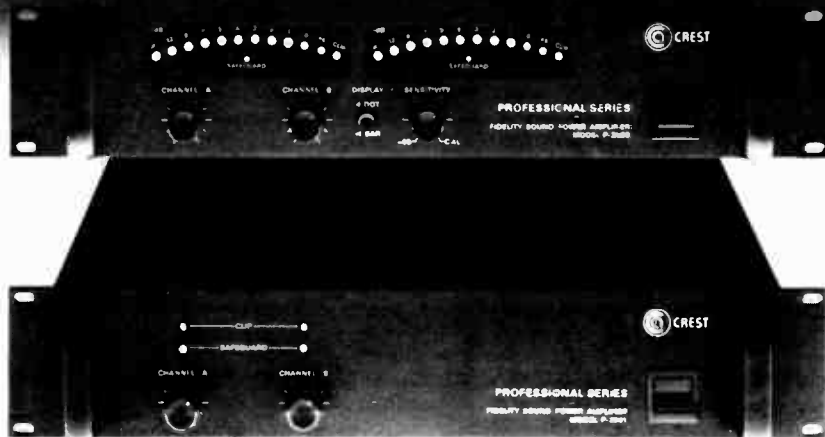
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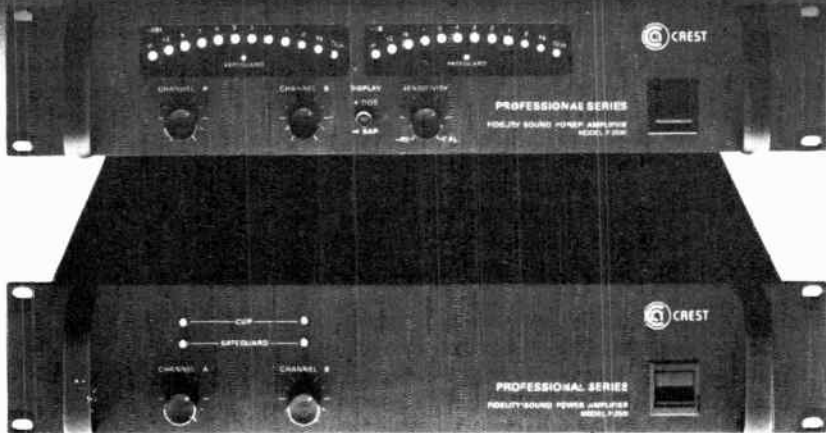
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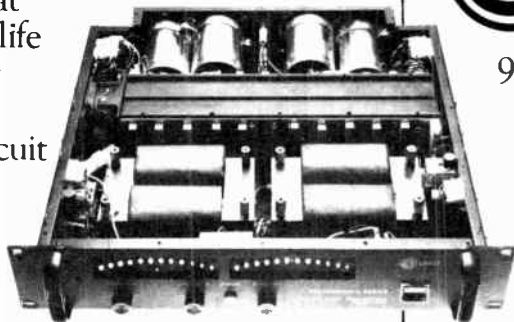
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## John Storyk-Studio Designer

The phenomenal growth of the recording industry over the last decade has generated a corresponding surge in recording studio architecture. John Storyk, one of the pioneers of this field who got his start by designing New York's legendary Electric Lady and Blue Rock studios, heads a firm called Sugarloaf View currently involved in some of the most sophisticated construction projects of the day. Studios like Criteria West in Los Angeles, the recently completed Howard Schwartz recording facility in New York's Graybar Building, one of the most advanced "state-of-the-art" studios in the world, a huge facility in Colombia, South America and several studios in Europe. Storyk's natural enthusiasm and boundless energy is reflected in his involvement with every possible aspect of studio design and construction. The first part of our discussion dealt with more general, philosophical areas in this area, Part II, which will follow in the July issue, will deal with technological specifics, including the future of studios vis a vis digital and video.

J-C Costa

### Introduction:

*Previous to your first project, Electric Lady Studios, you were essentially an architect in the more traditional sense...*

Previous to Electric Lady I was 21! I had always been studying architecture, and was always a musician. In fact, I was a professional musician for five years.

*What do you play?*

Keyboards, sax... still dabble. Anyway, Electric Lady was originally gonna be a club. I'd just finished a club in New York called Cerebrum that got a lot of notoriety, it was a freak situation. This was in 1968 during the Electric Circus. Dionysus days and the club got an uncanny amount of publicity. So Jimi (Hendrix) was going to do a club, I got the job to do it and, at the last minute, the club became a studio. And they said, "Ok, now you'll design a studio." I didn't know too much about studios. I'd been in Bell Sound — you could only have been in six studios then so I was in one of them. One thing led to another and I got it done. At the time, if you'd designed one studio in New York you were in a very small circle of people.

*Did you have to learn studio architecture "on the run?" Trial and error?*

Oh yeah, The other thing about 1969 was that it wasn't that hard to do better



than what was here. You couldn't do it now in 1979, like you can't be a Thomas Edison or an oil baron. There are other virgin territories, this (studio design) is probably not one of them now. There's too much literature, and too much expertise to pick up. Doesn't mean that new people can't do the work.

So it just worked out. A little bit of luck and timing and, yes, there was a lot of "on the run" at Electric Lady, a lot of learning and some mistakes. Some mistakes made at Blue Rock which was another studio that we did. Over budgets, timetables etc. (Blue Rock was 150% over budget and a year late.)

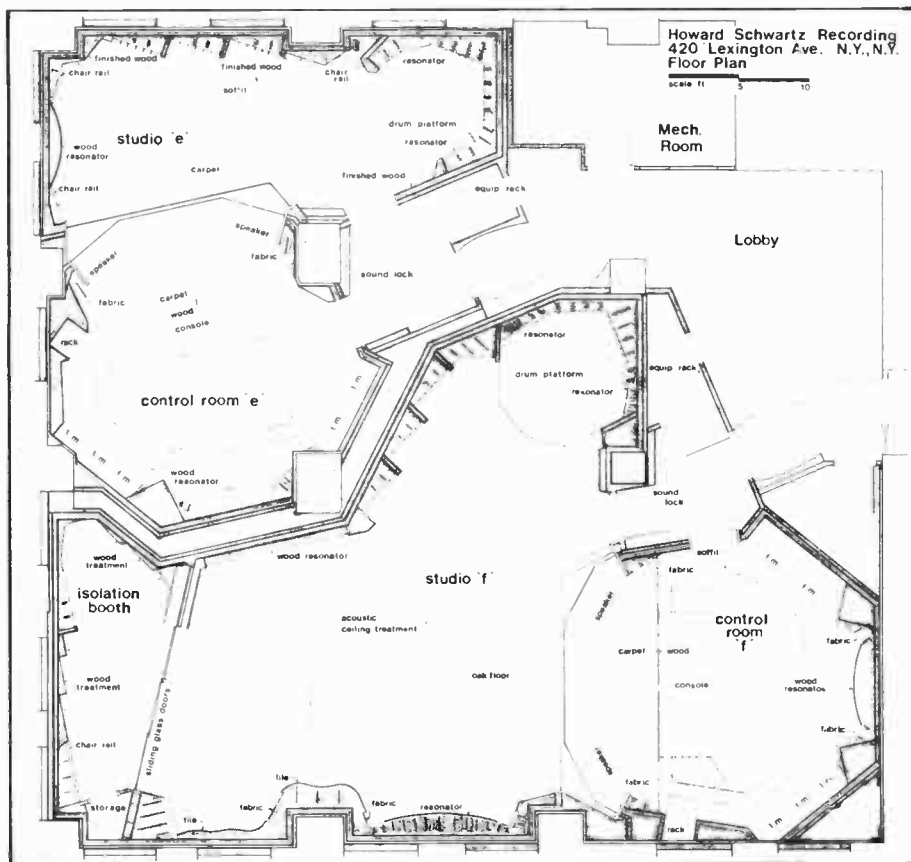
*How close do you work with engineers like Eddie Kramer (Electric Lady) when you're designing a studio?*

Very close. Depends on the nature of the job. Some studios come to us and say, "Please do it all." They don't know anything. It's always interesting to see why they spend what they want to spend. Of course, if Atlantic Records comes to you -- and they own four studios and have

been in the business longer than I've been living -- and they want to tack on their fifth studio, they have an Eddie Kramer and your damn well sure we're working with them, and we're honored to work with them. In the case of Criteria (Criteria West in Los Angeles, a sophisticated new Storyk studio currently being built) there were some meetings where I wasn't quite sure who was on what end of the meeting. I wasn't sure who should be paying who to be in the room. Your talking about some serious expertise. Always, there's a client. We make other people's dreams happen and it depends on how much they know. More and more, even the ones that think they know a lot, are coming to us for more and more information. There's so much to know. Especially with money being the way it is now. It's getting harder and harder to do even the smallest project.

*Speaking of cost-effectiveness, you were involved in one of the last great studio "splurges," Electric Lady, not just in terms of the equipment and the rooms, but Jimi's personal requests for all the*

# RECORDING WORLD



seemingly extraneous creature comforts. I remember the opening of the studio and it was just like walking on Mars. That kind of "studio/leisure spa" concept, with the possible exception of a George Martin/Monserat type thing, seems to be slipping away. The studio where you spend a lot of money on "non-functional" items.

It slipped away, but I have to take exception to that actually. Two real good explanations at least. One is, because everything else got so expensive, gear and construction, the cost of putting a sauna in divided by the cost of the studio is *nothing*. The competition? Ten times more than it was 10 years ago, so you gotta have that stuff. Number three, maybe not the sauna so much, or the "Bordello Effect," but certainly producer's lounges, producer's offices, more and more of that. People are realizing that when someone rents the studio for a month, that there's more going on than just sitting at the board for the eight hours and moving the knobs. There's a business going on, there

are artists who have to be dealt with, time outs, friends, drugs, sex... there's some real stuff that goes on there and they're (studio owners) *real* interested in that. Like the Record Plant (L.A.), that guy (Gary Kellgren) in his own magic way was a brilliant pioneer. The *psychology* of recording studios. And the ratio of the high-techs base to the low-techs base is shifting more and more. People are automatically including in their proposal things like a working lounge for each major complex. The new Criteria complex has individual producer's lounges for each studio. So that if The Eagles are in Criteria West for a month, they have their own lounge -- they can leave their guitars there and they'll be safe. They can entertain people there, they can sleep there.

Obviously, a large part of the success ratio with major studios lies in attracting "hot" producers on a regular basis. My early experiences at Atlantic with producers like Jerry Wexler and Tom Dowd gave me more formal ideas about aspects like "room sound," and control room

monitor sound determining the choice of the studio. Now, it seems like some producers don't really consider the sound of the room is a major priority when choosing a particular studio.

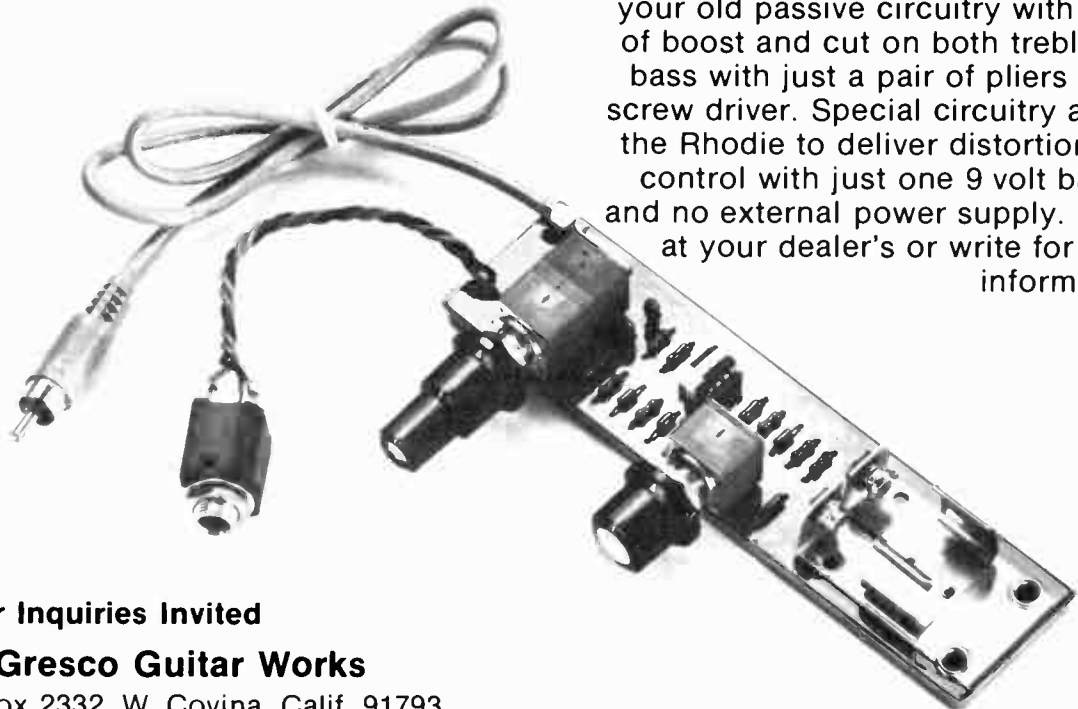
That's very true. You've actually touched on the very reason behind what's going on here. There have been a lot of people who've let the sound -- which is very important, that's actually what's going on. For years, the equipment dominated. Studio: buy the equipment, stick it in a room. Then people woke up and realized that the acoustics of a room was a science. But neither of them is the total ball of wax. It's the whole thing that goes on here. And if you've made an album A to Z and you've dealt with artists, you keep track of your hours over a month. You'll see that time in the studio is only one slice of what's going on. The esthetics play a more critical role than ever before, in certain instances overriding the existing technology. At the A.E.S. convention, the most successful consoles were the sexiest consoles. And they're all *great*. It's hard, if not impossible, to tell the difference between a record made on an MCI console, or a Trident, or a Harrison, they're *all great*. Ultimately people make their choice based on esthetics, durability -- *cost effectiveness*, and the acoustics to a certain extent.

*If the successful equipment is sexy looking, does that same visual approach apply to the interior design of studios? A place that looks good and is comfortable, as opposed to the seamy/starkly lit studios of old?*

If there's anything we've always done right is that we try to make studios look good and *feel* good. Make the air conditioning work, the lighting work. We're talking about quite a few systems. They all have to be built in to the room and they should still look good. Generally we feel they should be a little bit on the neutral side. They also kind of have to be able to please a lot of people, and a lot of times with studio owners, we have to help 'em hold back. Sometimes, when they're spending a half a million dollars, owners tend to really get going. It's easy to take yourself seriously when you just spent that much money and it's up to us to say, "Why don't you hold back just a little bit and we'll all end up just fine. And what works for one person may not work in the nighttime for the other, and why don't you

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## John Storyk-Studio Designer

do it this way so it'll last for years."

We're trying to make things hold very very high technology, be almost prismatic, crystal-like. Because musicians, God bless 'em, tend to get a little sloppy sometimes. We are aware of utility in design, that musicians are gonna be there and there'll be a beer on the console and at 4:30 in the morning somebody's gonna knock it over. So why wait -- we'll give them a shelf to put a drink on, or we'll make something two ft. high instead of two ft. six inches, so an amp doesn't go crashing into the wall. Or put ashtrays all over the place. It's our responsibility because equipment manufacturers aren't thinking about it. And studio designers, as far as we're concerned, still haven't completely analyzed what really goes on in the room. Different kinds of strata in guests and in users, different kinds of users. Some people shouldn't be anywhere near and don't want to be near knobs. Other people *only* want to be near knobs and don't want to be near the sandwiches. Other people need large surfaces to spread things out, others want no light at all. It's really strange. Your control room is 450 sq. ft., studios are 450 to 4000 and lots of different things go on in the rooms. The acoustics are important, but there's no reason to let any *one* thing wag the tail of another. First of all, studios hold *people*. And, second of all, they have to be built in the real world for real dollars.

*In terms of overall studio design trends nowadays, is there a movement to break away from the more internalized or "shut-in" feeling that exists with many of the classic old studios? Hardly any of the older rooms, including Bell and Atlantic, had windows except in the production offices. Do owners want to bring more of the outdoors into the room?*

Not really. We've got several studios with light, but the answer is that there's no real trend. If we can do it we'll do it -- in the cities, people still tend to put studios in buildings without windows. They tend to go to the junkier real estate and if you get a piece of real estate you'll put your offices where the windows are and the studios inside. But then, in situations where they *could* have windows, they don't really want them -- probably because they don't want to know when it's morning. For instance, in Criteria (West) where they could have had any amount of light, they consciously elected not to do it. You never want to know what



time it is in a studio, either because you're late or it's late. Daylight in a control room could actually get in the way. There are times when you want it dark and you don't want the glare because you've got enough glare already.

*Some of the older rooms, like Atlantic Studio A, have, either by accident or design, a reputation for a great sound, in this instance a one-of-a-kind rhythm section/bass-drum sound. Can you learn anything from studying these studios?*

Yes and no. That particular room, which is based on diaphragmatic panel action if you really want to know what's going on there, is 20 years old and Tom Dowd actually *did* design it, and did a damn good job. It's not his concept, it's a concept he took from some old European guys, but Tommy Dowd was a physics major and is a really smart dude. So there's a lot

to be learned from that one or from going into some of the big Columbia and RCA rooms. On the flip side of the coin: there's the old, "I'm not gonna do it unless it's on a Neve." I can hear that Neve console, and what they were hearing was the *noise* of the Neve console. For instance, Regent is the classic example of a studio that's really not as good as it is, but they get it going there and they're right for not wanting to change it, but not for the right reasons. Sometimes there's a particular quality with a room and, technically, there's no explanation for it. There are rooms -- even in 1980 when 80% of the rooms are less than five years old -- like Olympic where you could build a brand new Olympic exactly the same way, and you'd still like the old Olympic. Maybe it's all the people who've been in the room, who knows?

It's like this story I heard about Motown. They used to have three identical rooms, they were *absolutely* identical, and only one worked! But that phenomena of older rooms is very real.

*Extending these "gray" or ambiguous areas of sound quality into the rooms you are currently working on, are there certain things that turn out a little different, or surprise you, even after all of the meticulous planning?*

Always. In a way your question is wrong because what we're involved in here is a *process*. It's not nailed down and decisions are being made all the time in order to further define the project.

To illustrate this, Storyk breaks out plans for the recently completed Howard Schwartz facility in New York's Graybar Building.

*(Looking at the ultra-sophisticated plan for the control room) Seems like there's a lot more care and attention given to the design of the control room these days. Was this area much more neglected traditionally?*

This room represents a year and a half's worth of work. It's *more* important than the main room, because if you're unhappy with the acoustics in an area of your studio, you can change it. You can pull off a panel or make something that's hard, soft -- you'd have a lot of trouble doing that in here (control room). We're also doing a job here that's nearly impossible. We're taking a space that shouldn't have a studio on it, both ceiling-wise -- I can't give you the ceiling profile here, but it's *not* right -- and these columns here were

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### The Control Room-Basic Acoustics

Control rooms have to be functional rooms as well as acoustically accurate but this does not mean that they cannot be a pleasant room to work in. If the acoustics and the decor are considered together, it is reasonably easy to produce an environment that is both a "true sound" and a relaxed working atmosphere. I started our design by referring to our earlier drawing of the control room with its rough layout of the equipment to be used. To make the most of the available room the desk was to be end on to the window, requiring the monitors to be by the wall at one end of the long dimension of the room.

#### Reflections

With this layout and the bare walls as they stand, an engineer seated at the desk would have several principle reflections to cope with. The ceiling and floor we will at present discount as these are going to have a carpet and false ceiling anyway. We are left then with reflection in two dimensions. Remember at this point we are not considering the *frequency response* of the

room but the worst sources of *sound reflection*. If we remove these, it will make our future problems easier to handle.

These reflections are principally from three areas. The potentially most troublesome is the reflection from the wall opposite the speakers (A) which will give us a delay on the sound of about five times that of the direct sound path from the loudspeakers to the listener as well as being an excellent ingredient for a disastrous standing wave. Acoustically, this wall has to be removed and this is going to require some pretty heavy treatment to achieve this, particularly at low frequencies.

The second problem point is the wall just behind the desk (B). This will cause reflections that will totally destroy any stereo image for anyone sitting at the desk. For practical purposes this wall will have to be treated so that its final acoustic character is such that it parallels the response falling upon the right ear of the engineer.

The remaining problem area is reflections from behind the speakers (C). I see this as being connected with problems in

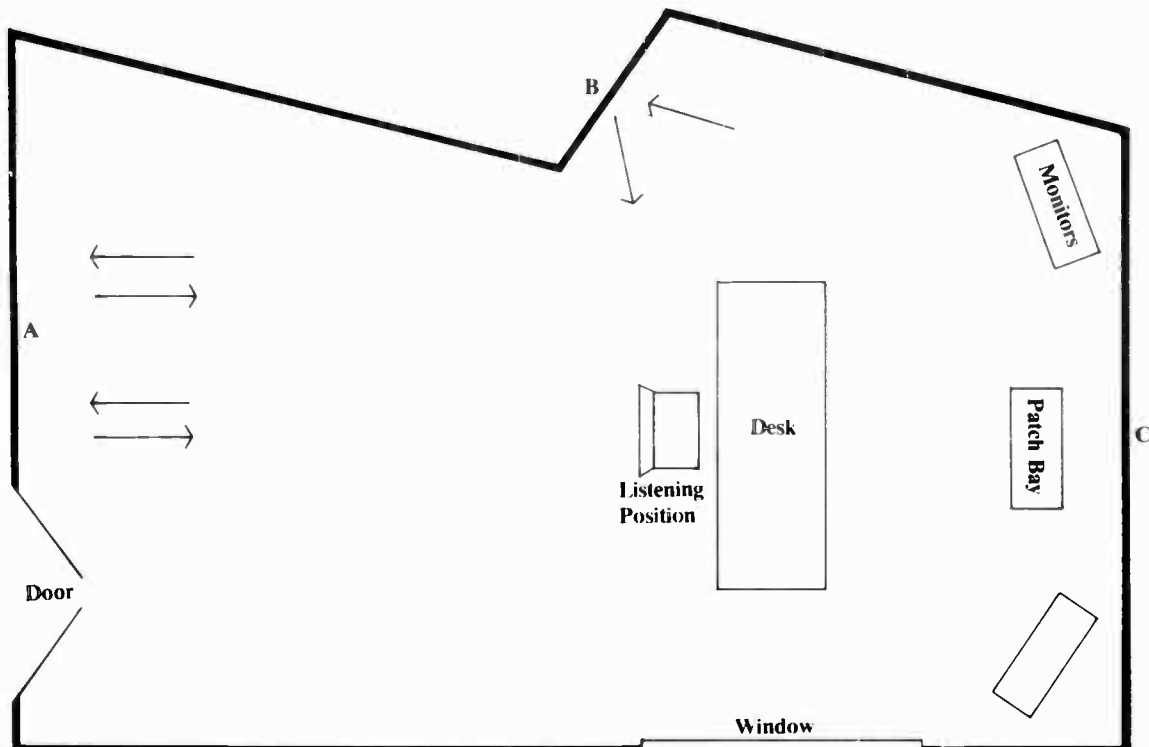
the frequency response of any speaker placed in this position because of its nearness to the wall. So both of these matters will be tackled together.

#### Treatments

The principle guiding rules I have used in selecting treatments for the walls is that of all surfaces in front of the listening position being kept bright to the ear and those behind dead. Also to try and keep the room as symmetrical about the front to back axis as possible but a room of this shape renders this difficult.

In examining the walls of the room I found that underneath the many layers of paint there was an old wall in an attractive multi-textured finish. By chipping this back and cutting back the mortar between the bricks we have a bright attractive-looking wall at little cost. Almost every room has a feature that can be used to create a certain character and to a studio this is important as it establishes an identity different from any other and will attract people who like working in such an environment.

Keith Spencer-Allen



## ON TEST: BGW 600 Power Amp

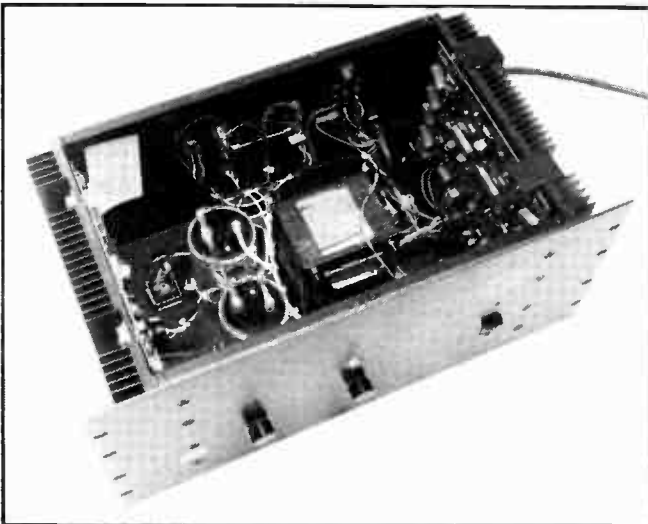
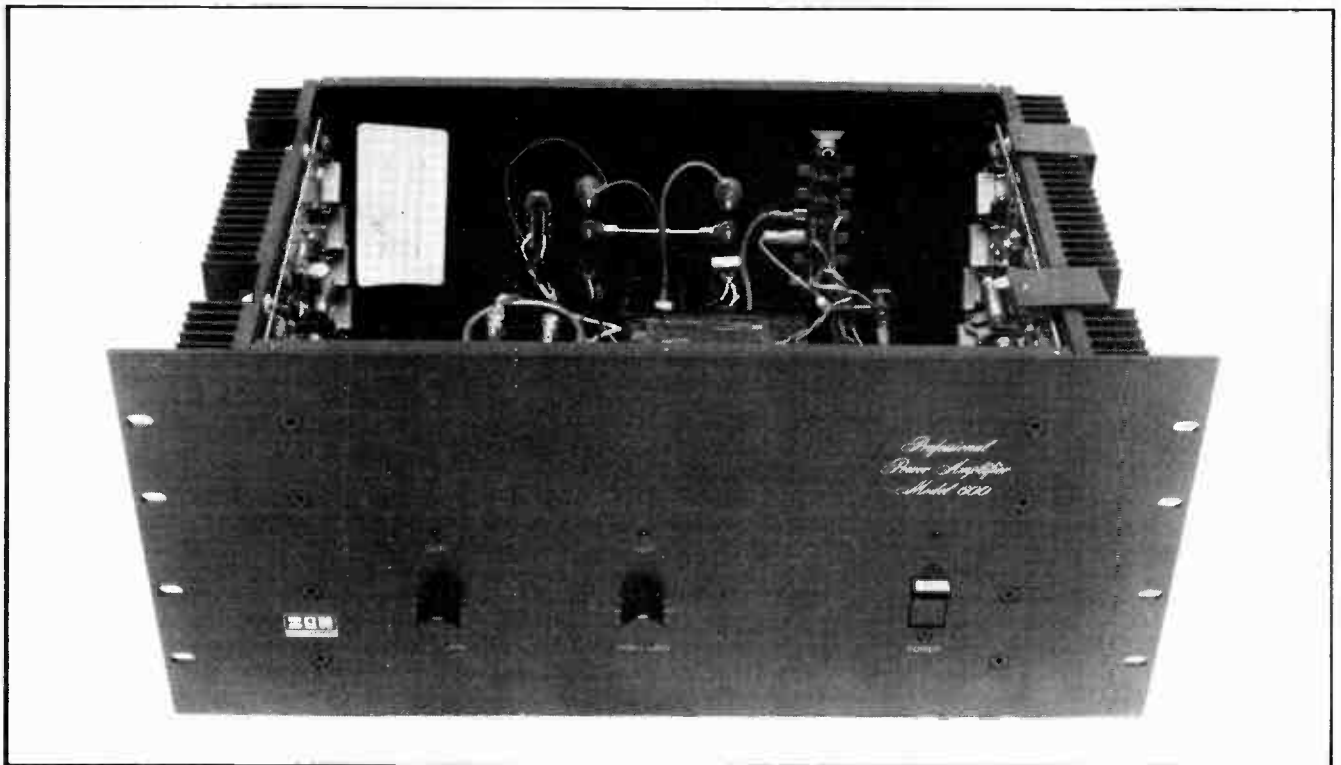
The BGW 600 is a stereo power amplifier in a rather more basic format than we have come to expect from BGW Systems Inc. Apparently the idea behind this model is to offer the performance of other BGW models but at a lower price.

The format is 19-inch rack mounting as is usual and requires 8 3/4 inch of rack

space. The front panel is 1/8 inch thickness steel in a black finish with four fixing holes on either side. The power transistor heat sinks form the sides of the cabinet while the rear, floor and top are 1/6 inch thick sheet. Construction is solid and appears to be capable of withstanding hard use.

The front panel contains left and right gain controls with associated LEDs indicating clipping and a power switch with LED. There are no carrying handles on the front panel and this may leave the gain controls rather vulnerable to knocks.

There is no interior cooling fan, so all the power transistors are mounted on the



# RECORDING WORLD

sides so that an exterior fan could be used to cover several units in a rack.

The rear panel contains unbalanced jack inputs, a recessed mono/stereo slide switch and the output connectors.

Internal construction is of a high standard with the power supply situated in the

middle of the floor and the PC boards mounted on the reverse side of the heat sinks so that the pins of the power transistors mount directly onto the board. All connections to the boards are in the form of a multiway connector.

## Conclusion

The BGW 600 acquitted itself well and any "financial short cuts" taken have not affected the performance which is of a high standard.

Keith Spencer-Allen  
and Mark Sawicki

PARAMETER	RESULT	TEST CONDITION	COMMENTS
<b>Specific power output</b> Watts (RMS) R-right channel L-left channel	510.76 WRMS 526.70 WRMS 288.12 WRMS 289.20 WRMS 179.56 WRMS 184.96 WRMS	R. 4 ohms L. 4 ohms R. 8 ohms L. 8 ohms R. 16 ohms L. 16 ohms	BGW claim the following: (A) 1kHz power: 200 watts/80Hms per chan. Both channels operating, 0.10% THD (B) 1kHz power: 285watts/4 ohms per chan. Both channels operating, 0.15% THD (C) 1kHz power: 570watts/8ohms (bridged MONO) 0.15% THD. The 600 model amp employs as the output stage devices six pairs of SJ7394/SJ7407 fully complementary devices (150 watts each), having total dissipation capability of 300 watts!
<b>Input Sensitivity</b> in VRMS for 350 WRMS (37.41 VRMS) output signal Ref. 1kHz	R. 2.03 VRMS L. 2.01 VRMS	Ref. 1kHz signal. 4 ohms load applied. Measured digitally using Sangamo-Weston model 6000 digital multimeter. Accuracy better than 1%.	Manufacturers' Input sensitivity figure: is considerably lower, claimed @1.88 volts. However power output is not specified. Voltage gain is 26dB (20 times).
<b>Total Harmonic Distortions (THD)%</b>	R. 0.0061% L. 0.0071% R. 0.098% L. 0.061% Mono: 0.0063%	@175 WRMS Ref. 20Hz @175WRMS Ref. 20Hz @175 WRMS Ref. 20kHz 8ohms @175 WRMS Ref. 20kHz load 500 WRMS; Ref. 1kHz	Very low in low frequency region, rising gradually with frequency. BGW figures — 0.10% Ref. 200 Watts/1kHz/8 ohms or 0.15% Ref. 285 Watts/1kHz/4 ohms.
<b>Intermodulation Distortion (ID)%</b>	less than 0.02%	Ref. 0.25 -200 watts	Quite good. These results correspond to 60Hz: 7kHz @4:1 ratio test.
<b>Input impedance</b>	Approx 15Kohms (variable figure) dependant on channel gain setting.)	Ref. 1kHz The channel gain control is 22Kohms/½watt potentiometer.	Satisfactory.
<b>Hum &amp; noise level</b>	better than 106dB	Below rated output into 8 ohms (unweighted band of 20Hz - 20kHz)	Very good. The electronic circuit of the 600 model power amp employs mainly discrete components. For improving S/N performance the whole system is extremely well screened magnetically. Smoothing section of the P.S. unit uses a pair of 9800uF/100v electrolytic capacitors.
<b>Frequency Response</b>	+0: -3dB +0: -0.25dB	Ref. 1Hz ÷ 100kHz Ref. 20Hz ÷ 20kHz	Very good.
<b>Damping Factor</b>	Greater than 230:1	Ref. 1kHz/8 ohms	Acceptable.
<b>Capacitance Load Test</b>	OK	2 microfarads non-electrolytic capacitors and 8 ohms dummy load.	Very good stability margin. The amp doesn't show any tendency to instability with capacitive loading.
<b>Open Circuit Stability Test</b>	OK	Dummy load removed both L&R channel set at MAX. Checked in both stereo/mono mode of operations.	No problems during OCS tests. An error sensing op-amp stage is used to stabilize performance.
<b>Short Circuit Test</b>	20 sec.	Full drive into 4 ohms. Both channels tested, but carried out separately.	The 600 model features the heatsink mounted bias circuit to provide precise temperature compensation and safeguards the unit.

## TANNOY SUPER RED MONITORS

The Super Red is one of several new models from Tannoy. The last professional models that the company developed a couple of years ago, the Buckingham and the Windsor, were a departure from the accepted Tannoy tradition as they employed multiple drive units. The Super Red, however, features a development of the dual concentric type of driver of earlier models, known as the 3809.

There have always been a large number of studios and engineers who swore by the original Red monitor and its "sound" but, due to its low power handling capacity, it became impossible to use as control room power levels leapt astronomically. Even the Gold and HPD, as successful as they are, could not destroy the aura surrounding the Red in some people's eyes. So here is the answer — a high level Red.

I know of several Tannoy aficionados who would remove the crossover assembly for the HPD monitors and bi-amp the high and low units of the dual concentric unit using an electronic crossover. I never heard the results but they used to say that it was a worthwhile development. Well, the Super Red features an active capability as well as its own internal crossover.

Physically, the cabinet measures 40.5 inches high, 28.5 inches wide and 16.5 inches deep. This is without the plinth which is available as an accessory, as is a hanging strap for ceiling mounting. The cabinet is constructed from one inch plywood, veneered in black ash or American walnut. The drive unit is front mounted in the top half of the cabinet and secured by four M8 hexagonal bolts. Removal of the drive unit requires only the removal of these bolts and the connecting lead from the crossover.

The cabinet is a reflex design with four ducted circular ports of four inches diameter. The back of the cabinet is sealed, so without destroying the cabinet it is difficult to be sure of the internal structure but there is extensive internal bracing and acoustic treatment giving the cabinet a high degree of rigidity.

The front grille panel is in two sections and consists of a knitted cloth over a wooden frame and which just clips onto the cabinet. Between the grille panels is the crossover panel, which isn't covered. The design of the crossover is similar to the HPD crossover but has an additional Presence Energy control as well as Treble Roll-off and Treble Energy controls. Below

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each control is a graphic drawing of the effect of the control positions.

The rear of the cabinet has the terminations for the input leads. By moving four external links it is possible to convert the operation of the Super Red from the internal passive crossover to accept an external bi-amplifier input.

We operated the speakers on a heavy duty speaker stand so that the drive units were at approximately head height when seated and about four feet into the room. We only operated in a passive manner utilising the internal crossover with the controls at a level position. The speakers were driven by a BGW 600 power amplifier.

The testing time was unfortunately only very brief but during this time we replayed as many different kinds of familiar material as possible and at many different volume levels. The impressions are only highly subjective then, but I will

give them any way.

The initial impression was one of a warm sounding speaker with an obvious "Tannoy sound". This sound appeared to be retained at all levels of volume, unlike the HPD which I have found to require a certain minimum level of input before it "comes to life". Power handling was good and bass definition was retained even at high levels. The speaker was found to have a wide treble dispersion characteristic giving a large usable listening area. No resonances were heard from the cabinet even on highly bass orientated signals at high volume. We drove the amplifier into clipping before any sound break-up was noticed.

These are not intended to be definitive results at all but they certainly seem encouraging and the Super Red is a speaker I would like to explore very much further.

**Keith Spencer-Allen**

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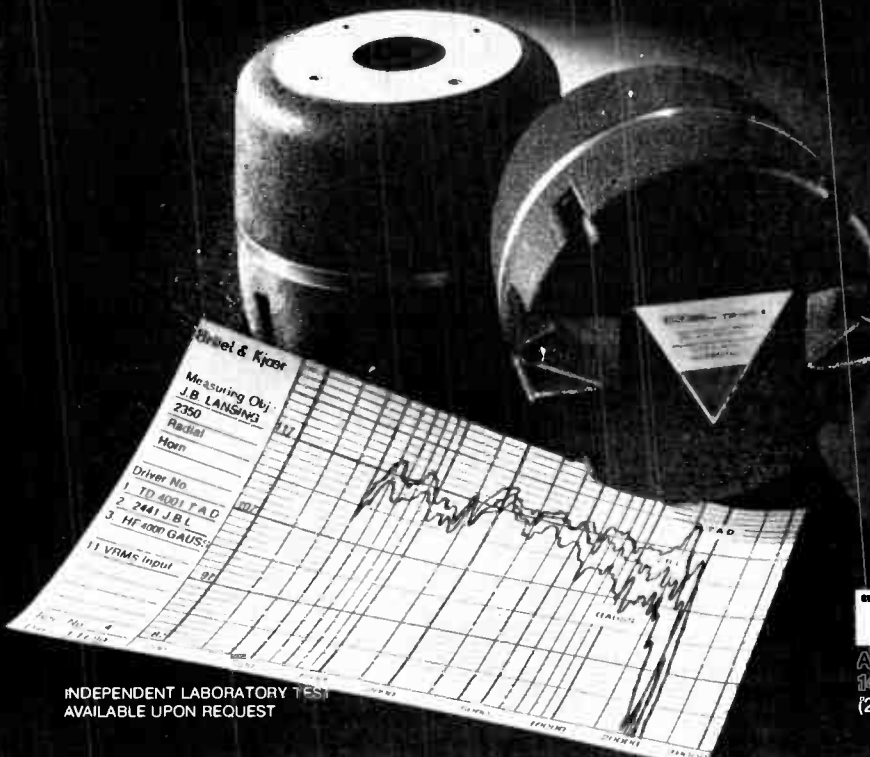
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# On Sax:

## Alan Holmes

Contd from p. 17

There is nothing quite so embarrassing as playing a solo in front of a large audience and having a spring break or cork or pad drop out, leaving you making a noise like a cat with its tail shut in a door and not being able to do anything but slink off sheepishly and try to fit. This sort of disaster is much less likely to happen if the sax is kept in excellent condition, which means well maintained.

A sax should be put in for a service every year, rather like a car, in which the whole thing is checked and adjusted and any tired pads and springs replaced. The difference can be surprising, as you adapt your playing to compensate for a leaky instrument which slowly deteriorates over the year.

The keywork should be very carefully oiled with special key oil twice a year. Great care must be taken to keep oil away from the pads: it ruins them. Use a toothpick dipped in the bottle to place just a drop on each pivot point. The use of injector oiler makes this much quicker, as it acts like a hypodermic with its hollow needle.

The main reason why small pieces of cork drop out is that they get soaked in oil, which loosens the glue. So wipe off any surplus before it runs down the pillar or along the key. Be careful when cleaning off the spit marks from the lacquer, as this is the other way that the corks get dislodged by careless fingers and dusters. Should you accidentally unhook one of the needle springs you will find a crochet hook just the tool to hook it back on.

The daily points to watch are: Check that the G-sharp key is not stuck down before playing, and to try not to play after sugary drinks (including beer) without washing your mouth out with water first as the sugar in your breath will

cause the pads to stick. To clean sticky pads, sprinkle some talcum powder on a sheet of paper and insert it under the pad. Close the pad gently and draw out the paper so as to coat it. Normally, sticky pads are caused by dust and can be cured by doing the same thing without the talc to remove the dirt.

Every time you finish playing, you need to take the mouthpiece off the crook and clean the inside, dry the reed and pull a swab through the crook to stop deposits building up which could affect the intonation. Not to mention your health! Goddard's silver cloth seems to work very well on lacquer as well as silver, after first removing the spit marks with a damp cloth.

You are setting up ready to do a gig and for some reason your sax gets knocked off its stand and falls over. When you attempt to play it it doesn't work. What can you do in the hour or so before the gig starts?

First check exactly what the damage is, using cigarette papers if necessary. Bend any twisted keys back as closely as you can, then, holding all the keys shut, run water through the sax till all the pads are really wet. Press down hard on the affected pads till a new seat is made, then make any necessary adjustments to the corks so that the instrument is playable. If the key rods are bent where the key is of the tube and rod type, then you are really in trouble. If it is jammed, there is no way to repair it at a gig, but most of the minor accidents usually involve only one or two keys and are mostly where the key pillar has taken the force of the knock and bent or dented into the body slightly. As soon as possible have the instrument repaired properly as it might not work when the pads dry

out.

Your repair man will be only too glad to tell you when your sax needs a complete overhaul. The time interval really depends on how much you use it and whether it has been knocked about by touring.

It doesn't matter how good you are, you will play better on an instrument that works correctly. Any extra pressure you have to apply to the keys to compensate for leaks is going to slow you up and make for jerky playing, so it's well worth a few pounds spent regularly at the repairers to make sure that playing your sax is as easy as possible. Playing is quite difficult enough without trying to battle with a leaky instrument, too. ■

### Repair kit

*Spare E and F pads*

*Glue: clear Bostik or brown animal Gloy.*

*Optional: instant Superglue or Araldite Rapid*

*Single-edged razor blade*

*Sheet of 1/16" cork*

*Champagne cork*

*Sheets of medium and fine sandpaper*

*Assorted rubber bands.*

*Key oil (and preferably an injection oiler)*

*Crochet hook for springs*

*At least 2ft. of strong string*

*Cigarette papers*

*Velvet or felt scraps*

*Screwdrivers, large and small, to fit key rods and pivot screws. Finally, a box (such as a cigar box) large enough to hold all the above and small enough to fit into the sax case*

# On Drums:

## Bob Henrit

Continued from p. 15

these are only guide lines and the player is expected to work his own tensionings out. For the snare-drum they always advocate 6kg/cm on the snare head and either 6, 8 or 10 on the batter head according to taste.

They list "funky" tunings too, which in the case of the tom toms involves adjusting any two opposing tensioners to roughly one half of the value of the others. In the case of the bass drum they specify the tension on the top two bolts should be two thirds the value of the other bolts (on the batter head). The way to check the tension on any head before a gig is as a guitarist tunes his instrument. He decreases tension on the string and then takes it up to the desired pitch. The same process should be used for drum torque — reduce the tension first then tighten to the desired number. So, in conclusion, *drum torque* is indeed a very useful device which should prove very popular, especially at the professional end of the market. No so much because of its price (\$42.50) but mainly because pros are the guys who are fastidious enough to *want* (and need) to have their drums accurately tensioned.

Studio players, engineers and record producers will find *Drum torque* a boon to enable positive tuning and more importantly *create a norm* for the industry.

The actual unit is made in Kentville, Canada and has an A.B.S.-type black plastic outer cover and internals of metal. One recommendation I'd like to make is that it should come in some sort of permanent box or pouch to protect it while it's in the drummer's trap case.

Bob Henrit has been a professional drummer since the Sixties and worked with a string of top bands, including Argent and Phoenix. A busy session musician, he has recorded with Roger Daltrey and Leo Sayer among others, and has also found time to present drum clinics.



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# On Guitar:

## Steve Khan

Continued from page 13

### Minor Chords:

On any minor chord the player may apply minor pentatonics built on the Root, 2nd, and 5th degrees of the corresponding dorian mode; and, also the dominant 7th pentatonic built on the 4th can be used.

### Example:

E minor 7 use:

E minor pentatonic  
E G A B D

F minor pentatonic  
F A B C E

B minor pentatonic  
B D E F A

A dominant 7th pentatonic  
A B C E G

As an exercise, take the time to do what I did for you with the *Major Chords* section and analyze what scale tones are produced within the E dorian mode by these four pentatonics. Then you might pick another minor chord, use the "formula" and

see if it all fits and holds true. To begin to translate this to the guitar: (1) pick a minor pentatonic that lies close to your nut (like F or G minor pentatonic) (2) then, using E strings as a point of reference, create your own fingerings in position by starting the pentatonic on each of the five tones — you'll find that this will cover the entire fingerboard. In addition, so you can *hear* how these pentatonics function over the chords, try making a cassette by playing the chord in long whole notes several times so that you use these scales over them... if this method is not available perhaps a friend can play the chords for you.

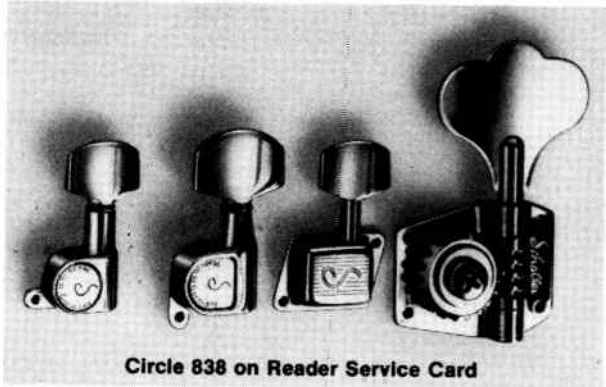
Next time, we'll take a look at minor 7b5 (half-diminished) chords and altered dominant 7th chords with the pentatonics that apply to them. Good luck!

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# machine heads

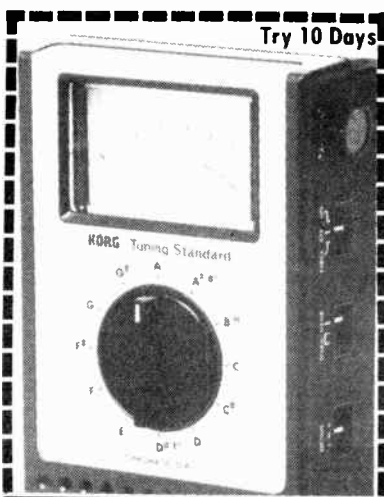
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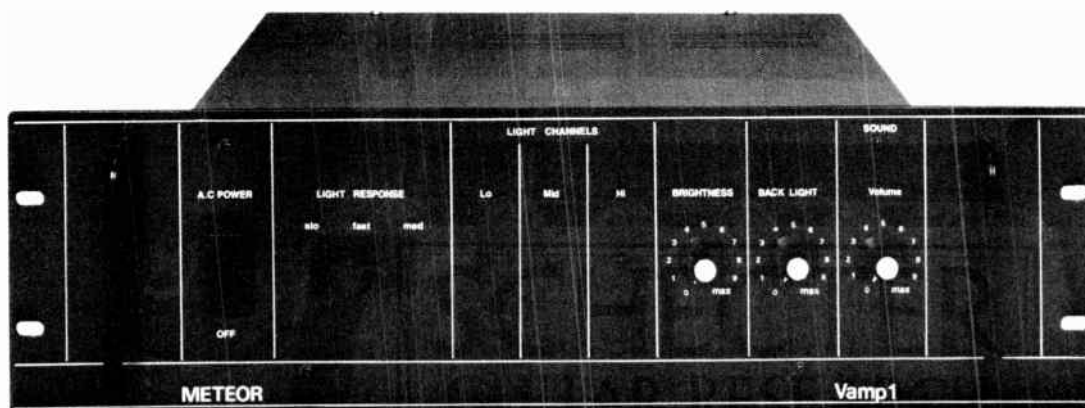
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		Yamaha ..... 126-130	<b>V</b>	Verisonic ..... 58	Vinci ..... 72

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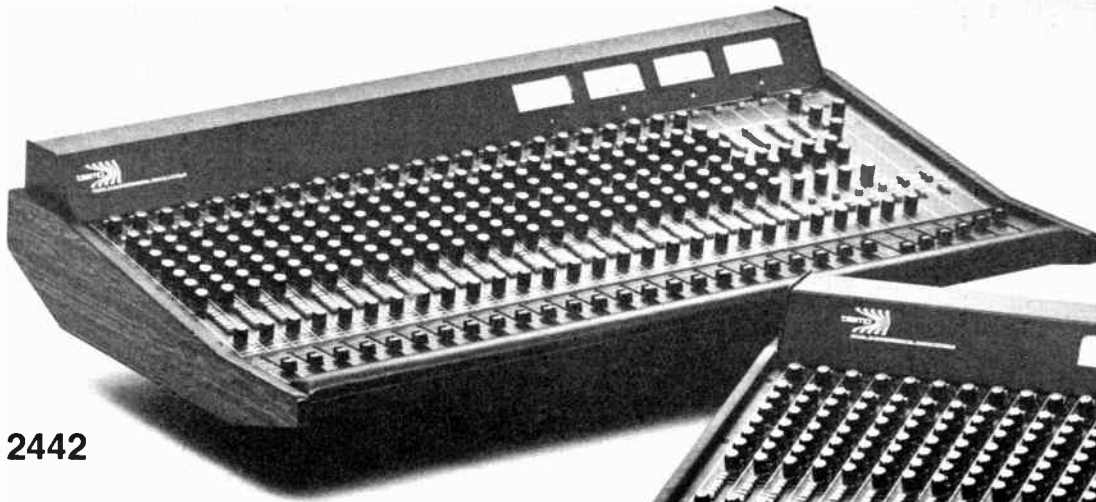
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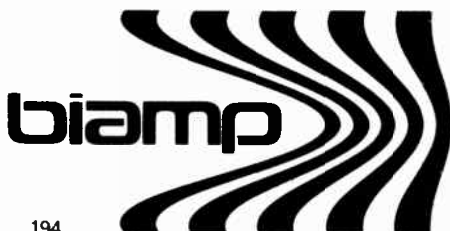


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FEATURE	BIAMP 1642/2442	YAMAHA PM/1000-16/24
Equalization	4 Bands	3 Bands
Cross Talk adjacent inputs @ 1Khz input to output @ 1 KHz	- 72 dB (max. gain) - 84 dB (worst case)	- 60 dB - 50 dB
Master Outputs Left and Right	YES balanced and unbalanced	NONE
Echo Returns	4 Each to include pan, assign to subs, or direct to left and right main.	NONE must use an input channel
Solo on Monitor and Echo busses	YES	NO
Input channel overload lights	YES 2 LED's - 20 and + 6	NO
Channel Patching	YES	NO
Mix Busses	3 - one pre, and post, one switchable pre or post	2 - both prefader post EQ.
Line Input	YES	NO
Signal to Noise Ratio	Better than 80dB	61dB
Total Harmonic Distortion (Line Input)	Below .02% 20 - 20Khz	Below .25% 20 - 20Khz
Frequency Response	± 1dB 12 Hz to 30 KHz	± 4dB 20 Hz to 20 KHz

FEATURE	BIAMP 1642/2442	YAMAHA PM/1000-16/24
Maximum Voltage Gain - Program	77dB	74dB
Slew Rate	Greater than 10 volts per micro second	Not Given
Mute on input channels and submasters	YES	NO
Live submaster mixing (subs to main)	simple and straight forward	complex matrix system
Submasters	4	4
Headphone cue or solo	YES	YES
Solo Priority system	YES	NO
Echo outputs	1 or 2	2
Submaster inputs	4	4
+ 48 volt phantom power	YES	YES
Switchable Metering	YES	YES
Playback Inputs	YES	YES
Input Channel Mic Inputs	Transformer balanced 16/24	Transformer balanced 16/24
Line Inputs	16	NONE
Channel Patch In	16 Prefader	NONE
Channel Patch Out	16 Prefader	NONE
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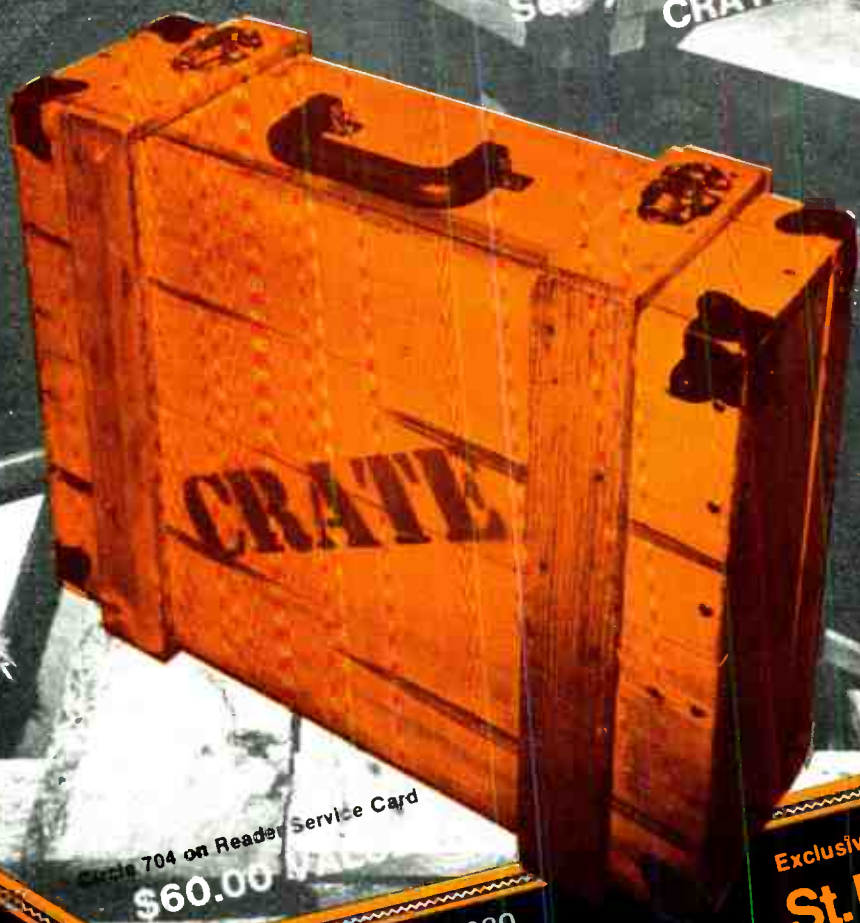
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