

INTERNATIONAL MUSICIAN™ AND RECORDING WORLD

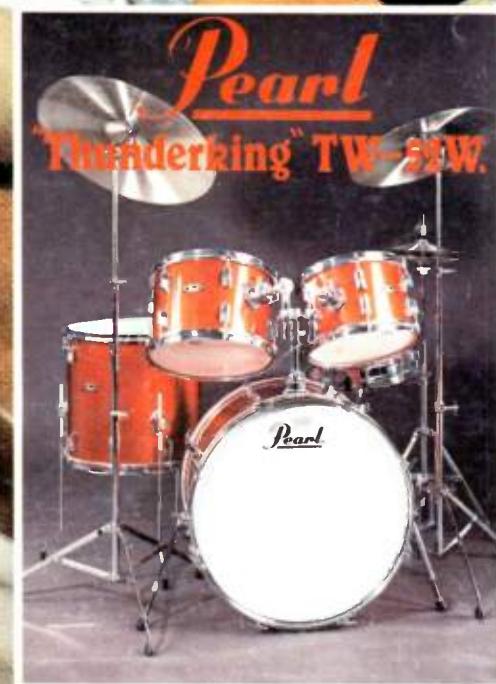
USPS 331-630 October 1980 \$1.75 Canadian \$2.00

Van Halen
Live Review

DARYL HALL
and
JOHN OATES

Joan Armatrading
Bill Nelson Jah Wobble
Bernard Purdie

Checks: Roland Vocoder Plus,
Hamer "Sunburst" guitar, Pearl
Varipitch, Cannons drum kit, Electro-
Harmonix mini synth, DBX compressor/
limiter



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12 into 2

The Studiomaster 12/2B is part a range of quality Studiomaster professional mixers, available from Recording Studio Design Incorporated, 1365C Dynamics, Anaheim, Los Angeles, California (714) 5284930 or (714) 5284931



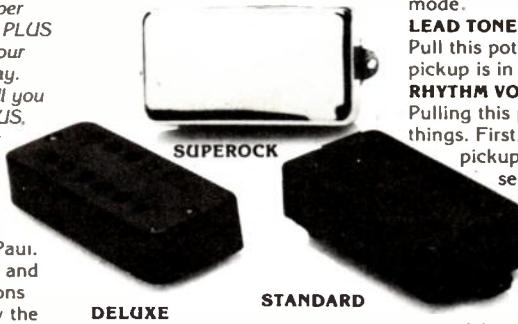
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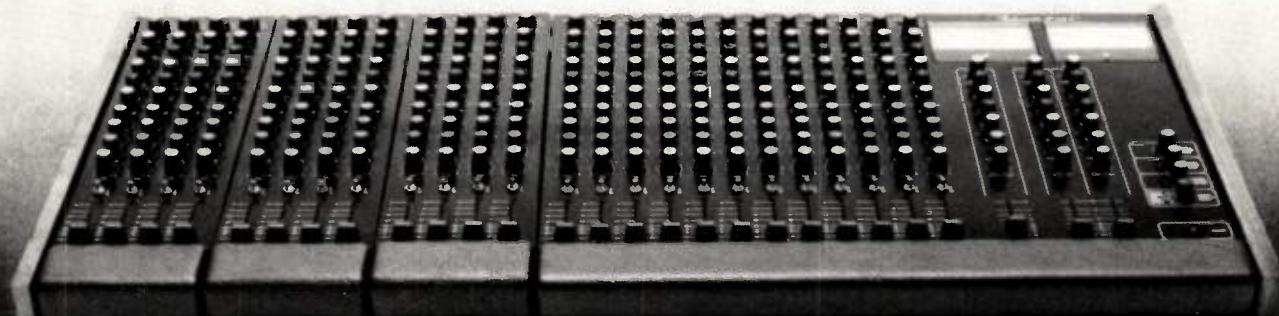
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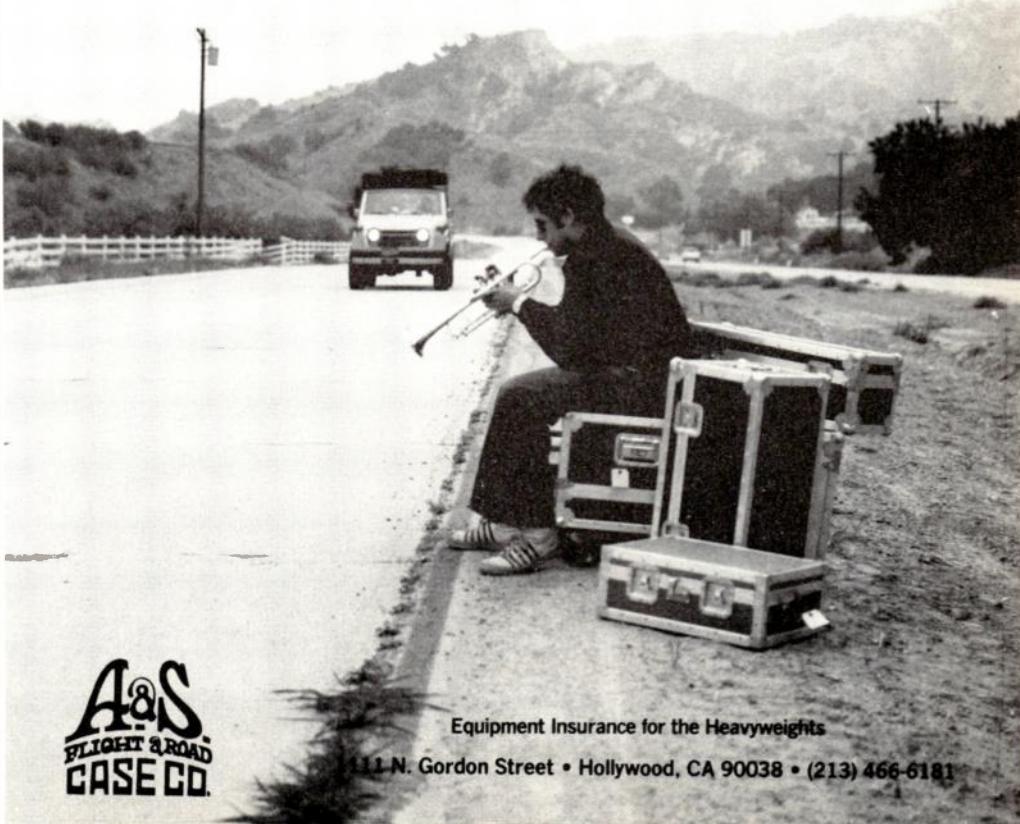
Our new Classified Section makes its debut this month on page 121 and, as you can see, the initial response to this section has been quite positive. If you are interested in taking advantage of this new IMRW/USA feature, please check the box on page 121 for details.

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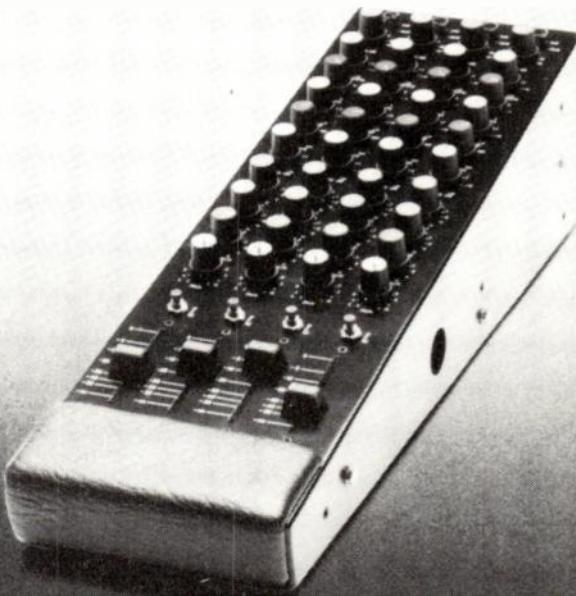
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A 12-channel mixer is very adequate for many applications but if your band intends going places, sooner or later it may find it can use a rather larger model. That's why all Studiomaster mixers, including the Studiomaster 12/2B are designed to accept Expander Modules. Sooner or later the group that can't add on has to trade in, and experience tells us that 12/2B owners like to remain 12/2B owners — it's that kind of product.

The Expander Modules are four-channel

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plus 4

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New York City

Over the last several years, we've been given some pretty fantastic and accurate insights into working as a guitarist in the studios of Los Angeles. Primarily, we have Tommy Tedesco and, more recently, Lee Ritenour, along with *Guitar Player* magazine, to thank for sharing their experiences and viewpoints with the rest of us. And if it needs to be said, it would be difficult to find two better players to have given out all that information and music. The purpose of this column is just to let you know a little more about New York City, so that, if it's in your mind to make some kind of choice between a career in one of the two cities, you'll have some idea of what you're getting yourself into — because there are some major differences.

First, our instrument — the guitar. For some reason, N.Y.C. has become basically a Fender town, while it's pretty obvious that most of the better players in L.A. seem to use the Gibson 335 as their primary instrument. It's probably some kind of coincidental personal preference on the part of the players and the fact that engineers in N.Y.C. seem to prefer a much brighter sound from rhythm guitar parts. You seem to find an equal balance between "stock" (or, moderately customized) Stratocasters and Telecasters with some kind of humbucking pickup in the front position. There are of course a few maverick exceptions to these not so hard-and-fast rules, like Eric Gale and his Gibson Super-400, always in demand on both coasts for his great sound and feel. It probably should be pointed out that an "established" player can just about show up with whatever instrument he chooses, because at that point in his career, his judgment is respected. Recently, Jeff Mironov, a long-time "Stratman" switched to a 335 and



he's as busy as ever. At various times during the Seventies, Hugh McCracken, David Spinoza and John Tropea, changed guitars for periods of time and they all retained the distinctively individual sounds that made them so popular. I don't want to make the switching of guitars sound like a big deal, but you must know that because of the physical lay-out of Manhattan — the means of transportation, etc. — whatever you can haul on your back and tuck under your arms, that's basically what you bring to the date. Needless to say, it's a wonderful luxury that the players in L.A. have those incredible road cases with all of the necessary guitars, amps and their efficient pedal boards. Many times on a date you find yourself saying that you wish you'd brought your "such-and-such" along but you just didn't have enough hands and shoulders. It can be really, really frustrating when the producer or artist is looking for your own brand of sonic creativity and that very instrument or effect is sitting in a closet at home. At times, the answer to this predicament is to try and "psych" out what the artist and producer are going to be looking for — and, at times, it never hurts to be direct and give them a call to discuss the music to be played.

Now, what about amps? Every studio in N.Y.C. has amps for guitars. Years ago, these amps were furnished by the Manhattan Guitar Club, which doesn't exist anymore. Most of the amps purchased

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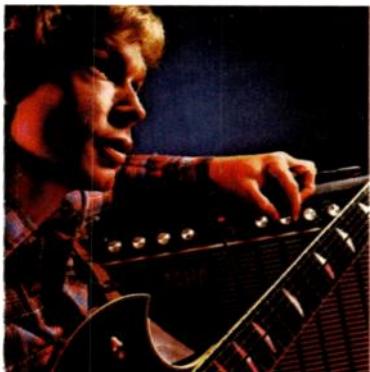
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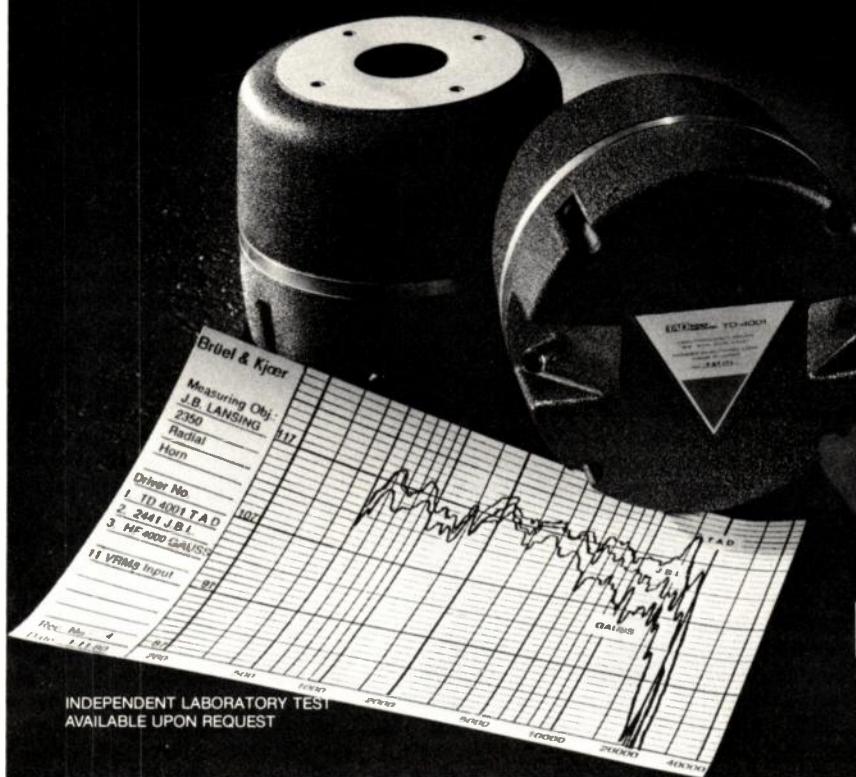
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Letters

Carl Palmer

We are writing to you regarding Steve Brennan's interview with Mr Carl Palmer, published in the July 1980 issue of the magazine *International Musician & Recording World*.

Makers of cymbals and gongs, we have a number of drummers throughout the world who specifically endorse our products. Mr Palmer is one of our endorsees, and has been for many years.

The point we would like to make, is that in your interview you wrote that Mr Palmer said he uses Avedis Zildjian cymbals, and accompanied this with a list of sizes and types. *This information is not true.* We would also like to inform you of Mr Cheech Iero's interview with Mr Palmer in the June/July 1980 issue of the American magazine "Modern Drummer" where Mr Palmer stated that he uses Paiste cymbals *only*.

As you probably realize, a false statement like this, especially in a magazine like *International Musician & Recording World* is very damaging to the promotion of our products, and very confusing to readers.

We therefore require this matter to be corrected by you in the next issue.

Beat Aklin,
Paiste AG

Setup Carl Palmer

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- 18" Medium, 2002
- 20" Medium, 2002
- 22" Medium, 2002
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- 38" Symphony Gong
- 50" Symphony Gong

Tone Deaf?

Dear Mr Holmes,

I read your column in the current "International Musician and Recording World" with great delight. Even

though I play the fiddle and not the sax, it was very good to read your comments about how you are pissed off at the contemporary notion that talent isn't very important. I am afraid that the tone-deaf people abound in even purported professional rock. The decibel levels are high enough so that permanent hearing loss will be the fate of those who stick around electronic music very long.

Three power chords can be heard emanating from the fingerboards of brats trying out equipment at every music store across the land. Volume and pitch monotony are the norm.

If I had known *International Musician & Recording World* was going to be so overloaded with the latest electronic specs and equipment, I would have subscribed to *Popular Mechanics* instead.

Your column is the only musical feature in the whole

damn magazine. I wish you would write about exposure to excess decibels in your column (not that many would take heed anyway).

I myself have a pickup on my violin, but that is mainly to be heard with unamplified brass and woodwinds. I'm not putting down electronic music as such or rock, but there is so much crap making lots of money.

Your suggested use of Strobtuners is fine. Some jerks try to match intonation "unhearingly" to each chromatic dial and they seem to have no sense of compromised, expressive intonation. (The tuners are necessary, it seems, for recording tracks, to ensure a consistent standard pitch; but even musicians with absolute pitch, I have observed, don't always agree with the electronic tuner's conception of, e.g. 440 cycles/sec.

INTRO/STEEL LICKS ON GUITAR

Ray Flacke is something of an anomaly in that he is rapidly becoming a front-line Nashville session guitarist even though he is British and has only been in the US for about two years. A veteran of many sessions in the UK as well as a former member of Big Jim Sullivan's band as well as an excellent band named Meal Ticket, Flacke brings his own particular insights into this discussion of electric country-style guitar and hopefully will shed some light on a very distinctive approach to music that some of you are already vaguely aware of. Questions and

responses are welcome and should be addressed to Ray care of International Musician & Recording World, Suite 1909, 1500 Broadway, NYC 10036.

I've been into Country Style guitar for quite a while now. I have always admired steel players and their licks so I tried to emulate a few on the guitar.

The piece I have put down here is not only effective but it will help your pitching and strengthen your fingers. It may take a little while before the lick starts to flow but they will, believe me.

As you can see in the Fretboard diagrams I have used Fig. 1, 2 and 3 for each step. The lick here is in the Key of E and is the sort of idea you could use to end a typical up-tempo country song or to finish a solo. (It sounds really effective if the steel player plays a harmony line to it.)

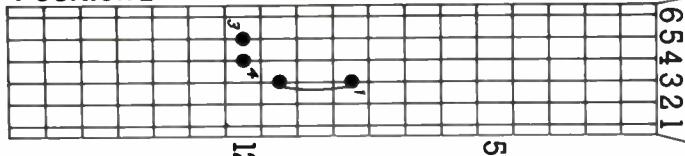
The idea is to strike and then bend Fig. 1 up to Fig. 2, while holding Fig. 2 and allowing it to ring, strike Fig. 3. So with Fretboard Diagram 1 you would get an F sharp note ringing together with a G sharp note.

With Fretboard VI, I play

both the top E and B notes, with the pad of my little finger and bend Fig. 1 up to Fig. 2 with my second finger. You can support your bending finger by placing your first finger directly behind it. Distributing the load so to speak. To get the best effect from these three, play them simultaneously — use both pick and fingers (or just fingers, depending on how you use your right hand). So that you get a block chord effect, allow all three notes to ring and bend Fig. 1 up to Fig. 2, which will bring you into a full E-major chord.

R. J. Flacke

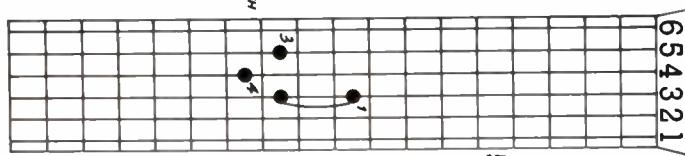
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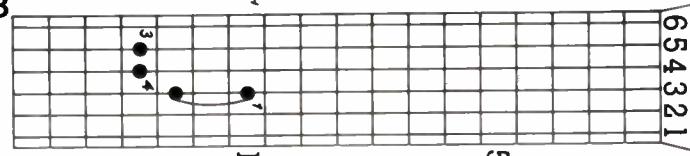
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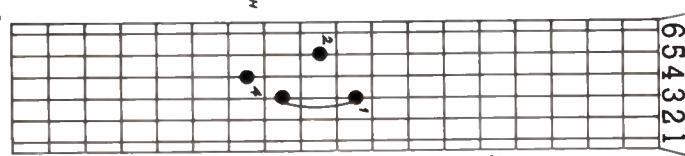
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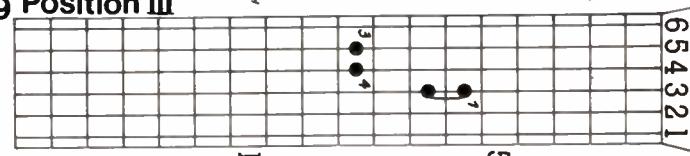
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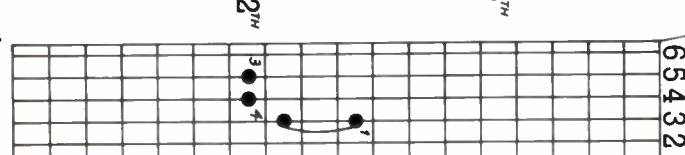
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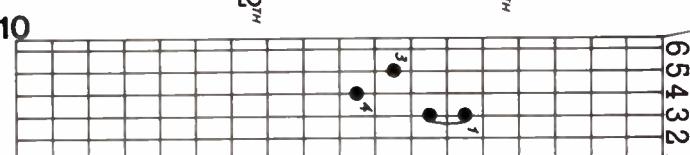
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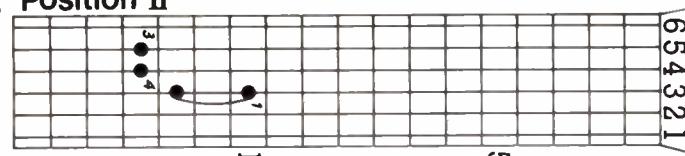
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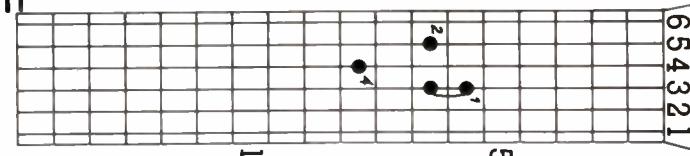
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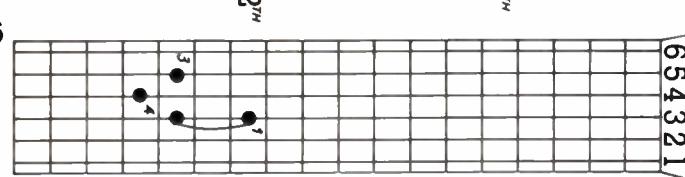
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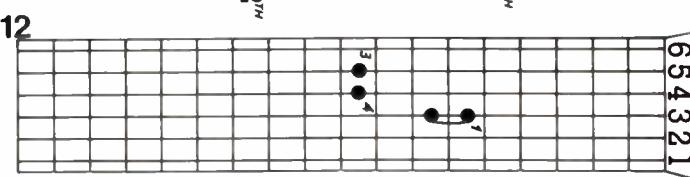
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I'm looking forward to your next column.

G. B. Leib

Rodford: Con

In your July issue, Jim Rodford does a bass check on the Rickenbacker 4001. Don't you think a bass player should do such an article? He says two things about the neck that are false. First, a Rick bass has dual truss rods, not one, which makes adjusting one side or the other easier. He fails to even mention this feature. Secondly, since when does a clear varnish cheapen a guitar? Apparently (sic) he has never had a neck that requires oiling too often.

Also, he states the adjustable mute on the one he tried stuck a bit. Does this mean that this is not a plus? You don't even see this feature on other basses. He talks (sic) about the pickup cover being a problem for pick players. Little

does he know that it is great for resting your hand. And for dampening strings you've got two hands.

I think this article is a disgrace to Rickenbacker and you owe them an apology (sic). I've played Rick basses for years and had not one dissatisfied cust (sic).

Doug Salmela

Jim Rodford not only plays bass, he is the current bass player for The Kinks — is that heavy enough for ya? Your first comment about truss rods may be well taken but the second comment involves a subjective opinion about looks that is not false *per se*, only his opinion. Also, I can't see how any part that sticks on an instrument could be considered a plus. Re: the pickup cover as a resting place for the hand, I'm sure Mr Rodford is aware of this aspect con-

sidering his professional standing and longtime experience in the area of bass playing. I think your letter is a disgrace to the English language (letters with as many misspellings and syntactical errors as yours give musicians a bad name) and we never apologize to any company for a review unless there is a specific technical error or a misstatement of fact. — Ed.

Rodford: Pro

Gentlemen, I've just completed reading Jim Rodford's "Guitarcheck" on the Series I bass by Alembic. As the proud owner of a 1976 Alembic Series I "Omega" bass, I read the article with great interest and once again you're right on the money!

In a review as praising as this was, I'm sure many people who haven't had the pleasure of playing an Alembic are a bit

skeptical that any bass could be that good. In my case, after owning over a dozen various basses, I don't even bother looking at other basses because, after all, you can't improve on perfection!

Mr Rodford obviously spent a good deal of time with the instrument since he uncovered most all of the idiosyncrasies that the Alembic bass has.

Since the only thing that seemed to bother Jim was the fact that you can't stand a "point" bass against the wall, it's too bad he didn't have the opportunity to test an "Omega" model. It stands very nicely against a wall.

I'd like to thank Jim Rodford for the "Guitarcheck" but even more importantly, I'd like to thank the craftsmen at Alembic for producing such a work of art. Believe me, they're worth every penny of the price!

Ken Smith,
Albany, New York

On Sax:

Alan Holmes

Those of you who have followed the two previous parts concerning harmonics are probably wondering why so much was left out. This was because I was trying to make the issue a clear-cut and definite method rather than adopt all the alternatives and choices of conventional harmonics charts.

About 15 years ago I was at the stage where I was practicing as long as I could physically manage and when it got too late to make a noise, and I was too tired to anyway, I learned a great deal from staring at the saxophone and considering, in minute detail, all the functions of its keys and playing processes, and running over anything I was having problems with, and trying to see a different approach to solve it.

I discovered during the course of trying to get first the aux F sharp and then the Harmonic 'G' which I play *without* the octave key, that the opening of the high F key when it is operated by the aux F mechanism should be closed so that the sounding of the G is facilitated without altering the tuning of the F. I did this by brutally bending the F key in, while holding it open and then re-seating the pad by wetting and pressing it and eventually by trial and error achieved the right amount of opening of between 1/16 and 3/32 of an inch or 60 to 100 thousandths or very roughly three of four thickness of cardboard from a cigarette packet. I also fitted a thinner cork too.

Recently, I bought an excellent book called 'Saxophone High Tones' by Eugene Rousseau and was very interested to see that he describes this modification and gives details of why it works. He was consultant to Yamaha on their latest '62' models and he has incorporated the restricted opening for the aux F with the use of a new center pivoted, metal faced key, which visually distinguishes the latest Yamahas from a distance. I can recommend this book

which is published by Etoile Music Inc, Shell Lake Winsconsin 54871, as it gives harmonic charts for baritone and soprano sax as well as useful exercises to join the harmonic and regular range together with alternative fingerings.

The use of this key in this method is as a vent and instead of the upper octave key at first, then with it. When you are playing harmonic 'G' the aux F key then acts as a vent instead of the upper octave key which is not used. Another good chart and excellent book although written in the Sixties is Larry Teals 'Art of Saxophone', published by Summy Berchard, which deals with all aspects of playing in text rather than exercise form.

The articulation or separation of harmonics is very difficult at first as the tongue is assisting in the production of the harmonic by deflecting the airflow. If the tongue is used in the normal way then the harmonic will abruptly cease to sound. Initially then, all tries at harmonics should be without tonguing and only after the notes are very stable and consistent should tonguing be attempted. This will require a new tonguing technique where the tongue is still deflecting the airstream with its shape, but the very tip is doing the very delicate and tiny movements necessary to articulate the notes.

Practise of the harmonics will also have a tendency to change your tone in the standard range of the horn as your muscles get stronger and while you should gain more control overall, you must be careful that the low range does not deteriorate into strangled squawks as your throat remains too closed. I should be more accurate and specify the back part of the tongue which is in the throat and moves up and down to vary the volume of the oral cavity (mouth) and thus the resonance chamber as seen by the reed. So make sure that what you gain at the top is not lost from the bottom.

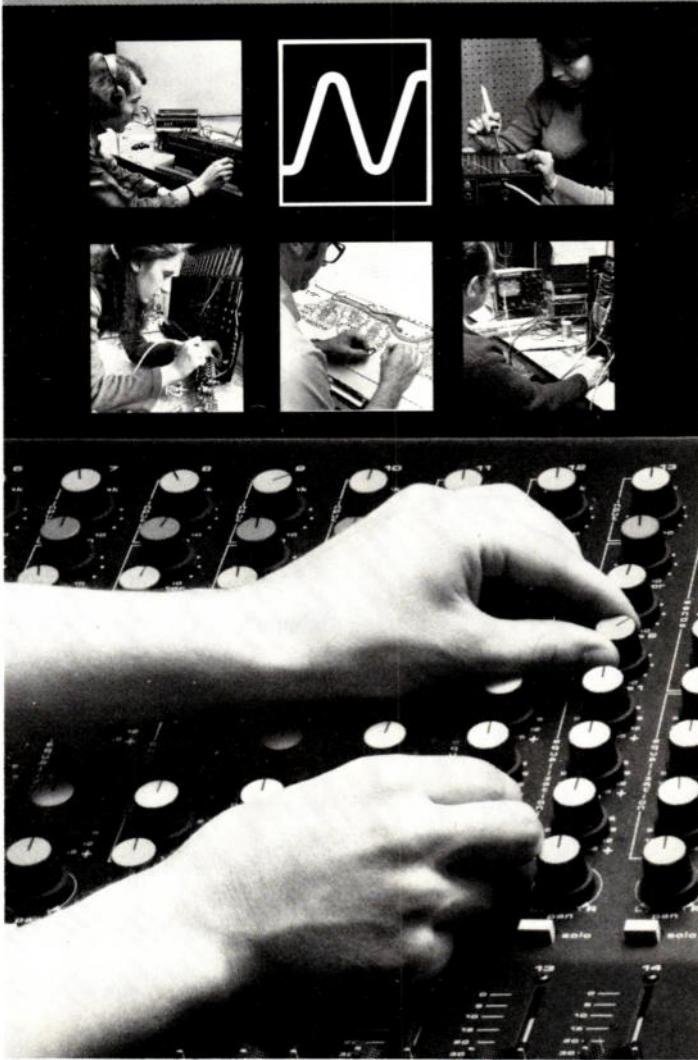
I hope that these final thoughts on harmonics will have been of assistance in obtaining better quality, and hopefully very musical, squeaks.

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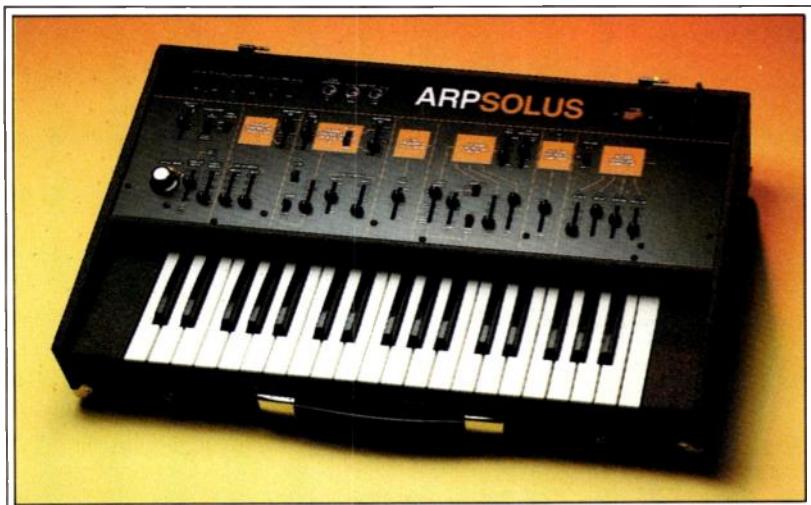


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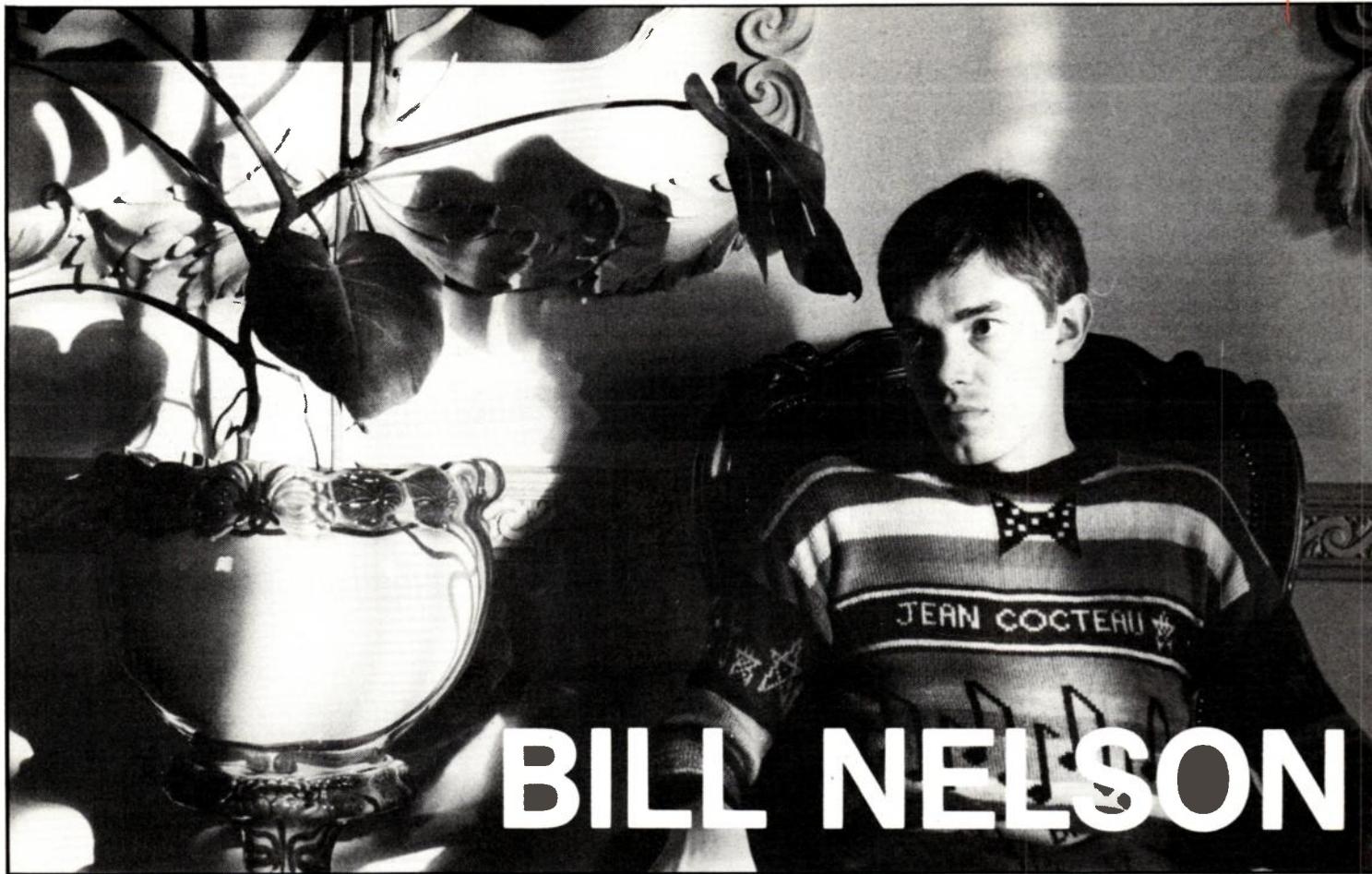
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BILL NELSON

Selby in the heart of Yorkshire, doesn't conjure up visions of the usual musicians' retreat like Laurel Canyon or Nassau. But it obviously has something going for it, because it is where Bill Nelson chooses to live and work.

Nelson is one of the more interesting figures to have emerged from the Seventies prior to New Wave. He led Be Bop Deluxe, who were one of Britain's brightest bands during this period, and showed considerable talent as a guitarist when there were few new faces around.

Without quite reaching the big league, Be Bop attracted quite a cult following, and Nelson himself seemed one of those musicians who were never content with churning out records to a commercial formula, but strived for something different.

That he nor the band achieved overwhelming success was probably due to this attitude. Following the demise of the band little was heard of him until last year when he resurfaced with both an album and a band called Red Noise. After a brief tour the band were no more and Nelson once again disappeared from view.

Now he is stirring up interest once again and shedding some light on his activities and projects. The fact is that since the demise of Red Noise last year,

he has been working solely in the studio. The fact that he records near his home in Yorkshire probably accounts for the lack of news about the boy over the past 12 months.

Bill admits that his reason for living in Yorkshire are mainly materialistic, the fact that he can buy a much better house there, and also be near his family and friends. And when it came down to recording, he found that he didn't have to go very far.

"I've lived in this village just over a year and they have one of these wooden prefabricated village halls. So I saw the vicar, and he let us use it for a hell of a lot cheaper than hiring a studio. So we used the Stones' Mobile and did all our recording up there.

"It was great because it was just down the road from home, and it was a very closed affair in a way because there was only John Leckie who co-produced with me, there most of the time. My brother would come in occasionally when we needed sax, but the rest of the time it was just John and myself.

"So it was like one guy in the truck and one guy in the village hall, with the wires in between, working on this music for ages. It's like working in a vacuum in a way, dangerous, but it was a unique experience as opposed to being in town

and walking in and out with loads of people."

The album that resulted from these sessions has still to see the light of day thanks to record company problems. Originally scheduled for release through EMI in the UK, the company's problems meant that he had to find an alternative. The alternative seems Nelson's own Cocteau label.

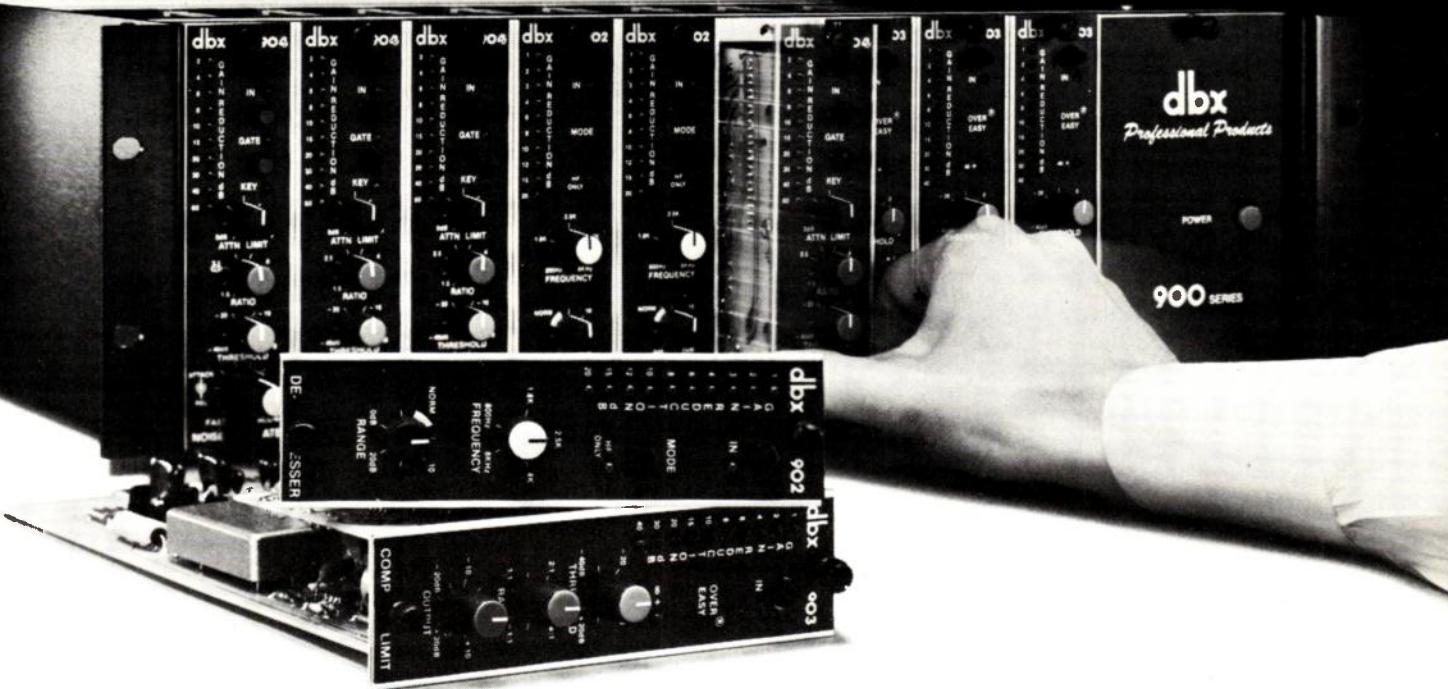
Having his own label has always been one of Bill's dreams, in fact prior to Be Bop Deluxe, he had recorded three albums at the Holyground studio in his native Wakefield, and sold limited pressings in local shops.

In addition to the album he has recorded on the Stones' Mobile, Bill also has some demos which he made at home which he will probably release. "I recorded them on a four-track Teac, a second-hand Rotel tuner/amp, a pair of old Amcron speakers and a very defective Canary mixing desk."

One of the biggest problems for an artist working alone and playing all the instruments, is one of self indulgence, and Bill admits that having minimal outside influence was a problem.

"Working in a vacuum, the only people I have to bounce ideas off are the management. They're obviously concerned about it being radio enough, so

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I've worked on things like that. Every time I do something that I think is overtly commercial, I think 'how disgusting, how compromising', and I play it to someone and they say, 'oh, it's not commercial at all,' and then they'll pick something out totally off the wall and say 'that's the one.' So I've given up on that side altogether. I just do it, and if it happens it happens.

"Compared to Be Bop I think it's more into the song side than electronics. I think that with Be Bop we had such proficient musicians that I tended to exercise them and tax them a little, lots of time changes and things. Now, because I haven't been writing for a band as such, but something to listen to as a separate entity, I've tried to work more on atmosphere and song mood, and the secondary thing then, I think, is electronics.

"You've got to keep an eye on what else is happening as well. In a way, it's dangerous to become too insular. The accessible parts of it are probably the most fashionable aspects, and the least accessible are probably things that have been there all the time, even in Be Bop, but were subdued."

Fans of Nelson who are expecting a "guitar" album are likely to be disappointed, because he has not gone in for showcasing his guitar talents, in fact he tends to play down the instrument. "I try to play it down a bit, because I find it too easy sometimes to please. My manager says that I should put more guitar on it, but until I can actually come up with something new, I don't feel like going through the old clichés, I'd just become a parody of myself.

"I got bored with my playing, I couldn't come up with anything that really knocked me out, so I just relegated to rhythm, which I'd never been. I started to fill in a few chords and began discovering chords and things, and I'm quite content to get a thrill off that and play the occasional guitar part. The most decorative part is either by synth or sax."

For much of his time with Be Bop Deluxe, Bill used a very old sunburst Gibson 345. He decided to have it re-finished, the pickups re-plated and the whole thing generally spruced up, unfortunately the work ended up ruining the sound of the guitar. So on the last Be Bop tour he was forced into using his back up guitar, which was a Yamaha SG2000.

"It took me a couple of days to get used to it when I first got it, because I was really used to the old Gibson. Then all of a sudden it clicked and I swear by it now, it's a wonderful instrument. It's got the usual things like tone controls and toggle switch, but with even just one pickup it would be a super guitar.

"I don't know whether it's got as

much character as the Gibson when the Gibson was functioning well, but maybe it's a matter of age. I don't really find any real lack of character though, I mean it's not quite as personal as the Gibson but some people say that they can't tell which is which on the recordings. Maybe that's the way it's EQ'd, I don't know.

"I've stuck by it for a couple of years now, and have been using it all the time. I use a Strat as well a bit, but I think if I got used to using a Strat all the time, I could really get into being a Fender guitarist. But the differences are so great between the two, the amount of adjustment you make from going from Yamaha to Fender is such that I concentrate on one at a time."

As far as amplifiers go, Bill used old Carlsbro's for a long time until it became impossible to get them any more. With Red Noise he switched to a Mesa Boogie, but found it's one great sound very limiting. He is now experimenting with a Burman.

One of his pet projects is to produce a batch of instrumental pieces, which has been the result of fiddling around with a rhythm unit, guitar modulator and the usual crop of flangers and MXR units. He tries to experiment with the units by using them not for the specific job they were made for. Bill also has a Hagstrom Guitar synth, but the unit does have its problems.

Getting back to the recording, it seems a result of his natural desire to experiment, and see just what would happen without a nucleus of musicians around to help with ideas.

"This is the first time I've done an album totally on my own. When we did the first Red Noise album it was with the nucleus of the touring band, people like Dave Mattacks on drums, so that in a way was a lot healthier. I just wanted to try it this way once because I'd always demoed everything on my own at home, and a lot of people who heard them preferred them to the finished thing.

"I thought it would be interesting to try it once, but I didn't particularly enjoy the experience. I mean, it was enjoyable at the end when you could sit back and say, 'well that's all my own work' but at the same time it was a bit of a strain physically being in and out and listening to everything without anyone there to bounce ideas off.

"I don't know if I'd do that again. I think if I could find a band that really thrilled me I'd be quite happy to pay them forever just to stay there and give me ideas. I suppose it's because I'm living up there that I don't really meet the people I should do that would be able to help in a big way."

It is obvious that Bill is still searching for the magic combination, which he found for a while in Be Bop, but even

"A lot of things that we tried out with Be Bop were very complicated...."



that wasn't totally satisfying. "Be Bop was a fixed thing for a long time because it was reasonably successful in its own terms. I think towards the end we were frightened of pulling apart for more non-musical reasons than musical ones, but we were all totally different people musically and it was just a ridiculous thing.

"I really wanted the band to be much more conscious of moving forward from the early days and it was difficult for some of the guys because they were so into jazz fusion, which is fine. I had a jazz fusion band a lot of years back when Mahavishnu Orchestra came out and we used to do that round of local gigs. It has ceased to be relevant to me personally, but the rest of the band were still into it. I thought I didn't always gel, there wasn't quite that sense of direction coming up, so we got too defused."

"There were a lot of things that we tried out with Be Bop which were very complicated simply because it was a musicians' band and we were all trying to throw each other around all the time. It got a bit silly at times and looking back I can see the total parody of it.

Despite his isolation, Bill has managed to keep in touch with current music trends, and worked with the Skids in addition to the many local Yorkshire bands who come knocking on his door for help and encouragement.

And with the album now scheduled for release on his own Cocteau label at the end of this month, it could be that we'll be hearing a lot more about Mr. Nelson.

David Lawrenson

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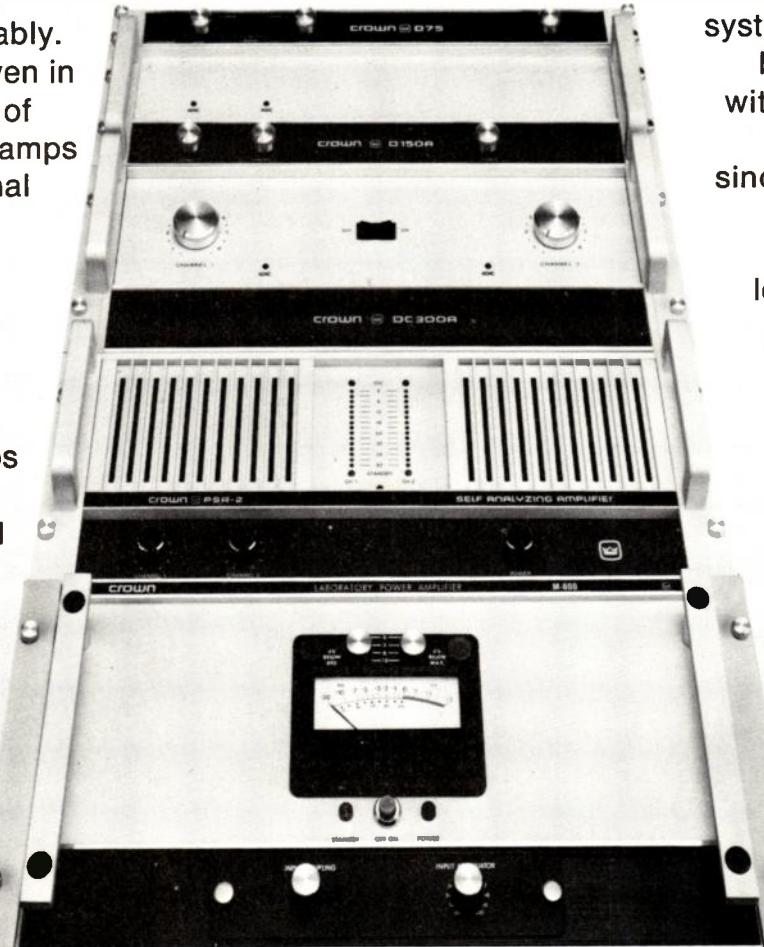
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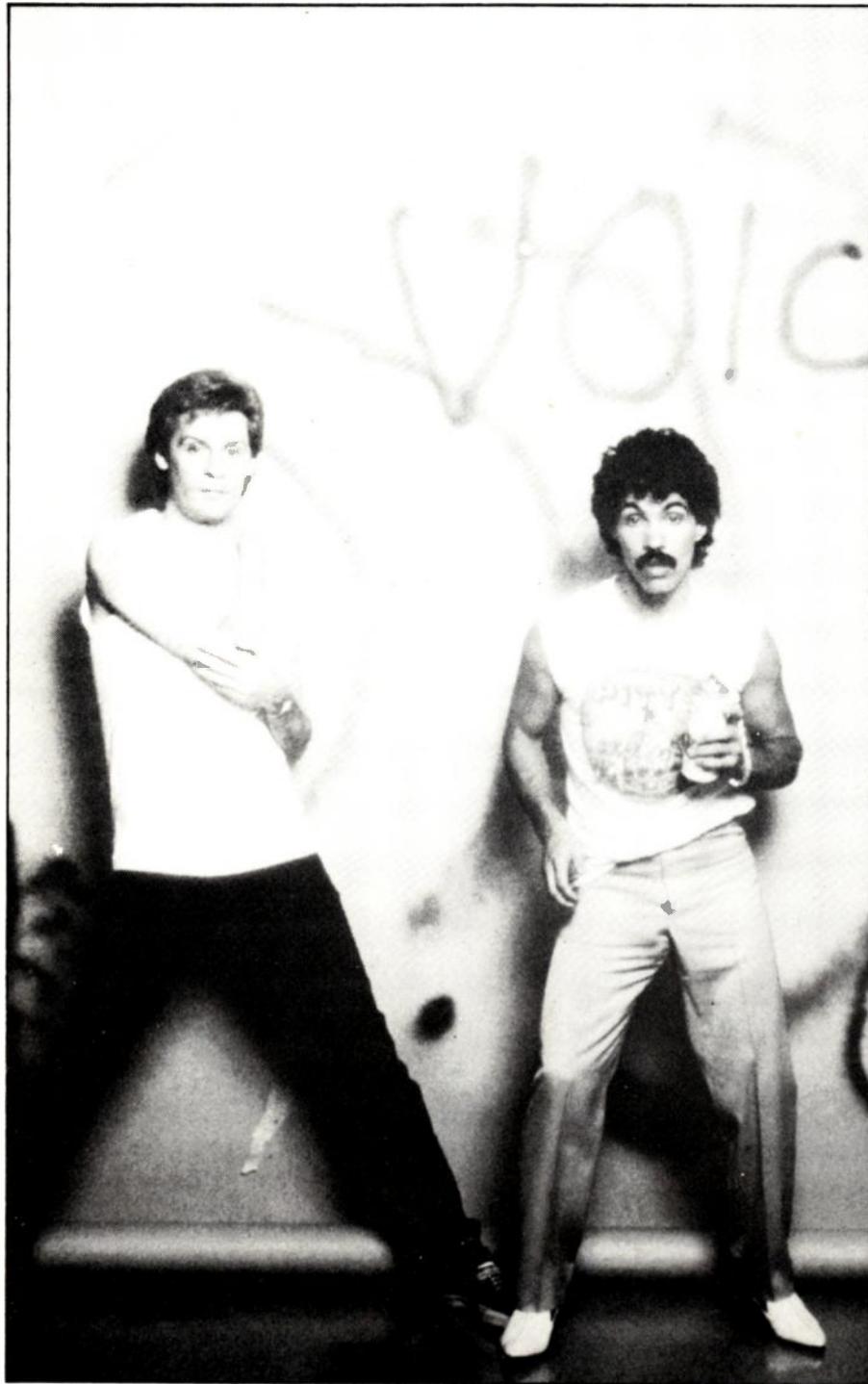
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HALL & OATES: THE PURITY OF VOICES



More than anything else, Daryl Hall and John Oates have shown a constant willingness to change and evolve musically through each of their successive albums. Their debut LP, *Whole Oats* (Atlantic) exhibited an introspective, acoustic "singer-songwriter" aspect of their musical personalities totally at odds with the music on more recent RCA albums. *Abandoned Luncheonette* (Atlantic), besides showcasing one of their biggest hits, "She's Gone," both formalized and capped off the "Philly Soul" element — also a vital part of their upbringing.

Later albums on RCA like *Bigger Than The Both of Us*, *Along The Red Ledge* and the infamous "silver album," *Daryl Hall and John Oates* demonstrated a more conscious attempt to successfully fuse home-grown R&B styles with a contemporary rock & roll attitude musically, while de-emphasizing the overly "confessional" aspect of their lyrics. More recently, *X-Static* demonstrated a rawer instrumental sound and a more powerful and direct approach to thematic content.

Their latest album on RCA, *Voices*, returns them to what was always the essence of their style — forcefully expressive lead and harmony vocals that literally define the particular essence of each song. This and the fact that *Voices* is the first entirely self-produced Hall and Oates LP gives both of these gentlemen cause to celebrate at this stage of their careers. Catching them during this "up" phase of their career, IMRW/USA had a chance to talk to them during rehearsals at New York's SIR studios prior to an extended tour of the US and Asia. Our conversation is related essentially the way it went down at the time.

IMRW: For better or worse, you've always maintained a constant sense of evolution throughout all of your albums. Does *Voices* represent another step



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On Bass: Jeff Berlin

In my last article I discussed using modal scales in moving from chord change to chord change in a smooth stepwise motion on the bass. This important point demands other examples explaining my idea. As these ideas are practiced every day, the reader will gain insight into improvisational ideas and a firmer grasp on chord changes and harmony. Remember that the modes are not the only scales we use in improvising. They are nothing more than scales built on each note of the diatonic scale. Here's what they look like. In this case, the scale will be built on the diatonic scale of C.



If you look at these scales you see several points they have in common. One point is that they all have the same notes, because they all derive from the C major scale. The second point is that none of these notes need accidental markings (flats and sharps) because, again, they all come from C major. If I had written out these modes based on the diatonic key of A flat, for example, every modal scale would have four flats in it, which brings us to point three. These modes will work in any diatonic key in music. There lies the beauty, because, at best, you are two frets away from a beautifully executed harmonically correct movement on the bass. Let's take the tune "We'll be Together Again" and examine the changes with the melody. I'll use the tune up to the bridge.



(A note to sharp eyed readers: if there is anything rhythmically wrong with the way I wrote the melody, kindly do not write in about it. Please accept my apology now because I'm writing the tune by memory).

If we treat all the changes in this tune diatonically and make sure from the melody that we've assigned the proper mode to the changes, we are set to play some very interesting bass.

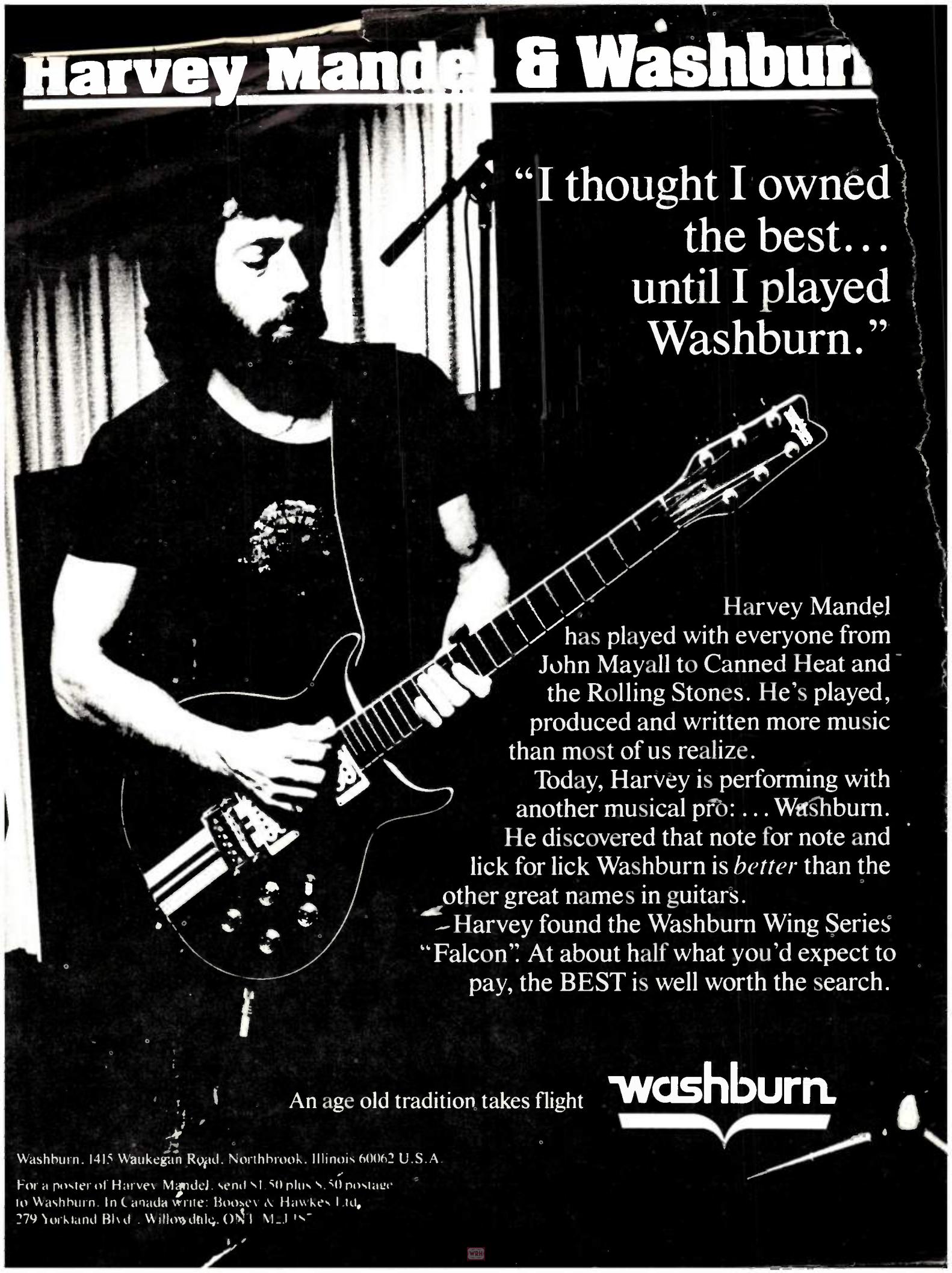
Here, again, are the changes to "We'll Be Together Again". I will write in the step-wise bass line for you. I advise you to play with a piano player when you learn the notes because then you will hear how good you sound with no chops playing at all.

I've written accidentals for convenience.

Continued on page 145

Harvey Mandel & Washburn

“I thought I owned
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Harvey Mandel has played with everyone from John Mayall to Canned Heat and the Rolling Stones. He's played, produced and written more music than most of us realize.

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in this process? Are there any obvious similarities to *X-Static*?

John: It's totally different from *X-Static*. Has nothing to do with *X-Static*. Vibe-wise, musically, production-wise... everything is a total change. The only constant is the fact that we use some of the same band members. First of all, *Daryl* and I produced it ourselves... the first time. That's probably the most outstanding characteristic of the album and it's definitely for the better. It's the first time that the purity of what we do and the music as we have written it has finally been realized in its truest form. It's really music that's the closest to the music that's in our minds.

IMRW: So this is actually the first album you've produced without anybody else collaborating on it?

John: We've always worked really closely with the producer. It's really a matter of credit and semantics as to whether we've produced ourselves or not. For instance, we did a large majority of the work on the *X-Static* album. The concepts, the songs are written and we basically know what we want. The big difference this time around is that we had no one to fall back on and throw the blame or whatever on. When you have a producer it's so easy to sit back and be lazy whereas, this time, we took the ball on our own.

IMRW: How about the built-in drawback of self-produced LPs, i.e. the lack of an "objective" ear?

John: The objectivity criticism is valid but I think that we, surrounding ourselves with kinds of musicians we did, had a lot of feedback from them, especially in cutting the rhythm dates. Not to mention the fact that the songs we wrote this time were so straight-ahead and it was so obvious how to deal with them that there was really no problem.

Daryl enters.

IMRW: Even more straight-ahead than *X-Static*? A lot of people commented on how "stripped down" that album sounded.

Daryl: *X-Static* was baroque compared to this album.

John: This is a very band-oriented album. This album sounds like a BAND. Like a band got into the studio and played the music — exactly what we wanted.

IMRW: So what players did you retain from *X-Static*?

Daryl: Everybody. We did switch drummers in the middle of the album, so Jerry's (Marotta) not with us anymore. On three songs, this guy Chuck Burgie played. On *X-Static*, Neil Jason played a lot of bass and, this

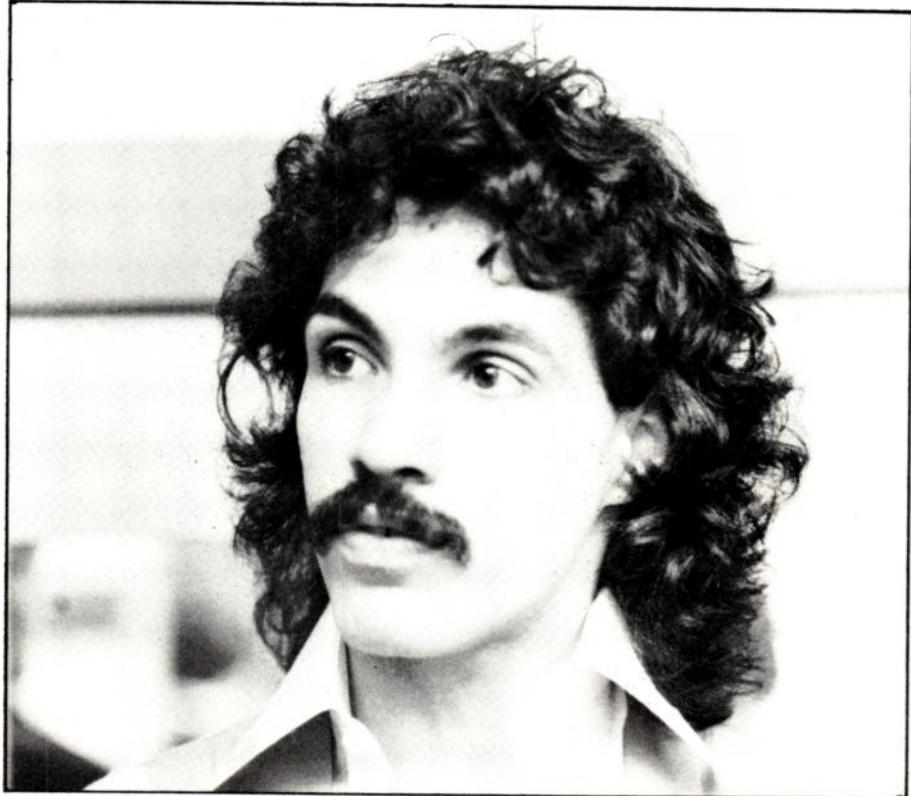
time, John Siegler played all of the bass. That was the basic change.

IMRW: As we mentioned earlier, your albums always seem to accurately mirror a particular period/stage of life you're going through at the time. How come you all are writing simpler, more direct material at this stage of your careers after having done some very weighty and sophisticated

than the more obvious social and/or environmental factors?

Daryl: Yeah... Philadelphia to me is like... *Teen Age*. It's like going to school, and we've been out of school for a long time.

John: There are inherent things that'll probably always be there and some songs bring out those roots a little more than others. It's not something we rely on.



material on earlier albums like *Abandoned Luncheonette*?

Daryl: It's still evolution, but it has to do with a reflection of what's around us. Not especially musically, but socially and environmentally... it's the times. We've explored certain things and then decided what directions to continue exploring in. We still deal with things very visually. We still paint scenarios more or less in our music even though they may be more sketchy types of things, that's something we've always retained.

John: I think that any artist's early work is always probing and a lot of trial and error and, in doing so, may be very adventuresome and not really on target. Whereas, later on, you can do things that look very simplistic and very clean but it's so lean that it's the pure thing.

IMRW: When you both moved from Philadelphia to New York several years ago, did that play a part in cutting you off from your Philly Soul music "roots"? In other words, did it have an impact other

Daryl: Being from Philadelphia, or growing up there, is a very important part of our music because it gives us a unique outlook from the start, from the root. Like there's always gonna be soul in our music because we relate to music from a soul standpoint. Even though it may be blast-out rock & roll or whatever it is, it's still coming from that point-of-view.

IMRW: That almost sounds like an anachronism in an era when a lot of "new music," except for reggae/ska influenced stuff, seems particularly soul-less. Tick-tock music lacking the basic suppleness you guys have.

Daryl: We were real lucky because we just got under the wire of still coming from an era, age-wise or whatever, when regional music still meant something. Like Devo, just to use them as an example, I like Devo but the thing about groups like that seem to have a lack of soul and a lack of place in time, and in the actual physical place, because music in the last 10 to 15 years has become very

nationally-oriented because of radio and things like that — regionalism is pretty much dead in music. Kids today who are starting bands don't have that root to draw from, they don't have a musical family or musical genre to draw from so they must to relate to society as a whole and because things are so mechanical and so bland and so one dimensional, the music reflects that.

IMRW: In terms of the general instrumental timbre of the band, things seem to have become much more guitar oriented on the last two albums. Is that a fair assumption to make?

Daryl: Well I've switched from keyboards to guitar. The keyboards are less out front because of the writing. I write more on guitar now and that changes everything. It's actually a four string guitar tuned in a cello or mandolin tuning, I call it a Mandar. It's great for writing because it's tuned in fifths and the chords are actually spread out farther than on a guitar chord, the notes are spread out farther so it's more like piano inversions with that kind of tonality but you still get the feeling of the attack on a guitar, so it's kinda like splitting the difference.

IMRW: Historically, you (John) were always known as the guitarist and Daryl was the keyboardist. Has Daryl's switch to guitar changed the way you both interrelate compositionally and instrumentally?

John: I think it has definitely helped us to expand. I don't perform with keyboards on stage but I use keyboards a lot to write with.

Daryl: I noticed one thing on this album. We did something that we haven't done in a long time, we actually wrote music *together* and that was largely due to the fact that we now both play guitars. Like there's one song on the album where I wrote the verse and John wrote the chorus, and if I had done that on the piano it probably wouldn't have fit together. It was a certain rhythm pattern and chord structure that I came up with that I wouldn't have come up with on the piano. In that way it helps.

IMRW: Daryl, does your writing actually change when you're composing on guitar in the sense that you're thinking more in terms of rhythm than chords or harmonies?

Daryl: No, it's not that, it's really a question of *attitude*. It's just more... aggressive. The piano by nature is just a more passive instrument. That's probably the reason I always wanted to play guitar 'cause even though I grew up with piano — I



was *stuck* with it more or less — it's not really in my personality. It's just a way of relating to an instrument that really changes your compositional approach.

IMRW: It seems that the subject matter of your lyrics hasn't changed so much as the way you approach it. Is this a matter of focussing lyrically? The recent songs seem to say a lot more while taking up less space.

John: That has to do with getting better.

IMRW: Because your thematic material doesn't seem to have changed that much, you still write about the same kinds of things don't you?

Daryl: I think we deal in existentialism and irony. That's the main theme of our music, no matter what subject we approach.

John: The introspective aspects of our lyrics, the sort of "singer-songwriter-crying-in-your-piano" aspect have finally been eliminated, which I'm glad for. We used to dwell on that a little bit too much, which a lot of people did and still do, and the lyrics now are more direct and maybe thematically we're still dealing with the same things, but it's much more concise and much more lean. That has to do with getting better at what we do.

IMRW: Without wanting to dwell on your "older" material, I'm curious about how you guys react when you listen to your early LPs. With ambivalence? Can you look back on them with affection?

Daryl: I like certain things... *Whole Oats* is like lookin' at somebody else. That's like the kids trying for the first time. Of course you have affection for them 'cause they're all points in time, especially since our music is very rooted in real things that happen to us. So it's like looking at diaries from the past.

John: And there are certain albums we *hate* because of that. And not because of the music. We were either going through bad times or there was a bad situation in the studio.

Daryl: (laughing) I haven't listened to our albums for a while but, all in all, I think I'm pretty happy with it.

John: He's "Happy With His Life" — as represented by his best LPs.

IMRW: Even though you've played guitar for quite a while, you still seem more interested in sticking with rhythm guitar.

John: I do that mainly because I don't really consider myself a player and it's difficult to sing and play a lot of difficult instrumental passages at the same time. The same way Daryl doesn't do a lot of solo work on his instrument. We use it as a vehicle to sing. I think it's better to have someone who can really hold down that part of it and do an unbelievable job. I like to surround myself with players who are as good as what they do as hopefully we are at singing and writing.

Daryl: We've gotten very good at explaining. I even go as far as singing melodies to people. We choose people for our ability to communicate with them so they can do what's in our



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In the past few years, you've probably heard many amplifier manufacturers claiming that their solid state amplifier has that "tube amp sound." Granted, it was close, but still... no cigar. You've remained unconvinced, and so have we.

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BERNARD 'PRETTY' PURDIE

Modern Father Of Funk

When Arthur Conley opened his '67 hit "Sweet Soul Music" with the line "Do you like good music?/That sweet soul music," he could have also been asking if you liked Bernard "Pretty" Purdie. THE soul drummer behind James Brown, Aretha Franklin, and countless others during their finest moments on record, Purdie is the heart of the backbeat, the modern father of funk. With over 3,000 album credits to his name, "Pretty" Purdie has spent studio and/or road time with artists like The Isley Brothers, Roberta Flack, The Stones, Jeff Beck and Steely Dan.

A skilled historian for the beat of the last 20 years, Purdie likes to tell stories. A delightfully animated speaker, quick with a smile and a warm sense of humor, Bernard Purdie is also a man who seems to make his own luck.

"When I was 10," he begins, "I got a chance to play with a big band. I would accompany my teacher to the gig and get him drunk. I'd have a bottle of gin ready for him and he'd be drunk by half time, so I would finish the gig. I never got paid, but that didn't mean anything to me. The guys in the band knew that I'd be there because they knew inevitably he was gonna be wasted.

"Everybody wants to make you a natural," he goes on, "Natural means that I was a natural for learning. I was playing since I was six. Born in Elkton, Maryland June 11, 1939, I was number 11 of 15 kids. My mother wasn't about to send me to music school, music didn't exist. I was lucky because the guy who lived around the corner, Leonard Haywood, was a drummer who taught music. He allowed me to sit on the third step in his house while he taught the kids who could afford lessons. I was there twice a week for seven or eight years.

"I couldn't do anything, I'd just listen. I wasn't allowed to speak, because I didn't exist. He would let me play when he wanted to make an example for somebody. I would come down and do exactly what he said and then he'd stop me. One time I spoke and he said 'OUT You don't exist!' I was so hurt because I'm lookin' at my whole thing going down the drain. I begged and pleaded with him all week and he allowed me to come back

saying, 'The next time you open your mouth that's it'."

IMRW What did you use for practising?

B.P. I had a pair of sticks and I practised on a bread can. After that, I wasn't allowed to play the bread can, because it was too loud, I had to play with my hands. I could only play the sticks on the sidewalk. Didn't have a practice pad, we couldn't afford one.

IMRW Was this how you learned your rudiments?

B.P. Let me explain something, rudiments are something we all must learn, that's the alphabet. Besides rudiments, he was teaching me all the things that I'm doing now. I'm doing the exact same thing he did 25, 30 years ago. He taught me feeling, attitude, stability, flexibility, maneuverability, and just plain old down to earnest *feel*.

IMRW How about a mini-lesson on the subjects you just mentioned?

B.P. Feeling should be the last one

"My best performances were with Aretha Franklin"

you mention, even though it's the first one everybody talks about. That's what the people get. People get feeling first, even though it should be the last thing that the drummer worries about, or any musician for that matter.

IMRW It takes all those other things in order to project it.

B.P. That's right. But no matter what happens, if you don't like the feeling then anything else he's doing is out the window. So for the public, feeling would automatically come first. They don't know what he's playing, but they like the way it feels.

Coordination means having your limbs to move in a systematic way so they go together to make one beat. Even though your arms and legs are doing things separately, they must bring everything about to the point where they mean one thing.

Attitude is what you're doing with

coordination, it's how you go about making it feel good to you. So you see, feeling is adding to everything you do.

Stability means staying power. You have to be able to stay and last for any length of time. That you have to build from as a baby. When a baby wants to walk, he's got to crawl first. If he wants to run, he's got to walk. Unless you continue to play and rehearse, you will never have stability. Rehearsal makes stability, no other way.

Flexibility means to be able to maneuver, which brings about going into the studio. This is another world. Every session, every song I do, means I've got to be somebody else. They might want the feeling of Ringo of the sound of Chicago. You name all the groups and I have to be flexible enough to make that sound commercial enough so you'll buy it. That's flexibility, but that's what the studio man does.

Stan Getz is a fantastic player, but he plays one way. Stan would have a problem, to some degree, joining just any kind of band; R&B, rock, blues, reggae. He would have problems playing all these different kinds of music because he never had to be that flexible. He's a star within his own right, so he doesn't have to.

IMRW Don't you trade off something when you become a studio musician?

B.P. Yes, you lose who you are. Stan Getz knows he's Stan Getz, but we lose who we really are because we have to wear so many hats. I'm one of the lucky ones. I was able to create my own sound and still be flexible enough to play with anybody, anywhere.

IMRW That type of flexibility is something you learn, it's not a trait you start with.

B.P. Right, you've got to have something to put your hands on, you must have a direction.

IMRW After two years at Maryland's Morgan State College, I'm sure your inclination wasn't toward the studio.

B.P. I never knew there was such a thing.

IMRW But skill-wise you could read music.

B.P. Sure, I did that when I played with the big band. I had to, but there was never any drum music. I read the



trumpet, trombone and sax charts. That would tell me so I could make sure I'd get my licks together. In the Fifties and Sixties no one wrote drum music and charts were usually never given out to the drummer. Besides the guys were lazy and didn't know how to write drum music because they didn't have to take it in school.

IMRW Do you prefer a chart?

B.P. Most people don't realize that I get twice as much freedom when you give me the music. I don't worry about what I have to play if I've got the music. I can play what is there and then take all the liberties I want around what I have to do. You don't have to think about direction. I know exactly where you're going, so I can start off immediately adding stuff. I'm halfway through a song and I've already added stuff because I have the ability to read ahead. That didn't come until 1962 when Stick Evans taught me to read faster.

IMRW Did he teach you to read in groups?

B.P. Not only in groups but pages in front of myself. I'm down there early, working it out and arranging. I have an almost photographic memory and that helps too.

IMRW What brought you from Maryland to New York City?

B.P. Definitely a dream. I was afraid of New York from what I'd read in the

"Working with Steely Dan has been super exciting"

papers. But I knew I had to go there to make it happen. I came up with a whole band from Baltimore after being in college. We were super country, real naïve. When we got here, we stopped in the Bronx to see the guitar player's cousin. We took our equipment across the street to a club and played for free. We had a ball and the place was packed within an hour's time. Somebody said they should get Mickey and Sylvia. I knew them from the song "Love is Strange". Sylvia came down and asked us to come to her club (The Blue Morocco) and audition. She didn't like the rest of the band, but she liked me. She asked me to stay and I did a session with them. Less than a week in New York and I'd done a studio date and gotten \$80. I freaked out. I thought I'd hit the big time, I was a star. For the next six months I worked in a laundry.

IMRW How did you break into the studio scene?

B.P. I went downtown and told everybody I was good, I could do the job. I begged for a couple of years. There was no such thing as demo tapes, somebody had to give you a shot. I didn't know anybody so I'd go where musicians hung out. I'd buy drinks and cheesecake for people I was told were musicians. Finally I found out who was what in the industry. I had been buying for the guys who weren't working! Anyway I didn't get a shot for a couple of years.

IMRW Who gave you the break?

B.P. Barney Richmond and Buddy Lucas. I had already done a couple of demos with Les Cooper and Lonnie Youngblood. I was making the round but I hadn't been making records. I found out Barney and Buddy were contractors and bugged them for six months. My first break was the song "Just One Look."

Barney came into his restaurant looking for a drummer. He was looking for Joe Marshall, Panama Francis, Sticks Evans or Gary Chester, but none of them were there. I was the only drummer in the place. He said, 'Can you read?' I said I can do it. Barney took me to Allegro studios and Buddy was there. Buddy said 'You've got Mississippi Bigfoot here.' That's the nickname he gave me because I

Continued on page 108

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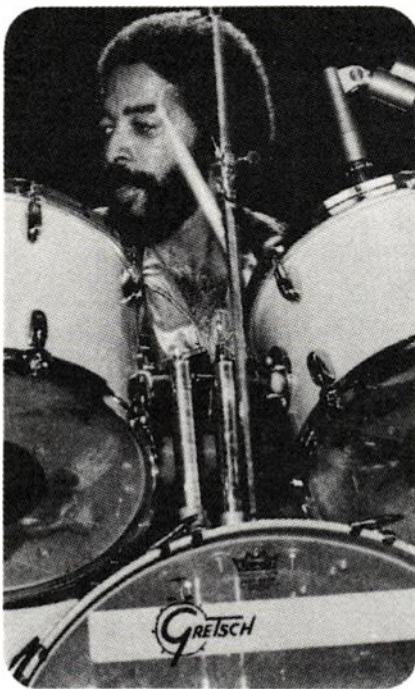
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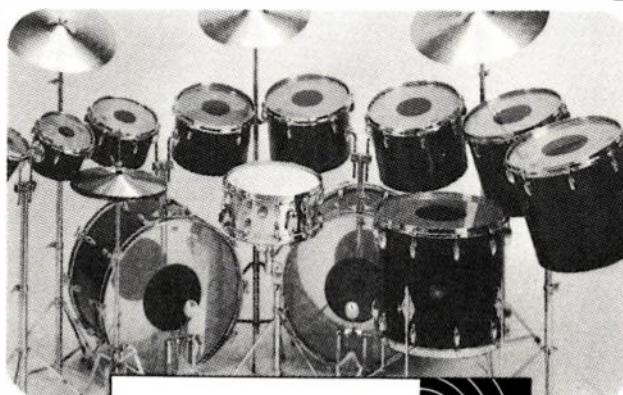


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LA BELLA'S MUSICIAN of NOTE

ATTILA ZOLLER

Born: June 13, 1927

Home: Born in Hungary, resides in New York City.

Profession: Jazz Musician, Composer, Consultant and Musical String Designer for E.&O. Mari (La Bella).

Earliest Musical Experience:
I started playing the violin when I was four years old until I was about twelve. Then, I started to play the trumpet and played in the Classical Symphony in Hungary while I was still in high school. I have played the guitar since 1945, and started playing jazz in Vienna in 1949.

Major Influences: I was influenced by the great jazz musicians.

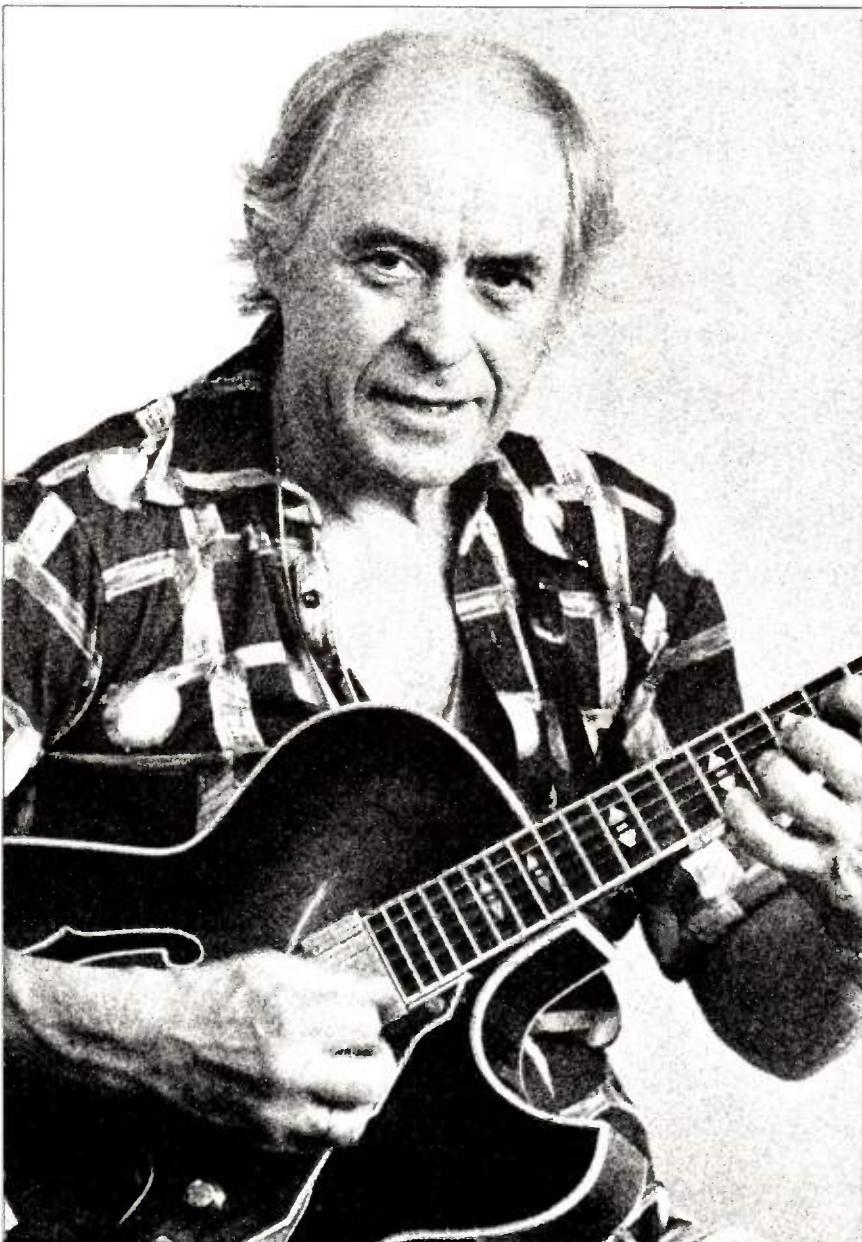
Latest Musical Accomplishment:
I play live at Gregory's in Manhattan every Monday evening with Don Friedman & Bob Bodley. July 3rd I will be starting a tour in Germany.

Keynotes: I cut five albums in 1979 on Enja and L&R Records: *Common Cause, Jim and I* (with Jimmy Raney), *Trinity*, a solo effort called *Conjunction*, and one about to be released soon. Most of these recordings are original music.

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**If your passion is music,
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The first few questions are met with a flat "yes" or "no" and it seems that Joan Armatrading is living up to her reputation for not liking interviews. Still, as the questions work round to her guitars, her musicians and her music, the lady unfolds and the answers begin to flow.

All of which seems to say a great deal about the talented Miss Armatrading. An intensely private person, the interminable questions about everything from her favorite color, to being a woman in a male dominated profession have left her wary and possibly a little jaded.

Hers is quite a unique talent, far away from the stereotyped images of female performers which usually fall into two categories, the well-groomed pop star with the fashion magazine looks or the raunchy, wrap-a-round the mike stand rocker. Joan Armatrading is removed, possibly even aloof.

However, that image could be threatened by her latest album, *Me Myself I*, which is quite simply a rocker. The intricate songs and creamy melodies of her previous albums have given way to a definite injection of electricity and simpler rock chords. So why the change?

"I just fancied it. And I changed the band that I had. The last band was very jazzy, a sax player, a keyboard player, the whole thing was jazzy and I just didn't want to hear that any more. I'm not saying it was bad or anything, I just fancied doing a different sound."

Apart from a different sound, Joan also went for different musicians on the album, used a different producer (after several albums with Glyn Johns) and a different studio. The players included a couple of Springsteen's sidemen, organist Danny Federici, and mighty Clarence Clemons on sax, because they happened to be working at the Record Plant in New York where she was recording, and the choice of studio was a result of her choice of producer, Richard Gottehrer.

"I didn't know anything about Richard, I didn't hear any of his work before. I just met him, and we talked and I knew what I wanted. In talking to him, I knew that he was going to help me get what I wanted and it worked really well."

"I wanted a change and Richard knew New York and he'd worked at the Record Plant. He'd worked with the engineer there a lot and so that's why we did it. I didn't want to make the album in England because I'd made the last three albums here and just fancied a change."

The choice of a different studio and different musicians is something which provides Joan with an added stimulus.

It is a tribute to her talent that over the years she has been able to recruit such well respected musicians from both sides of the Atlantic. I asked her for a break down of her current band.

"Well, Richard Hayward is the drummer. When I was putting together the band I had to find another drummer because the previous one had joined someone else. Anyway I was on a plane to Los Angeles and I said to Glyn (Johns), 'can you think of anybody?' and he said, 'how about Richard Hayward'.

"Well we got to Los Angeles and went to Westward Music, the music store in LA and said to the guy there, 'can you think of any drummers' and he said 'Richard Hayward, I'll go and phone him up now.' He phoned Richard up, talked to him, he came round and that was it. Then he played on the live album and after we'd finished the tour for that live album he had a motorbike accident. He was out of action for a long time, but when he was better I asked him to join the band again, because he's really good.

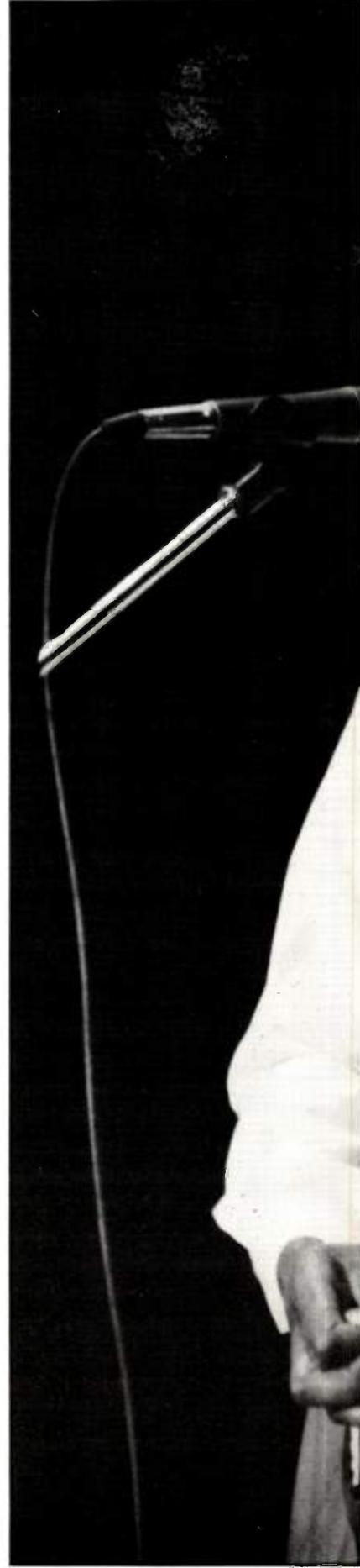
"I've just bought a Prophet synth... The next album will probably be Prophet filled"

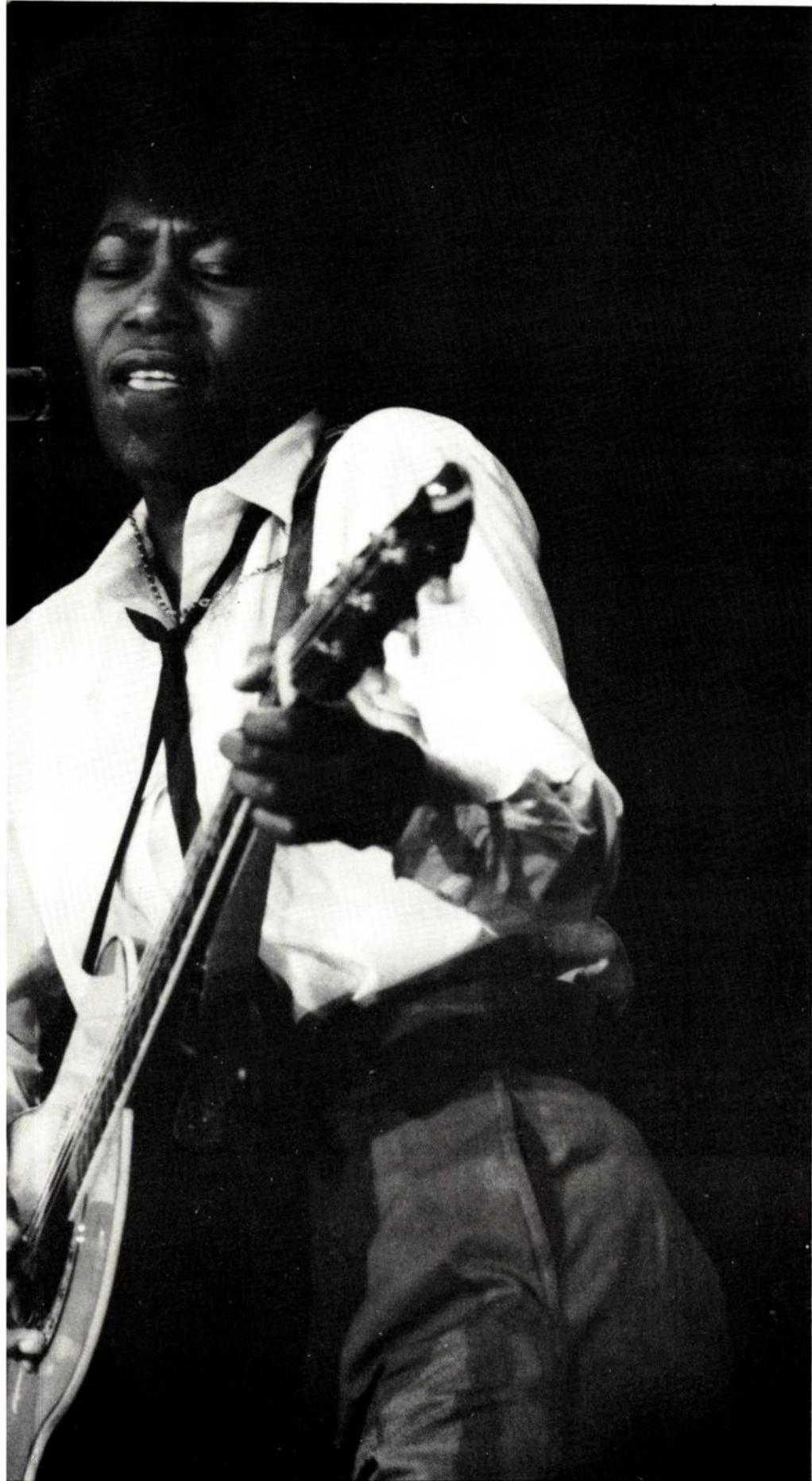
"Dick Simms on keyboards, he was with Eric Clapton for six years. Dick played on the *To The Limit* album and I wanted him to work with me because I like his organ, he gets amazing sounds out of it, he's got it modified. He can be really deceiving. You can listen to him and think, 'this guy's so simple, he doesn't know what he's doing. He's very tasteful, I like him'.

"Bill Bodine (bass) was in my last band and Micky Hirsch (guitar) was in my last band and I knew in my head that those four players would get the sound I wanted. I wanted two guitarists because all the new songs I'd done, I'd written two guitar parts for.

"I wanted two guitarists for the record, because I didn't want the one to overdub. Two guitarists for the road and Dick recommended Bilko, Rick Beilke, and he's very good. He's very tasteful, and bit by bit he's been coming into the band, because he would have been the new boy. He's good, and once he started to play I

MISS ARMATRADING TURNS ROCKER





knew it was going to work."

Working with such top names is quite a challenge, but Joan has a strong enough character to strike the balance between getting them to play what she wants, while allowing the musicians their own artistic freedom.

"Within all the restrictions I give them, they have a freedom to express themselves, it works really well. It works the same on stage. The songs are my songs, and I always have to feel that they're my songs. The bass player is Bill Bodine and he rehearses the band for me.

"When I come in I say, what's okay and what's not. From then on I either tell them myself or tell Bill and he sorts it out. It's very helpful for me not to keep doing it, it's good to have someone who's a very knowledgeable musician. So he's like the leader of the band, but really I'm the boss!"

This enviable position has come her way as a result of many years of hard work spread over half a dozen albums. Yet it wasn't until the success of her third, simply titled *Joan Armatrading*, in 1976 that she began to gain recognition.

Her influences reflect her diverse background, having been born in the West Indies before moving to Britain. Jazz wasn't one of her first influences, but it was a style which fascinated her, particularly jazz guitar chords which she used to practice.

Despite first going to the piano, it was guitar which she found the more interesting. Joan says that she was about 14 when she started playing the guitar, but confesses that she only really started to work at her playing for her first album in 1974.

Since hitting the limelight, she has become synonymous with the Ovation acoustic guitar. She uses them both for live work and studio work, and has formed an attachment for the instruments which once seemed the sole prerogative of Martins.

"When I bought the Ovation, I was actually looking for a Martin. I tried Martins, Gibson, Guild you name it, but in the end I was brought an Ovation. The first one was a Balladeer, no pickup, and as soon as I played it I said, 'that's it' and I said I'd have it. Then the guy said how about trying one of these?" and then he brought me the one with a pickup which was a folk classic.

"So I started strumming and this noise came out so loud I said, 'OK, that's it.' I got it because I liked the guitar and loved the volume mainly, but I like the tone as well. I play them because I like them, and because they are really convenient for the stage. I like to play them in the studio as well

but I also like to try different guitars."

Joan has 14 guitars in all, many of them being Ovations, but her collection does include Yamahas as well as a Melody Maker electric and a Strat. She really cares for her instruments, and is in fact a great friend of IM's master luthier Stephen Delft.

In fact it was Stephen who related an interesting little story about Joan and one of her guitars, which involved the instrument being flown back from Europe to be repaired. Joan explained: "I started to get this awful buzz. The neck went out, and the bridge went weird and then it needed a new nut — it was generally in a state. Some chords you would play in certain positions, and it would just feedback all the time. So I sent it to Stephen to try and get him to sort it out, which he did really well."

Joan now has a stereo Ovation, but she had another tale of woe concerning her favorite Ovation. "It was my first Ovation and the neck got broke so I sent it back to the factory. It's old like a '70 or '71, and had one of those really little necks which are really comfortable.

"So the neck got broke, and I sent it back to Ovation. I said to the guy who looks after my guitar and equipment, 'Send the guitar back, but if they say they can't fix the neck don't leave it, because then I'd get Stephen to fix it.'

"They took the neck off and gave me a new neck, I could have cried. I'll just have to wait until I get to America now. I brought another one in, but I just can't play it. It's the emotion of it as well, I just can't bring myself to pick it up, I loved that guitar, it was my favorite.

"The one that I use at the moment is my favorite for stage, but that first one was my all time favorite. It sounded the best, played the best and felt the best. I used to leave it at home most of the time because I didn't want anything to happen to it. I took it out on the road and the neck got broke!"

The idea of playing electric appeals to Joan, but she never seems to get round to it. As with her attempts to practice, what usually happens is that she ends up writing a song instead, which isn't such a bad thing, but it doesn't help her playing.

When making demos of her songs, however, Joan often plays everything, so at times all the musicians have to do is copy her parts. Still she enjoys the stimulation of hearing good musicians injecting their own talent into her pieces.



As far as writing is concerned she tries to write in different keys, because she feels it's good to sing in different keys. Favorites tend to be E and D, while her songwriting influences stretch to just hearing other good songs, even if she doesn't like the singers.

Having branched out into a different area for the *Me Myself, I* album, I wondered if the next album would be different again, which prompted the reply: "I've just bought a Prophet synthesizer so that's going to take up all of my time now. It's an amazing instrument, you just twiddle the knob, set the thing and that's it — it's great. The next album will probably be Prophet filled!"

So it looks like we'll be seeing even more sides of the already talented Joan Armatrading in the future.

David Lawrenson

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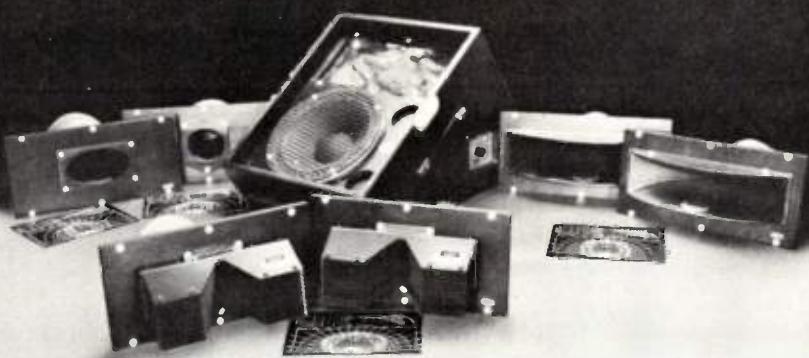
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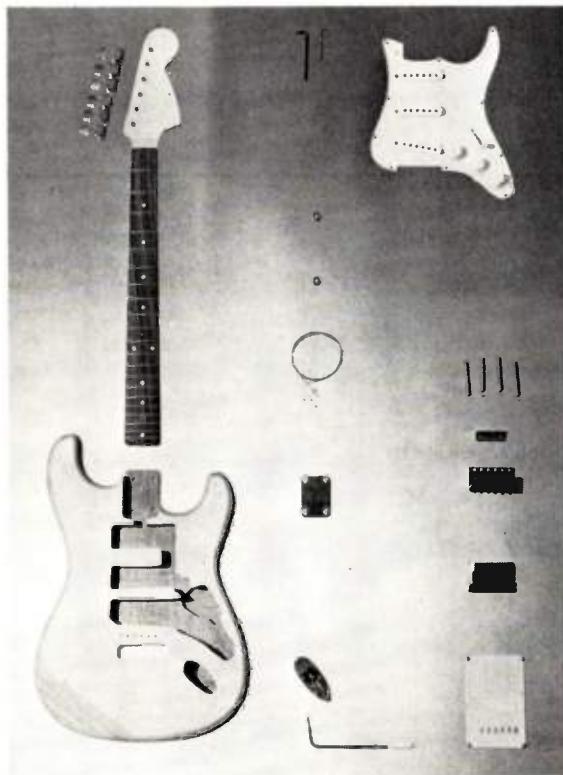
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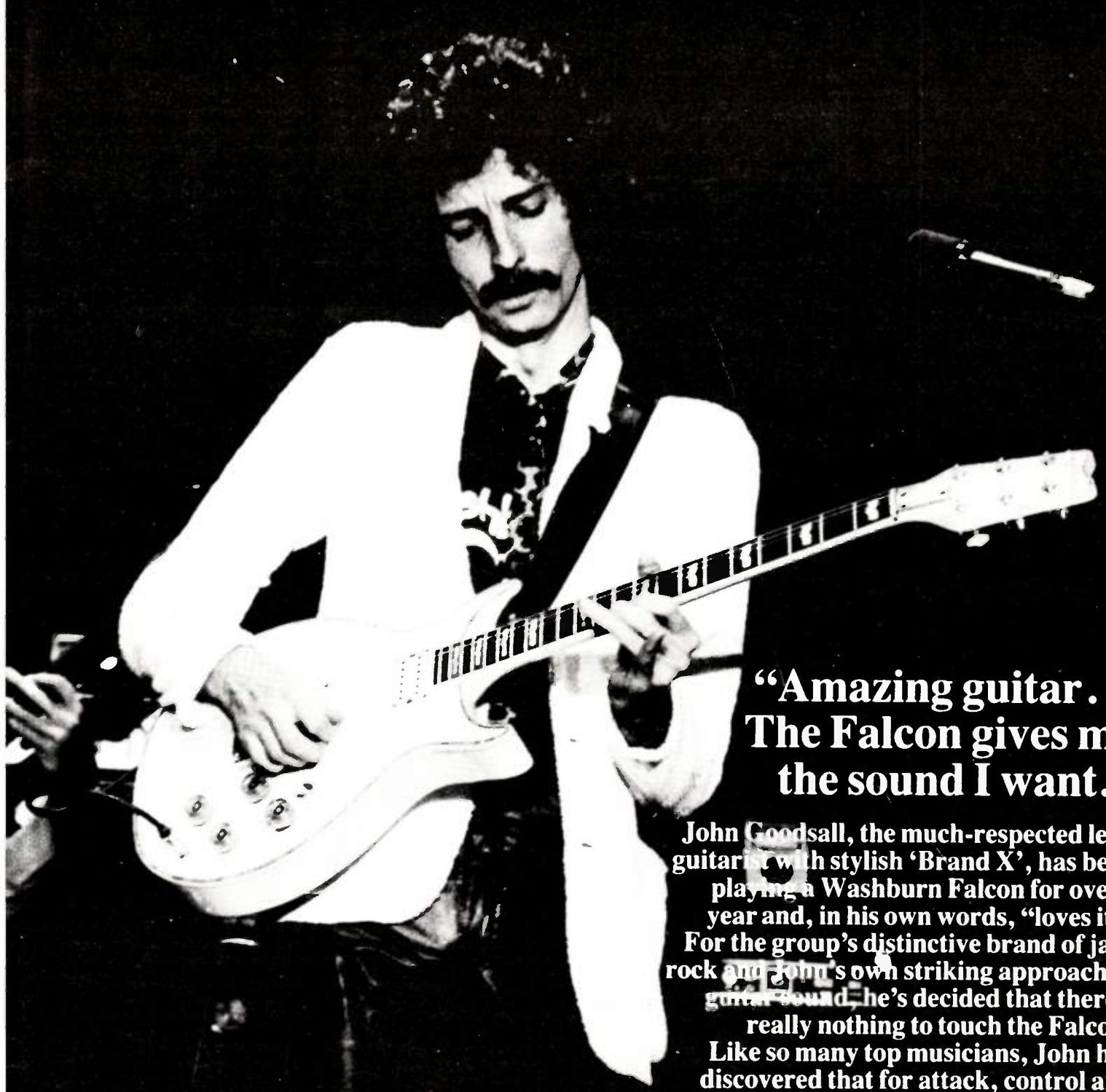
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An Age Old Tradition Takes Flight

Evolution Of Performance Synthesis

In a field where the only constant is change, an endless stream of technological updates, competitive conformations and periodic obsolescences no longer surprise the serious synthesist. Over the past decade, improvements and advancements in the logistics and playability of electronic music synthesizers have been pouring out of engineering labs at a fast and furious pace. In some cases, the "Better Mousetrap" has become a thing of the past before the majority of consumers even understood what made it a breakthrough to begin with. The music industry as a whole has had to learn to deal with this syndrome effectively, making a paying proposition out of the increasingly tangled merger of their own stronghold with the ver-evolving world of electronics.

This article — the first of two — will provide an insight to the evolution of performance synthesis, starting with its first widespread availability some 15 years ago and marking its major advances through to the present threshold it now stands ready to cross: the age of practical, computer-controlled synthesis.

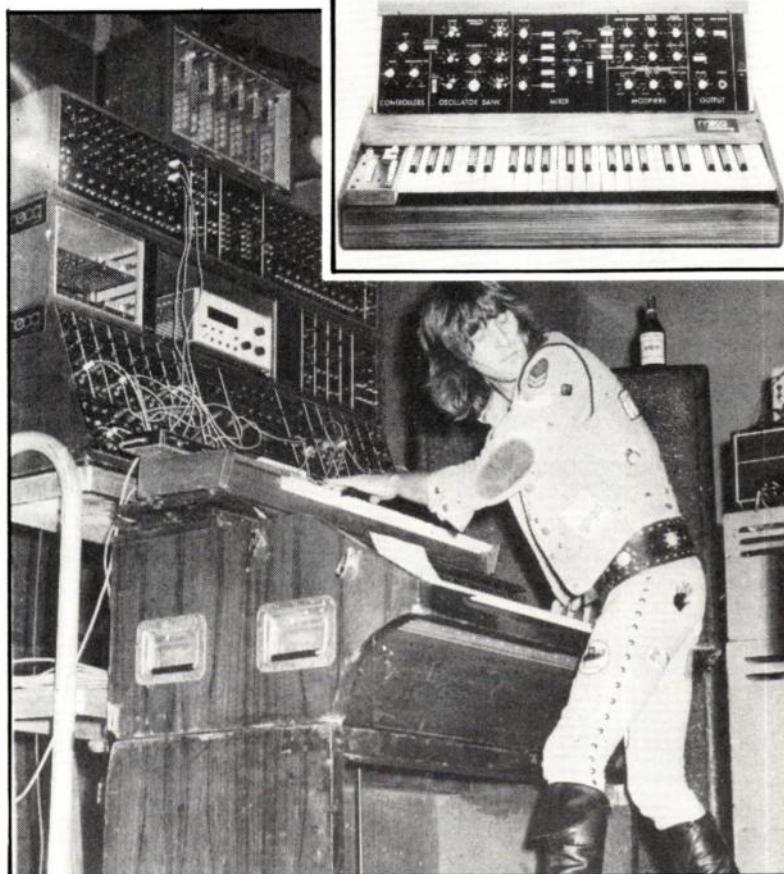
In the mid-to-late 60's, when portable organ sounds were swiftly falling from grace in favor of the "puffy" B-3's and a resurgence in acoustic keyboards, people like Robert Moog and Alan Pearlman (ARP) were enduring what now seems in retrospect, a struggle to convince some skeptical merchants of the usefulness and inevitable acceptance of electronic performance synthesizers. They had their work cut out for them and in the beginning, it was no easy selling job. Let us con-

sider at the outset that if a new instrument or technology is to become widely accepted, then the first bunch of people who must be won over are the music store owners and their salesmen. Considerable amounts of money are spent to advertise the new product's existence and to educate the consumer in its use. This is probably the most effective means of generating excitement among the people who will ultimately slam their wallet down on the glass counter and begin to haggle. But while this is a simultaneous effort, such ad campaigns aimed at the consumer are overshadowed in importance by the priority placed on securing dealerships in major areas.

In those days, when a keyboardist walked into a music shop and asked for a demonstration of "the organ in the window", the salesman was merely faced with the job of showing him or her where the on/off switch, drawbars and volume pedal were — maybe a brief explanation of "why that horn spins around in there" — rip off a few Vanilla Fudge licks, and that was it. You want it?

In walks Robert Moog with an instrument bearing his family name or Alan Pearlman or David Friend with something called an ARP, and now all of a sudden, we're talking about voltage-controlled-this, low-frequency-that, pulselwidth-whachamacallits and "how do I contact the tower on this thing?"

What they were promoting then was the first generation of performance synthesizers, using "state-of-the-art analog systems". When using the analog format, the word performance is crucial to the instrument's description and saleability. An analog synthesizer is made up of a series of components or "modules"



that serve to generate or modify sounds. These modules (oscillators, filters, modulators, noise generators, etc.) are all controlled through the manipulative uses of voltage. The "breakthrough" involved in this technology centered around the fact that these voltages were easily and accurately "switched" or brought into play. The separate modules were interconnected with external "patch cords", in any one of an enormous amount of possible interactions, or more simply, a vast vocabulary of useful musical and environmental sounds. The major drawback of these systems for use in live performance was that the synthesist was required to manually change the connecting or "patch points" in order

to shift into a different sound. In the middle of a show, the necessity of re-setting up to two dozen wires and knobs to prepare for the next tune can be a nerve-wracking experience if your onstage format demands a steady, uninterrupted flow. If you ever witnessed an Emerson, Lake & Palmer performance during their early, pomp-rock days, then perhaps you got a glimpse of Keith Emerson's customized Moogs and figured he was moonlighting for the phone company.

To this problem came the solution of internally-wired analog instruments. In an effort to provide an equitable compromise, many keyboard synthesizers hit the market with a pushbutton and/or slider and knob control

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system. By limiting the synthesizer's capabilities of sound production from a nearly infinite pool of possibilities to a finite set of popular and useful musical sounds, the designers made it logically feasible to incorporate all of the necessary patching internally, making the player's job of switching from one sound to another much easier. This advancement was put to use in two general formats: variable and preset synthesizers.

Variable synthesizers of this era, such as the ARP Odyssey or Mini-Moog, were self-contained, pre-wired units that housed controllers, oscillator banks, audio mixers, modifiers and output provisions. By selecting a raw "waveform" such as "sawtooth" (a brassy sound) or "square wave" (a hollow, reed-like sound) and modifying or changing that sound by driving it through a series of variable filters, the playing could create an abstract sound that either defies comparison to an acoustic instrument or comes close to hitting the mark in trying to simulate that acoustic instrument. Just as in the externally-wired models, settings or "patches" (though not nearly as complicated) had to be memorized or recorded for future use. In an effort to broaden the market to include the not-so-serious synthesist, as well as an equal consideration given to the instrument's overall playability, pre-programmed or "pre-set" synthesizers emerged and enjoyed quite a bit of popularity.

A synthesizer such as the ARP Pro Soloist for example, offers the keyboardist an extremely portable yet very versatile solo instrument capable of producing a great number of orchestral or abstract sounds at the touch of a single button. But, given the fact that consumers in general are more

likely to holler about restrictions than they are to sing praises, the industry quickly geared up for the next plateau of development: polyphony.

The further compromises necessary to pull this one off are evidenced in the range of capabilities that the early polyphonic synthesizers possessed. For the most part, their bag of tricks included violin, horn and a few piano sounds with "single triggering" circuitries (if you hit one note and held it, anything else you played while that first key was depressed would not trigger the envelope — mud). While very useful to the organist or pianist who used these machines for diversity, considering them to be "another keyboard" rather than a synthesizer — a totally different animal — the prejudicial sentiments built up concerning monophonic systems after poly-units hit the street irked a few serious disciples. Tom Piggott, one of this nation's best living definitions of a synthesist versus a keyboardist, found the clamor surrounding the cry for polyphony a bit much to take: "The first question they ask is, 'Can you play chords on it?' That's tantamount to saying that, 'when saxophones play chords, I'll go out and buy one.' Isn't that ridiculous? The monophonic synthesizer has a much wider range of sonic capabilities and melodic nuances, making it a natural for solo work. It has a niche all its own on that justification."

After the development of practical polyphony, the synthesizer industry seemed to coast — improving their existing models took priority over the design of new ones — and a battalion of manufacturers joined the parade.

As competitiveness grew in importance, the whips came

out again as the designing engineers and research & development departments worked feverishly to come up with new ammunition. They found it: Integrated Circuit Chips. These miniature electronic marvels were capable of replacing the bulkier and more costly wiring or "breadboard" methods, at the same time marking the dawn of digital technology's involvement in performance synthesis. Along with American manufacturers such as ARP, Oberheim and Sequential Circuits, European manufacturers such as Crumar (of Italy) and others began to employ the benefits of digital circuitry in their keyboard lines, putting them to use in controlling oscillators and seductive, touch-sensitive or featherlight switching of stored patches. People who eat logarithms for breakfast and other strangers with diatonic blood types began to learn each other's languages and found one simple and apparently lasting bond between them: Mathematics.

Before getting into the machinations of digital synthesis technology (at the same time, wanting to keep all the spaghetti in one bowl), the two different methods used in sound production with analog systems should be brought up as a point of reference. They are known as *subtractive* and *additive* synthesis.

Subtractive synthesis — the more common of the two — is based on an oscillator's ability to produce a tone with a very rich, almost infinite harmonic structure. These harmonics, or frequencies, are reduced, eliminated, altered or enhanced by the various filtering and modulating processes incorporated in the machine. Very simply — the oscillator provides a pitch with all of its harmonics intact and the filters or modifiers change or

systematically *subtract* the related harmonics necessary to arrive at the desired sound quality.

Using the additive synthesis format obviously reverses the procedure. The oscillator will give you nothing but the frequencies you ask for. Rather than building a sound by chipping away at what you don't need, you construct a timbre by *adding* or combining all of the frequencies or harmonics in its character. This is called "tone generation".

Right here is where our friends in the computer field enter the arena.

To the ear, a bell is a percussive sound, made up of a fundamental tone with a boatload of harmonics arranged in non-diatonic intervals. To the eye, the mathematical equivalent of this description looks something like this: $f_k(t) = Ck f_0$ (Can you picture this baby on the blackboard in Music Theory 101?). The point is this: Like it or not, the structure of a musically interesting or useful sound is almost always a complex affair. Quite often, certain characteristics or frequencies embodied in that sound evolve into other forms during the life span of a single note. Example: A clarinetist slurs into a G, starting somewhere north of an Fsharp, with plenty of air in his tone, eliminates the air making it a more solid sound and then caps it off by adding a touch of vibrato before fading out. Simple? No way, Your Grace! If a synthesist was determined to duplicate that procedure within the same time frame — a single note — the modulation of frequencies, appearance and disappearance of air ("pink" or "white noise") and the delayed entrance of Low Frequency Oscillation (for vibrato) would send our ambitious volunteer to the nearest Emergency Room for splints ►

on his now-broken fingers. The mathematics of that sound's musical structure dictates the occurrence of certain "events" which may take place at a rate of up to 20,000 times per second! A human being just ain't gonna do it. But a computer — more precisely, a general purpose controlling computer (or microprocessor) — can do it standing on its head.

This introduces us to a third genre of synthesis techniques which has yet to come to fruition on a widespread scale but most assuredly will. One of the leading proponents of this system, Harold G. Alles, resident wiz at Bell Laboratories in Murray Hill, New Jersey, describes it as "contrived digital synthesis".

Instead of representing a sound in voltages as analog systems do, digital synthesis makes it possible to produce a sound by translating a series of discrete numbers. This is a commonly understood and widely used discipline in the computer field known as the "sampling theory". According to this principle, the signal from a digital oscillator must be tapped or "sampled" at least twice as often as the highest frequency in that signal if the final sound is to be accurate. In other words, if you play a note that has a harmonic frequency around 20,000 cycles per second, then a precise sampling rate will fall somewhere between 50 and 60kHz — 60,000 "events" in a single second. Those events govern all the components of the final sound from pitch and timbre to amplitude and if you're going to employ a digital system for "real time synthesis" (another term for live performance, folks), you have no choice but to use a controllable microprocessor capable of spitting out 20 to 60 thousand numbers a second.

The execution of a complex sound, as discussed earlier, requires the controlled sequence of a flood of events governing all the parameters of that sound's character. The mathematical calculations necessary to program the computer to trigger these events is an equally minded boggling project — one that is underway in at least four locations at this writing. All of these units, regardless of their respective stages of development or differences in layout and design, incorporate four integral components which bridge the gap between an idea and a sound:

(1) *A Digital Synthesizer Bank* — a group of controlled oscillators and a digital-to-analog converter (D/A), supplying the sound system with the necessary voltages.

(2) *Controlling Mechanisms* — a keyboard or keyboards, coupled with the usual parameter controls and pedals.

(3) *General Purpose Controlling Computer* — interfacing with the keyboard and related controls, this translates the control settings and trigger velocities into storable and retrievable control information.

(4) *Software* — little discs that actually store the information and can be interchanged.

If all of this sounds like a toyland for the John Paul Gettys of the world, take heart. Again, according to Harold G. Alles, "It is just now possible to make a system that is commercially competitive with some analog systems. A proper question at this point is, 'What are the advantages of digital synthesis that make it worth all the effort?' The advantages are *precision* and *control*. The various synthesis parameters (frequencies, amplitudes, etc.) can be absolutely and repeatedly set to precise values. Hundreds of these parameters can be controlled in real time using a com-

puter, and these controls can be stored and easily retrieved. Thus the computer-controlled digital synthesizer can overcome the principal shortcomings of the analog synthesizer..."

So much for "Bigger & Better". For an explanation of the word "competitive", look to the fact that IC chip manufacturers and distributors are sprouting up at a rate that rivals McDonalds franchises. According to industrial efficiency reports, if the automotive industry had kept pace with the computer industry in terms of cost-effective advancements over the past 20 years, a mid-

line Cadillac would now cost around \$13.00 and average over 800 miles per gallon of gas. That's a pretty tough track record to top in any field.

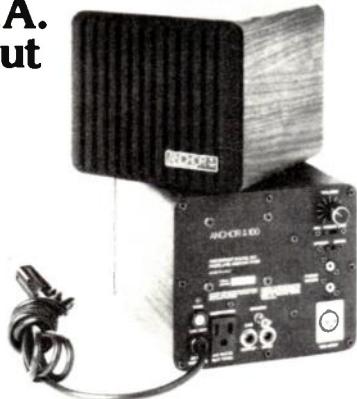
In part two of this overview of the ever-changing synthesizer industry, we'll take a detailed look at several instruments now in production, the people, principles and promises behind them and possibly a sneak preview of some prototype instruments that could very well be the "status quo" in 1985, as electronic music synthesizers enter the age of computerization.

by Steve Ruggere

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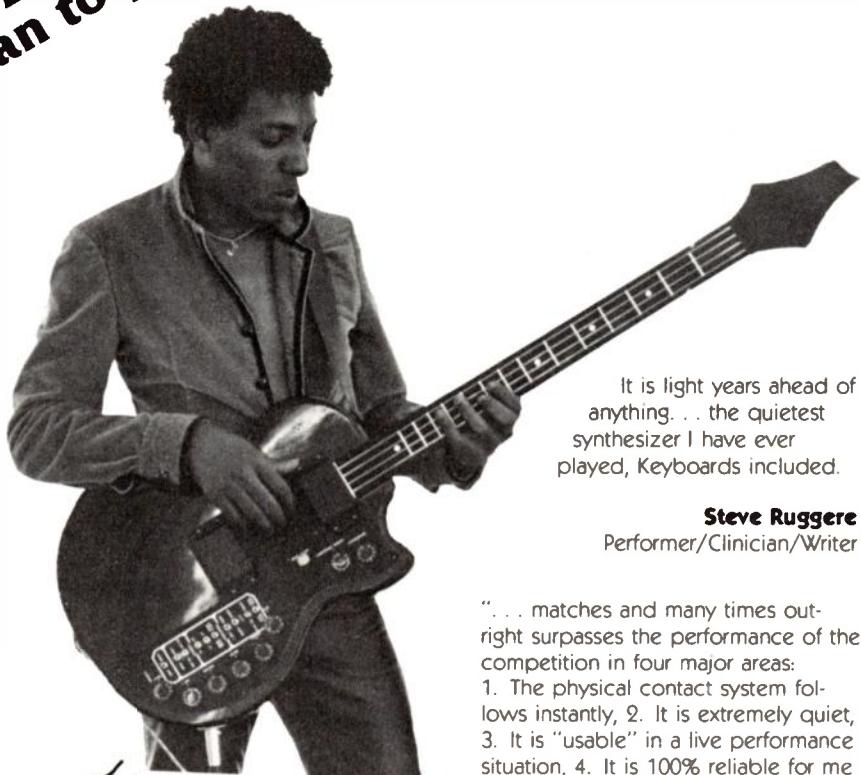
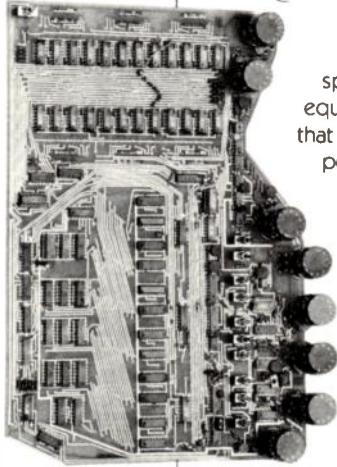
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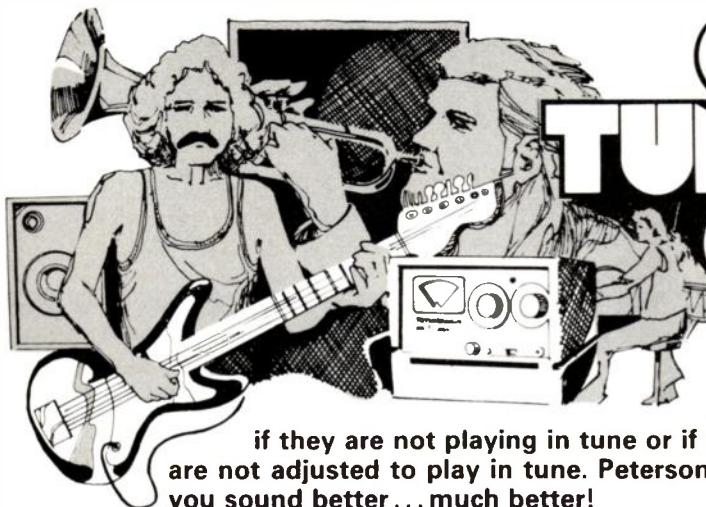
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Keyboardcheck

ARP 16-Voice Electric Piano \$3,000

Like air rushing in to fill a vacuum, the ARP-16 Voice piano comes into the electric piano marketplace to plug the gap between the high-priced thoroughbred electric grand above it and the many budget-priced pianos below. The 16-Voice also represents an important attempt to provide more versatility than usual for electric pianos and, by and large, it's a successful and exciting new instrument.

The major attraction for my taste was the actual keyboard. It looks and feels like the real thing, i.e. a classy acoustic piano, and the action is solid yet flexible and fast. The keys are wooden and standard grand-piano length with a weighted maple action. Each key is mechanically coupled to a hammer, whose speed and weight when struck are measured by electronic circuits which in turn are connected to tone generators. This system allows the keyboard a continuum of touch sensitivity in terms of both attack volume and respective decay, creating a most realistic facsimile of an acoustic piano. It just feels very natural to play the 16-Voice. The keyboard is 6 octaves long from F to F.

Above it are the 16 numbered tabs for preset sound, each tab with its own LED. Preset 1 is the standard piano setting which is perhaps a little sponge-ey, but then preset 9 provides a somewhat more percussive version with a stronger "pluck". The other crucial voices are 7 and 8, the "Rhodes-type" sounds. They produce classic electronic outputs which should satisfy aficionados of this sort of sound. Those who may find traditional electronic pianos unwilling to express their own style and idiosyncrasies will be pleased to discover that preset 7 produces a livelier and brighter-than-usual

version of these tonal voicings without losing the warmth. Both 7 and 8 presets certainly provide respectable and tasteful accompaniment or soloing sounds in the hallowed tradition.

Voices 14, 15, and 16 are successively brighter, funkier and increasingly touch-responsive applications of the piano's built-in envelope follower. The harder the keys are hit, the heavier the effect.

Voices 10 through 14 are also progressively brighter settings from a muted harp through muted harpsichord and grand harpsichord to Voice 13, an exceedingly hard-edged piano sound with so much bite and definition that care must be taken not to hit the keys so hard that distortion results. Voices 11 and 12 are definitely my

favorites; to my ears the best compromise between bite and warmth. The remaining presets are somewhat more esoteric and ethereal concoctions which, apart from the "vibes" sound, would probably not have too much regular application.

Each of the 16 presets is subject to various other controls which can enhance the basic settings. There are controls for overall volume, tone and tuning, plus a detuning control. An acoustic piano has more than one string for each note, and the 16 Voice piano has more than one tone generator for each note. The further clockwise the de-tune control is set, the more these tone generators de-tune relative to the master tuning. Perfect tuning would actually sound

a little unnatural, so judicious de-tuning should be applied to impart presence and warmth. Considerable detuning creates a honey-tonk effect from presets 1 and 9.

As on traditional pianos, 2 pedals are supplied—the left for muting and the right for sustain. The impressive brass pedals can look a little strange on their floor platform divorced from the rest of the instrument, but at least they can be easily taped down onto a stage. By switching the "soft" tab on the front panel to "vibrato", the left pedal then applies vibrato which has adjustable speed and depth controls. Consistent vibrato can also be applied independently of the pedals, which do not have to be plugged in to trigger the ef-



fect. Vibrato is especially enhancing of the more "cutting" voices such as 7, 12 and 13.

Inside the piano there is also a phaser, applicable to any preset voice with adjustable speed (sweep) and resonance (depth). The phaser tab activates the built-in stereo phase shifter, and so, round the back of the instrument, besides low and high impedance mono outputs, there are also left and right stereo outputs. Actually the two stereo outputs are essentially the same, but electronic circuitry "animates" the sound to enhance the impression of presence. Obviously, to get the ultimate effect from this piano, you really need the facility to assign the stereo outputs to two speakers either by using two inputs on a mixer which can bisect outputs to different speakers, or by using two separate amplifiers and speaker setups, one for each channel. It may sound obvious to say that the better the amplifier/speaker system the better the results from an instrument, but this truism has never struck me as forcibly as it did when reviewing the Arp 16-Voice. The scope and sensitivity of the

instrument is noticeably improved with every enhancing adjustment of the sound system. Both top and bottom responses must be wide-ranging to really cope with the extremities of the piano's dynamics, and working pianists may find putting it through the PA system is the best move. It is also crucial to match up all the impedances to get the best results. I found that, even using a cabinet designed for keyboards with a responsive top and midrange and attenuation control, everything had to be just right to avoid distortion. I would also recommend the use of a noise gate to eliminate line noise and hum, but in this respect the Arp is certainly no worse than a number of other electric pianos. Nevertheless distortion and earth-loops are on the cards if elements of the surrounding set-up are inappropriate. Having said all this however, I assure you that it's worth taking the trouble to sort out the best reproduction for the 16-Voice piano. This is a classy and sensitive instrument with a wide dynamic range, and it requires an equally flexible and sophisticated sound system to do it justice. In the right

conditions, going through a good PA in stereo, it is truly impressive.

Through the use of auxiliary inputs, it is possible to mix other stereo pre-recordings with the piano's stereo signal (useful for learning or experimenting with new parts) and this facility can also be put through a front-panel headphone output.

The 16-Voice is eminently transportable, being relatively light and covered in fairly tough vinyl with a detachable keyboard cover panel. There are three useful metal carrying handles attached, but there are also metal corners which can work loose and cut your hands, as my roadie will testify!

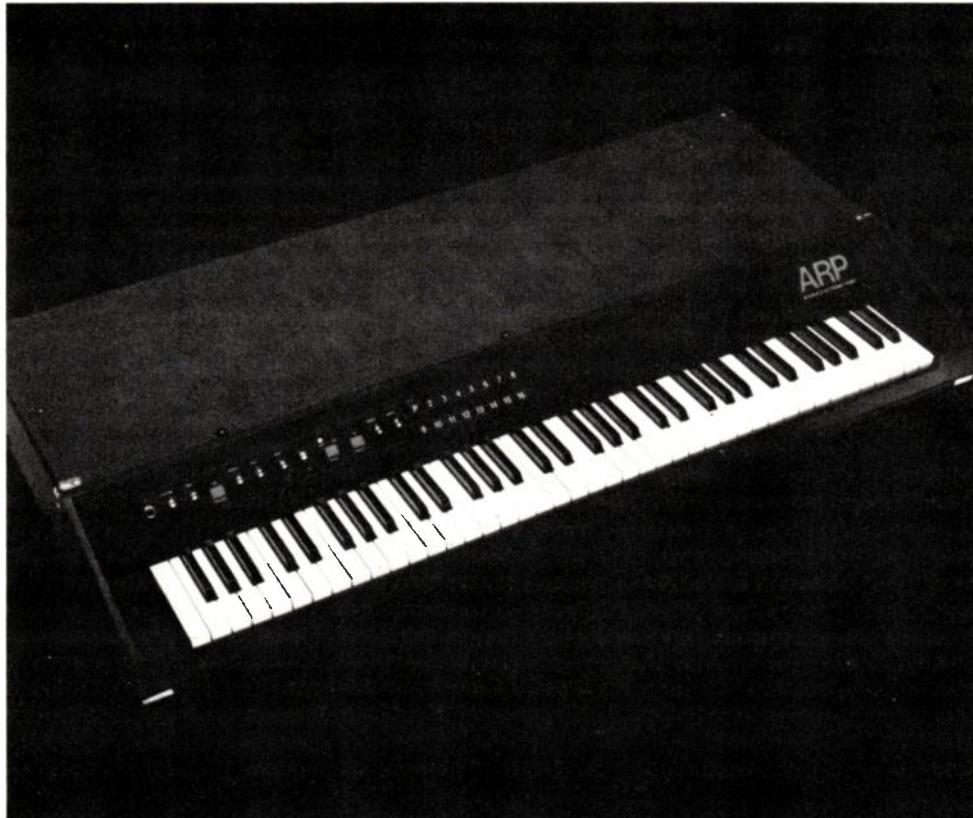
Underneath the piano is a substantial wooden frame which prevents warping and holds in the detachable steel legs (a trifle wobbly) but are set at a sensible height for playing either seated or standing. The legs can hold an extra 200 pounds besides the piano, so additional instruments can be placed upon the helpfully flat-top surface.

It's hard to predict the roadworthiness of a new product, but I must report that on a flight from the UK to the States cuddled in a

good flight case, the piano lost the use of 2 notes in the middle octave. That's easily repaired of course, but it does imply that checks are in order when touring. Arp assures us that, because the master clock oscillator digitally determines the pitch of all the notes, the piano will never require tuning.

Overall then, the Arp 16-Voice Piano has many selling points—the flexible and natural keyboard action, the accurate and dynamic touch sensitivity, the range of presets and controls and the compactness of design of such a sophisticated instrument. It needs more careful setting up than many other pianos, but sorting out the appropriate system is well worthwhile, for this piano can deliver a wide spectrum of impressive and rich sounds, including both classic acoustic and electronic piano voices. It's more expensive than many other pianos, but it is also much more versatile and realistic to play than cheaper products. The price seems justifiable to me and this instrument is a valuable new addition to the available range of keyboards, and one which I'm sure most pianists would be pleased to own.

Stan Shaw



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Performance

This month, we feature a heavy metal band who toured the UK recently, the rapidly rising American HM outfit, Van Halen. The concert had completely sold out.

Unfortunately, Van Halen indulged in offensive language to an unnecessarily excessive degree. It is my often expressed opinion that if a band cannot adequately express itself in the one-and-a-half hours they are on stage through its music and by using the tens of thousands of words to be found in the various dic-

tionaries of the English language, but instead find it necessary to use obscene and offensive expressions in order to get their message across, then something is seriously wrong. Don't get me wrong — I am no prude — far from it in fact. I just find this excessive use of bad language which seems to have become an essential ingredient in heavy metal and new wave music so unnecessary. Anyway, I shall get off my soap box and get down to the business in hand.

Van Halen

Venue: Birmingham Odeon

Hire Company:

Showco, Dallas, Texas/Colac, London

The stage set used by Van Halen looked like something out of a science fiction movie, with the huge drum kit standing on a space station landing platform, the keyboard instruments built into rocket propelled consoles, the massive lighting grid more visually exposed than usual and bank upon bank of loudspeakers, all with cones exposed and metallic center domes reflecting the lights.

The PA was effectively lost in shadow at the side of the stage and had been built upwards instead of outwards — presumably to leave more clear stage opening. Stage width is often a problem at Birmingham, and in the past the Cerwin Vega PA used by Boomtown Rats and the Malcolm Hill system used by AC/DC literally occupied half the available stage width at both concerts.

Alex Van Halen's drum kit is an extensively personalized Ludwig outfit comprising two kick drums, two floor tom-toms, three large mounted tom-toms, two smaller rack tom-toms and a set of five tuned 'octobans'. The kit literally bristled with cymbals and was completed by a huge gong suspended in a frame behind.

The two kick drums were each

made up from two shells joined end-to-end by means of a concertina type flexible coupling and held in a rigid arc by means of internal steel struts. Only a single skin is used on each assembly and the two pairs of shells, one arched left, the other right, are placed side by side in a 'bull-horn' configuration.

It all looks very impressive, but whether it actually produced any audible improvement in kick drum sound I cannot say as there was no clarity at the bottom end of the PA and one kick drum would have sounded the same as any other to the audience. There was certainly a great deal of energy expended in pounding the skins and a great deal of noise was produced in the process, but the sounds were not definable above the general level of sound coming off the stage or over the PA.

Equally gross were the two loudspeaker systems used for lead and bass. Eddie Van Halen's lead guitar stack comprised nine 8 x 12 JBL cabinets stacked on their sides three high by three wide, giving a total of 72 (yes, seventy-two!) 12-inch JBL K120 drive units in a wall some nine feet high by 18 wide.

This was powered by a rack of





Marshalls, but the road crew had got the rack into its transit case before I could get close enough to determine whether there were three or four amps in the rack and whether these were the 100 watt or 200 watt versions.

Michael Anthony's bass stack comprised nine cabinets of identical dimensions and stacking configuration, stacked on the other side of the drum rostrum, but seven of these were 2 x 18 cabinets fitted with Gauss units, and the other two were 8 x 12's as used for lead. This gives us totals of 14 Gauss 18 inch drivers and 16 JBL K120's, all of which seemed to be driven by a rack of Ampeg 400 watt bass heads.

All 18 of these huge cabinets, as well as the rack for the amplifiers and further racks for the keyboards, were made by Flag Systems Incorporated (the Tycobrae loudspeaker system people) in the States and were brought over for the tour. The cabinets are covered in that thick grey felt material that RSE used to use for their PA systems some years back and have an extremely fine, but very taught and strong, nylon mesh over the front mounted loudspeaker chassis.

It is so fine that until the cabinets are inspected at close quarters, it looks as though there is no protection for the cones at all. These cabinets were superbly made and were extremely heavy, and were trucked by clipping wheeled baffled covers onto the front of the cabinets for total protection in transit.

The actual PA contractor was Showco from Dallas, Texas, who had come over with the band, but in order to reduce shipping costs, Showco had sub-contracted the front PA to Colac. Showco had brought with them their own 30 into eight stereo main desk and associated auxiliary racks, 30 into eight monitor desk, the monitor auxiliary racks, monitor power amplifiers and the entire monitor loudspeaker system, leaving Colac to provide just the main PA loudspeaker system and associated power amplifiers.

The Showco monitor loudspeaker system consisted of four large — four-way full range cabinets, each fitted with four Gauss 12's for the bottom end, a line array of four JBL K110's for

lower mids, a pair of JBL 2396 elliptical horns without the usual lens for upper mids and four JBL 2402 'bullets' for the HF; eight all-JBL 1 x 15 'W' bin, two radial horns for the mids and a high frequency horn — none of which was I able to identify. The power amplifiers were all Crown DC300A's with UREI 27 band graphics and Showco active crossovers.

Beside the Showco main desk out front, the Showco auxiliary equipment racks contained all sorts of goodies including UREI 27 band graphics and one of the incredible Crown RT/2 acoustic analyzers, UREI limiters, and MXR Flanger/Doubler, an Eventide Instant Flanger, two Eventide H910 Harmonisers, three Omnicraft GT-4 3-channel noise gates and a Roland RE-301 Chorus Echo. Some of these were used on the auxiliary sends and returns from the desk, while others were on specific channel inserts as required.

From here on Colac took over, using a Brook Siran Systems MCS-200 four-way active crossover to feed ten 4 x 250 watt Midas power amplifier 'blocks' and 12 Taurus 2 x 400 watt power amplifiers. The bottom section of the PA loudspeaker stack was a pair of RCA 2 x 15 bins. On top of this was stacked three vertical columns. Nearest the wall was a pile of eight Martin Audio 1 x 15 bass horns. Next to that, was a pile of six Martin Audio MH212 'Philishave' midrange horns, and alongside this again, was a pile of eight Vitavox four-cell dispersive horns with a four-way JBL 'bullet' array at the center.

Half of the Vitavox horns were fitted with JBL 2482 high power compression drivers, and half with 2440's. The frequency band allocation was the RCA and Martin bins together up to 250Hz, the Martin 'Philishave' 250Hz to 1.5kHz, the Vitavox horns with JBL 2482 drivers 1.5kHz to 3.5kHz and the Vitavox horns with 2440 drivers from 3.5kHz up, with a high pass passive filter feeding the JBL 'bullets' at 8kHz.

The system certainly made a good deal of noise, with an average sound pressure level of 106dB(A) and a maximum peak of 115dB(A). I could see from the Crown analyzer display in the Showco rack that the energy was

fairly evenly distributed across the frequency band, although there was little energy below 63Hz and a continuous peak at around 250Hz for most of the concert.

At one point, during a guitar solo from Eddie Van Halen, I measured a sustained tone of 112dB(A) at between 1kHz and 2kHz that went on for quite some time and left my ears ringing. These measurements were taken at the desk location about two-thirds back in the auditorium. Due to the "denim army" packing the front of the theater, I could not get anywhere near the stage to measure the levels up front, but it would be at least 3dB(A) higher than the figures given above.

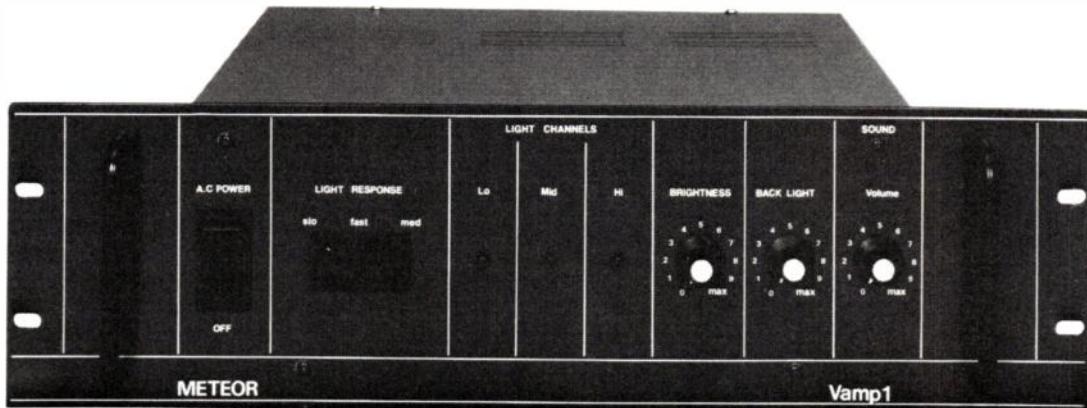
The sound quality was not good. The sound was not at all well defined and seemed to me to lack punch. Nor was there sufficient low frequency energy for my liking and David Lee Roth's vocals were just not getting across. As it happened, some friends of mine who are really into Van Halen were also at the concert and knowing nothing about the technicalities of sound systems, were complaining that even knowing a good proportion of the material, they had great difficulty in hearing the words and were not at all impressed by the overall sound quality.

I can only agree with them, although with the gear being used, there is no obvious explanation. Nevertheless, the band were exciting and the whole audience seemed to be with them every inch of the way — lapping up every remark from David between numbers and responding extatically to every detail of every number.

The lights were very good indeed, with what must be one of the biggest "straight" lighting rigs around just now. A total of 750 1kW paralamps were in use fed from an Oldham 80-channel, two pre-set board with 40-channel matrix and 20-channel sequencer. The whole of the roof of the stage seemed tube covered with lighting trusses with additional dropframes around the sides, serviced by a system of catwalks. The system was provided by Showlights who also look after Van Halen's lighting in the States.

Ken Dibble

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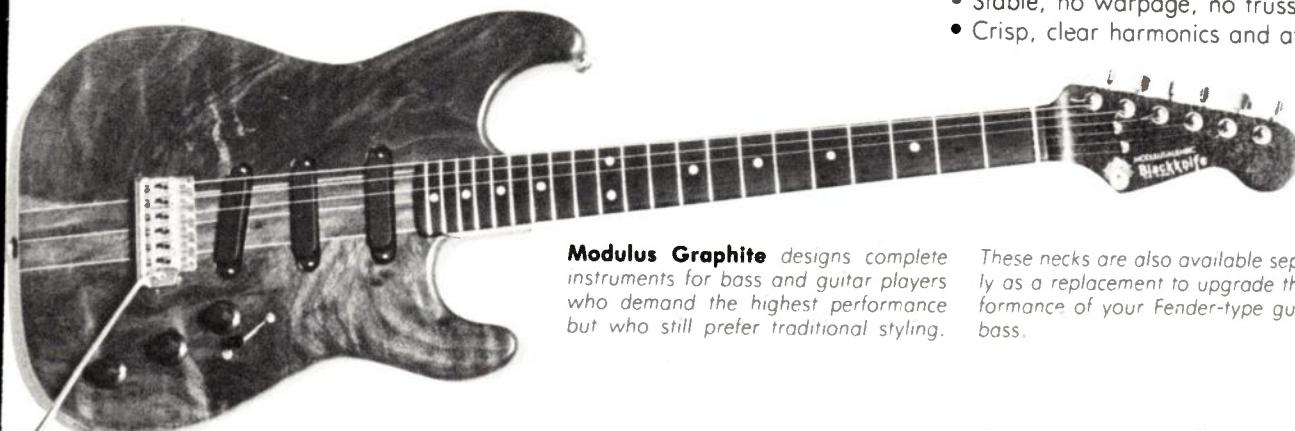
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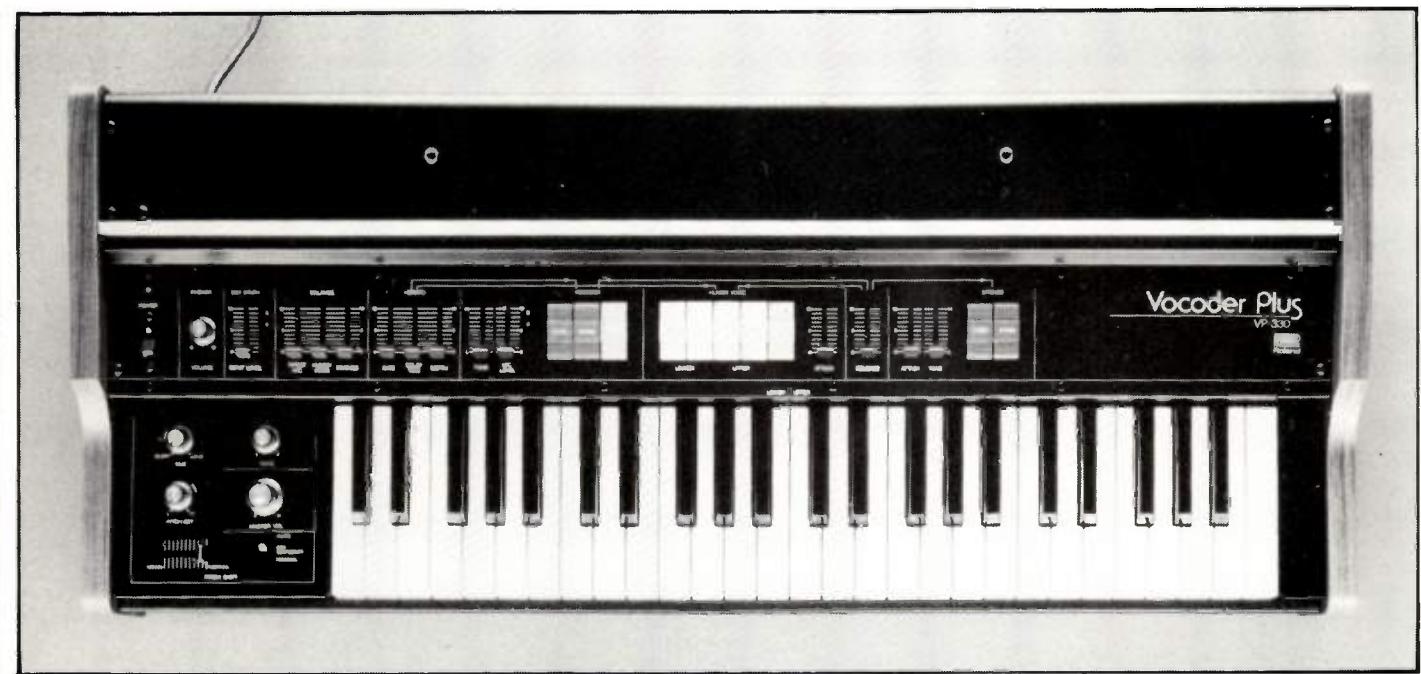
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Synthcheck

ROLAND Vocoder Plus



The Vocoder Plus has now been on the market for about seven months and seems to have been designed to answer the need to bring the "Vocoder Effect" closer to the performing keyboard player by presenting it as part of a present polyphonic synthesizer.

It also has a string section and, for the first time to my knowledge, a synthesized male and female choir sound.

The function of a vocoder is to use the *dynamic content* (loud and soft) and the *harmonic content* (treble and bass) of any sound source to respectively control the corresponding parameters of another sound source. The Vocoder Plus makes all the usual painstaking wiring up and balancing of the different sound sources very simple by reducing all the variables usually involved to only one: the mike input level into the machine (or any other sound source). The other input is internally derived from the synth oscillators at a fixed level, making it, in my opinion, one of the most straightforward and easily usable vocoders around.

Description

The Vocoder is built in a nicely finished wood case with a front metal panel bearing all the controls for the instrument. Part of the front panel is on hinges and gives very easy and quick access for servicing purposes.

The four octave keyboard (C to C) is the usual Roland design and although it is not as fast as, let's say, a Moog keyboard, in this instance it is perfectly adapted to the technique one is going to use to realistically play a string and a choir sound. The keyboard is "split" in the middle so that any of the three functions can be arranged in different combinations, e.g. string and vocoder on first two octaves and choir on the remaining top two octaves, etc.

The vocoder section comprises: one fader to control the level of the input of the mike on to the machine, a second fader being a tone control for the input (very useful in instances where the mike would either be too bassy or too trebly). Then three switches: vocoder on/off for the low

section and on/off for the upper section of the keyboard, and an ensemble switch which gives a basic "chorus" effect and also switches the sound from mono to stereo when the two outputs of the instrument are being used.

Voice and Choir

The human voice and choir section has Male 8' and Male 4' on/off switches for the lower part of the keyboard and Male 8' and Female 4' on/off switches for the upper part. A separate ensemble switch for the choir sound adds incredible depth if used in stereo. Although the decay and sustain settings are preset by Roland, there is a variable attack time control and a variable release control.

The release control is shared with the string section and its design (cutting down fairly steeply to a lower level at the release of the key and then sustaining) represents quite accurately the acoustic progression of a live choir, in a large hall or a church, for example. It also obviates the need for a reverb spring to

make the choir very realistic indeed.

Strings

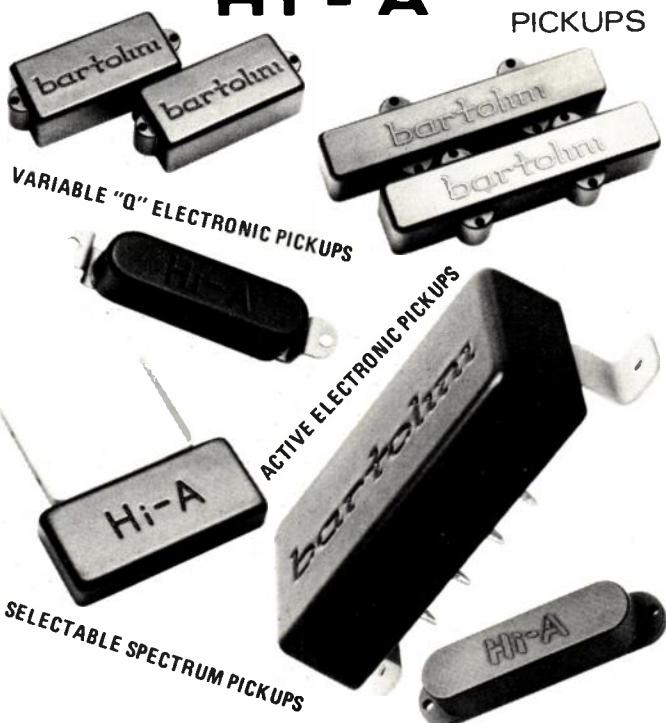
The string section again has two on/off switches for the low/high part of the keyboard, an attack fader and a filter tone control. A conventional vibrato section with rate, delay time and depth can be used to control the vocoder and the choir section. The string generators, under constant modulation, need no further vibrato.

An unusual feature on the left of the keyboard enables you to glide from the note you are playing downwards to any other note (max. about 1½ octaves; or if you have preset the spacing to start an octave below, you could glide all the way up to the normal setting). This gives a dramatic effect when used with a full chord and can be quite haunting if used in conjunction with an echo machine set on long, slow repeat. You can glide up either manually with the smooth fader provided or, if you choose, automatically triggered by the gate of the keyboard. You can adjust the

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speed as well as the span of the glide. A fairly fast speed coming from about a $\frac{1}{4}$ tone down gives a very realistic effect to the choir, giving the natural "split-second delay" for the pitch to establish itself steadily.

Outputs-Inputs

These are placed at the back in a slight recess of the casing and are as follows:

an input XLR or jack for the mike;

an input for external synth;

a mono output; another output labelled "Stereo" (which in fact is mono but is the second channel of the stereo, so you have to use both to get the stereo effect);

a vocoder "Hold" to lock the vocoder filter into a vowel or any other sound so it does not have to be continually repeated while you play;

a pitch shift control for a pedal (I have not had the chance to try this, but one might be able to feed the CV output of a sequencer and apply it to whichever notes are being played, getting with a bit of luck a polyphonic sequence);

a headphones output jack with independent volume control.

Usage

My opinion of the machine as far as the qualities of the sound and the role it could fulfil within a keyboard setup, is very favorable. The string synth is always a very useful tool and the addition of the choir and especially the vocoder gives the player the reach to these extra dimensions very easily and with good control.

Live, it could be used for dramatic, theatrical type effects, to lay a very strong "spacey" backing or to even sing a duet with oneself by feeding the voice through the vocoder and playing a harmony on the keys. In the

studio you could lift any instrument off the multitrack, feed it into the vocoder and play a harmony along with it. Although the basic sound is different, the fact that the intonation, articulation, and all the small idiosyncrasies of the singer or player are respected, makes the harmony come out very tight and realistic indeed!

The only slight drawback I noticed while using the machine in the studio was a slight rise of the noise level on the choir sound as the keyboard was played. As it seemed to be wide band, it was not viable to filter it out without touching the choir sound bandwidth, thereby changing the very good intonation. However, it could easily have been this particular instrument, and considering that the monitoring was at a very high level and that the choir sound is unlikely to be "up front" in a mix, it was of no real consequence.

Summary

The Vocoder Plus is neatly designed and the controls are easily at hand. The few facilities present, if cleverly used, offer a very wide range and a lot of variety as to the final blend. Its dimensions, 905(W) x 370(D) x 145(H)mm make it a "small" polyphonic and easy to move about for the regular gigging musician. Its value for money is definitely on the positive side, and any keyboard player currently checking for a string synth should give it a good try and bear in mind the infinite variety of effects the Vocoder Plus can perform.

Raphael Preston

Raphael Preston is an accomplished musician and freelance keyboards consultant. He has worked extensively in Europe with many professional musicians and for some time was the chief technician and keyboards adviser to Vangelis.

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Guitarcheck

HAMER "SUNBURST"

List Price \$799.90 (Dot Inlay)

Billed as "The Ultimate," Hamer electric solid body guitars have already gained a healthy amount of notoriety in a relatively short period of time. First used by Rick Nielsen and Tom Petersson of Cheap Trick (neighbors and friends of co-founders Paul Hamer and Joel Dantzig), these guitars can now be found in the hands of such notables as Pete Townshend, Nick Lowe, Dave Edmunds, Paul Stanley, Johnny Ramone and Andy Summers.

Based in Arlington Heights, Illinois, the Hamer Company first started their line with the Hamer "Standard," a luxurious "re-creation" of the legendary Gibson Explorer guitar—the one most closely associated with the irrepressible Mr. Nielsen. Since this guitar was made from carefully selected materials and hand-crafted in a limited series, the asking price was rather steep. In order to provide an instrument with a more "accessible" list price, Hamer and Dantzig went on to create the Hamer "Sunburst" series guitar.

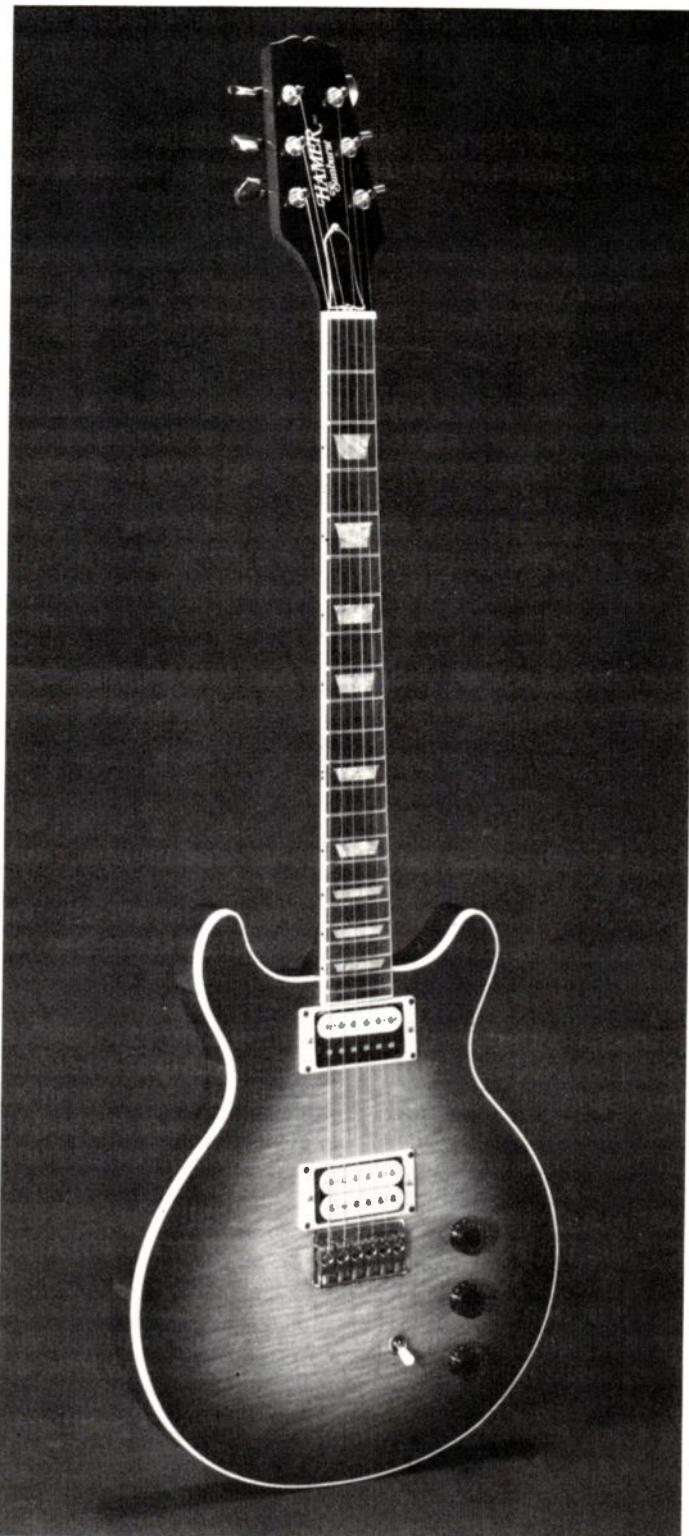
Like all of the Hamer instruments (they also make 4, 8, and 12 string basses), the Sunburst guitar features a body and neck made from British Honduras mahogany, a rosewood fingerboard with either dot or crown inlay and a decorative "overlay" of highly figured maple as the top of the instrument. The Sunburst also has two custom-wired Dimarzio P.A.F.-style pickups (half-white for the bass or neck pickup and cream for the bridge pickup) which are a bit *fatter* and more mid-rangey sounding than the off-the-rack P.A.F.'s. Older models, like the one tested, have Grover machines but the company has now

converted to Schaller machines. A combination bridge/tailpiece with strings anchored through the body completes the hardware set-up.

Primarily intended as a rock & roll guitar, the Sunburst is essentially a comfortable, fairly lightweight instrument packing the punch of heavier Les Paul-style guitars. The control system—tone/bass, tone/treble and volume laid out in a straight line starting back from the bridge for "easy-to-reach" playability along with the toggle switch—seems very simple and basic but, with judicious knob-fiddling, can offer up a lot of tonal combinations not normally found on this type of guitar.

As stated before, the overall sound is hotter than a good many guitars with P.A.F.-style humbuckers, while the combination of the maple overlay on top and the rosewood fingerboard adds a distinctively crisp texture which greatly expands the Sunburst's sonic possibilities. In fact, speaking of these very possibilities in a Hamer company profile in *Rolling Stone* magazine, Jethro Tull's Martin Barre stated, "I've never come to a dead end." When the toggle switch is in the middle position, the pickups are out-of-phase, an uncharacteristically rich and meaty out-of-phase sound that differs subtly from the pseudo Fender Strat hollow/ring sound found on other instruments. The tone controls really work on the Sunburst, and rolling back on the bass and treble pots just a few notches can make a substantive difference to the tonal configuration.

The Sunburst has both a smooth, warm bass sound and crackling treble response



when played "clean" through an amp but, to these ears, it truly blossoms when played in a "dirty" or distortion mode. The treble pickup screams loud and clear with plenty of bite and all of those terrific overtone "squeals" and "honks" so in demand by cliche-ridden boogie band guitar ravers. The bass pickup yields a thick puree of distorted sound without the muffled or "gagged" sound common to humbucking pickups normally used this way.

As to the Sunburst's construction and finishing work—in deference to my eminent counterpart in the U.K., Stephen Delft, who is certainly more versed in these matters than I—it seems to be adequate-to-excellent overall with a nicely book-matched piece of maple wood overlay. The sunbursts—the model tested is cherry red with darker reds, blues and greens also available as solid colors—are generally well-integrated in the grand tradition of late fifties Gibson Les Paul Standards (and their modern Japanese imitators!).

The mahogany used for the body and neck has a tight and uniform grain, the neck seems stable after several weeks of axe-wielding and the headstock is simple and to-the-point with easy access to the machines. The bound fingerboard seems well finished with no discernible dead spots, rough edges or buzzes (except for a minor buzz above the 14th fret for G string). Intonation is good overall and the Sunburst seems to stay in fairly consistent tune, even with lighter gauge strings.

My only minor objection to this instrument is an aesthetic consideration. Mainly that the body (partly because of the ivoroid binding, intended as a "classy" option) has a rather flat, "uncarved" look to it, a factor that undoubtedly has to do with production-line cost factors. Ironically, the less expensive Hamer "Special" model introduced at the recent NAMM show in Chicago substituted a rounded-off look for the binding and, to these eyes, the end result made for a

more coherent overall look. The neck feels fairly slim and comfortable and the action is low and supple to the touch—string benders rejoice!

Conclusion

Overall, a well-made solid body guitar with lot of tonal possibilities implicit in a contemporary rock & roll aural framework. The "flat" look of the body and odd (to the eye) linear configuration of the control knobs put me off for a while, but I soon grew very comfortable with this instrument—my taste leans more to the Sunburst's more

traditional P.A.F.-style pickup sound than the mega-scream approach—and would feel confident using it most any professional application.

J.C. Costa

Scale Length	630 mm
String spacing at bridge	50 mm
String spacing at nut	34 mm
Fingerboard width at nut	42 mm
Depth of neck at fret 1	19 mm (approx)
Depth of neck at fret 10	24 mm (approx)
Frets on fingerboard	22
Body joins at fret 21 (treble & bass)	
Heel starts at fret 18	

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SynthCheck

Electro-Harmonix (Model EH 0400)

Electro-Harmonix, creators of the legendary "Big Muff" distortion device and a company who've generally made a name for themselves over the years by creating units to provide the latest and most sophisticated in effects at the most reasonable prices, have reached a culmination of sorts with the introduction of the Mini-Synthesizer.

Selling at an ultra-reasonable price and weighing in at a mere 860 grams, the Mini-Synthesizer provides a lot of the functions and tonal effects normally associated with keyboard synths selling at much higher prices. The Mini-Synthesizer is powered either by its own two 9 volt transistor batteries or by a 9 volt AC adaptor which can be plugged into a small socket on the rear panel of the unit. Alkaline batteries are recommended because the

unit requires quite a bit of power within the context of its' reduced size.

The Mini-Synthesizer is actually triggered by an electrically sensitive printed keyboard (colors reversed for sharps and regular keys via a shaky silkscreening job) that spans two octaves. The unit comes with a small built-in speaker but can also be played through an outside amplifier and speaker by connecting the output jack to a regular musical instrument amplifier with a 1/4" phone cable. A slightly different cable hook-up system (Y adaptors, "RCA-type" plug adaptor) will permit the user to hook the Mini-Synthesizer up to a home stereo system.

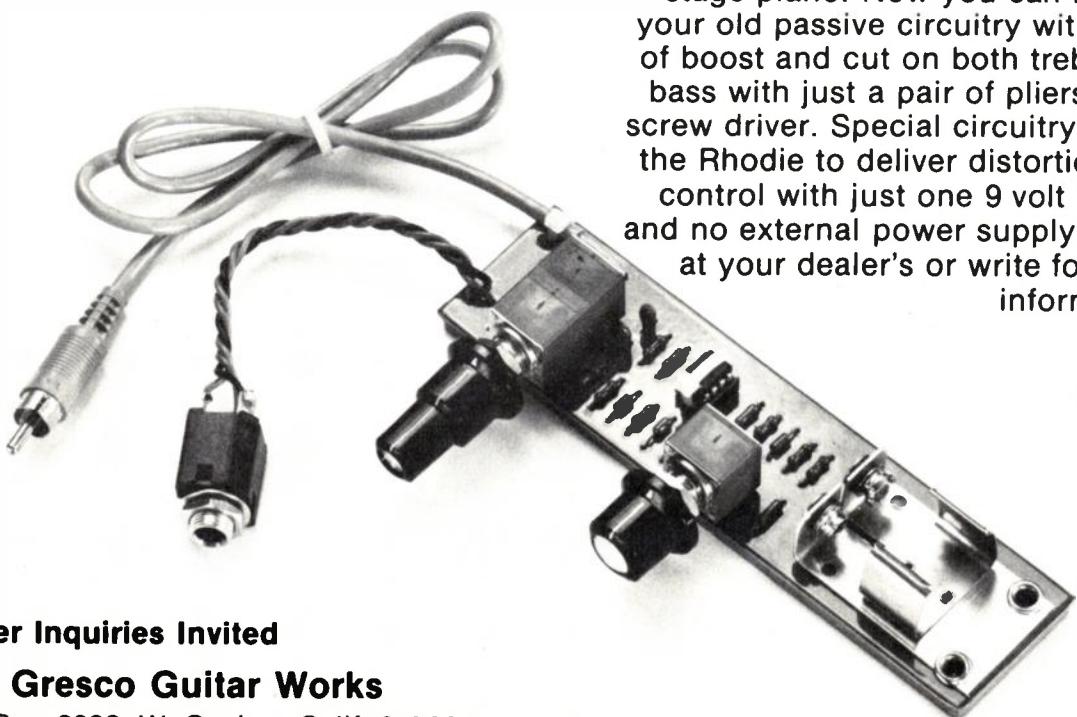
The controls are essentially grouped into three basic sections—OSC, FILTERS and OUTPUT. The OSC section contains a Pitch Bend control for

Mini-Synthesizer \$220 (Approx.)

bending notes and tuning control. An Octave switch below the sliding Pitch Bend control can be activated to hear the same effect two octaves lower while the Suboctave slider next to the Pitch Bend can provide a sound one octave below normal pitch to add different sounds by blending the two controls together.

The FILTERS section starts off-left to right—with the Phase switch and the Phase Rate slider above it. With the Phase switch in the lower position, the Phase Rate slider acts as a tone control. With the switch in the upper position, the Phase Rate control determines the speed of a "sweeping" tone change which slows down in the higher positions. The next six controls are also for shaping the tone—the slider-type switches include Sweep Start Frequency, Sweep Stop

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Frequency and Sweep Rate; the switches underneath include a Sensitivity switch, a 2X Filter Switch and a Q Switch. Using these controls, the Mini-Synth's filter section can be "swept," starting at the frequency set on the Sweep Start control and stopping at the frequency set on the Sweep Stop control while the Sweep Rate controls the time taken for the complete sweep. The higher the setting, the longer the sweep times, and if two frequency controls are set in the same position, the sweep will be cancelled and there will just be a tone change.

Pushing the Sensitivity Switch into the upper position will activate the Mini-Synth's "impact sensor" and, if the controls are brought down to the second line from the bottom, the sweep will start higher up as the keys are played *harder* (touch-sensitivity at these prices!?). In the upper position, the 2X Filter activates a second filter to give the sound a "voice-like" quality and the Q control adds varying degrees of sharpness to the sound.

Evaluating this unit, one is immediately made aware of the fact that, as handy as it may be to have a built-in speaker, the Mini-Synthesizer benefits *greatly* from being played through a larger amplifier. The speaker provided is cute but gives the unit a toylike sound that tends to trivialize its usefulness in more sophisticated applications. Hooked-up to decent amplification, this unit truly comes to life, providing a surprisingly wide and flexible array of synthesized tones for the user. The electrically-sensitive printed keyboard works adequately once you get used to the feel (or lack thereof) of it with the triggering system occasionally misfiring only at the most extreme settings or when the user tries to "crowd" notes together too fast (obviously, this synth is



monophonic).

The unit is housed in a relatively sturdy black plastic case (a bit disappointing, but understandable considering the price and the priority of the electronics inside) and all of the slider controls and switches work smoothly and well.

In conclusion, the price and tonal

flexibility of the Mini-Synthesizer make it a virtual pioneer in the burgeoning field of low-cost synthesis. Through larger amplification, this unit could well find some use in particular pro applications as well as being a valuable tone generating and effects device for the musician who is not primarily a keyboard synthesist.

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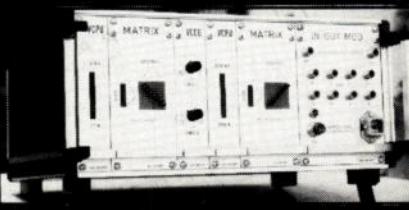
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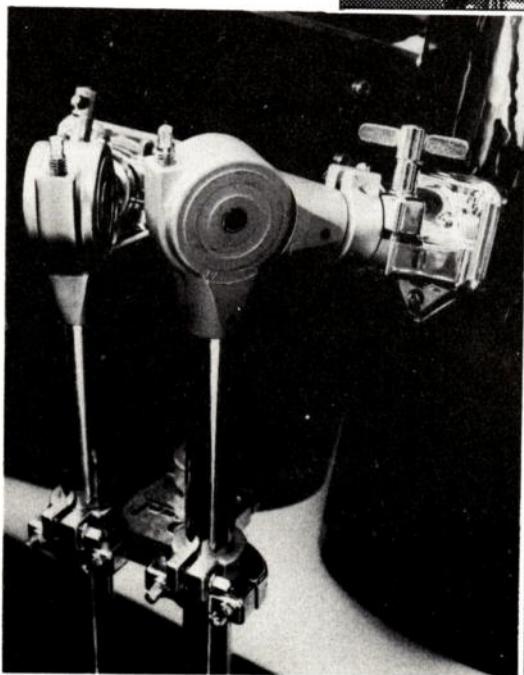
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Drumcheck

Pearl Vari-pitch Cannons

The Pearl Vari-Pitch Cannons were first introduced at the NAMM Trade Show in Chicago in June 1978. A professional drummer called Randy May did something which a lot of players had thought about but had somehow never brought to fruition. *He fitted a Roto-tom to an ordinary drum.* This gave him the unique facility of a Roto-tom which sounded like a drum yet with more sound spread, but also with the handy facility of an easy tuning system. I don't believe the Vari-Pitch drum was ever introduced to change pitch (gliss) as you played it, but more to enable the player to select the optimum pitch instantly. More of this later.

Anyway, Randy May interested the American musical conglomerate Norlin in the idea and they went ahead, experimented and finally patented it. As far as I can ascertain the original idea for the Vari-Pitch system was to have a fitment which enabled the Roto-toms to fit any drum. However, the powers that be decided it would be better to devise a whole new drum kit, including snare drum, to sell as a unique sounding and looking set. They decided on using Pearl's Phenolic material for their shells which up until then had not been available, although we Europeans had been using Phenolic concert tom toms for five years or so. (Phenolic is a hard Bakelite-type material made from glued,



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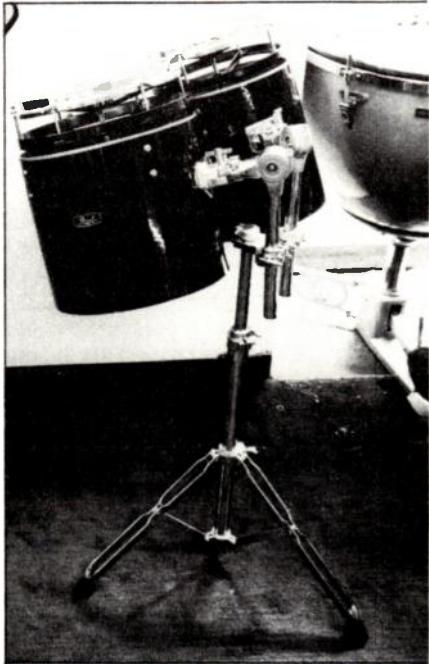
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compressed cardboard which has a very bright sound.)

Their experiments decided that the obvious shell sizes, 12x8 etc., didn't add enough bass to the Roto-tom's sound so they were made slightly deeper at 10½" inches, which gave them more strength. The floor tom tom too had this shell depth without, as far as I can see (or hear), any loss in tone — the look of the drum takes a little getting used to, but because the Roto-tom is suspended *over* the shell rather than inside it, the actual distance between top head and shell bottom is two or three inches more. There are four tom tom sizes available — 10, 12, 14 and 16 inches in diameter — but all have a two inch smaller Roto-tom fitted to them with the exception of the three snare drums. These are slightly different with a 14 inch Roto-tom for the five or six and a half inch shell drums. (There is also a five inch drum available with a 12 inch Roto-tom — out of all the snare drums I preferred this one for inexplicable reasons.)

Anyway, as I said, the Roto-toms themselves are mounted inside the drum via a cross-type framework which is adjustable for any size drum and is fixed to the shell at four positions inside it. Actually, four 'L' shaped flat MS bracket struts are slotted to take eight drum-key operated screws and these locate and fix the threaded pressed steel centre boss. This thread takes the Roto-tom's centre rod and keeps it steady. However, to enable the Roto-tom to tune or detune it is necessary to lock this centre thread and

Pearl (or rather Norlin and Randy May) came up with a unique way of doing this. They have a flat steel locking 'nut' which has a four inch piece of steel tube brazed to it, into which one fits the butt end of one's drum stick (which has been conveniently thrust through the gap between the Roto-tom's top rim and bottom cast ring). This effectively locks the centre rod thread solid to the crossed framework and allows the down head to be tensioned by turning.

The sounds from all of the drums is slightly deeper than usual although I feel that all of these Vari-pitch drums, and come to think of it Roto-toms themselves, have a much better sound when their heads are tensioned higher rather than lower. I find that ordinary Roto-toms "clack and clatter" a little, especially from a distance. Mind you, the reflectors which Remo makes these days go a long way to "rounding out" the sound, since they spread the sound sideways. (A drum without a shell has no spread and its soundwave simply goes down and up.)

The 22x14 inch bass drum supplied with VP422 is also of Phenolic which is reasonably unusual because although Pearl have made some of these in the past (and, of course, their concert toms) this is the first I've seen of them. Anyway, its fixtures are exactly the same as any other Pearl bass drum with 20 'T' handled tuners and claws and fibreglass (or could they be Phenolic?) counter hoops.

I feel that the beauty of the Vari-pitch set will be appreciated more in the recording studio where it will be very simple to tune the drum to the optimum sound which the engineer wants to hear. Since it only takes a turn or two up or down to change the pitch, the engineer can tell you to stop when he hears it at the right note. The same, of course, applies for the Phenolic snare drums, although here the procedure is a little more complicated because as any drum teacher will tell you, on a snare drum you can't tension the batter head up or down without it having a profound effect on the snare (bottom) head, and subsequently on the sound of the drum. Therefore, one finds that in most cases it's necessary to adjust the sympathetic bottom head once the batter tension has been changed.

Having said that you'll appreciate this is not such a simple matter and one must resort to one's drum key (as per usual) to do this. Pearl use their normal, internal, under-batter-head-operating dampers with this snare drum, but since they can't be mounted to the shell as they normally are because they would foul the lower ring of the Roto-tom, they are actually fixed to this lower ring and so rotate with the drum head when tensioning is being carried out.

There are, I am led to believe, two different (yet

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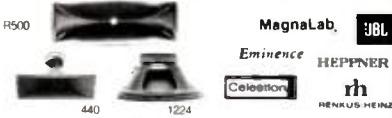
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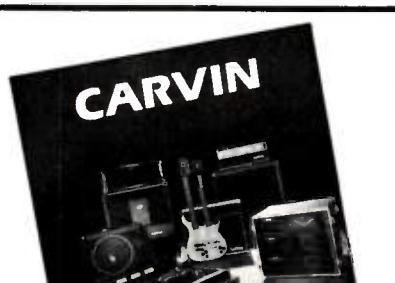
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一億総シンセ時代到来!?

何と僅か860gの ウォーク・シンセ 登場!

エレクトロ・ハーモニックス ミニ・シンセサイザー MODEL EHO400

いやはや、アメリカという国は一体何が飛び出してくれるか分らない所だ。世界を破滅に導く原爆が飛んでくるのは困るけれど、ここに紹介する嬉しい楽器なら大歓迎だ。とにかく、このミニ・シンセは本当に本物のシンセサイザーなのである。そのうえ、僅か860gと軽量、スピーカー内蔵、バッテリー作動(DC 9V 006P×2、またはACアダプター)、プリント・キー等々の特長があげられる。要するに、手軽に持ち運べ弾く場所を選ばないという事で海、山、公園は勿論、トイレの中でも、歩きながらでも、寝ながらでも、車の中でも等々と、実に広範囲に渡っているので嬉しい限り。また、裏面のアウト・プラグ・ジャックにアンプを接続すればパワフル・サウンドもバッチリで、ギタリスト同様、ステージで派手に動きながらのソロもOK。アウト・ドア、イン・ドアの両方ともOKというから実に泣ける。

では実際に機能性の方はどうであろうか。読者諸君の中にはシンセサイザーといえば、「高価で手が出ないもんね!」とか、「ボク、メカニックには弱いのよ!」とか、「先天的に鍵盤楽器は弾けないのだ!」とか誤った先入感を持った人が多いと思うが、このミニ・シンセはそれらのイメージを完全にぶち壊して

しまった。何といっても、フレイヤー・サイトからみてセルロイド紙にプリントされたキーは驚きてあろう。このプリント・キーは電子の液晶スイッチと同様、タッチ・センスで軽く触れるだけで音が出る仕組になっている。ゆえに、ピアノの様に肉体的訓練(運指etc)を積まなければタメ!という様な事はなく、指でプリント・キーをなぞるだけで既にキー。ホート歴10年に匹敵しちゃうかもね!例えば、低音を押さえておき高音部くり返しリリースすれば、いわゆる驚異的なフレーシングもハッチャリ可能。備えている機能はこく簡単であり、カラフルなスライド・スイッチを写真左側より説明してみます。

オクターフ

このスイッチによりオクターフの切り換かいとも簡単に出来ちゃうのだ。

ピッヂ・ヘント・スライダー：その名の通り上下にスライドさせる事によりピノチの調整、そしてリート・キター顔負のチョーキング・ニュアンス(ペント効果)などをかもし出せる。

サフ・オクターフ：このバーをスライドさせる事によりオクターフ下の音がブレントでき、重低音のコントロールが可能。

フェイス & フェイス・レート

フェイスを

ONにするとコーラス効果が得られ、かかり具合はフェイス・レートをスライドする事によりOK!また、フェイスをOFFにするとフェイス・レート・バーかトーン・コントロール・バーに早変り

さて、これらのバーはあくまでも音を創るうえてのサポート的役割にすぎないか、これから説明するVCFセクションこそ、このミニ・シンセの切り札ともいへき強力な武器なのだ。まず、スイーフ・スタート・フリークエンシーとスイーフ・ストップ・フリークエンシーで決められた音色を、スイーフ・レートでコントロールした時間でスイーブできるユニークさ。という事は、ブレイブ・スイーフ・ストップ・フリークエンシー・バーを動かせばアタックは決まった音色で始まる。と同時に音色の変化を暗くしたり明るくしたりといった芸も可能。さて、スイッチ(ブルー部)の説明をしてみましょう。

インパクト・センサー・ON OFF：このスイッチの切り換によりフィルターにタッチ・センサーが接続される。

2X フィルター：切り換によりVCFにサフ・フィルターが加わり人の声に似た音色が得られる。

Q：フィルターのレゾナンス(共鳴)の鋭さ(強弱)を切り換る。とにかく、コンハクトなホティからは想像出来ない程ハワフルな音色が出てくるのでフノたまける。あえて言うなら、オーハー・ハイムに代表される極太の音色ともいおうか。さすがロックの国アメリカ産ならではの音色だ。最少限のコントロールで最大限の効果が得られる歴史に残る!?

このミニ・シンセをどう使いこなすかは君のアイテア次第だ。ちなみに価格の方は¥49,000とメチャ安。

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New Product Review

by ROCK STEADY, August, 1980

the leading rock & roll magazine in JAPAN

Translated from ROCK STEADY:

ONE MILLION TOTAL SYNTH PERIOD ARRIVE!?

WHAT! ONLY WEIGHING 860G! WALKING SYNTH COMING UP!

Electro-Harmonix, MINISYNTHESIZER Model EH-0400

Nobody predicts what kind of merchandise America produces. They made Atomic bombs to destroy mankind which were not welcome to world. But this is different product. It is pleasure to introduce here a musical instrument.

This is Minisynthesizer anyway this Minisynthesizer is real Synthesizer. However, only weighing 860 g. It has own speaker, batteries operated (DC 9v/006PX2 or AC adaptor) and printed keys are in the board which are special feature of instrument.

MINISYNTHESIZER is easy to carry in-door and out-door such as sea, mountain, park, bathroom, hiking, walking, bedroom and in the car etc. Not only that MINISYNTHESIZER can be played through the outside of amplifier and speaker by connecting the output jack to MINISYNTHESIZER which makes powerful sound as a stage guitarist.

So what is the function of MINISYNTHESIZER? Readers of this article think that MINISYNTHESIZER must be very expensive to purchase or I am weak for mechanic and no musical talent to play. But this is wrong preconception. Nevertheless, this MINISYNTHESIZER broke all such imaginations completely.

From the player side, you will surprise to see printed keys in celluloid paper board. This printed keys are same as electric table liquid crystal (so called touch sense)—just touch lightly—you can hear the sound so it is quite different from heavy piano play as physical exercise or finger exercise. MINISYNTHESIZER is just touch the keys with your fingers then you feel as have played for ten years expert.

For example, press low volume some times press high volume repeat and release, MINI produce colorful sounds—the function is simple but the production of sounds is great like color pictures.

Explanation from left with color slides:

Octave: Depends with switch turning control can be simple.

Pitch Bend Slider: Just like this name—upper and lower slides turning control or lead guitar checking or sound effects etc.

Sub Octave: When slides this bar possibly lower sound can be controlled.

Phase & Phase Lead: When the Phase switch is "ON" can get chorus effects. When Phase switch is "OFF" changes tone speedily.

All these bars are support for production of sound.

The next six controls all affect the MINISYNTHESIZER's filter to change the tone of the sound. The filter can be swept, starting at the frequency set on the SWEEP START control, and stopping at the frequency set on the SWEEP STOP control. SWEEP RATE controls the time it takes for the complete sweep. Higher settings produce longer sweep times. If the two frequency controls are in the same position, there will be no sweep, just a tone change. The tone can be changed when the filter is not sweeping just by moving the SWEEP STOP control.

Impact Sensor ON/OFF: Depends when this switch changes filter touch-sense can be connected.

2X Filter: Turns VCT when change of subfilter add second filter can get similar to a human voice.

How can you imagine this small compacted body can produce such a powerful and colorful sound?

We can say, Rock Country of America produces over harmony and maximum color sound!

MINISYNTHESIZER is minimum control musical instrument and maximum effect which will remain in History?

How you can use this MINISYNTHESIZER? Is up to your idea.

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the same) Vari-Pitch sets available. Europe have theirs completely built in Japan but America has their assembled in Nashville, Tennessee. I can see no real difference because of course the Roto-toms and the shells are the same, but the American drums had, when I saw them last, an inverted, 'U' shaped plastic strip to protect their under Roto-tom top shell edges — the ones from Japan do not.

It suddenly occurs to me that there might well be guys out there reading this who have been "out in the woods" for some time and won't have seen a Roto-tom. So, I'll give you a rundown on one. They were invented quite a few years ago by a noted American percussionist who took pieces of a couple of other Remo products, put them together and the result was an easily tunable drum albeit without a shell. Basically, it consists of two different sized spoked, cast, dished rings, say 12 inches and 14 inches in diameter. The larger ring has holes drilled and tapped into it to take ordinary square headed tension screws and these holes match up to the holes in an ordinary triple flange, pressed-steel rim.

So far, so good. The larger ring has a hole through its centre boss which is tapped to take a largish, coarse threaded bolt. The smaller ring has a blind clearance hole for the same bolt. So, we take our ring, put a lead inside it, then our smaller ring (which fits neatly inside the head) then our large ring which we join to the counter-hoop with the tension screws, and finally our threaded rod. As this rod is held firm and the lower ring's boss revolves around it, eventually the threaded rod pushes the smaller ring up against the head and so tensions it. That is just about all these is to it (prior to the Remo inventions there had been a way of tensioning bongos which worked in this manner).

The cast rings are nowadays black plastic coated and the square tension screws are held silently with rubber washers. It is, as usual, necessary to ensure even tension and sound around the drum head at the counter-hoop and the tension screws work as usual for this. Are you *sure* you haven't seen a Roto-tom?

Accessories

The Vari-Pitch sets come complete with the newish 900 series stands and pedals which I have never reviewed before, so here goes.

Pearl's new tom tom holder is like "chalk and cheese" coupled to the original "ball and socket" model. This new one has no pressed-steel parts and, with the exception of two tubular steel rims, is completely cast. It has a cast double receiver plate bolted to the best drum shell with a strengthening plate behind it and inside the drum. On the top of this shaped plate are two raised circular shaped receiver holes split in half to take the atrial arms with a half section clamp. This clamp is fixed and sprung on one side (yet adjustable a little with a drum key) and freed with a large wing bolt on the other. Once tightened it grips and immobilises the arm and therefore the toms' downward movement. Above this is a sort of cast "jubilee clip" tightened to the tubular arm by a drum key operated screw which has a lug sticking out of it. This locates into a female slot on the actual receiver plate. This too immobilises the arm and so the tom toms' circular, horizontal movement. This has the added advantage of ensuring the two 'L' shaped arms always fit into their sockets the right way round (left and right) each time. Pearl call their clamp system LOCK STOP.

The *piece de resistance* is the vertical position adjustment for the horizontal tube. Actually, it's through two cast circular bosses attached to the tubes which locate one inside the other. Inside these bosses is what's known as a slipping clutch centre — a thick edged metal strap which is shaped to fit inside the unit; when the drum key operated screw is tightened it pushes down on this edge and forces the hardened steel against the walls of the smallest boss and arrests all movement. (One needs to be careful not to use excessive force on this screw though, because it's tapped directly into the casting. Also very little pressure is necessary to lock the unit solid.) By the way, I noticed recently at the British Trade Show, that Pearl have updated this tone angle adjustment. I'm pretty sure the principle is the same but the two halves of the round bosses do not "cup" together, instead they key "sandwich" together and are locked with a pair of "Phillips" type bolts.

Anyway, the unit works extremely well and is sensibly factory-located close to the front of the bass drum. This means the tom toms can be set more closely together. The tom toms' receiver plate is a smallish, cast single unit which bolts to the drum shell and has all the attributes of its larger double mate on the bass drum including, of course, the Jubilee type, lock stop pipe clip.

Pearl's 900 hi-hat stand is, I feel, a logical improvement on their old one. It has a two piece cast footplate like before but this time it's sandblasted for non-slip and is actually fitted with a to stop. (The 800 had provision for this but never had one). It has something unusual too, in its twin adjustable springs on each side of its centre pull and outside the down tube. These springs give much more adjustment than before from very soft to very, very hard in very few turns. They're at every tube locking adjustment point on all the 900 stands including the stool. Pearl's engineers have filled the die cast joint clamp which is to be found at the top of the bass drums mounted tom tom arm receiver plate. It has the split rings and ensures the same height positioning and indeed position relative to the drummer each time. (The only slight snag I find is that each single section of stand must be dismantled from its neighbours to put the set away.)

Anyway, the hi-hat has this memory stopper facility too. The feet on the tripod legs are very interesting — they revolve to offer the player either a rubber or sharp spiked tip to match, as they say, any floor surface. This position can be locked with a drum key operated screw. The top cymbal clutch and bottom cymbal seating seems to be the same as before. I played the 900 hi-hat next to my 800 and found quite a lot of difference in feel. The 900 is, of course, more sophisticated and for my money worth any extra bread.

Pearl's cymbal stands from the 900 series are pretty much the same as before except that they too have the die cast joint at the two height adjustment positions. They still have tripod legs with rubber feet, but the tilt has been changed. It's exactly the same as the slipping clutch angle adjustment on the Vari system tom tom holder only quite a bit smaller. It has a largish wing nut to arrest its vertical positioning and Pearl have made the top cymbal rod, which is joined to the top of the tilt, longer, to enable us to get even more weird and wonderful cymbal angles. The company do not use felts and leather washers anymore, but instead have a pair of unique "flying saucer" shaped softish plastic

On Drums: Lenny White

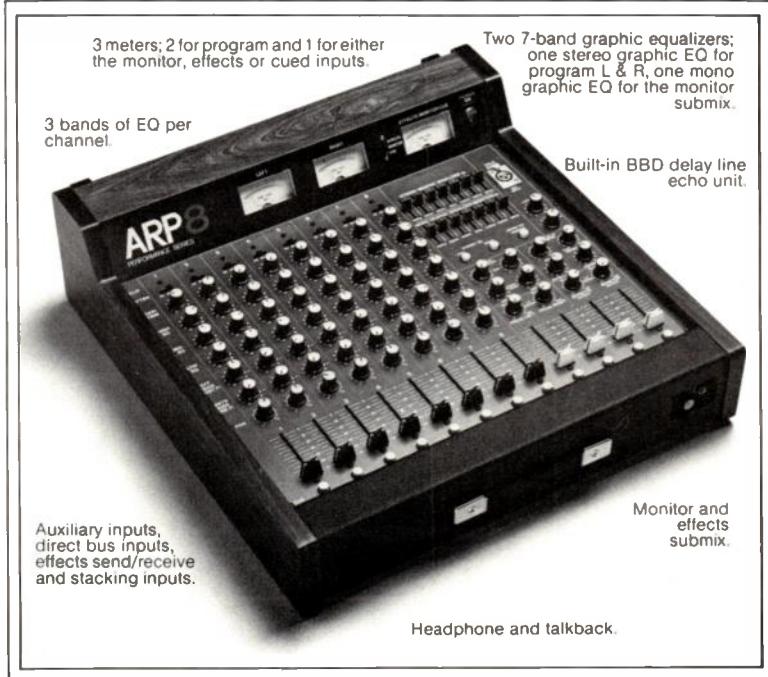
"FEELING" THE DRUMS

For every technical advance you make (drum synthesis etc), humanity takes a step backwards. After all, there's only one other instrument that's more "natural" than the drums and that's the human voice. Recording and drum making technique have become very sophisticated but when you go to a concert you can often hear a *good* drum sound but it doesn't sound the same as if you were sitting right there in the middle of the drum set-up. Live sound has always been a constant problem for me. Playing live, for example, I never put the snare drum in the monitors or the hi hat because cymbals are "harnessed distortion." Basically, in a live situation, the drummer should *feel* his instrument as opposed to *hearing* it. The snare drum is so high pitched that you can feel *exactly* the weight you apply to it.

So hearing and feeling your instrument are two different things. Like on a gig the bass player will say, "I can't hear myself." That's ridiculous. If you're sitting within your own sound, how can you not hear yourself? What it is is that you can't *feel* your own sound. We have a 26" x 14" bass drum and if you hit it, you're supposed to feel it. And if you can't feel it, it's because of the nature of the other instruments onstage cancelling out that particular frequency. That's what you use monitors for — so that you can feel or "perceive" your own sound. And then you have a basis to play off of, 'cause if you can't do that it's like playing with all treble and there's no bass. Which is why, as I mentioned before, you should play "bottom-up" instead of "hands-down." More drummers should do that, especially young drummers.

As far as keying off of other musicians in the band within the mix, I've always keyed off the bass. Most drummers should generally key off the

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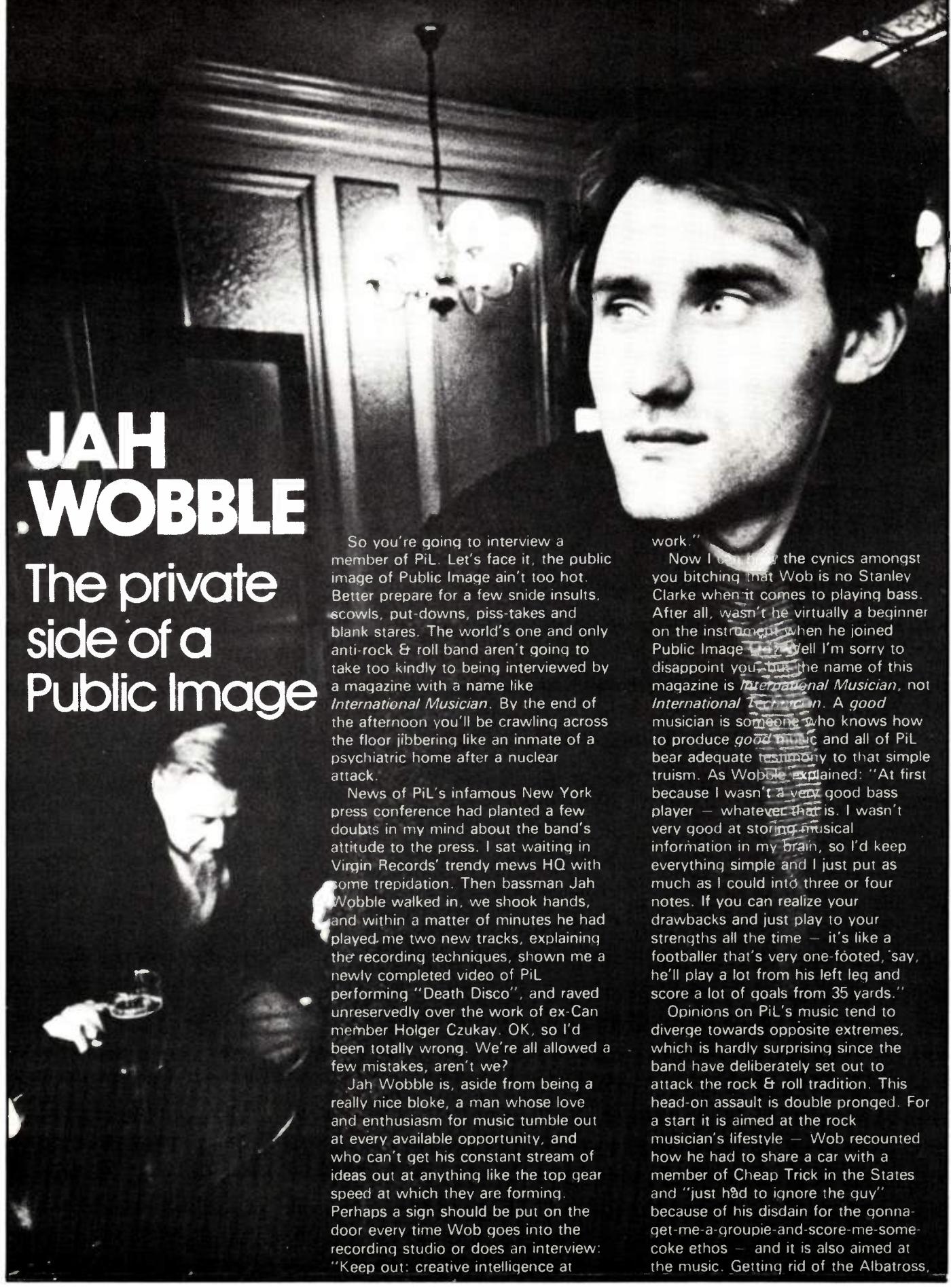


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JAH WOBBLE

The private side of a Public Image



So you're going to interview a member of PiL. Let's face it, the public image of Public Image ain't too hot. Better prepare for a few snide insults, scowls, put-downs, piss-takes and blank stares. The world's one and only anti-rock & roll band aren't going to take too kindly to being interviewed by a magazine with a name like *International Musician*. By the end of the afternoon you'll be crawling across the floor jibbering like an inmate of a psychiatric home after a nuclear attack.

News of PiL's infamous New York press conference had planted a few doubts in my mind about the band's attitude to the press. I sat waiting in Virgin Records' trendy mews HQ with some trepidation. Then bassman Jah Wobble walked in, we shook hands, and within a matter of minutes he had played me two new tracks, explaining the recording techniques, shown me a newly completed video of PiL performing "Death Disco", and raved unreservedly over the work of ex-Can member Holger Czukay. OK, so I'd been totally wrong. We're all allowed a few mistakes, aren't we?

Jah Wobble is, aside from being a really nice bloke, a man whose love and enthusiasm for music tumble out at every available opportunity, and who can't get his constant stream of ideas out at anything like the top gear speed at which they are forming. Perhaps a sign should be put on the door every time Wob goes into the recording studio or does an interview: "Keep out: creative intelligence at

work."

Now I can hear the cynics amongst you bitching that Wob is no Stanley Clarke when it comes to playing bass. After all, wasn't he virtually a beginner on the instrument when he joined Public Image ~~Ltd~~? Well I'm sorry to disappoint you, but the name of this magazine is *International Musician*, not *International Technician*. A good musician is someone who knows how to produce *good music* and all of PiL bear adequate testimony to that simple truism. As Wobble explained: "At first because I wasn't a very good bass player — whatever that is. I wasn't very good at storing musical information in my brain, so I'd keep everything simple and I just put as much as I could into three or four notes. If you can realize your drawbacks and just play to your strengths all the time — it's like a footballer that's very one-footed, 'say, he'll play a lot from his left leg and score a lot of goals from 35 yards.'

Opinions on PiL's music tend to diverge towards opposite extremes, which is hardly surprising since the band have deliberately set out to attack the rock & roll tradition. This head-on assault is double pronged. For a start it is aimed at the rock musician's lifestyle — Wob recounted how he had to share a car with a member of Cheap Trick in the States and "just had to ignore the guy" because of his disdain for the gonna-get-me-a-groupie-and-score-me-some-coke ethos — and it is also aimed at the music. Getting rid of the Albatross,

bass and keyboards. The standard rhythm section is bass, keyboard, drums and, earlier, the rhythm guitar. That's the one thing I missed in Return To Forever. In my group (Twennynine), the rhythm guitar is definitely present.

I also listen to keyboards a lot, especially in terms of "traditional" jazz music, because there the keyboards function as a rhythm guitar. So you have a situation where you have a harmonic instrument that's also a percussive instrument which is like a dream come true for a percussion player. If you could get chordal or melodic textures out of playing an instrument by hitting it, like you do with the drums, the possibilities would be endless. So the piano is the closest thing to that and drummers definitely relate to piano players right away.

I've been fortunate enough to play through three different eras of music. The late-Sixties post-bop, the early Seventies jazz-rock thing and now disco, funk or what I call my music, "Pro-Pop," progressive music with an R&B base. I call it that because what I'm doing now involves mostly all vocals, or Pop music, and it's progressive because of the rhythmic and harmonic knowledge I've gotten playing jazz and jazz-rock music which I put into my music. So anyway, I played with Freddie Hubbard and Joe Henderson during that first post-Bop era, with Miles Davis at the beginning of the whole jazz-rock movement and with Return To Forever at the point of fruition for jazz-rock, and now with Twennynine into the Eighties and a whole new thing. So I'll be referring to these three different chronological periods throughout the columns to come.

This abbreviated installment of "On Drums" provides a transitional phase leading up to a more in-depth discussion of improvisational music. Please stay tuned. — Ed.

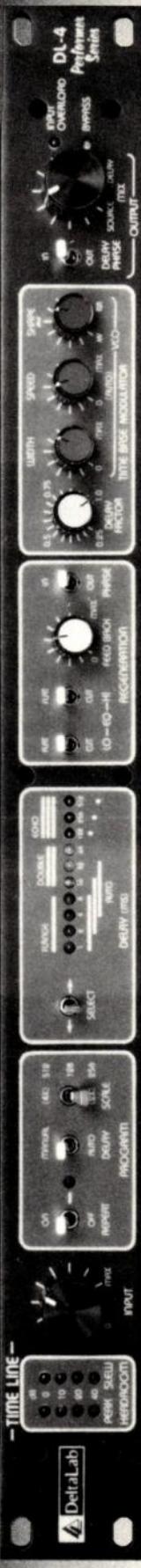
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as they say.

"Rock & roll is probably the only music I can't play," said Wob. "John (Lydon) is very anti-rock & roll - probably due to the Sex Pistols experience where he was expected to act like a rock & roll star, whereas I'm not so much anti-rock & roll as I don't like being judged by those criteria. I don't like being expected to live up to that, in the same way as I don't like being expected to live up to being a white man who just does reggae. It's so stupid because people are used to seeing things with definite labels. 'People still say 'what do you think of the Clash?' and I don't think of them, they're of no interest to me.'

Whatever the denials, PiL are seen as a rock band, even if only because they appeal to an audience that is part of the rock sub-culture. American journalist, Chip Stern, writing in a recent US edition of *International Musician*, compared PiL to Ornette Coleman, the originator of free jazz, and it's a pertinent analogy. Ornette's playing was heavily steeped in the blues and bebop but abolished bar lines and broke away from conventional tonality. Likewise PiL are influenced by existing musical forms, most obviously rock and reggae, and although often rhythmically straightforward are harmonically adventurous, bowing in the direction of atonality — just listen to Keith Levine's guitar on 'Albatross' from the *Metal Box* for an example.

OK, there have been attempts at 'freeform' rock before, like Captain Beefheart's *Trout Mask Replica* and The Pop Group's abysmal Y. The strength of PiL is that they don't just sound like an experiment or an accident — they pursue their goal with almost perfect unchallengeable logic. These guys aren't just poncing about to be 'different' — they play that way because for them it's the most natural way to go about things.

One of the most lethal weapons in PiL's assault on conventional rock is the ironically titled 'Poptones', a maelstrom of swirling overtones and images. The rhythmic structure has nothing to do with rock, the drumming resting on the third, sixth and eighth beats rather than a steady four four. But to *really* understand one must discard technical analysis. It all comes down to feel, and as Wob explained, PiL's feel is based on "shapes, dimensions and perspectives."

"I got that from listening to shortwave (radio), just the basic sounds that give a great impression of distance. That's why reggae is so superb, it gives an impression of distance, and dub reggae specifically, this great dimension and perspective

thing. I think people feel closed in by environments and attitudes, music just brings you out of that. That's why Public Image probably breaks people away from these enclosures. It wasn't planned that way. People who are into rock & roll just can't understand it because rock & roll's enclosed, it doesn't break you away from anything, it encloses you even more. The way I'm going is into this circular motion, all harmonies and everything just merging with the guitar and the bass."

It didn't take long in conversation to work out that Jah Wobble (the Wobble is derived from his real name John Wardle and the Jah from his love for reggae) is not just PiL's bass player but is one of the chief architects of the band's music. The almost imperceptibly shifting circles and phasing, derived from shortwave, recur throughout their playing, pivoting around Wob's reggae-deep bass throb. When most of his contemporaries were listening to the usual mid-Seventies fare of Bowie, Roxy and Bolan, the young Wob was at home with his ear pressed to a shortwave radio and his finger on the tuning dial (the only rock album he ever listened to was the Who's *Quadrophenia*).

"I even used to listen to Pakistani music at that time. I used to find it really strange, this Pakistani was singing from half way across the world and it would just send a shiver up your back. I used to like listening to propaganda broadcasts from Moscow and Prague, they're in English and they're real creepy." As a result of this Wobble introduced a track off his solo album with a greeting in Czech, which was noticed by someone from the BBC's World Service. "Some geezer rang up here (Virgin HQ) and he said he wanted to know what the translation was, he got the translation and he broadcast it to Czechoslovakia. He asked me to ring him, so I rang him and he had a false name.

"I just love real freaky phasing, 'cos you get phasing from shortwave that you can't get in studios, which is right up into the atmosphere and down and up to the stratosphere again. You pick up very peculiar things on shortwave. It's absolutely crammed, you just run the dial in one direction and you've got something completely new and you get the most wonderful oscillating noises, it's something you don't get with synth." I commented that you can hear that heavy kind of phasing in PiL, particularly on the track called "Socialist," basically a short, constantly repeated phrase with the interest occurring around the phased drums.

"With PiL, as you say, there's a similarity there," agreed Wob.

"There's such a massive pattern to it all. And it's circular, it's a cycle, the world's round. Molecules are round, everything's very circular."

All he would say about PiL's future development was that they would use "bigger circles." That's all music is, patterns of sound. I've got some new stuff which has got bass patterns which go on for like 20 minutes before I finish one pattern. I just get into that, practising it for two hours. The whole thing lasts for about an hour and a half, like a big symphony thing, which I'd like to sue for a great big film or something. It changes ever so slowly."

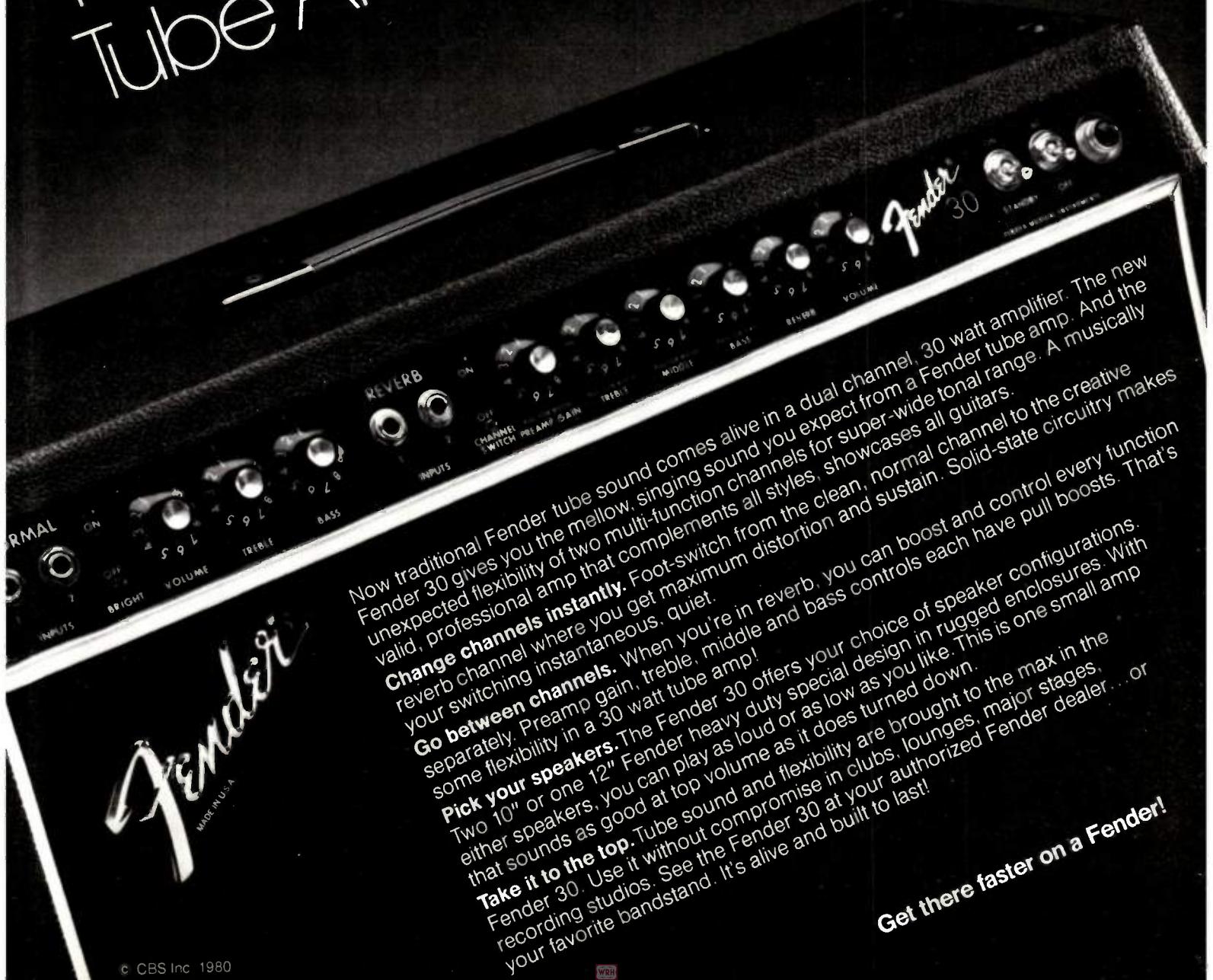
I suggested another way of seeing PiL is as a reflector of the 20th century urban world. Listen and you can hear the sound of aeroplanes flying overhead, car horns, etc. He agreed. "Oh yeah, for certain. It's a mirror to the world around. The jet engines going over non-stop, traffic, you soak it up, and that's why when Stockhausen said on the TV program that there's no such thing as self-expression I really thought 'yeah, that's the way I've been feeling'."

Because of this he doesn't see PiL as some fantastically original group of musical creators plucking ideas out of thin air: "It would be great to say 'yeah, we really are original', but we're not doing anything particularly new. Everyone's pooling from the same sources and they arrive at certain destinations, and it goes right across the board from the classical sphere to the jazz sphere to what we're doing."

The band that is now Public Image Ltd was not born as some kind of subversive organisation agitating against the foundations of rock & roll. It was really just a bunch of mates having a good time — Wob and Lydon were old friends from Kingsway College of Further Education and Lydon already knew Levine (an original member of the Clash) from his Sex Pistols days. Far from being seen as a significant force in music, their first album puzzled and alienated many people. One minute they were a classic new wave rock band blasting out songs like "Public Image" and "Low Life", the next they were blanketing the vinyl with thick layers of flanged sound on "Theme", or fooling about for ten minutes on "Fodderstompf" as if to say 'ha, ha, you suckers paid good money for this crap.'

"People said at the time 'this album is patchy and if it moves in the same way as 'Public Image' and 'Low Life' it'll be alright by me', but in fact it went the way of 'Theme' and 'Annalisa' — into a more expressionist freeform way — instead of real structure. I think the most structured song we've done since then is probably 'No Birds.' We'll

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probably do structured songs again."

He was honest about

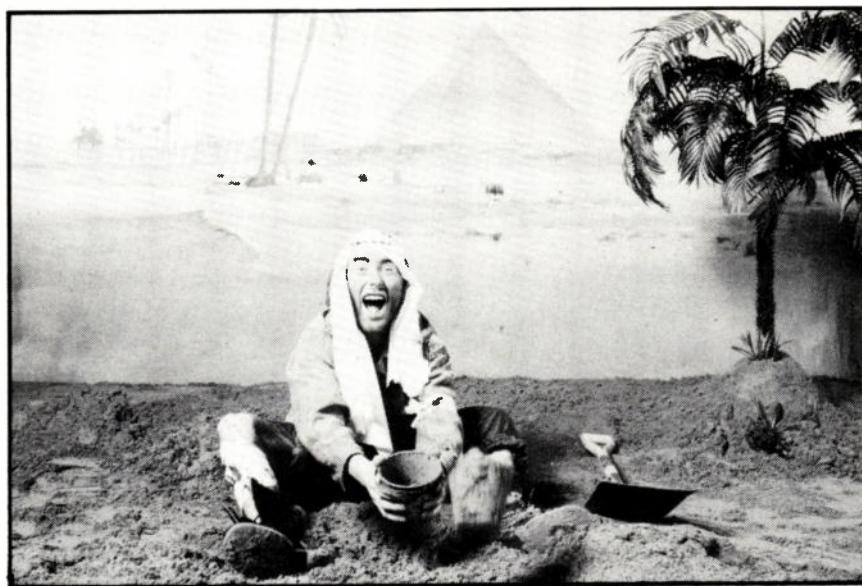
"Fodderstompf": "We were just drunk and we had a bass riff. It was self-indulgent and that's it. We wanted to get the album out by Christmas and we had one night when we just did that at the end of an evening, mucking about, and we decided to put it on an album, which was quite useful because it really surprised and puzzled people. We don't normally set out to do that, but I knew that people didn't know what to expect and that was completely over the top. It was like my first single ('Dreadlock Don't Deal In Wedlock'), which was a heap of trash. I did it for the money, there's no integrity there, it was a pure heap of shit, I realized I'd get a big fat advance for it and I wanted the money."

But despite the self-indulgence that took up half of one side, the rest of the album was "very professionally done," according to Wob. "We were very disciplined about it. Everything was worked out exactly the way I wanted, every little sound, whereas with *Metal Box*, funnily enough, it was relaxed and drifted into.

"With *Metal Box* it was normally just going into a studio and I'd be playing a bass and everyone would be sitting there reading and I'd start getting sounds and start getting a bass line and I'd suddenly say 'listen, record this' and the drummer started playing and everyone was getting really excited. Keith would get a guitar and John would be sitting there very thoughtfully writing out lyrics. Sometimes Keith will say 'listen to this synth sequence and put a bass to it'. Or John will have a rough idea for a song and he'll just give a little suggestion, but normally it's a rhythmic thing it normally comes from a drum beat or a bass line. "Annalisa" came from a drum beat, it was composed as such in a rehearsal room in Bermondsey in London." The very first sound that hits the listener on any PiL record is Jah Wobble's ultra deep bass. I personally blame the depth of the bass on *The Metal Box* for blowing the woofers on my admittedly poxy stereo speakers. It's a sound that is quite deliberate.

"I'm a junkie for deep bass, I've got to get a shot, I've got to feel my guts being moved," he explained. "I used to go into places with sound systems years ago and my trousers used to get sucked into the bass bins if I went too near."

The bass sound is something he has continued on his first solo album, *Jah Wobble In Betrayal*, a mixed bag of sometimes eccentric but appealing tracks. One highlight is a virtually unrecognizable version of the old Fats



Domino classic "Blueberry Hill" ("I hope he doesn't get to hear it — he'd probably hate it!") which has a hard trebly edge on the bass.

"I didn't think that you should get a sound and that's it, you know, you are influenced by reggae or you are influenced by Stanley Clarke with a twang. Why not mix it all in? That's what I'm into, bursting vinyl on tape, cram the sounds in there. Like "Betrayal" (the first cut), that sound is straining at the lead, it's so dynamic, very heavy bottom end and a real twang.

"When you play bass and it's a very heavy sound you lose the top two strings, the G and the D, completely, you can't really hear them. So the first thing I got into was wanting to capture tones off them, not just the trebly tones, but the bass tones off those two strings as well."

He gets that sound by combining the amplified sound with DI. "I like using the amp for the bottom rather than DI. If you use the amp for the bottom end you get the sheer rush of the air being sucked into the speaker, and you can actually feel that sometimes spectacularly if you turn the amp against the wall, for some reason it kind of increases the suction. Sometimes, I use three channels on the amp, but normally two, which is one mike really close and one slightly up the wall.

"At Gooseberry Studio when I did "Not Another" using two tracks, two mikes, two amps, I didn't really need any top on that at all. Instead of using headphones in the next room I just strung the lead into the control room and listened to the drums coming off the speakers. The bass was that heavy it was easier to listen to in the control room.

"Sometimes I record four or five

tracks on the bass at once. On something like 'Pineapple' — I used only four in the end — one went through a flanger, one through a space echo, two off the amp and one a straight DI, which is really interesting."

Wobble also likes a pure DI sound: "That way you can get a lovely rounded bass sound with beautiful definition on it. That's when you don't want a sound system sound, you want something which is just a nice bass sound." His main bass is an old Ampeg which has a "very acoustic" sound, and he owns a Fender Precision, which he used on the first PiL album. He also likes Fender Jazz basses because "they're more springy, there's a lot more variation in the note. I've played a bit of reggae on them, they're bouncy." His strings are usually Rotosound. "They're abrasive, they're very physical, they hurt. If you haven't played for a while and you start doing a lot of slides you can burn your hands up. I like that, the pain of bass playing, it's a very physical thing. I've used black nylon wound ones that look good, they're quite accurate but they're very flat, very lacklustre."

For amplification he uses Ampeg: "I always use Ampeg now, they're pretty reliable for a start — I think it's a V4, it might be a V6, I'm not sure — with two Gauss 18" speakers, and Gauss are damn good."

Wobble's interest in sound doesn't just stop at his bass — he's taken on a production role with PiL (in conjunction with other members) and is fascinated by drum sounds: "Sometimes I've used snares recorded on four tracks, putting mikes around the room. If I'm mixing something with stomping beat, like 'TV' on my album, I use a loop on the bass drum so you get the same 'boom, boom' every time."

I didn't have to pummel Wob for all this technical info — in fact, he couldn't wait to tell me. "Putting sounds on tape, I love that, like a kid, I get really excited about the whole thing. At first I didn't give a shite about how you got a sound, all I was interested in was where the action took place. Then slowly I got interested in the intermediary stage, the EQ. At first it was just bass because the thing that got me was engineers who were just 'oooohhh, you can't put that much bass on, you'll break the speakers', and I was cocksure about it. And they used to say 'you can't tell what notes you're playing' and I'd say 'what the fuck!'

"You can't fail to get into the politics of all this. The record company doesn't realize what the people want, that's why they use market research men. Whereas I like to think I know what the people want, and I don't mean dummy kids into the Two Tone. I know what a few thousand people who really love sound want. So I didn't take any notice of what the engineers said.

And so to the future. When I spoke to Wobble the outlook seemed bright — the band had completed a mini-tour of the States and Wob was looking forward to playing a few live dates in Britain following their long silence. He was also happy with the latest in a long line of drummers, Martin Atkins.

A few weeks later and several clouds have appeared on the horizon. The band have sacked Atkins, saying they don't intend to play on stage again, and Keith Levine has made several disparaging remarks about Wobble in the music press. All that can be said at the time of going to press is that PiL's record company, Virgin, have vehemently denied that the band are going to split.

Another surprise is the release of a second solo album just ten weeks after the release of the first. Apparently Wob went into the studio to record a single and came out with enough material for an album. It's a scrappy document, and should have been restricted to a single.

As we were winding up the conversation somehow switched to the film *Apocalypse Now* which Wobble had seen five times, and a powerful insight into PiL's music emerged, almost by accident, when I told him a friend refused to see the film because they were frightened by what they might see. "That's what PiL is about, it shows the dark side of people's minds that they are afraid to admit are there," he said.

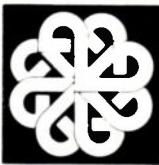
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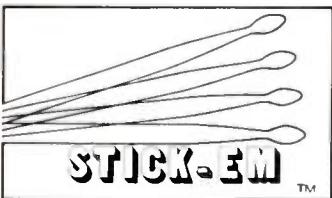
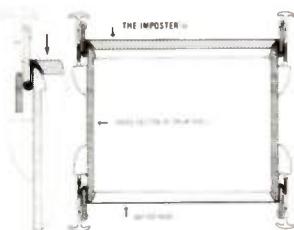


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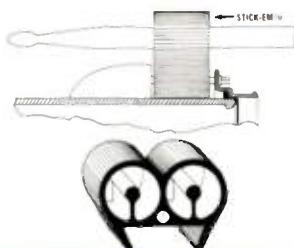
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Since the late 70s, the music marketplace has seen a healthy number of guitar synthesizers come and go. For the most part, these units have been monophonic instruments employing the Pitch-to-Voltage Conversion (PVC) system—a principle requiring the use of a solid-body electric guitar, some also involving the installation of a special hexaphonic (six pole) pickup. A PVC system operates by deciphering the note(s) played on the guitar, translating them into cycles-per-second values which are transmitted to the synthesizer bank (the oscillators) for a near-simultaneous triggering of the same pitch(s). While these units have their own set of attractive qualities (the player is still using a stringed instrument, leaving the synthesizer to follow *him*), there has been, and continues to be, a reluctance on the part of the electric guitarist community as a whole to part with a serious chunk of money in turn for a monophonic instrument with a somewhat questionable reputation for reliability and practical performance applications. The two biggest gripes have been the necessity of firing a pitch through *electronic* means—occasionally ending up in “glitches” or misfires due to the PVC’s inability to “track” consistently—and the fact that most of the available models are monophonic.

There is now an instrument available called the “Poly-Touch” which effectively erases both of these arguments, offering the string player a shot at genuine polyphonic synthesis without the necessity of a second mortgage.

The Poly Touch is a *physical contact system*, housing 96 touch-sensitive frets, 6 digitally-controlled oscillators and all the usual parameter controls in a self-contained, guitar-shaped unit. Each “fret” is actually a brass bar, set for a pre-assigned frequency. By placing a finger on a fret and grounding the connection by placing your thumb on the back of the metal neck, the instrument knows which note or notes are to be played. They are then

triggered by picking, plucking or tapping the corresponding “trigger bars” which act as surrogate strings. At the neck end of these trigger bars, you’ll find a small spring which runs through a metal cylinder. When the trigger bar is depressed (in the most comfortable manner for that particular player) the spring makes contact with the cylinder walls, thereby firing the pitch(s). Since it is a physical-contact system, the word “tracking” does not apply—what you play, or more precisely, what you touch, is exactly what you get. The intervals between the “strings” are pre-set at the factory—they cannot go out of tune with each other, nor can the intonation go askew. The instrument is tuned by turning an inset pot with the tiny

screwdriver provided. This is a “Master Tuning Device” which raises or lowers all of the strings in proportion, over the range of nearly an octave. This device, in tandem with the 96 frets and a three-octave transport switch, gives the Poly Touch a total register of seven octaves.

In describing his brainchild, designer Robert Polson refers to the Touch as a “genuine” polyphonic synthesizer. Instead of using one envelope and filter for all six sound sources, each oscillator has its own dedicated envelope and filter—all six controlled with one set of rotary pots and toggle switches. Whether playing chordally or in single-line fashion, each note struck will have its own attack and filter sweep. The different sounds or “wave-



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forms" incorporated into the Poly Touch include sawtooth, square wave and pulse-width modulation (driven by a Low Frequency Oscillator or the ADSR). The filter's usual cutoff frequency and resonance controls are accompanied by a three-position toggle switch which sets the filter sweep for all-pass, band-pass or low-pass. The sweep can also be activated through the use of a filter pedal (duplicating the cut-off frequency control), with a resultant sound close to a screaming wah-wah. The Low Frequency Oscillator (LFO), along with driving the pulsewidth modulation, can be brought into play to control the speed of the vibrato circuit which is preset for a low and high depth. Another preset circuit is a polyphonic portamento device, activated simply by an on/off switch. Positioned on the pickguard near the high E string, you'll find a "touch-sensitive pitch bend device", capable of bending a note upward a whole tone. Since this little gizmo reacts to the amount of conductivity in the player's body, each individual will get slightly varying results. Two other provisions are toggle switches which set the ADSR-driven filter to a + or - position and yet another which allows the LFO to drive the filter at variable speeds.

The only outboard piece of gear included in this system is a power supply. All changes in wave selection, filtering processes, etc. are made on-board the instrument, much in the same way a guitarist would change volume and tone on an electric. The Poly Touch (list price approximately \$2000.00) and the monophonic Bass

Touch (list price approximately \$1300.00) represent the first *practical* and *reliable* attempt at offering the string player a different tool using a physical contact principle—control. The transition from a stringed instrument to the Touch is similar to learning how to type on a manual machine and then switching to an electric. The fingerboard discipline is the same but the physical, manual pressures necessary in playing strings are non-existent—a featherlight touch will do. The succinct printed circuit board assembly with its army of IC chips can be serviced quite easily—everything is modular, popping in and out with no trouble at all. This clean assembly method has resulted in an all-but-silent signal, rarely calling for the use of a noise gate for live or studio work. Available in koa or walnut bodies, the Touch from Oncor Sound has stirred quite a bit of excitement among those who seek a reliable and versatile polyphonic guitar synthesizer for a price that won't send them to the breadline.

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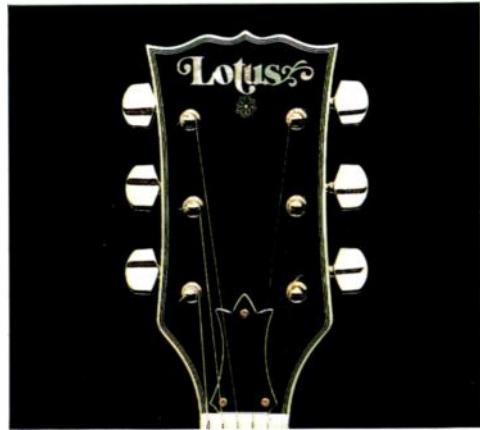
The Yamaha Handcrafted Folk. Six models, each guitar meticulously crafted from the highest-grade woods we've specially chosen from forests worldwide. Then hand-adjusted to the most stringent specifications. To admire and play the result of almost a century of work, write us for the selected Yamaha dealer nearest you.



Lotus

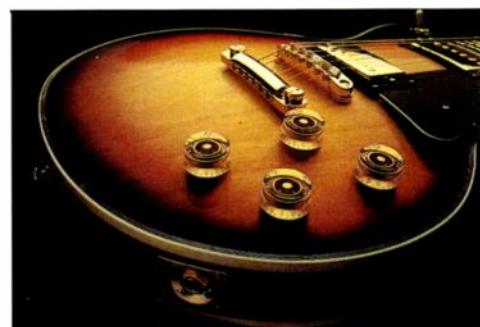
Quality at a price you can afford

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.



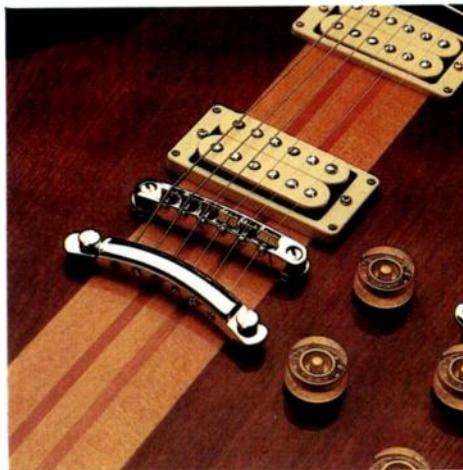
All instruments bearing the Lotus name and emblem feature "invisible" quality construction as a standard item, but individual models in the range allow the player to choose the guitar that is precisely right for his requirements.

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.

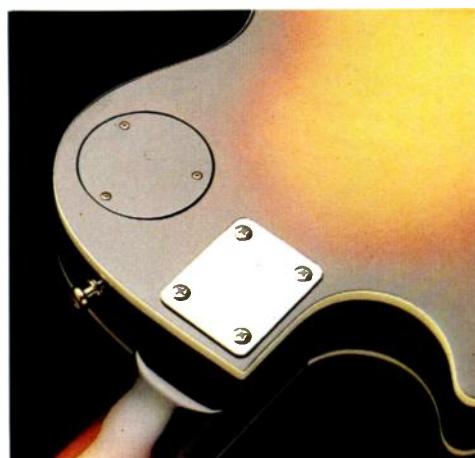


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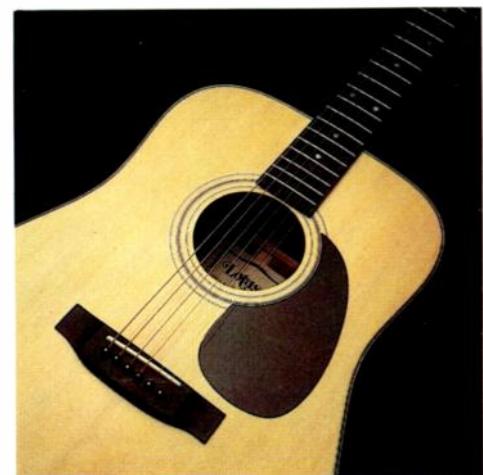


On the L1000 and several models in the range a "tune-o-matic" style bridge allows the player to pitch and tune each string perfectly and bad intonation becomes a thing of the past. As you would expect on a guitar of this quality all metal parts are heavily plated and every fitting is made from the finest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



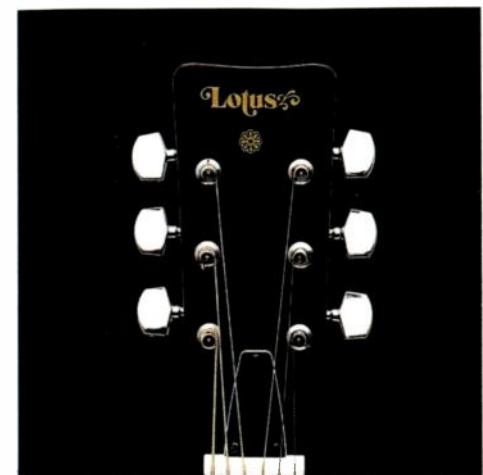
The Lotus acoustics have rapidly become accepted as providing a unique combination of tone, playability and value. Over the last year, thousands of players have discovered that it is possible to find an acoustic guitar that is built well, sounds good and doesn't cost a small fortune. The L102 (shown 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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New Products



Casiotone M-10

Casio, the internationally known calculator company, recently introduced the new Casiotone M-10 "music center," a compact keyboard instrument delivering four separate instrument sounds which are selectable at a touch. Controls include a volume control switch, a power switch, a tone selector switch and a vibrato switch. The keyboard has a total of 32 keys, 19 white and 13 black, with a note range of two and a half octaves.

Other features include 4

preset tones (piano, violin, flute and organ); an 8 note polyphonic function (up to eight tones sound simultaneously allowing the playing of most chords); a vibrato effect; a built-in speaker which can be alternated with a stereo speaker through an amplifier; a 2-way power source, AC or batteries and the rather staggering dimensions of 2" high x 16½" wide x 5 3/8" deep and a total weight of 3.5 lbs. including batteries.



Guild Model Five Small Amplifier

Guild Guitars has just introduced a line of small amplifiers "engineered for ruggedness, compactness and versatility in the full range from clean, powerful sound to funky distortion." All models have line output jacks for plug-in to PA's or larger

amplifiers with headphone jacks as a standard feature.

Pictured here is the Model Five, a 10 watt RMS/20 watt peak amplifier with a 6½" speaker and a treble booster. Weighing 10 lbs, the Model Five's dimensions are 11½" x 11" x 6" and it also has a volume control with a hi-boost switch, master volume, bass and treble controls.

Seymour Duncan "59 Model" Pickup

Seymour Duncan Research Laboratory just introduced the latest addition to its current line of humbucking style pickups—the '59 Model. Based on the original "Patent Applied For" pickup which has become a classic of the genre, the '59 Model has "a warm, full sound featuring extra added punch in the bridge pickup." Looking and sounding like the original—it even has the square pin hole with the distinctive "Patent Applied For" recessed moulding ring on top of the



coil bobbin—the '59 Model is a direct replacement unit, does not require guitar modification, comes with complete wiring instructions and is available calibrated and balanced for either the neck position (SH-1n) or bridge position (SH-1b).

Fender 30 Amplifier



New from Fender is the Fender 30, a tube-type amplifier which puts out 30 watts RMS, 66 watts peak music power through the option of either two 10" or one 12" specially designed Fender heavy duty speakers.

For the "normal" channel, controls include bright switch, volume, treble and

bass. The reverb channel includes channel select switch, gain with bright boost, separate treble, mid and bass with boosts, reverb and a master volume control. Features on the rear panel include line/record output jack with level control, effects in/out jack, output tube matching and hum balance controls.

The American Standard Pick

D'Andrea, "the world's largest manufacturer of quality picks since 1922," is now marketing a product under its own brand for the first time. Using the name *American Standard*, "the single most popular pick in use today—The D'Andrea #351," is now available in a new assortment box at your local retailer's.

The package contains thin shell picks, medium, and heavy shell picks. To date, D'Andrea has manufactured over 1,750,000,000 picks of all varieties and if all the #351 picks were laid end to end, they would stretch from New York to San Francisco eight times!



Roland RX-100 Reverb Box

The new Roland RX-100 Reverb Box is an electronic stereo reverberation effect designed to compliment amp or PA systems. Featured on the RX-100 are two channels with Channel A Input and Output on the front panel (1/4" phone jack) and Channel B Input and Output on the rear panel (RCA-type phono plugs). Both Channel A and B have independent volume controls which allow the user to balance the RX-100 in a stereo situation and the amount of reverb per channel can be adjusted by the Panpot. Other features include a Mode Switch which supplies an Invert/Non-Invert Phase when used in a stereo situation and the Roland FS-1 footswitch for footswitchable operation.

The Affordable Pro-Mixer by Carvin

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

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

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

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

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

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

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

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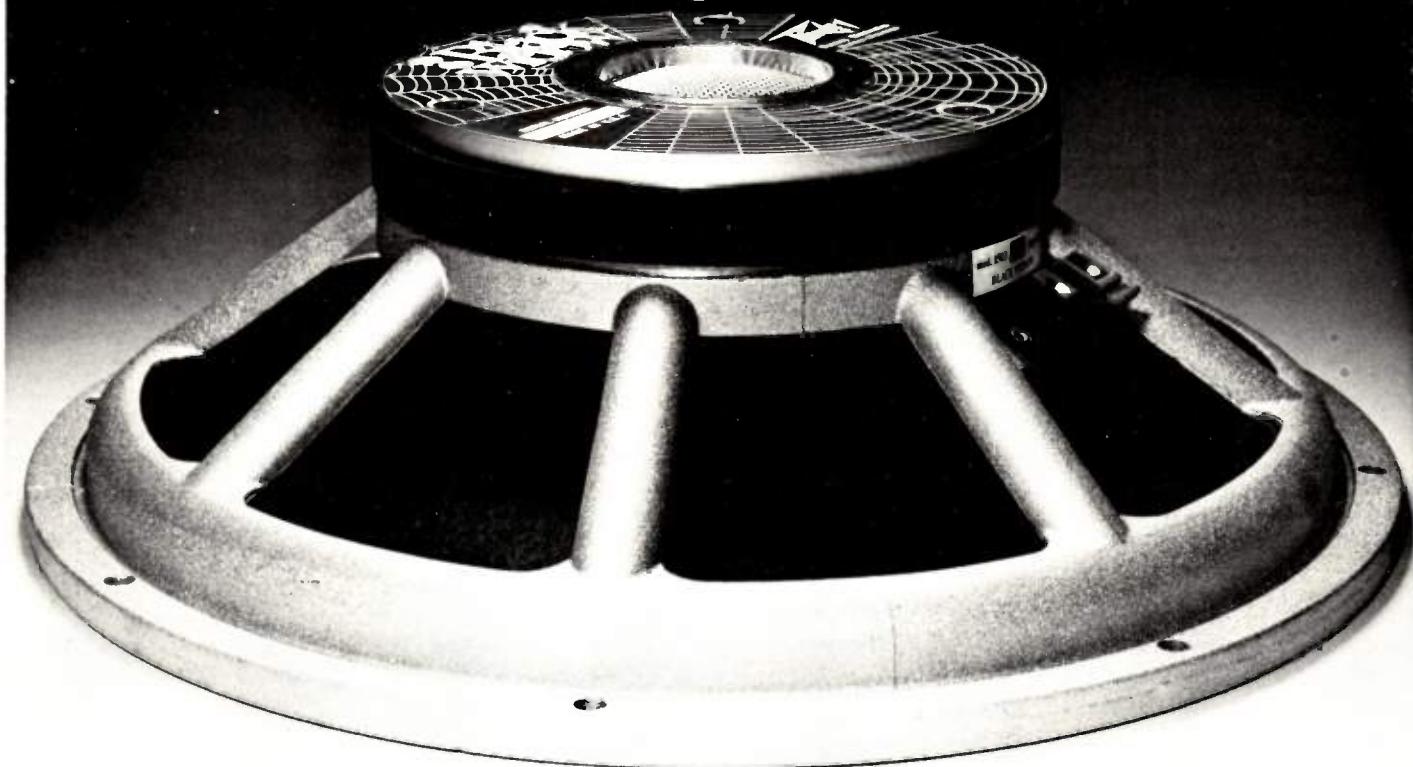


Polytone Improv I Acoustic Electric Guitar

One of the impressive entries from the recently introduced line of Polytone guitars is the IMPROV I acoustic electric guitar. The IMPROV I features two custom designed Polytone pickups with gold plated covers and separate volume and tone controls for each; master volume control; ebony adjustable bridge with bone saddles; Polytone logo pearl inlays on an ebony fingerboard; spruce top and curly maple sides; rosewood pickguard and control knobs; "exclusive" heart-shaped tailpiece; bone nut and a specially designed headstock; special flat neck for playing ease and a Sunburst finish.

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Albums

CHIC — *Real People* (Atlantic 16016)

Risque proved that Chic was not defined by disco, and with *Real People* they've matured into a major force in American music. With their commercial potency firmly established, Chic now feels confident enough to come out of the closet with their funk, rock and jazz synthesis — *Real People* is street music passing in pop society, and it'll come as a revelation to those who've dismissed Chic in the past.

Consider Nile Rodgers and Bernard Edward's visionary use of a string quartet on the instrumental "Open Up": the



loping, syncopated line is notable for an absence of vibrato, a choppy, guitar-like attack and its contrapuntal intricacy. Unlike most pop music, the strings are an adjunct to tension, not a substitute for it; on "26" and "Chip Off The Old Block" they moan like Ray Charles and chomp out fragments of riffs and harmony that mirror the clipped, nursery-rhyme phrasing of the vocalists.

Chic just has more different grooves than any other funk band; on anthems like "I Got Protection" and "Rebels Are We" they build enormous tension through repetition and the accumulation of interlocking rhythms and melodic breaks. Edwards plays a spare, floating style of bass that always seems to be moving contrary to the beat; he doesn't play time, he creates space. Edwards and drummer Tony Thompson play a constant game of ping-pong with the off-beats — they even play down grooves with an up

feel — usually only implying the one, so Rodger's rhythm guitar takes on a lot of time-keeping responsibility (like the way he reinforces Thompson's hi-hats on "Real People"). But there's also plenty of room for Rodger's to free associate cross-rhythms and solos that reflect the influence of George Benson and Jimi Hendrix.

Real People functions as dance music and listening music; it re-asserts the importance of rhythm without sacrificing pop sheen; it sets high standards for recording quality; and its lyrics debunk the beautiful people mystique that flourished in their early work. In short, a remarkable achievement.

ROLLING STONES *Emotional Rescue* (Rolling Stones Records COC 16015)

The Rolling Stones' recent work has bordered on self-parody. What makes *Emotional Rescue* so satisfying is the manner in which they come to terms with current fashions and their own archetypes. On songs like "Summer Romance," "Let Me Go," "Where The Boys Go" and "She's So Cold" the Stones have returned to the steady, chugging blues grooves that characterized their earliest work; all built on the bedrock of Keith Richard's rhythm guitar (everything you ever wanted to know about Chuck Berry but were afraid...), the moving bass



lines of Bill Wyman and Charlie Watts's unshakeable, behind-the-beat drumming. Ron Wood finally sounds in-

tegrated into the band, but because he's basically a Richards clone he defers to Keith on most guitar parts (no real lead playing here), although he contributes sumptuous pedal steel on the otherwise forgettable "Indian Girl."

The Stones also go slumming through contemporary styles of R&B (like "Dance" and the title tune), their exploration of reggae and ethnic music, although the rock flavor still predominates. Lyrically Jagger's still doing his rogues' gallery of decadence and leerish attitudes, none of which ever meant a damn thing to me, but the music is playful and propulsive, Jagger's vocal affectations are funny, so what the hell.

PETER GABRIEL (Mercury SRM 1-3848)

The ex-lead singer from Genesis has finally hit his stride after two solo albums mired in pomp and bloated textures. Like the Stones (and many of the most progressive people in rock), Gabriel has turned to ethnic music to balance the orchestra thrust of his arrangements. There are no



cymbals on the album, so these songs are all tension and no release. Gabriel has drawn on the balaphon and marimba styles of Central and West Africa to augment the minimal tom-tom attack of Jerry Marotta and his own lean keyboard textures. It's a strange mix of electronic menace and primal rhythm, focused by Gabriel's shifting dramatic poses: the assassin and madman of "The Intruder" and "No Self-

Control"; the heroic pilgrim of "...And Through The Wire" ("we go so strange across the border"); and the herald of "Biko," a powerful tribute to the slain South African leader. *Peter Gabriel* is ornate enough for his old fans, but with a terseness and metallic thrust that should win new listeners — this is thinking man's art rock.

ART BEARS

Winter Songs (Ralph Records RR7905)

A lot of art-rock invokes the ornate images of the middle-ages, but this deranged druid music better captures the discordance and mystery of that period. Dagmar Krause sings Gregorian melodies with a serialist's sensibility, Chris Cutler's drumming provides the occasional rock reference, and Fred Frith's work on guitar, violin and keyboards alternates between folk references and post-Hendrixian white noise. Fascinating, but not for the faint-hearted.

PERE UBU

New Picnic Time (Chrysalis CHR1248)

This innovative quintet walks the line between art rock, new wave, modern electronics and guerilla theatre. Singer (?) David Thomas is the ringmaster, chortling about



like a maddened four year old as guitar, bass and synthesizer paint elaborate melodic dubs on a rock-steady pulse; Alan Ravenstine's synthesizer work avoids all clichés, functioning as a textural Greek chorus. Pere Ubu is funny, and makes daring use of reggae, ethnic

"It Sounds As If The Room Is Right Between A Giant Pair Of Headphones!"

That's the sort of comment professionals have been making while listening to a whole new way of projecting sound. Right now this loudspeaker breakthrough is strutting its stuff in pro sound applications across the United States and Europe. But where it came from and what it is make quite a story.

An electronics engineer with a streak of genius in him was thinking one day about loudspeaker systems, as the weak link in the pro audio chain. Horns, he knew, were the only practical way to put volume and throw into a speaker system. But a speaker horn works like the bell on a trombone, and it can't help putting that 'bone grittiness into the sound. This engineer was after a loading technique that would reproduce clear, natural sound with a horn's volume and throw, the way a flute or a pipe organ does.

And there was the basis of his invention! A specially designed slot running the length of a piece of pipe (as shown in the photo) made that pipe act like a myriad of organ pipes merged into one. When one end of the slotted pipe was clamped over a loudspeaker - **incredible!**

The sound that poured out was as clear as a mountain spring, and airier than dandelion down. High notes or low, quiet or roaring loud, soft or staccato didn't faze this device. Sound textures and tone shadings, vocals and instrumentals, even the wildest electronic effects came out sounding more like themselves, and much more musical.

Sound quality was everything that was expected — the surprise was the breathtaking expansion of coverage. This invention projected a new kind of sound, **sheet-wave sound** as audio engineers call it, as different from horn and cone speaker output as lasers are from light bulbs. It doesn't try to bull its way through the air like the wave-fronts produced by ordinary speakers. Sheet-wave sound lays down flat, and slips through like a knife.

The result is three speaker systems in one: long throw, front fill, and side fill. Sheet-wave sound just doesn't fade off at a distance anywhere near as much as usual, so there's plenty of sound for the back. The sound source is a virtual point, which makes the output clean and strong up front. Horizontally the coverage angle is a third of a circle, even at the highest frequencies, providing the same sound balance right out to the walls. In short, the sweet spot fills the room.

As frosting on the cake, the new system turned out to be a lot smaller than equivalent horns, too. There just aren't any drawbacks to this technology. It does everything astonishingly well.

An invention this revolutionary, with three U.S. Patents for protection, should have swept the marketplace. But there was one unconquerable obstacle: a handful of well-known audio engineers. The invention was too radical to be easily understood, the engineers were too set in their ways to be receptive, and the inventor was too feisty to simply pass them by. Instead, he spent the last years of his life in fruitless technical disputations.

It was 1975 when we took over the technology from the inventor's estate, trademarked it **Sound Lasers**, and set to work on developing it practically. Our initial aim had to be at the upper midrange and highs of the audio spectrum, where most sound quality and coverage problems are found with ordinary speakers. We hit the mark with **The Tube**,



mounting directly on standard pro horn drivers and handling everything from a 1200 Hertz crossover up to supersonics.

The Tube was a smash success. More than 30 dealers signed up in 6 weeks, just from listening to The Tube. Well over 3000 of The Tube have been sold now. They're owned by some of the top names in music — but not by very many local groups, because the retail cost of The Tube with a good one-inch driver has been too high.

When we realized this, our reaction was "Why should anyone have to pay retail prices? All those middleman mark-ups don't do a thing for the user."

We were ready to **sell direct to users**, as soon as we found the right driver at the right price. That took just one phone call, to a new-technology driver manufacturer named Renkus-Heinz.

Renkus-Heinz has not one but two models of one-inch pro drivers, both with minimized distortion and extended frequency response. Their SSD-1800 handles 40 watts of continuous power, and its frequency response extends from well below The Tube's 1200 Hertz crossover point up to 16,000 Hertz. Combined with The Tube, it's great for every kind of stage use, from bolstering sound columns to super tweeters in coliseum systems. The SSD-1400 is for recording studios and intimate clubs. It goes all the way up to 20,000 Hertz, with less sound output and power handling (33 watts). Both models are in the new Pancake design, less than two inches thick, and both are available in either 8 or 16 ohms. When you combine either one with The Tube, you've got the state-of-the-art system for projecting the upper frequencies, in a package so small (7½ inches overall length, weight 5½ pounds) that you could carry two pair with one hand.

And if you buy factory direct, you can have The Tube with driver for less money than you'd be likely to pay for a big-name driver alone at retail. The Tube with an SSD-1800 driver for stage use will cost you \$188 total. With an SSD-1400 for the studio, the combination price is \$166. And remember, this is new-technology equipment that will still be in the forefront years from now.

But don't think we're asking you to commit yourself without a chance for a real trial. Buy any quantity you like from us, and when your equipment arrives, try it out for ten days, in your own system, at our risk. If it's not right for you, in any way at all, simply return it to us in original condition for a prompt **refund of your full purchase price**.

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YES, I'll let you take the risk! Here's my order, subject to return for refund in 10 days.

— The Tube, matte black finish @ \$44 each	\$	_____		
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— SSD-1800 stage driver, 16 ohms @ \$144 each	\$	_____		
— SSD-1400 studio driver, 8 ohms @ \$122 each	\$	_____		
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sales tax (to California addresses)		\$	_____	
shipping and handling		\$	6.00	
		TOTAL	\$	_____

Enclosed is my check money order in full payment.

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Albums

music and calculated dissonance — it's really just Pink Floyd for grad students.

JOHN HASSELL / BRIAN ENO
Fourth World Vol. 1 / Possible Musics
(EG Records EGS107)
THE RHYTHM DEVILS
Play River Music
(Passport PS9844)
MAX ROACH
M'Boom
(Columbia Digital IC38247)

These three records further expand the possibilities of ethnic sources in American music. The Hassell/Eno and Rhythm Devils records are largely impressionistic works; the later is a tropical picture of rainforests and jungle sounds (composed for the movie *Apocalypse Now*) featuring Airt and the Greatful Dead's drummers Mickey Hart and Bill Kreutzman; the former superimposes keyboard clouds and electronically altered trumpet passages over polymetric percussive drones. Roach's percussion ensemble is the most mature, incorporating street corner sounds and Afro-Cuban references into richly detailed compositions. The digital process captures the sounds of metal, wood and skin with breathtaking clarity — *M'Boom* proves that there's no difference between rhythm and melody.

TOOTS AND THE MAYTALS

Just Like That
(Mango MLPS9590)

BOB MARLEY AND THE

WAILERS *Uprising*
(Island ILPS 9596)

BLACK UHURUA
Sinsemilla
(Mango MLPS 9593)

Reggae, though still an underground music as far as the mass audience is concerned, has had a profound influence on pop music through rock (the Police, the Clash); it has also increased our

awareness of African music. These albums illustrate the range and changing face of reggae.

Toots is a nature boy, and *Just Like That* is a lazy, sunny trip through store-front churches and top 40 bars. Toots' rhythm section sits the beat down and allows more room for keyboard and horn fills; there are numerous references to 60s soul music and ska, making this a most appealing dance music.



Marley's forays into pop were not well received by his fans, so now he's returning to the revelatory style of his earlier work — exhorting us to transcend while prophesizing the destruction of Earthly evil. Carlton Barrett's skanking hi-hat figures keep the pulse swinging like a pendulum as Marley and the I Threes create a dreamy vocal backwash.

Black Uhuru's sensual music is probably closer to New Orleans and Memphis funk

because drummer Sly Dunbar and bassist Robbie Shakespeare fill in a lot of the spaces that would normally be empty in reggae rhythms, and play more on top of the beat. Black Uhuru is as committed to employing blues sources as Marley is to using rock.

GEORGE BENSON
Give Me The Night
(Warner Bros. HS3453)

Producer Quincy Jones has helped Benson find a better balance between his singing and guitar playing. The guitar is more prominent in the mix, lightly echoed to stand-out from the keyboards and big band accoutrements; there's



still a pretty high proportion of mush, but George gets to stretch out (at last) on "Off-Broadway" with a spiralling combination of trills, octaves and triplets. Benson also shows off his vocal chops on melodies that test his voice and shy away from easy senti-

ment (like the jazz classic "Moody's Mood"). This is thoughtful, romantic funk, and while it's not the George Benson album I've been waiting for, half a loaf is better than none.

Now it's true confession time. This month's batch of releases has been pretty lean, so I've been trying to come up with some things to write about. The problem with the following records is that I can't get excited enough to praise 'em, and they don't annoy me enough to really trash 'em. We'll call this category unoffensive/uninspiring, but you might find some of it interesting — maybe I'm just tired.

IRON CITY
HOUSEROCKERS
Love's So Tough
(MCA3099)

Your basic urban-industrial blues-rock bar band. Sort of a J. Geils sound, a singer Joe Grushecky belts them out with a snarling pugnacity that suggests Graham Parker (and that's stretching things).

Chip Stern

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The Prophet-10 is *the* most complete keyboard instrument available today. The Prophet is a true polyphonic programmable synthesizer with 10 complete voices and 2 manuals. Each 5 voice keyboard has its own programmer allowing two completely different sounds to be played simultaneously. All ten voices can also be played from one keyboard program. Each voice has 2 voltage controlled oscillators, a mixer, a four pole low pass filter, two ADSR envelope generators, a final VCA and independent modulation capabilities.

The Prophet-10's total capabilities are too numerous to mention here, but some of the features include:

- Assignable voice modes (normal, single, double, alternate)
- Stereo and mono balanced and unbalanced outputs
- Pitch bend and modulation wheels
- Polyphonic modulation section
- Voice defeat system
- Two assignable & programmable control voltage pedals which can act on each manual independently
- Three-band programmable equalization
- Program increment footswitch
- Programmable volume control and a master volume control
- Octave transposition switches
- Upper & lower manual balance control
- A-440 reference tone

The Prophet-10 comes complete with a high quality flight case, two voltage pedals and two footswitches. It's now available; see your local dealer.

Play the Prophet-10 today – It's your ULTIMATE KEYBOARD.

For more information write to: SEQUENTIAL CIRCUITS, INC. 3051 North First Street Dept. K San Jose, California 95134

DBX 163 COMPRESSOR LIMITER

The DBX compressor limiter has got to be about the simplest unit of its type available. DBX refer to it in their literature as the "one-knob squeezer" and that is really just what it is. Although it is found in their professional products catalog, it is really, a semi-pro unit and should be considered in that light.

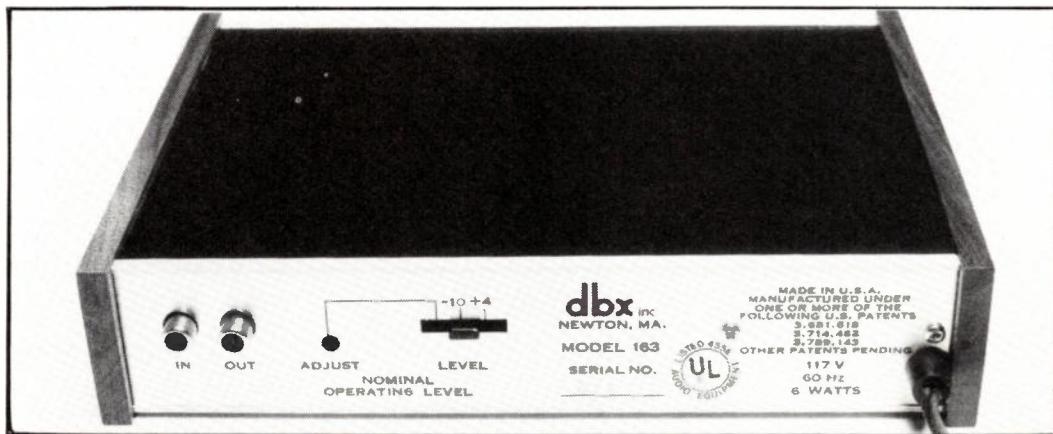
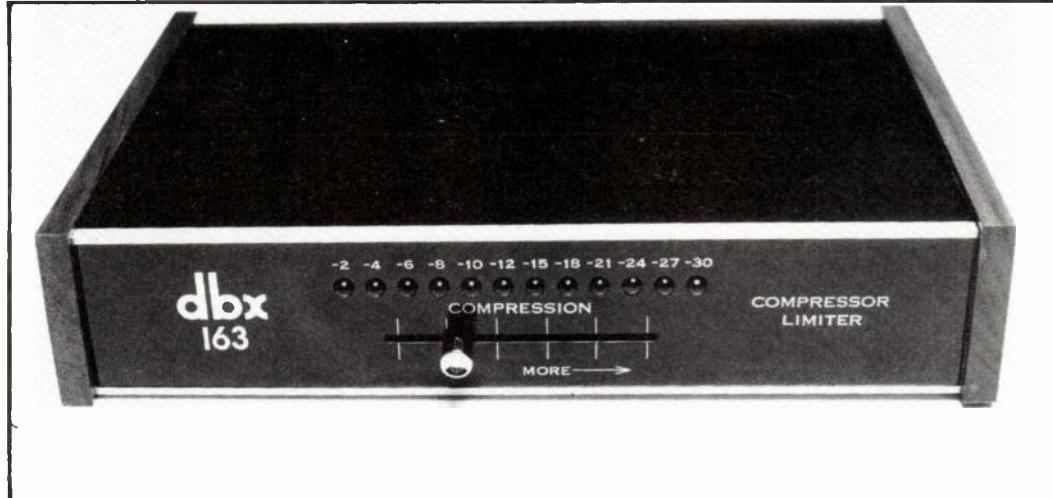
The 163 has been designed as a free-standing unit that needs to be placed on a table top or shelf. I am told that it is possible however to couple two 163's for rack-mounting operation. The front panel is in the glossy black finish of all DBX products with silver legends.

The casing is of a sturdy but lightweight construction with wooden end panels (real wood). These panels are removable and gives access to the interior. The electronics are situated on the PCB covering almost the entire area of the 163. Despite it being a budget unit, the standard of construction is of the accepted DBX level.

The in and output sockets are situated at the rear and are of the phone socket type. It is possible to alter the operating level of the 163 by a rear-mounted slide switch offering three positions — +4, -10 and a third position where the level may be set by a preset through a hole in the rear cover with a screwdriver.

In the review sample, this preset did not line up with the panel hole and it was impossible to adjust. I soon rectified this, however, by opening up the unit and gently bending the preset down to the hole where it should be located, but care needs to be taken if you do this as the control is mounted directly on to the PCB. The power lead is a two conductor cable which is fixed.

The front panel is simplicity



itself. A row of 12 LED's displays the degree of gain reduction or compression. The amount of compression is adjusted by a side-mounted slide control inscribed with an arrow pointing in the "more" direction. When power is applied the -2 (extreme left) LED illuminates regardless of there being any signal present. As the amount of compression increases DBX have incorporated a feature where the gain at the output is increased to maintain a constant output level. This works very effectively.

So using the 163 is a piece of cake. Just plug in and you're off. A word however about the

kind of compression found in DBX limiter compressors. Most "traditional" compressors work on a form of peak sensing but DBX employ RMS level detection. In practice this means that the compressed signal does not sound compressed as this form of compression closely parallels the working of the human ear.

Another DBX feature is the use of a compression curve that is very gently introduced after the signal level exceeds the threshold level. The effect is to disguise the point at which compression occurs and so reinforce the effect of the RMS sensing and you initially don't believe that the unit is

working — but if you can watch the output on a VU meter the reduction in the dynamic is plainly obvious.

In use, I found it ideal where you didn't need a special form of compression with a particular attack and release. Just plug it in and forget about it. It's not possible to link two 163's for stereo but most of the time they would be used for processing single items so this is not really a great hardship. Quality without frills describes the 163 fairly accurately and the price is attractive. If you need a compressor you can't go far wrong with the 163.

Keith Spencer-Allen

CX-3=B3+147



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washers which keep the cymbal happily swinging in a good playing position. If one so desires one can lock these down hard (although one shouldn't) with a large wing nut.

The 906 snare drum stand is exactly the same as the 806 but of course with the inclusion of the memory locking die cast joint. It has a basket type holding mechanism with tripod legs and by my calculations is the lowest snare drum stand available. It also can, with a very simple tube cutting job, go even lower — so, anyone out there with an 8 or 10 by 14 inch snare drum, you know which stand to try.

This only leaves me with the 910 bass drum pedal. Honesty makes me admit to not liking this pedal when I first tried it a year or so ago, but I understand that its teething problems have now been ironed out. It too has the cast, two-piece, sandblasted, non-slip footplate and, of course, the

lock stop. The unit locks to the bass drum hoop in one simple cam action with a large lever. There is Pearl's usual nylon core strap and also a new beater shaft of hardened, black, high tensile steel. The adjustable spring action is enclosed in a cast case and this too (like the old 800s) is within easy reach for any adjustment of the spring. I've never owned one of these although I've played quite a few on my travels. I love the look of it though and now they have the bugs ironed out, I'm sure will be on to a winner. (Those of you looking for a good, cheap, double expansion spring pedal should check out Pearl's even cheaper 710 — it ain't that bad!)

I notice from my new Pearl catalogue several things which I thought you mob out there might conceivably be interested in. First of all, there are now only three different shell construction materials available for the *normal* sets: fibreglass, maple and birch (hereafter known as *dynamic wood*). Vari-Pitch, as I've already mentioned, are slightly unusual in that they alone are made from Phenolic. In addition, there is a 6½ inch maple shell snare drum with a layer of fibreglass on the inside available only with the Jupiter parallel-action, snare throw-off, and die-cast hoops top and bottom. There are also extra depth (at eight inches) double headed concert tom toms which sound excellent, and Pearl have (I feel) quite rightly discontinued the six inch diameter concert tom. Drums that small never seem to have a convincing sound and if one was in a hurry to get around lots of tom toms from smallest to largest, one could often start an otherwise amazing fill off with a click or two because one's aim wasn't too good that day. Nowadays, all Pearl's concert toms have their new cast tom tom holder (as do all the other drums) which is definitely a move for the better since it does away with the terrible old spade-fitting holder. Also, there is an extra length (355mm) 'L' shaped tom tom holder arm, the 717H especially made to fit the 18 inch bass drum. I found the old one at 200mm was simply not tall enough to put my tom toms at a comfortable playing height.

Pearl now do a set called Contemporary II which I find very interesting. It's a six drum set which has *no* floor toms. Instead it has something which I have been campaigning for, and about for a long time — stand mounted tom toms on the side cymbal side. I have spent (dare I say wasted) hours in studios while engineers have tried to match up the sounds from mounted and floor standing tom toms. I know from bitter experience that the two types cannot sound the same because the floor drums' sound is transmitted straight to the floor — the stand or bass drum mounted ones do not (or at least not with quite the same acoustic effect). So, Pearl haven't quite got the sizes right yet, they have 9x13 and 10x14 — they should instead, I feel have, say, 12x14 and 14x16. Still, they are definitely on the right track as far as the recording player is concerned. Lest I forget, all Vari-Pitch cannons are factory fitted with Remo CS Leads — but, of course, you can fit any decent head to a Roto-tom. Ambassadors sound fine to me on them.

There are now some new finishes available from Pearl which brings their total to 15. They all seem to me to be OK apart from the marine pearl which I never liked — my favourites of the new batch are wine red, green flash and army green which is a sort of khaki.

Henry Roberts

CHORUS

Chorus / kōr-əs / n

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Continued from page 10

then were of the Ampeg "Gemini" series and over the years they've really taken a pounding so it can be a real nightmare to walk in, hoping to sound great, and find an amp that's lost all its frequency responses and may still have the original speakers. However, before you turn left at Kansas City — many of the finer studios have sought out advice from the guitarists here, and you'll find a lot more Fender "Supers" and "Twins" around, along with Music Man, Boogie and a few studios even keep a Marshall around. If for some reason there's trouble with an amp, the producer will rent whatever you feel is appropriate from someone like Studio Instrument Rentals. On some projects, you'll be consulted before the date about what kind of amp you'd like. But, in general, be forewarned, don't expect to see your favorite amp sitting in front of you unless you're going to

have it schlepped there.

Before you even consider plugging in some kind of external sound effect, make sure that you're capable of getting some kind of clean guitar sound and that you understand how to "brighten" or "darken" that sound a little in case the engineer asks for it. Having these things under control, you can be assured that the most important aspect, *your straight sound*, is in order. Well, pedals seem to change as new and better ones come on the market, but, in general, you're pretty much expected to have: (1) some kind of over-drive or distortion device; (2) a phaser, flanger, or chorus effect; (3) an envelope or wah-wah of some sort; (4) a volume pedal. Most of the players have some kind of efficient shoulder bag to put all this stuff in which leaves you one or more shoulder for your electric guitar and a free hand for your acoustic.

I suppose one of the most

frequently asked questions is, "Is there any difference in the type of work available in N.Y.C. and L.A.?" I would have to say Yes! Los Angeles is more record and film-TV oriented, while N.Y.C. has its record dates but seems to survive on "jingles" — music for TV and radio commercials. Most of the studio players you've read about from N.Y.C. basically make their living from these commercials which afford some of us the luxury of pursuing our own writing and performing talents outside of the record date world. One of the reasons there isn't a greater usage of road cases for guitars, pedals and amps is that a "jingle" usually takes no longer than an hour, with occasional short overtimes, then you're done and off to the next one. So if things were being carted around for you, you might be late to every other date, that's why here, it's best to just bring it yourself.

Well, the Seventies, among

other things, may have marked the "Golden Age" of the "studio musician" — certainly, these players finally got some long over-due recognition — but there's no telling what the Eighties will be like, especially because we're beginning on a low economic note for the entire country. One thing is very certain though, today's young musician is better prepared than ever. You all have vast amounts of information available to you, and you must take advantage out of all of it — it may well be the difference between you getting the job and someone else landing it. It's difficult to break into any playing or recording scene, anywhere, the best way to beat it is to be thoroughly prepared. So learn from everyone and everything and be very patient with yourself, for it will take some time for an individual style and sound to surface. So wherever you decide to go, I wish you all the very best of good luck! ■

Continued from page 10

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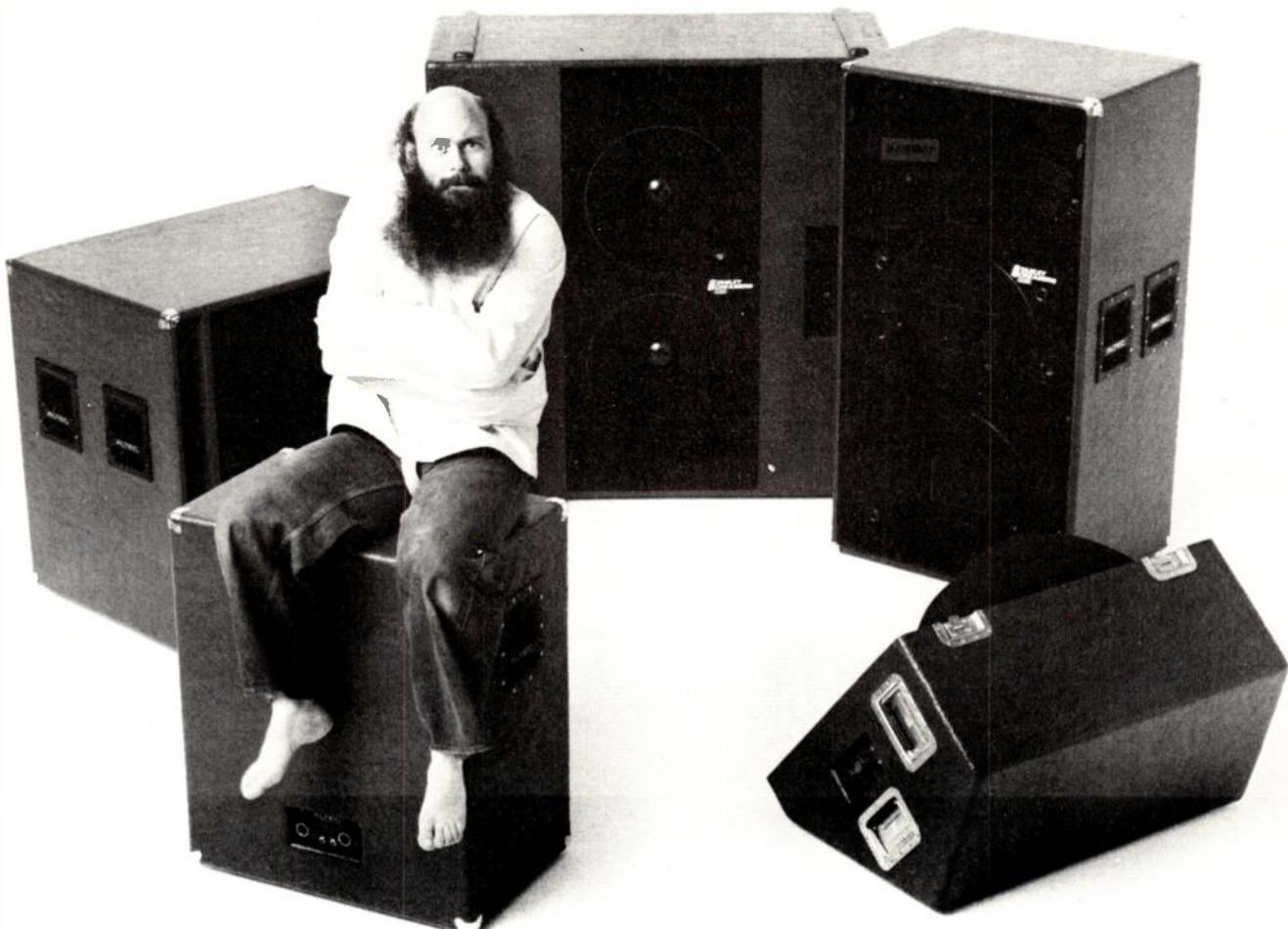
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HI-TECH WITH HEART

TODD RUNDGREN

It could be the set for the next installment of "The Empire Strikes Back". Up here in Bearsville, New York, just milliseconds away from flower-peopled Woodstock, sits Todd Rundgren's video workshop, recording studio and his ultra-modern secluded home. Everywhere you look there are computers, video cameras, mini-robots — all those technical toys that keep your average *Omni* reader from feeling the pains of future shock.

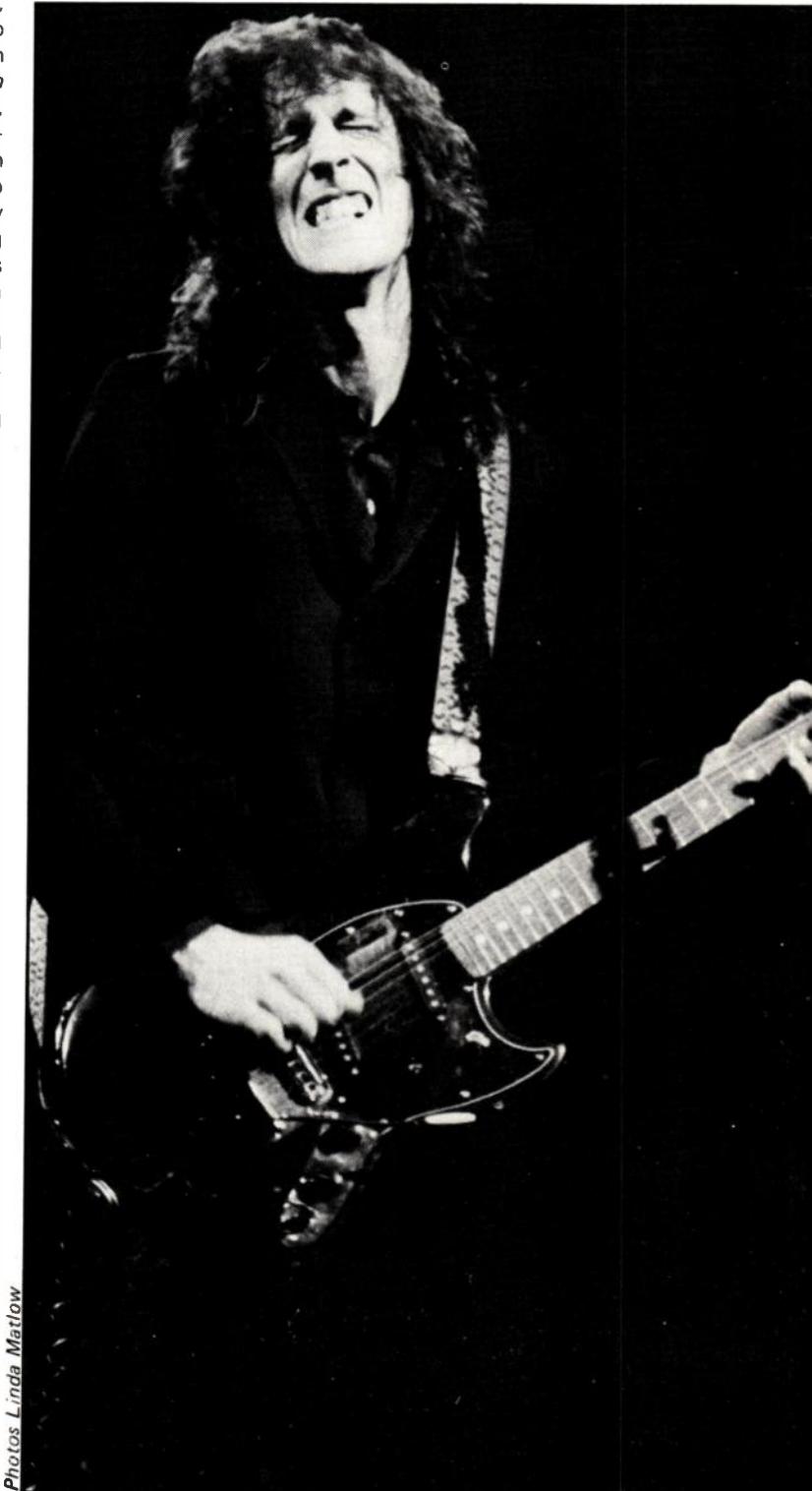
Thirty-two year old Rundgren has been blessed (or cursed) with the techno-wiz image this setting implies ever since producing, engineering and playing all of the instruments on his third solo album, *Something/Anything*, in 1972. Yet Rundgren has never fallen prey to serious accusations of inhumanity, even with his love of knobs and digital delay. Unlike Gary Numan, no one could ever say Todd Rundgren has a pocket calculator for a heart. His technical reputation has simply helped make him one of the most sought-after producers of our time: shaping the sound of Tom Robinson, Rick Derringer, Patti Smith, Grand Funk, The Tubes, Meatloaf and many others. He has worked on projects as diverse as the legendary debut of the New York Dolls on record right on down to his latest dalliance with that Sunkist commercial pin-up, Shaun Cassidy.

And these production jobs (particularly his lucrative work with Meatloaf) have financed Todd's other endeavors; from the video studio to his Irwin Allen-style pyramid tours with Utopia. Rundgren as a performer has never broken out of cult status, only selling between 150,000 and 200,000 copies of each of his and Utopia's albums. Respectable, but it ain't *Bat Out Of Hell*.

Through all his works, however, whether it be solo records or straight production jobs, a distinct *Todd Rundgren sound* has emerged. Generally, this involves a crisp vocal up-front with sudden and clean thick rushes of backup chorales over bright, bouncy synthesizers and a thumping bass. Rundgren's approach is rarely mired in its own thickness (*à la* Phil Spector) — the overall feel is both crystal clear and full bodied. Hi-tech with heart. The quintessential pop of Rundgren can be heard in great old tracks with "Couldn't I Just Tell You", with trim guitar work bouncing off a taut backdrop of bass and drums. And the voices are everywhere — the same rich backup vocals one can still hear on the last Utopia record on catchy heavy metal cuts like "Rock Love."

A perfect example of how individual Rundgren's production sound has become was recently demonstrated by Cliff Richard's single, "We Don't Talk Anymore." Rundgren had nothing to do with the song, yet Richard's voice perfectly recalled Todd's high, smooth backups, plus there was the same buoyant keyboards, the firm bass and drums and an arrangement that could have stepped out of any of Todd's more AM moments. "I heard that song for itself, I never heard myself in it," Todd insists, sitting on the grass outside of his recording studio. "I think that sound is more identifiable as something I might do in producing someone else's albums rather than a sound I have myself."

Rundgren admits to having a fairly set production style. "I think my sounds are common throughout. I only hear things a certain way. Most producers only hear things one way. That's why people choose



Photos Linda Matlow

them — to have it all coming out of that ear. The secondary reason is for what direction you may steer them in."

Rundgren never asks to produce people's albums. They all come to *him*. Some (like Hall & Oates with their *War Babies* LP) know exactly what sound they want. (For them it was an imitation Bowie sound — glam-rock USA). Others come to him empty-handed, looking for guidance. "I most enjoy doing a production if it's a real collaboration," Todd says. "I like it if the person has a strong direction or good performing ability. On some of the records I've had to take an inordinately large role as producer. I either have to give an album direction it doesn't have or try to doctor up performances that aren't there."

For Todd's most recent production (this past spring), he took on someone who had almost no idea of what he wanted. Shaun Cassidy, who has burdened the world with some anemic pop tunes ("Hey Denie" was one of the better ones), was ready to try something/anything different. "We decided to make a dance record; I guess you could call it a new wave dance record," Todd says. "I thought he could do that successfully."

Even if this decision does not represent a purely crass commercial move, it is still wisely timed with "new wave" being the latest movement to co-opt. Generally, such commercially viable moves for Todd are geared more to his sensibility than his wallet. Still, Rundgren can often act as smart businessman, taking a cut of his production jobs rather than a larger up-front fee. This proved to be a great investment in the case of *Bat Out Of Hell* which sold over five million units worldwide. Still, Todd claims to have been

shocked by the big buck success of Meatloaf's album (a strange assertion since Todd's Wagnerian production is just the sort of empty schmaltz the public almost always laps up.) "I don't consider big productions to be automatically commercial," he challenges. "I find it (Meat's material) tense music. It's demanding emotionally so I didn't think it would necessarily appeal to so many people."

One production effort which stands far outside of Todd's trademark Mr Clean whoosh of sound is the first New York Dolls record; a proto-minimalist work and one of the most brilliantly sludgy LPs ever foisted onto the public. "That album came out rawer than it should have because of sloppiness," Todd says, obviously not feeling that this messiness made the disc more coherent conceptually. "They spent a good deal of time trying to get what they thought were certain types of sounds, but ultimately they wanted to be involved in the mixing process and at the same time they didn't want to take as long as it takes to really mix an album. They demanded it be mixed in the worst room in the Record Plant just so they could get it over with before something they had to do in Long Island. It was mastered on Mercury's antiquated equipment. They could have gone some place good like Sterling or something. A lot of the mixes are muddy and not as good as they should be."

Rundgren also had some problems working on the second Tom Robinson LP. "The day before we started the album, their drummer quit. They had to use a new guy who was much better than the other drummer. He had a lot of personality in his playing and was a session player. That

made the album sound studioish. He played freer because he didn't know the songs. He just used his session musician's intuition to pick up on what was happening. Someone who knew the material would be more defined and straightforward. Also, a lot of the emphasis that was originally on the guitar on the first album shifted off because a new keyboardist came in and he was real good. You had to let him play. So a lot of people were upset about that because the sound wasn't based on hammering guitar anymore. We thought the album was more focused than the first (*Power In The Darkness*). The band expected it to be a big seller when it was released."



Of course, the album turned out to be a commercial disaster, but Todd has become used to an up-and-down trend to his career, both as an artist and a producer. Back in the last Sixties, Rundgren was a wizard, a true pop star with The Nazz. (In a 1969 issue of *16 Magazine* the editors wrote how Todd "speaks a special kind of language that can be understood only by puppy dogs, pussy cats and little brothers and sisters"). Yet Todd immediately began widening his career after that band's demise by putting in some engineering work along with his early solo efforts. He

engineered The Band's *Stage Fright* record in 1970, but he didn't really strike people as a particularly gifted studio wiz until he did the one man *Something/Anything* LP. Though Todd's main instrument is guitar, he played every sound on the double set. Today, he admits he couldn't perform on them all with equal prowess. "The drums are always the hardest to play," he explains. "The bass is uncomfortable as well. On guitar you can clutter up the notes because you're playing them in bunches. On the bass you have to be more precise. It's hard to be fancy. To play drums is not just bashing away. To keep the same meter going without speeding up is a real trick. It's also hard to get an un-sterile sound on the drums."

From doing this "one-man-band" solo record, Todd picked up another production signature which would prove helpful in his later work with others. He developed an especially lush feel to his background vocal recordings, something he later heard on Queen's more operatic numbers.

Today Rundgren continues to do solo recordings while also working with Utopia — a Marxist ideal of a band in which all the writing is credited to the group as a whole.

Also filling up his hyperkinetic schedule is the video studio, where he's busy creating programs he hopes will one day be bought by the major networks. Visions of Utopia videos running right next to "Three's Company" and "Those Amazing Animals" dance in his head. The studio is an impressive structure just down the street from Todd's house and Rundgren makes it clear that ultimately, his work here is not geared for the home video disc market, though he

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has done some quickie home video pieces involving songs off the *Adventures In Utopia* LP. "Only ten thousand video-disc machines are owned by people in this country, so it still doesn't mean anything commercially. I want my videos broadcast on TV. That's the only way it can get to people. If not a regular network, then cable TV would be okay. HBO is a big enough network."

Rundgren seems to understand what he's up against trying to get his fantasy-oriented videos through to Freddie Silverman (NBC Pres.) and his ilk. "TV executives are not inspired people. They aren't aiming for the lowest common denominator so much by intention, they just can't get it up any higher. People would accept better material but the people in power are too uninspired to give 'em anything better. Then they justify their lack of inspiration by calling the public dumb and they quote ratings to back it up. But the public aren't given an alternative."

The videos Rundgren is interested in are not necessarily music-oriented. He know how many of these rock pieces simply feature the band goofily mugging for the camera to serve purely as a record company promotional gimmick. "A lot of times, these aren't very interesting because the music isn't that interesting in the first place," Todd reasons. "Even if a song is a hit, most of them are uninspired visually."

Rundgren goes in more for "Star Wars-style" special effects videos. His studio has lots of backdrop artwork for intergalactic scenes; exactly the sort of escapist fantasy that occasionally renders Rundgren's recent lyrics so irredeemably childish. Still, Todd seems committed to comic book star talking —

choosing as one of his first video projects a visual track for Tomita's synthesized version of Holst's *The Planets*. RCA commissioned the project but after Todd had completed half of it and they found out the price tag on the rest, the whole effort was dropped. True to character, this does not phase Todd. He is confident his videos will one day be appreciated by what he sees as his most important audience, the masses.

Right now, Todd is more



concerned with Utopia. They've got to finish a new group album this Summer and at their futurist studio here in Bearsville they've just completed a bouncy instrumental track in record time. As the band takes off for the weekend, Todd lays around on the grass outside, taking a place in the sun. His main hope for the album is that it lives up his standards of immediacy. "I always try to be direct," he intones. "I don't know what direction that may be in though. All I know is I can't seem to keep moving in the same direction."

Jim Farber

TECHNICAL INFO

Todd Rundgren

Though Todd Rundgren likes to function as a musical octopus with a hand on every instrument, his main axe is still the guitar. Todd's fave is a vintage black Fender Mustang which he's used for some five years now.

Live, Todd has a rather unique system for monitoring his guitar. The output from the guitar amp goes directly into a small acoustic chamber which has a single 12-inch speaker and a microphone permanently mounted inside. That microphone is the sound used for the PA and the monitor system. There's also a slave output which is passed through a voltage controlled amplifier, controlled by a knob on Todd's mike stand. That allows him to vary the volume of what he hears on the guitar, so he doesn't have to rely on the general monitor system.

On stage, Todd also uses a 'Nasty' (John Nady) wireless guitar system so he can jump around and give the audience something interesting to look at as well as listen to.

Roger Powell

Many times when critics complain of technological overkill in Utopia, the person they lay blame on (after Todd) is synthesist Roger Powell. After all, Roger did do some early work with Robert Moog and currently writes a regular technical column for *Contemporary Keyboard* magazine. Yet Powell's work with Utopia is in fact quite straight-forward and his keyboard set-up live is relatively simple. With three main synthesizers he covers it all, starting with an RMI/KC2 keyboard computer, on top of

which sits a Prophet 5; and then there's the Probe, a hand-held fiberglass-enclosed keyboard that's very lightweight. Generally what Powell finds most disturbing about the current synthesizer scene is that "the age of convenience is here. There are a lot of pre-set synthesizers around that don't challenge the user to explore anything outside of what a research team has pre-determined. In true synthesis you should make your own decisions."

Kasim Sulton

The third "equal-partnership" member of Utopia is bassist Kasim Sulton. Like Roger Powell (who released a solo record on Atlantic in 1974 titled *Cosmic Furnace*), Sulton is involved in solo projects outside the band. In all of his studio work Sulton uses Fender Precision basses, though he switches to Kramer basses live since they're smaller instruments. "I'm a little guy and if I used a bigger Fender on-stage I'd look kinda strange," he says. For amps, Kasim uses two Ampeg SVT's — normal size.

John Wilcox

As if to further confirm Rundgren's claim that he was "born to synthesize", even John Wilcox's drums are synthesized on stage. Though such drums can often sound blurry, Wilcox claims the bass drum sound here is better than most natural drums. For both of his kits, Wilcox's basic set-up is the same: It includes two upper tom-toms, a floor tom-tom, a bass drum and a snare. John uses Zildjian cymbals — a ride, crash and a pair of high-hats.

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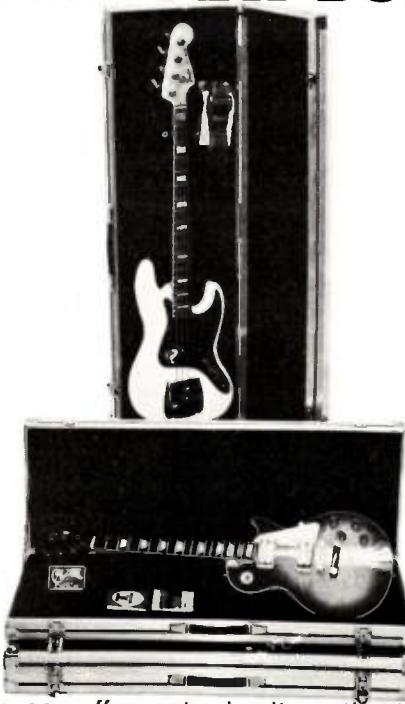
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RECORDING SYNTHESIZERS

Part 5: Percussion Effects

When making a multi-track recording, one of the first steps is often to lay down a timing track, which in its simplest form is nothing more than a series of clicks. This track then acts as a timing reference for the player(s) when subsequently recording all the instrumental parts. However, although regular clicks can be produced very easily with the synthesizer's LFO, as I described last month, with a little more effort the synthesizer can be used to generate the sounds of percussion instruments. These "instruments" can themselves be multi-tracked, three or four being sufficient for most purposes, and mixed down on to one track which then itself acts as the timing track for the parts added later.

In this and next month's article, I am going to describe how to set about synthesizing percussive sounds, so that following one of the recording methods described in Parts 1-3 of this series you could produce your own multi-tracked percussion ensemble.

Synthesizing drums

Drum-like sounds are easily generated by virtually any synthesizer as shown in Fig. 1. The VCO frequently is reduced to a low value (resulting in a low-pitched sound) and the ADSR or AR module is adjusted so that it produces the kind of waveform shown on the right. This waveform, which controls the amplification of the VCA, reproduces the essential characteristics of any percussive sound: fast attack (the sound starts very suddenly), followed immediately by decay, the sound dying away either quickly (e.g. bongos) or relatively slowly (e.g. bass drum).

Each tap on the keyboard generates a keyboard gate pulse which triggers the ADSR or AR module, allowing a short burst of "sound" through the

VCA. Note: when using an ADSR module to produce percussive sounds, a useful trick is to set the Sustain level control to zero and the Decay and Release controls to the same value. Whether you tap or hold down a key, the ADSR will then always produce the same waveform. When using an AR module, the key must be tapped or the percussive effect will be lost.

The pitch of the "drum" is determined by which note on the keyboard is depressed (the keyboard voltage controls the VCO frequency). Low notes will produce "bass drums" higher notes "tom-tom" and "bongos." The quality of the sound is determined by the choice of waveform and VCF settings; notice that in Fig. 1, the ADSR waveform is shown controlling both the VCF and VCA, the former adding "edge" by emphasizing the upper harmonics when the sound begins.

Keeping time

When recording the first track of a multi-tracked percussion section, the LFO can be used to trigger the ADSR module (see Fig. 1), resulting in regular beats at intervals determined by the LFO frequency. This usually only works as long as a key is depressed, which is a very helpful feature because it allows the regular sequence to be interrupted by releasing the key when rests are required (keep an eye on the LFO's indicator light during rests!). If the LFO's frequency is increased, the same set-up will produce a drum roll as long as a key is held down.

Cymbals

Because the basic constituent of a cymbal's sound is noise, the arrangement shown in Fig. 2 can be used to synthesize a whole variety of cymbal-like sounds. The noise generator is the basic sound

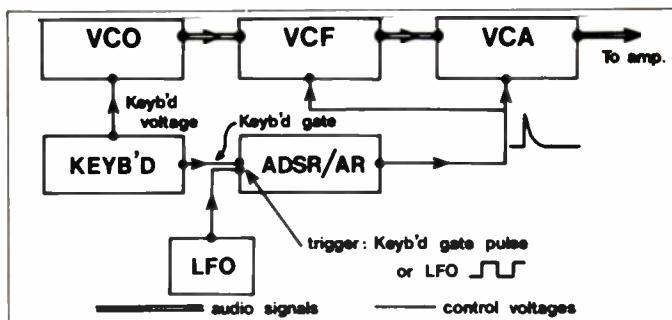


Fig. 1 Arrangement of synthesizer modules used to generate drum-like sounds. The ADSR or AR module should be set to fast attack and quick release times. The pitch of the drum can be altered by tapping different notes on the keyboard. Repeated beats or drum rolls can be produced by using the LFO to trigger the ADSR module.

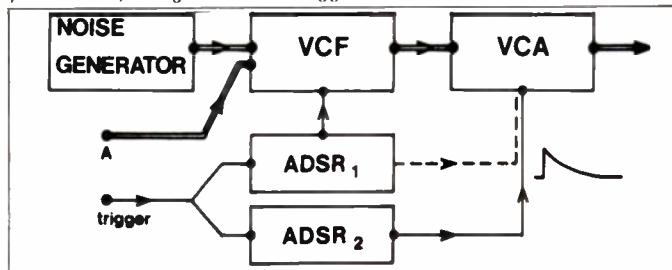


Fig. 2. The noise generator is used to synthesize cymbal-like sounds. Sound coloration is introduced by adjusting the filter (VCF) settings and additional sound sources (VCOs etc.) can be introduced at point A if required.

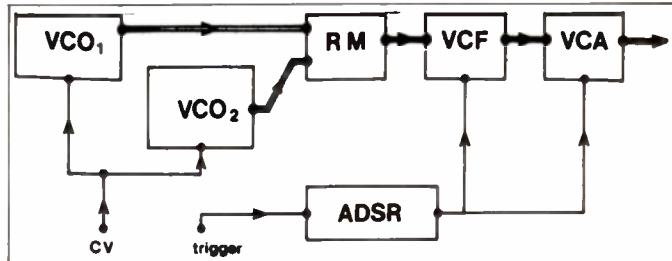


Fig. 3. Two VCOs and a ring modulator can be used to synthesize gongs and bell-like sounds. The VCOs' common control voltage (CV), usually supplied by the keyboard module, determines the overall pitch of the sound.

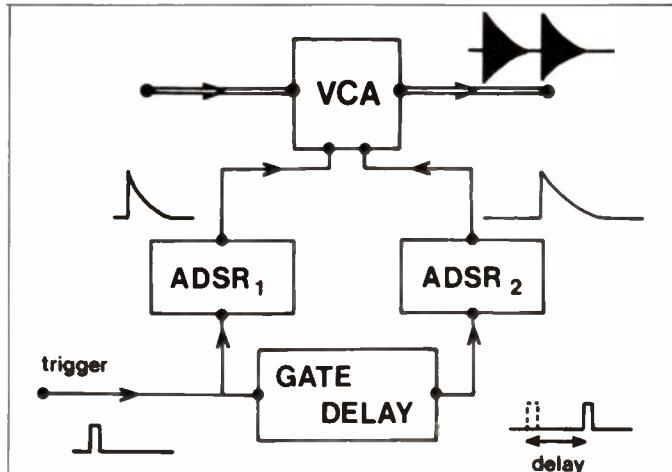


Fig. 4. A Gate Delay module can be used to produce two "strikes" on a synthesized percussion instrument from one key depression (supplying the initial gate or trigger pulse). The time between the "strikes" is determined by the gate delay.

source but other components (see below) can be added to the sound in the VCF's audio-signal input mixer if required. The ADSR module's decay and release times will usually be longer than those used when synthesizing drums. Interesting effects can be created by using the LFO to shift the filter cut-off frequency, adding a sort of "swish" to the cymbal effect.

Again, as described above, the LFO can be used to trigger the ADSR module to produce regular cymbal crashes, or cymbal rolls — which incidentally will sound better if the decay and release times are shortened. When working in this way, if the LFO has a "keyboard trigger" switch, always turn it ON; the LFO will then start a new cycle immediately a key is pressed, which will result in a more reproducible and predictable sound.

Gongs and bells

These sounds are most easily synthesized using two VCO's and a ring modulator as shown in Fig. 3. The characteristics of the sounds are controlled by the relative frequencies of the VCO's (they should not be widely different) and sine or triangular waveforms tend to produce the best results. Noise can be introduced very effectively at the VCF's input mixer. Alternatively, relatively soft gong or bell-like sounds can be added to the cymbal sounds produced by the arrangement shown in Fig. 2 to great effect.

If you do not have a ring modulator, bell sounds can be synthesized by using the VCO's output as a *control voltage* for the VCF. the cut-off slider should be set about mid-way and the resonance control to maximum.

Double striking

Some synthesizers contain a "Gate Delay" module, which is used to produce two gate or trigger pulses from one key depression as shown in Fig. 4. The keyboard gate pulse acts as the trigger for ADSR, as usual, but in addition is delayed by the Gate Delay

module, the output of which triggers ADSR2. The resulting output of the VCA is two sounds following one-another in quick succession, separated by the delay time as shown, and sounding like a "double strike" on the percussion instrument if the delay short or a single echo if the delay is lengthened and the settings of

the VCA's sensitivity control to ADSR2 is reduced. The Gate Delay module is therefore particularly useful for increasing the complexity of synthetic percussive sounds without demanding more effort on the keyboard.

Given these three types of percussive sounds — drums, cymbals and gongs, with all

the possible variations on each of them — very effective varying rhythm patterns can be multi-tracked. Next month I will be describing how to involve a sequencer in synthesizing percussive sounds, and also how a synthesizer can be used to improve the sounds produced by electronic rhythm units.

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Continued from page 26

mind — with no surprises!

John: There are hardly any solos on *Voices*. We've been using textures in instrumental sections rather than an actual solo.

IMRW: So what should we be listening for on this album? What is the developmental point from the last LP?

John & Daryl: *Voices*.

Daryl: It's called *Voices* and the voices are everything. You're going to hear so much more singing and the voices are gonna be up-front and the most important part of the record.

John: We've actually used background voices as hooks on most of the songs and a lot of times mix-wise, the backgrounds are louder than the lead.

Daryl: We're doing a lot more low harmonies. We used to do all that falsetto stuff, now we're doing a lot of stuff in the Beatlesque range. A lot of slides, things like that.

John: And we did a lot of four part, Doo-Wop style harmonies with a bass singer.

IMRW: Daryl, on your solo LP, *Sacred Songs*, you were collaborating with Robert Fripp and other people as opposed to John. Did that alter your way of working significantly?

Daryl: It was definitely a big change when I did the album in '77. It was a big directional change that I needed to make and I think a lot of what we're doing now is directly stemming from what I did on *Sacred Songs*, so it makes more sense now than it would have two years ago.

IMRW: As far as your particular

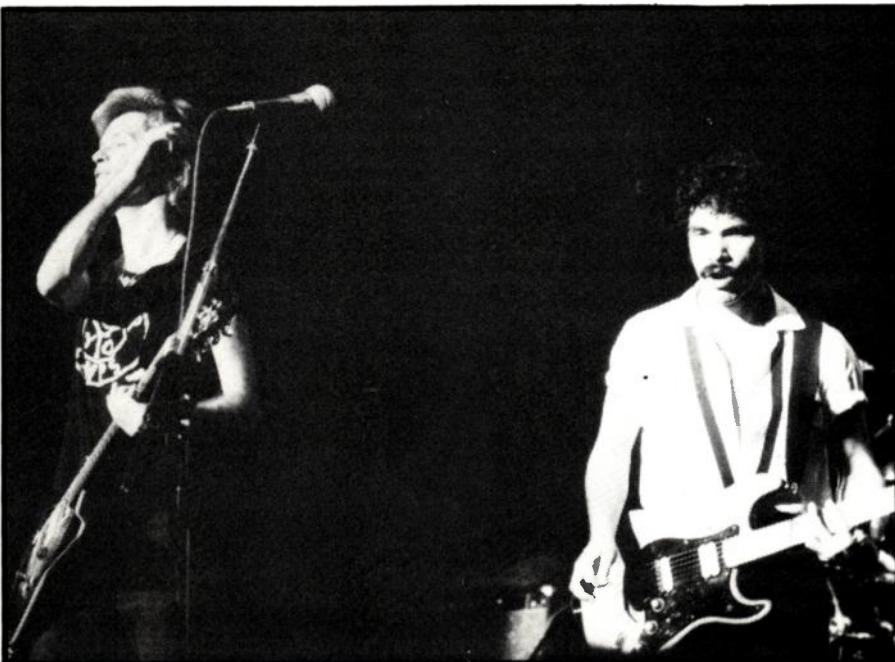


instrumental situation is concerned John, what kind of guitars do you use?

John: I'm using my "Old Faithful," the same guitar I've been using for about six years now. It's a Fender Stratocaster, an old one, a '59, with Gibson electronics and it's been customized and worked on and it's just so comfortable it feels like I'm not playing a guitar. I don't have to think about it and that's really my main concern when I'm onstage. The pickups include a Gibson PAF on the treble side and a DiMarzio on the front and I've got a split switch. Red Rhodes did most of the work on it out in LA. Jerry over at Alex Music (W. 48th St. NYC) does the work for me now. He works on all of our instruments. For the first time on this tour I'll be using more guitars though. I'm gonna be using a Navigator, a Japanese guitar that was given to me on our last tour. It's really a nice guitar. It's hand-made and looks just like a Strat. I'm also going to be using a Rickenbacker 12-String on a few songs and I may even use my Les Paul. I use a Music Man amp and that's it for amplification. For effects I use a wah-wah pedal and as soon as we drop "She's Gone" from the set I won't be using that either (laughter).

IMRW: Daryl, you mentioned the Mandar earlier. Is that custom-made?

Daryl: I had the original eight string ones made — a guy named Art Valdez made me the first couple of them. Then Paul Hamer made one for me. He also made a Mandocello for me, which is lower — between a guitar and a bass — but recently I've found some really rare instruments. In fact, I think I've cornered the market on Gibson tenor guitars. They only made a dozen of 'em around 1959 — they did one in the SG style, one in the Les Paul style and in the ES-300 style and I have all three of those. I found one in Japan, one on 48th Street — I found 'em all over the place. They're really rare. They sound great and they have the original pickups on them. And it's four strings instead of eight, so it's even more guitar-like. For keyboards, I still use a Yamaha Grand and on the record I used the new "suitcase" Yamaha electric and a Roland Vocoder, which has a very interesting sound. The other keyboard player uses mostly Yamaha stuff in addition to a Prophet, a Mini-Moog and a Wurlitzer. We use custom amplification — Crown power amps, Alembic preamps and custom cabinets with graphic EQ and the whole thing. Everything is taken direct on stage except for the guitars and the drums.



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In the early 60's until about 65 it was really heavy. I had a ball. During that time I did "Mercy Mercy" by Don Convay. "High Heel Sneakers" and all the Motown records.

IMRW Pianist Richard Tee once told me that the Motown sound was really New York, not Detroit.

B.P. They were cut in New York and sent out to Detroit and fixed up. Of course some became masters, but what could we do? There was no law against what they were doing. Songs like "Wonderful One" or "Can I Get A Witness" were two of over 500 tracks I did for Motown. Smokey (Robinson) wrote those songs because they had tracks and he'd play piano on top of them and make it sound like it was done there.

IMRW Do you like the illusion of playing with tape, playing with musicians who aren't really there?

B.P. I love it. It was one of the biggest things in the world, to make something happen that didn't really happen. My job was to stop it from being an illusion. That's where I made my money for many years, fixing up what other people *didn't* do.

IMRW Do you have any strong memories of working with James Brown?

B.P. There was one time when I didn't work with him for two years and then we did a session at Beltones Studios. We ended up with a 23-piece band, horn and rhythm section. James came in late and said 'Purdie this is your big chance. Let's see what you can do.' The song was "Goin' to Kansas City" and he started his two bar count. On his second bar I started a roll on top of his count and came down with a big crash with the horns. James heard all this music coming out and he jumped in the air. I hit every one of the licks with the horns and we were cookin'. I went into my star bag. It was done in one take.

IMRW You also did so much with Aretha Franklin, stuff like "Respect"

and "Chain of Fools." What do you remember about working with her?

B.P. When I was coming along my teacher told me that the way I play, I could go in any direction, but he said my best foot would be with lady singers. I realize my best performances were with Aretha Franklin. That was the height of my playing and what I have done. It really did a number on me. No matter what she'd sing, I'd try to put my foot in the spots she might possibly miss. I was inspired by her singing. She told me that I inspired her when she sang, so it was mutual.

IMRW A couple of my favorites are the *King Curtis* and *Aretha Live at the Fillmore* albums.

B.P. Those are the best live albums I've ever done, and I've had a lot of them. That happened because of Gene Paul at Atlantic records. We came in one morning and started experimenting with the sound. We came up with something close to a studio sound. Sure enough that was the night both those albums were taken from. The first night we showed off for all the musicians in the house. The next night we got even tighter and we burned. We ended up with 45 minutes of Ray Charles. The people got seven or eight (on the live Aretha album) but we had 45 minutes of groovin' with Ray Charles. It was smokin'.

IMRW Have you done anything recently that's been exciting?

B.P. Working with Steely Dan has been super exciting. They know what they want and what's right for them. For me it's an esteemed pleasure because I know I'm gonna sound good when they're finished with me. I'll sound even better than what I liked in the studio. This new album is even better than *Royal Scam* and *Aja*. *Royal Scam* I consider to be a classic album and this is even better.

IMRW When you record do you use your own drums or rentals?

B.P. I use rentals. I don't change my sound. Rentals don't bother me. I get what the producers want.

IMRW What about your own drum set?

B.P. I use Sonor drums. I have a 16" floor tom and two tenor toms, a 13" and a 14". The bass drum is 22 inches. I have two snares, a 6 1/2" and 6 1/4". I use the lighter drum for small places 'cause it's very loud. I use Sonor footpedals and hardware. I prefer the 1970 footpedal, I think it's the best they ever made. I also use Zildjian cymbals. 13" high hats and 16", 17", 19" and 20" cymbals. My sticks are Bernard Purdie models made by Sonor. They're

light enough for jazz and heavy enough for rock.

IMRW With more and more studio musicians making their own bids for recognition, would you like to see your name at the top of the credits?

B.P. I want to play live more now than I ever did. I realize I've always wanted to be a star. Secretly in the back of my head I've wanted to be out front. It's not easy. To do it right, with taste, that's the whole thing. I realize I want to be up there more so now because I'm actually getting good!

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AES Preview

The AES exhibition will be held in New York City from Oct. 31 to Nov. 3. As the show for audio and acoustic engineers, the latest innovations will be displayed in every aspect of the business.

Ampex will be displaying their new line of recording units, the ATR-124 (16/24 tracks), the ATR-100 (2 or 4 track), the ATR-700 (2 or 4 track)

and the MM-1200 (16 track). They will also show their ADD-1 digital delay device as well as new synchronizing equipment.

Audio Arts Engineering will be displaying their new 8-Buss mixing console and limiter as well as their new 4-channel modular mixing console.

New products at AES from BASF will include Ferrichrome tape for car

stereos as well as a host of other tape and tape accessories for home and car stereos.

BGW will be introducing their new top-of-the-line "behemoth" power amplifier, the BGW 1250. Features include: full complementary circuit using forty eight 200-watt power transistors; forced air cooling with 3-speed solid-state fan control.

Burns (Beyer) will be exhibiting M600 moving-coil microphone with locking on/off switch and four-position bass roll/off switch. Specifically designed for live vocal performance, the M600's "unique" diaphragm will withstand high sound pressure levels while exhibiting the fidelity normally associated with ribbon microphones.

Eastern Acoustic Works will be showing their new CT Concert Touring components and the new Forsythe Mark II Bass horns at AES. E.A.W. will also be supplementing their extensive line of studio monitoring products with the MS-100 Studio Reference Monitor. Also on demonstration will be the SM Series stage monitors, the FR Series Full Range Cabinets and the MR Series of Mid Range Enclosures.

New at AES from Emilar will be the EC-175 High-Frequency Compression Driver, EA-175 High Output High-Frequency Compression Driver, the EH-500 Wide-Range Exponential Horn, the Emilar Y-Throat Adaptor for High-Frequency Driver, the EH-800 Shallow-Depth Exponential Horn, the EW 15 Low Frequency 150 Watt Loudspeaker and the EX 500/EX 800 Dividing Networks.

This year, Eventide is having a demonstration suite for the first time, in addition to their booth. They will show their line of studio-quality delay lines, including the models JJ193 and CD254 for sound reinforcement, and new options for the H949 Harmonizer—a "de-glitch" card, and a remote control card which uses the IEEE 488 standard interface bus.

EXR will introduce the new EX-3, the latest addition to their professional line of "exciters" designed for broadcast and balanced line use. They will also introduce their new SP-1 unit specifically designed for the working musician.

Marshall Electronics will be exhibiting their new 5402 Time Modulator, a new Mini-Modulator and a special surprise!

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The JH-24 Series Multitrack Tape Recorder, the latest in MCI's history of recorders, features totally transformerless electronics providing improved frequency response, signal to noise ratio and RFI rejection.

able for use with the JH-24 is MCI's AutoLocator III, a microprocessor based tape counter/locator featuring 10 memories and built-in TVI (Tape Velocity Indicator) function.

MicMix Audio Products will introduce their new LX-20 reverberation system which incorporates a patent applied for technology to provide "highest quality" reverberation. They will also show the LX-500 reverberation system which offers "everything you ever wanted in a reverb," while providing maximum flexibility with analog and digital circuitry.

At AES, **RolandCorp US** introduces the CPE-800 Compu-Editor, providing 15 channels of automated fader control for any conventional mixing console. Featured on the CPE-800 are: Piecewise Linear Approximation technology, SMPTE time code for access and synching from any tape position, parallel operation updating and editing facility, scene mode, open reel or cassette deck data storage and retrieval and graphic display outputs for displaying all fader motions on a conventional oscilloscope.

Wireworks Corp., manufacturer of professional audio cabling systems, will feature its Microphone Multicable Components Group, a family of versatile modular components—the newest concept in multicable technology.

In addition to their P-50 Model, **SAE** will be exhibiting their new P-250 unit which features 250 watts per channel at 8 ohms as well as the P-500 Model which features 500 watts per channel at 8 ohms. Both the P-250 and the P-500 have stepped-up volume control, built-in electronic crossovers and are available in 6, 12, 18, or 24 dB octave.

Sony will be showing a traditionally wide variety of products at the AES show. Their low cost ECM-989 stereo microphone uses a three-unidirectional back electret condenser capsule design for advanced M-S miking techniques.

Sony's "ultralightweight" MDR headphones are now available in four different models, including the top MDR-7's with a frequency response of 16-22,000 Hz. Also, the long-awaited DAE-1100 digital editor and DRE-2000 digital reverberation unit are now available.

Studer Revox will be exhibiting their new professional series of reel-to-reel tape decks.



LEXICON MODEL 1200
AUDIO TIME COMPRESSOR



UREI MODEL 525
ELECTRONIC CROSSOVER

Tangent Systems, Inc. has introduced a new line of mixing consoles: SERIES 4. Joining their stereo buss "AX" series, the new Series 4 (four output buss) console is designed to offer the professional the optimum features and performance for both sound reinforcement and 4 or 8-track recording sessions. Offered in either 12 input or 20 input fully modularized mainframe.

UREI will debut its new Model 525 Electronic Crossover at the May AES show. Features include four panel-selectable modes: stereo 2-way or 3-way and mono 4-way or 5-way. Crossover frequencies are continuously adjustable from 50 Hz to 10 kHz, with the actual frequency measured and displayed on a digital frequency counter with 1 Hz resolution. Mode select and crossover frequency controls are front panel screwdriver slot adjustments for greater security. A subsonic filter is included to roll-off frequencies below 30 Hz providing protection of the low frequency transducers in the P.A. system. This is switch selectable on the rear panel. Inputs and outputs are XLR/OG connectors or terminal strips.

An advertisement for SESCOM, Inc. The top half features a cartoon character with a confused expression, surrounded by question marks, standing next to a microphone stand. The text "GOT A PROBLEM? GET THE ..SESCOM SOLUTION." is written diagonally across the top. The right side contains text about SESCOM products and availability. The bottom features the SESCOM logo and contact information.

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Speakercheck

10 inch Drivers - continued

Having set our stall for testing 10-inch loudspeakers and published reviews of six units in last month's issue, we now complete our 10-inch feature with six more reviews and a summary of the results obtained. This month we have two of the HH Acoustics 10-inch units, the Richard Allan HD10 and Atlas 10, the JBL E110 and the Fane Crescendo 10/60E.

With the sole exception of the Richard Allan HD10, which has been appearing in the catalog for more years than I can remember, all the other units are brand new and have only appeared in the market place over the last two or three months. We should also have included two brand new units from RCF, but these did not arrive from Italy in time for our tests and in fact, the JBL E110 only just made it having been airfreighted over from the States for the purpose.

The manufacturer's have not even published the specification sheets and we had to take the specs from individually typewritten sheets! The six individual test reports largely speak for themselves and do not require any further comment here, and therefore, I shall move on to a summary comparison between the 12 units tested.

It will have been noticed that we have lumped together both "standard" and "professional" units in each feature and so the first exercise must be to separate the two groups. Further, it has become apparent from our results that we have two distinct types of response characteristic, where one type of loudspeaker is giving a smoother, more uniform frequency response — generally at lower levels of sensitivity, while the other type is giving a response that appears to have been tailored towards high mid-band energy levels such as might be required for bright, sharp guitar sounds or for use as mid-range drivers in three-way PA systems etc. This then gives us four groups of product which, due to their different market applications, must be compared separately.

For convenience, we will refer to the former type with the better low frequency performance and smoother response as extended range units, and the latter type, with the high mid-band energy levels as general purpose units, as the characteristics of these are more akin to those of most general purpose 12-inch instrument loudspeakers as fitted to most standard 4 x 12 cabinets and combos.

Ken Dibble

Group 1 — Standard General Purpose

Model	Sens (dB)	SPL (dB)(A)	Power (Watts)
Celestion G10/60	99	113	60
HH Acoustics 10G	95	110	50

I really think that selection between these two must depend upon the sound that you want, as the Celestion will give more brightness, while the HH will give more guts. The Celestion is not only less expensive,

but also 4dB more sensitive, but we did find problems with our sample unit and you must study the individual reviews and response curves before making a choice.

Group 2 — Standard Extended Range

Model	Sens (dB)	SPL (dB)(A)	Power (Watts)
Celestion G10/50	95	110	50
HH Acoustics 10PA	94	110	50
Richard Allan HD10	92	106	50

Again, the choice here is marginal. The Celestion and HH units both have presence peaks over the upper mid band, while the Richard Allan unit does not. The Richard Allan, while offering the lowest sensitivity and the highest cost

per decibel, has the most uniform frequency response and the highest relative low frequency energy levels. I really think that the Celestion must come out favorite with best sensitivity at an incredibly low price.

Group 3 — Professional General Purpose

Model	Sens (dB)	SPL (dB)(A)	Power (Watts)
Richard Allan Atlas 10	96	114	100
Fane Crescendo 10/60E	100	116	60
ATC PA75-234 Std	98	113	75
JBL E110	98	113	75
Mega 2538M	94	108	60

The JBL and ATC units have identical figures and very similar response curves, except that the ATC has a pronounced dip in its response curve whereas the JBL is nicely uniform, and I think that if I were contemplating spending that sort of money on a 10-inch loudspeaker, I would go for the JBL. However, the Fane has a

very similar response, but offers higher sensitivity at a considerably lower price, while the Richard Allan is cheaper still, but not as sensitive. The Mega unit is primarily intended as a mid-range driver, but is particularly low on sensitivity for a professional category unit — although this is to some extent mitigated by its low price.

Group 4 — Professional Extended Range

Model	Sens (dB)	SPL (dB)(A)	Power (Watts)
Mega 2538M	91	106	60
ATC PA75-234 Std-LS	93	109	75

Of these two units, the Mega has by far the smoother frequency response and better low frequency performance, but is also the least sensitive unit tested in either category.

By way of an overall comment, I think that as far as 10-inch units are concerned, and on the basis of our results, I would give some very serious consideration before I spent

the sort of money being asked for the JBL and ATC units when units from Celestion, HH Acoustics, Fane and Richard Allan are so close, and in some instances, apparently better, at a fraction of the price.

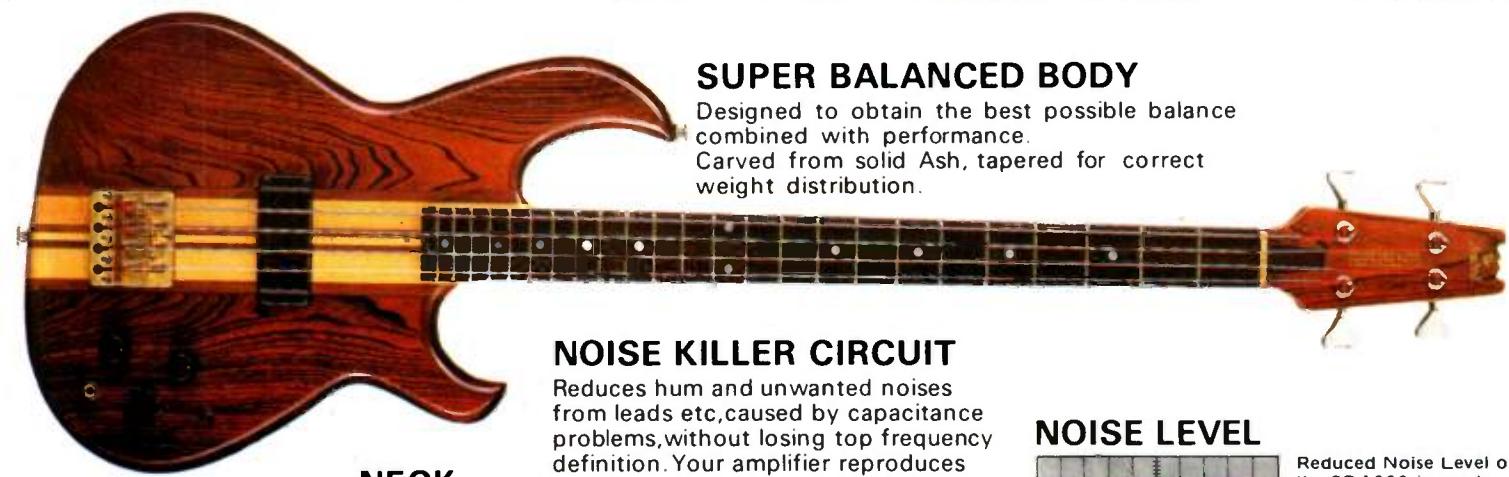
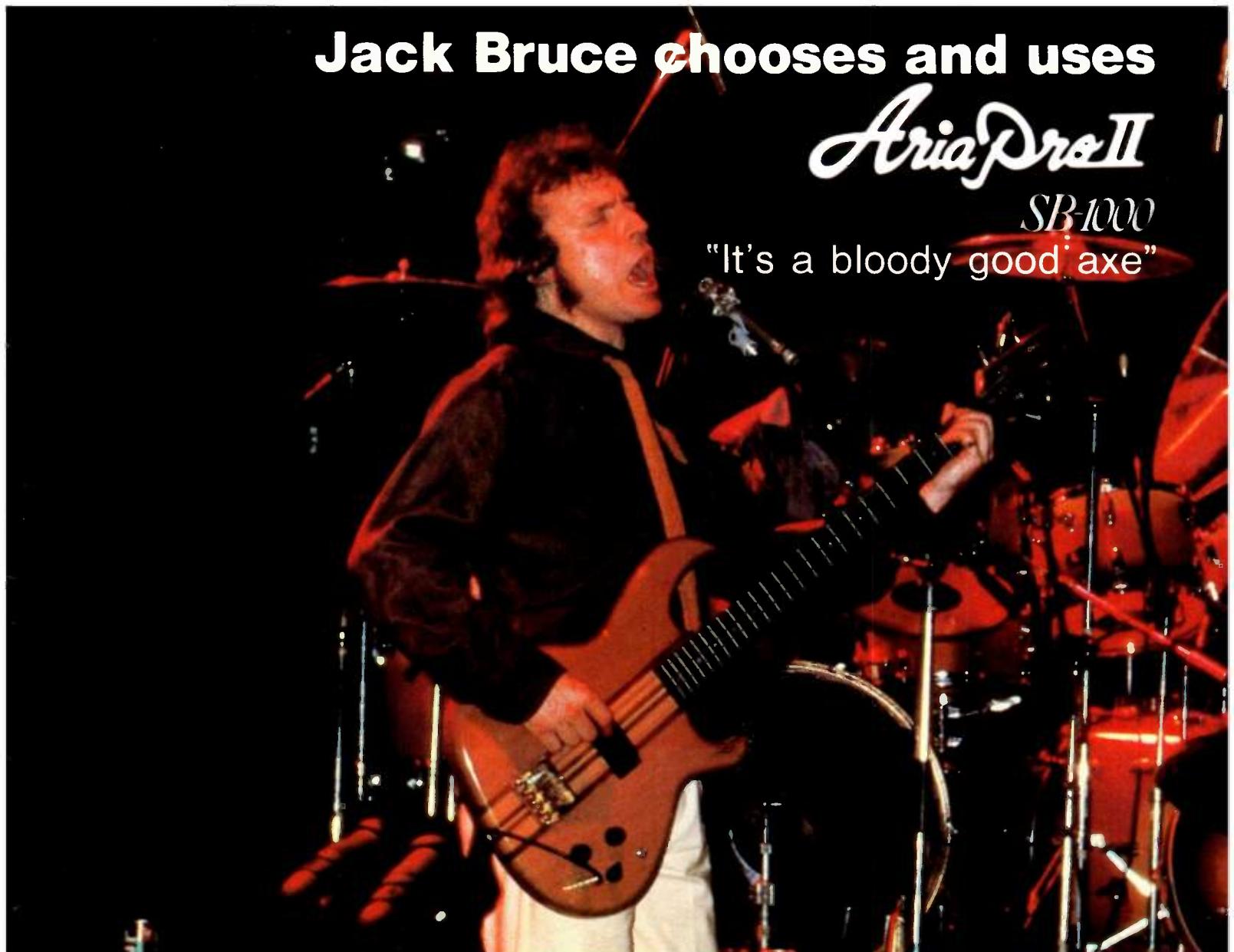
Of course, we cannot vouch for long term reliability nor for any improvement in performance that might result if the more expensive units were

Jack Bruce chooses and uses

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SB-1000

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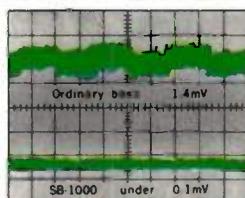
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housed in properly tuned enclosures, and of course, the JBL and ATC units are superbly made and presented, but once the back is screwed on the cabinet, you have only the sound and the hole in your pocket by which to judge the end result!

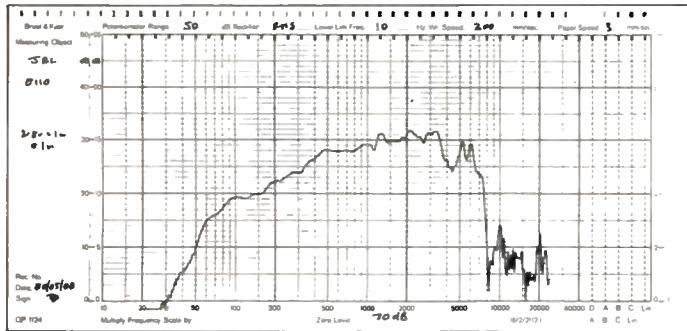
Besides cone loudspeakers, there has been a lot of activity recently on the compression driver front, with new units

coming onto the market from JBL, Electro-Voice, Emilar, RCF, Mega, Renkus Heinz, Gohlion, Peavey — and word has it that ATC have got something up their sleeves as well. So, for the next couple of months we shall be taking a third look at compression drivers to see what has been happening over the last 12 months.

JBL E110 Ser. No. 11518 (USA)

Parameter	Manufacturers' Rating	Test Result
Frequency Response	60Hz-8kHz	Useful to 8kHz (-12dB)
Sensitivity	98dB@1W@1m av. 500Hz-2.5kHz	98dB@1W@1m av. 400Hz-6kHz
SPL	Not stated	113dB(A)@75W@1m pink noise
Power	75W cont. sine wave 150W cont. program	Confirmed@75W RMS sine wave
THD	Not stated	6 per cent@75W RMS sine wave
Impedance	8 ohm*	6.5-20 ohm
Resonance	Not stated	75Hz in std. 50ltr enclosure

Also available in 16 ohm impedance



This is the first time that we have been able to include one of these new JBL 'E' series ceramic magnet drivers. The four spoked cast aluminum chassis is of particularly rugged construction, employing generous material thickness as well as additional bracing to ensure absolute rigidity.

When testing their "Strongbox" column system for strength, JBL found that while the cabinet stood up to being dropped six feet onto a concrete floor, the K110 chassis did not, and so the E110 has an

uprated and very nicely made chassis! It retains the familiar cropped, machined aluminum front rim of its predecessor and is still finished in black stove enamel.

The ceramic magnet is fairly large and is fitted with a black crackle finish rear cover and a black rubber tyre encloses the ceramic ring. The heavy-duty spring-loaded terminals are retained as is the system of venting through the rear of the magnet. A particularly lightweight, slightly curved cone is carried by a doped concertina

type linen suspension system of fairly high compliance and an alloy center dome is fitted over the 76 mm voice coil.

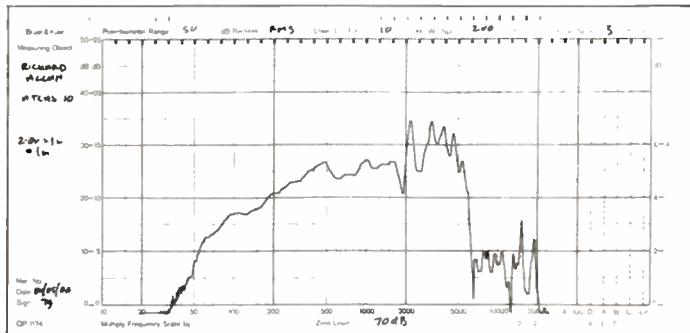
Performancewise, no problems at all, with the maker's specifications confirmed to the letter. Sensitivity is high and the sine wave power rating is confirmed at 6 per cent THD. Although the frequency

response is exceptionally wide, note that in common with other units tested, the E110 falls off rapidly at the lower frequencies and is 10dB down at 80Hz in our enclosure.

This certainly a very nice loudspeaker indeed, but I would not like to pay for fitting out a 4 x 10 cabinet with E110's on this side of the Atlantic!

RICHARD ALLAN Atlas 10 (UK)

Parameter	Manufacturers' Rating	Test Result
Frequency Response	80Hz-8kHz@ -10dB	Useful to 6kHz (-12dB)
Sensitivity	106dB@1W@1m @1.5kHz	96dB@1W@1m av. 400Hz-6kHz
SPL	118dB@100W@1m pink noise	114dB(A)@100W@1m pink noise
Power	100W RMS	Confirmed@100W RMS sine wave
THD	Less than 5 per cent @100w above 100Hz	4 per cent@100W RMS sine wave
Impedance	8 ohm	8.5-20 ohm
Resonance	58Hz + 2Hz free air	85Hz in std. 50ltr enclosure



These two loudspeakers are built on identical cast alloy chassis, which are of a particularly open four-spoked design. The front rim has the usual Richard Allan identifying features of protruding mounting lugs and a bright red felt gasket, and to facilitate front loading, a strip of adhesive gasket material is included in the packing.

While the chassis is of more than adequate strength to carry the comparatively modest magnet fitted to the HD10, I am not at all happy when it comes to support the massive magnetic assembly used for the Atlas 10. The

chassis thickness is not overgenerous and there are no bracing struts or re-enforcing ribs at all, and I would not expect the four spokes to remain intact after a cabinet had been dropped a couple of times.

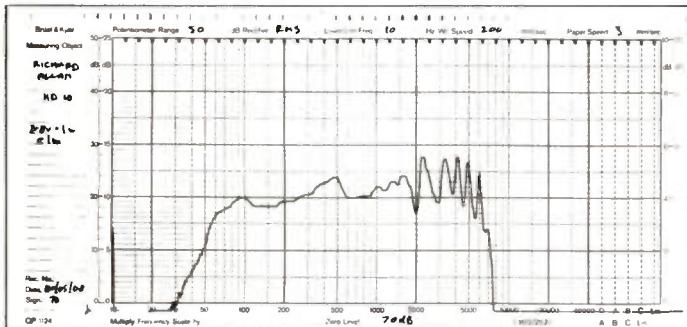
Massive is not an overstatement for this magnet — it is 180 mm (7") in diameter, 40 mm (1.6") deep and weighs about 8 kg (17 lb). The cones are surprisingly heavy and of a curvilinear profile, and both have treated cambric "concertina" type front suspensions. The HD10 has a 38 mm voice coil and is fitted with a chromed plastic center dome while the Atlas 10 has a 51 mm coil

Speakercheck

RICHARD ALLAN HD10 (UK)

Parameter	Manufacturers' Rating	Test Result
Frequency Response	Graph given	Useful to 7kHz (-12dB)
Sensitivity	94dB@1W@1m@1kHz	92dB@1W@1m av. 300Hz-6kHz
SPL	Not stated	105dB@50W@1m pink noise
Power	50W RMS	Confirmed@50W RMS sine wave
THD	Not stated	3 per cent@50W RMS sine wave
Impedance	8 ohm*	8.5-30 ohm
Resonance	45Hz free air	64Hz in std. 50ltr enclosure

*Also available in 15 ohm impedance (HD10 only)



and an unpretentious linen dust cover. But units are very nicely made to the usual high standard I have come to expect from Richard Allan, but I do wish that they would think of an alternative method of termination. The large plastic laboratory type screw terminals they have used for years really are cumbersome and are not at all suited to their purpose.

The Atlas 10 is the only unit submitted for testing with a full 100 watt RMS power rating and it complied with this at just 4 per cent distortion and no signs of stress. While the other parameters do not agree with the manufacturer's figures, they nevertheless represent a creditable set of figures, with adequate sensitivity, and a usefully wide frequency response characteristic that is not unlike that of the Fane Crescendo 10/60E and will probably have similar operating characteristics.

The Atlas 10 is at present being fitted to the Turbosound

2x10 midrange unit, so I presume that Turbosound are crossing over to take advantage of the "plateau" of flattish response between 400Hz and 1.6kHz which can be seen on the response curve — a feature not shared by the Fane unit. The HD10 also fully confirmed the maker's power rating, this time at just 3 per cent distortion at 50 watts, and although the sensitivity at 92dB is on the low side, this unit has one of the smoothest frequency response characteristics of any unit tested, and its output energy level is only 5dB below the mean at 70Hz.

This unit is obviously going to find application as a low/mid frequency unit, but care will be necessary in designing the enclosure as it is quite possible to "bottom" the voice coil on the back plate of the magnet under heavy transients of low frequency program material and the cabinet must dampen excessive cone travel by careful tuning.

These are both nicely made units with quite different performance characteristics. Both performed very well indeed, but the HD10 could usefully use a little more sensitivity if this could be achieved without sacrificing its superb response

characteristics. The Atlas 10 is in urgent need of a much more substantial chassis before I would want to throw it about on the road for very long. Those are my only significant criticisms.

FANE Crescendo 10/60E

Parameter	Manufacturers' Rating	Test Result
Frequency Response	80Hz-7.5kHz	Useful to 8kHz (-12dB)
Sensitivity	103dB@1W@1m	100dB@1W@1m av. 500Hz-5kHz
SPL	Not stated	116dB(A)@60W@1m pink noise
Power	60W RMS	Confirmed@60W RMS sine wave
THD	Not stated	6 per cent@60W RMS sine wave
Impedance	8 ohm	7-15 ohm
Resonance	90Hz free air	110Hz in std. 50ltr enclosure



This latest addition to the Crescendo 'E' series loudspeakers is built on an adequately ribbed and braced heavy gauge pressed steel chassis and is fitted with a very large ceramic magnet assembly. Gaskets are fitted for front or rear mounting and a business-like finish is provided by a sand textured black stove enamel treatment to the chassis and a chrome plated rear cover to the magnet. Termination is by a pair of color coded plastic spring-retaining terminals. A straight, very lightweight, ribbed cone is carried by a stiff, treated paper front suspension and is fitted with a vented alloy centre dome. It is altogether a very nicely made and presented loudspeaker and has a look of

substance about it.

As might be expected with a free air resonance of 90Hz, the 10/60E does not produce a great deal of low frequency energy, and its frequency response characteristic, with its present peak, indicates to me an application for lead guitar and the like rather than for PA or other wide band uses. It is easily the most sensitive 10-inch unit we tested and has a good sharp response right into the treble regions and should produce a very bright, brittle guitar sound with plenty of bite at high volume levels.

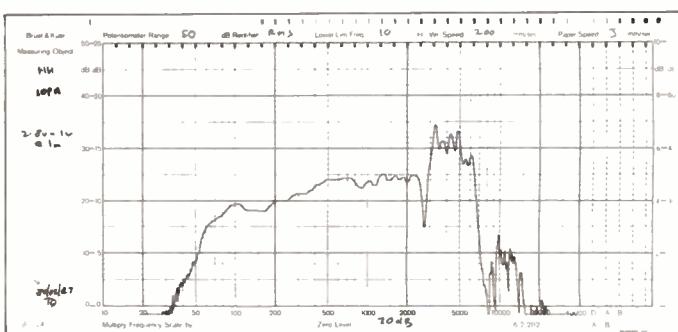
The 60 watt power rating is confirmed at 6 per cent THD — which is mainly due to odd peaks rather than to a continuous presence of har-

monics. The unit seemed particularly happy in our enclosure and THD below 150Hz – usually the problem area, is unusually low. This is without

doubt a very useful unit, very well made and presented, but getting towards the expensive side due to the large magnet fitted.

HH ACOUSTICS 10PA (UK)

Parameter	Manufacturers' Ratings Test Result
Frequency Response	50Hz-8kHz
S4dB@1W@1m av.	Useful to 7kHz (-12dB)
400Hz-7kHz	
SPL	Not stated
Power	50W unqualified
THD	Not stated
Impedance	8 ohm*
Resonance	60Hz free air



These brand new loudspeaker units were developed specifically for use in the new HH Electronics Performer range of amplifiers and loudspeaker cabinets and are now available as separate components. The fact that they were intended for incorporation into a manufactured product rather than specifically as a component loudspeaker for over-the-counter resale is somewhat confirmed by the very utilitarian finish and by the very basic, pressed steel chassis, but as large magnets are not used, the strength and rigidity is adequate for the purpose.

Soft foam plastic gaskets are fitted for front or rear cabinet loading and termination is by a pair of solder tags on a Paxoline panel. Both models have a fairly lightweight, ribbed cone, but the 10G has a doped

paper surround and is fitted with a silver sprayed linen dust cover while the 10PA has a linen concertina type of front suspension and an alloy center dome. The baffle hole required for front loading is particularly small for a nominal 10-inch chassis, and is in fact only 3 mm larger than that required for the ATC nine-inch chassis.

From a performance aspect, the 10PA presented no problems at all, with good sensitivity for a general purpose 10-inch unit, a usefully smooth frequency response and low distortion at full rated power – all in exact agreement with the manufacturer's published specifications in fact and quite suited to its intended application. Generally, the same can be said of the 10G with the exception of the presence of an alarmingly high level of third harmonic distortion below

about 150Hz which reaches 100 per cent at 70Hz and 130 per cent at 50Hz!

Above 150Hz, the THD is generally lower with an average value of about 6 per cent, but even this includes an odd peak of 10 per cent which coincides with the dip in frequency response shown on the published curve at just below 2kHz. This problem could either be due to our sample being faulty in some – although in all other respects it seems to be fine, or to the unit not being happy in our test enclosure, but even this would not normally produce the effect shown here. Another peculiarity is that our in-cabinet resonance is only 5Hz higher

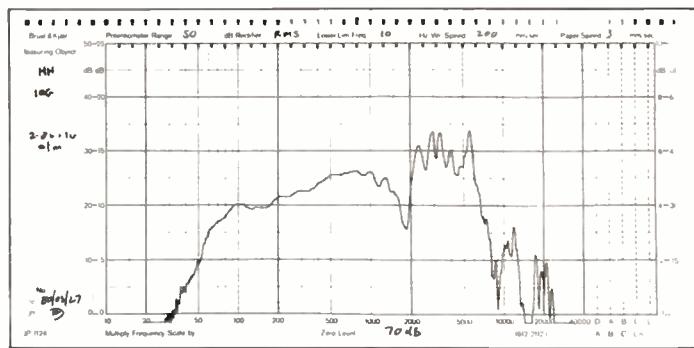
than the published free air figure. There is without doubt something odd about this particular unit, but I would not want to go any further without making further tests.

Although the presentation is in basic OEM form, these units are nicely made and generally have performance characteristics that are in exact agreement with the maker's figures and well suited to the intended application. There is however the question mark hanging over the 10G as to whether the high levels of third harmonic distortion are inherent due to a design shortcoming or to a problem with our specific sample, and this we cannot answer at this stage.

HH ACOUSTICS 10G (UK)

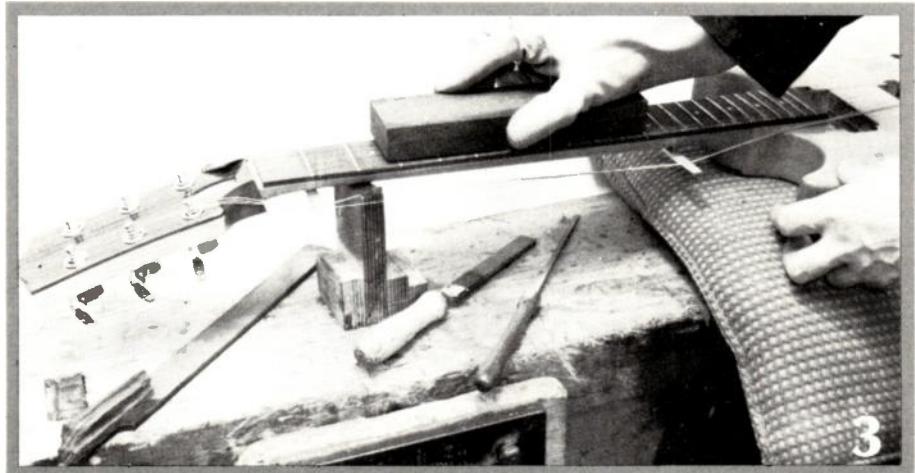
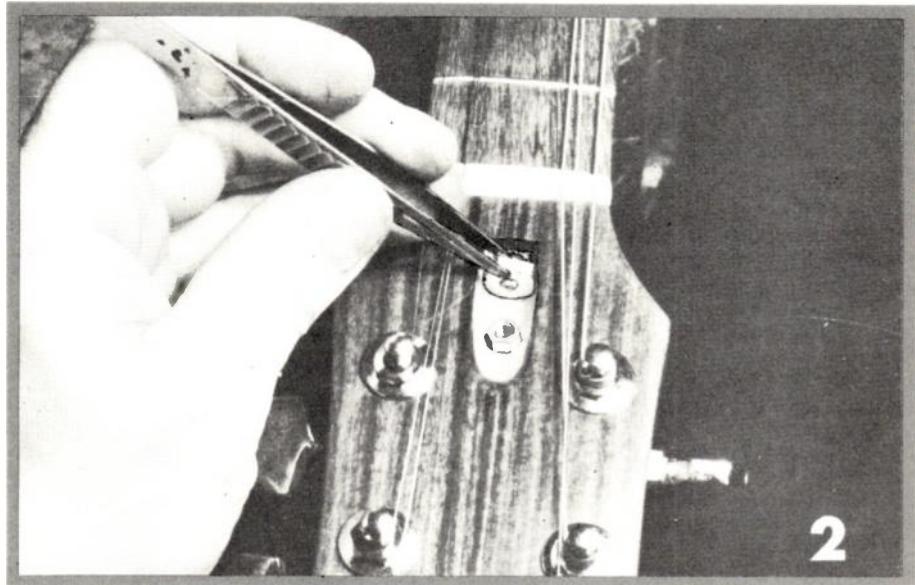
Parameter	Manufacturers' Rating Test Result
Frequency Response	50Hz-6kHz
Sensitivity	95dB@1W@1m
400Hz-6kHz	95dB@1W@1m av.
SPL	Not stated
Power	50W unqualified
THD	Not stated
Impedance	8 ohm*
Resonance	80Hz free air

*Also available in 4 and 8 ohm impedances
Baffle hole diameter for front mounting: 215 mm



Final Assembly- Part 19

This chapter deals with the final assembly work on your instrument. After this, it is complete in its basic form. Although certain modifications such as phase-change switches or coil taps are certainly possible, I intend to cover these in future articles which will also deal with similar modifications to commercial production guitars. The wiring arrangement described in this chapter corresponds to the standard control system on the more common Les Paul guitars, and other similar instruments. It has certain limitations but the usual re-arrangements to overcome these limitations have problems of their own. I feel the original (and by now, classic) system is probably the most useful unless one is willing to be involved in quite sophisticated electronics. I shall be happy to describe several active mixing and tone control systems which I have found moderately successful, if there is a demand, but I feel this also is beyond the intended scope of the present DIY Guitar series.



Part 18 left the guitar strung up but without a truss-rod adjusting nut. This is quite intentional. I usually leave guitars (but not basses) in this state for a week or two before fitting and/or adjusting the truss-rod nut and washer. The neck usually pulls forward a little, giving the adjusting nut something to work against, so that it will not shake loose, or need frequent re-adjustment. There is quite a large amount of fitting work required to complete the instrument. Most of it can be covered more efficiently with the help of a series of photographs. Photo 1 shows the completed guitar, needing only strap buttons and a cover plate for the truss rod adjustment

on the head.

Photo 2 shows the truss rod adjustment nut and washer. The nut has been described earlier; it is an M4 by 0.7 full depth brass nut, filed down lightly on all six flats until it measures $\frac{1}{4}$ inch across opposite flats (or until it just fits a $\frac{1}{4}$ A.F. tubular spanner). It will then fit Guild and Rickenbacker neck adjusters. The washer is filed from a 2mm to 2.5mm slice cut from hard brass bar. It is roughly circular, with a flat, like a letter D, and has a 4.5mm hole for the truss rod. You will appreciate that this makes a very stiff washer. The usual kinds of shop-bought brass washers are unsuitable.

The neck will probably have about 1mm forward bow, with strings tuned up but no rod adjustment. You should reduce this to between $\frac{1}{8}$ and $\frac{1}{4}$ of 1mm. You can check the bow by holding first and/or third strings (under normal tension) onto the first and last frets. Look at the clearance between the string and the frets in the middle of the neck.

Photo 3 shows the process of "stoning" the frets, with a little oil and an accurate silicon carbide (Carborundum) sharpening stone.

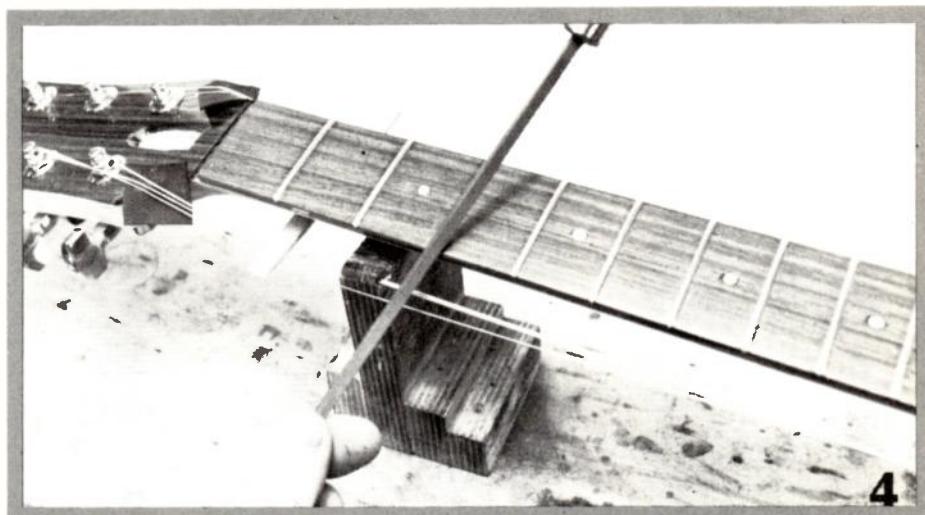
Photo 4 shows a fine Swiss file being used for trimming the fret ends. There is no trick to this. It just requires very careful work trimming and rounding the ends, without nicking the edges of the fingerboard.

Photo 5 shows a final fret de-burring, and removal of bits of debris from the fingerboard. There are many ways of finishing a fingerboard. On lacquered ones, I use Superfine Scotchbrite abrasive plastic mesh. A similar product is sold for cleaning kitchenware, but it may be only 'fine' grade. It works as well, but leaves more obvious scratches in the finish. You can polish a lacquered fingerboard with the same mops and compounds used for the body. You will need help to hold the guitar firmly. It is easy to "catch" the fingerboard edge on the rotating mop.

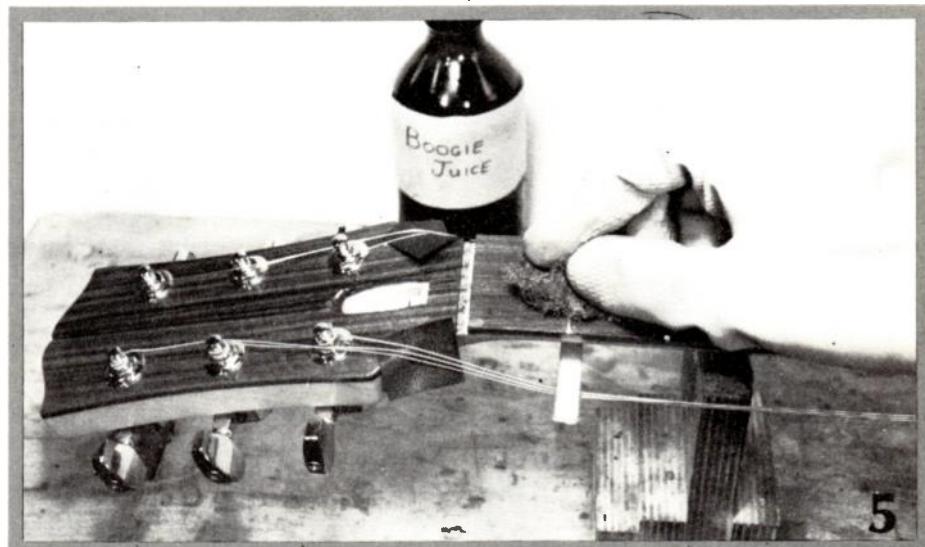
For bare wood fingerboards, I prefer to use 000-grade steel wool and "Boogie Juice", I would not recommend the use of Teak Oil, but I suppose you could use Raw Linseed Oil. I find that it tends to go a bit sticky after a while, unless you polish it off very carefully. "Boogie Juice" penetrates the wood, and does not leave a sticky residue, as long as you wipe off any obvious surplus. You should, in any case, take care to remove all traces of steel wool. It is equally bad for fingers and pick-ups. Rubbing the steel wool along the length of the fingerboard is easier and gives a better appearance. Rubbing across the fingerboard gives a better playing feel.

The control cavity and back plate recess are painted with Condec H104 screening paint (conductive paint). This is made by Electrolube. (Electrolube Corp, 155 Michael Drive, Syosset, NY11791, USA) readers may obtain screening kits from 'Stars Guitars'. The "Stars" paint is very good and dries faster, but it gives off unpleasant fumes. The Condec paint has the considerable advantage that if you spill any of it on the guitar's lacquer finish, it will usually just wipe off without damage. Also I would rather breathe water vapor than MEK vapor.

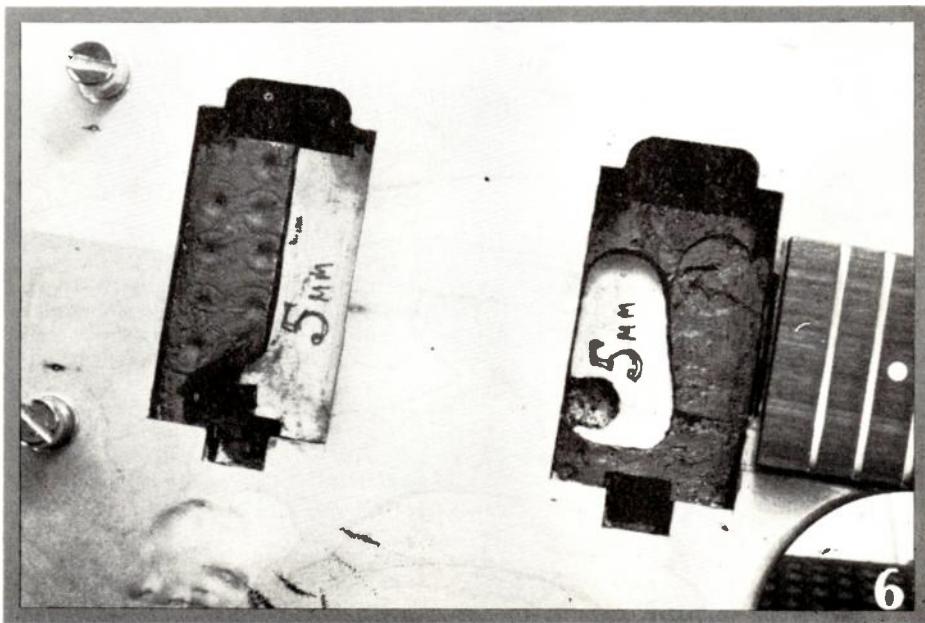
Photo 6 shows the same screening paint applied to the pick-up recesses. The areas marked "5mm" are also painted, but have



4



5



6

been covered with masking tape so as to show clearly on the photograph. You will only need to deepen the holes here, if you *later can not* lower the pick-ups enough to clear the strings adequately, for the string action which you wish to use. (If you do remove any wood, you should make good the screening paint). When the paint is dry, you can fit the electrical controls and then the pick-ups. The jack socket will need a spiked washer inside the body and a smooth washer on the outside. The pots will need smooth washers and also a small *shallow* hole on the inside of the body to take the projecting tab on the pot body. Take great care not to drill right through to the front of the guitar. I suggest a metal tube over the drill leaving only 2mm projecting. Alternatively, you could bend the tabs over and use spiked washers on the inside. A radio or amp repairman should be able to supply a few old washers from discarded worn-out pots. The switch can easily be held to prevent it from turning as you tighten the fixing nut, and will not need a spiked washer. In any case there is usually not enough thread to allow for fitting one. Hold the block by the solder-tags only, not the contact springs, which are easily bent out of alignment. Some switches have a stiff action. Apply just a smear of grease to the plastic operating lever between the ends of the contact springs. If the switch still does not work properly, take it back to the supplier for adjustment or replacement. Do not try to adjust it yourself unless you are willing to spoil one or two switches learning how to do the job. Some of these switches are fitted with a tubular, recessed nut for fixing to thick panels, but I have one sample which has only an ordinary nut and cannot be fitted to this guitar.

Alternative nuts should be obtainable, but in case anyone else has the same problem, I will describe the special nut which I made from a scrap of Light Alloy bar. You will need the use of a lathe and threading tools, or you could ask an engineer to make you one, together with a simple pin-spanner for turning it. The exact size of the thread on the switch is a little uncertain. I bored out the nut to 11mm and increased the depth of the internal 32 tpi thread until the switch screwed into it smoothly. Considering the small load and the depth of the thread, this seems satisfactory, although it would probably make any decent engineer wince. The end result both works and fits better than the commercial item. With either the home-made or the factory-made version, you should have no difficulty fitting the switch in place.

Photos 7 and 8 show stages in the wiring of the system which I have suggested. If you prefer other arrangements refer to Part 12 or wait for later articles on fancy wiring arrangements.

Photo 7 shows stage one. As the cavity is screened, you can use ordinary plastic insulated wire for the internal connections. The thick wire passing above the the switch joins the bridge to the switch frame. This also links to the back of the nearest pot. Photo 8 shows

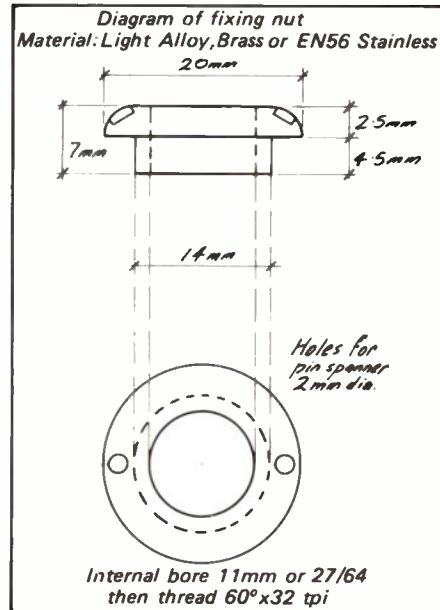
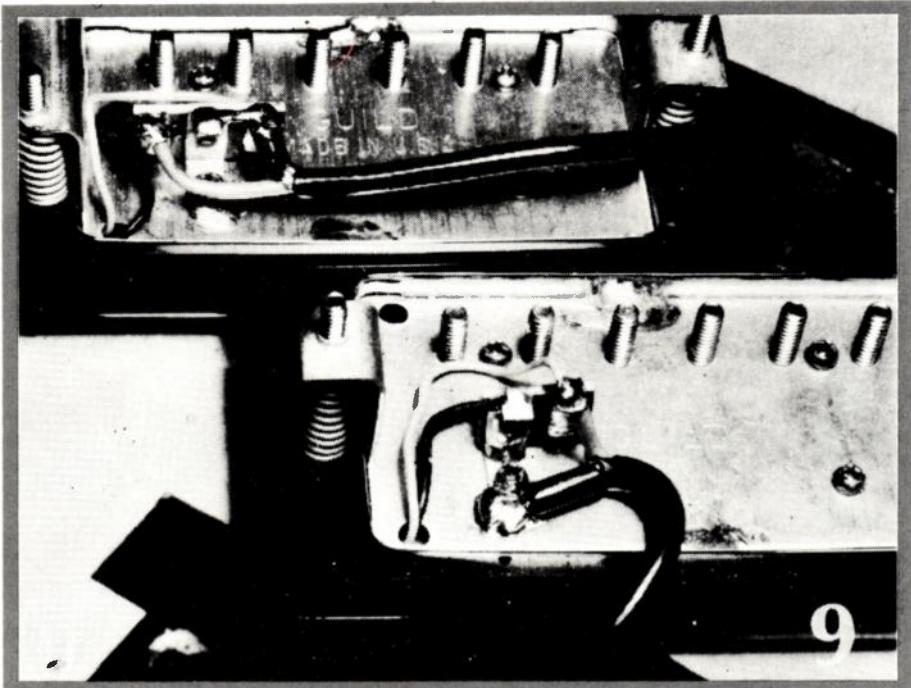


stage two. I have covered most of stage one wiring with a piece of card, so that you can see better in the photograph. The numbers indicate the sequence of connecting wires. Wire number one is soldered first to the linked tags on the switch. The other connections should be visible from the photograph, but they are also detailed in Part 12. Only the pick-up wires require screened cable because they pass through part of the body not lined.

Photo 9 shows the connections to the

Guild pick-ups. Note the tops of the tags folded over and the cable soldered to the base of one tag on the fingerboard pickup. It is not essential to do it this way, but it makes the cable point in the right direction for easy fitting of the pickup. Other makes of pickup may already have wires attached. Also the following fitting instructions may not exactly apply. Solder a thin copper wire to the switch frame or to the back of one of the pots. Loop it through the wiring channels, and fasten it

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onto the surface of the screening paint in the two pickup cavities with very small washers and countersunk screws. Put a dab of paint over the top of each connection.

Before wiring in the pickups permanently, put them in their places, with the wires attached, and fed through to the control cavity. Adjust the strings to a 1.5mm "Treble/2.5mm Bass" action, or lower if you prefer it. Lower the pick-ups in their surrounds until the pick-up covers clear the strings by about 1.5 to 2mm when the strings are fretted at the highest fret. If the pickups won't go low-enough, check for obstructions looped wires and, if necessary, deepen the recesses where indicated in photo 8. Replace screening paint and allow to dry. Refit pickups. Make sure the strings are lined up correctly at the bridge and nut. Set the pickups with their polescrews under the strings, if necessary, favoring the top strings where screw spacing and string spacing do not quite agree. Prick through the surround mounting holes into the guitar front. Remove the pickups, drill proper pilot holes, and then screw the surrounds and pickups into place. Take care not to place the pickups on any important lacquered or polished surface, even face down. The mounting brackets and sometimes the pole screws have sharp burrs, which will scar a good finish. With the pickups in place, you can turn the guitar over, cut the ends of connecting wires to length (leaving a generous surplus for possible reconnections at a later stage), and solder the connections. The screening braids go to the back of the volume pots or to the pot tags linked to the metal cases. You can use whichever is most convenient. The center conductors of the pickup wires go to the pot tags at the opposite end of each group of three (these tags are also connected to the tone controls. The centre tags of the volume controls connect via short wires to the switch).

Your guitar should now be working. Cover the back plate with screening paint, or glue and metal foil. Let it dry, and screw in place. Make pilot holes for the screws if you have not already done so. You will also need to make a cover for the truss rod nut.

I hope you have enjoyed making this guitar, and that you will let us know if you have any outstanding successes or disasters.

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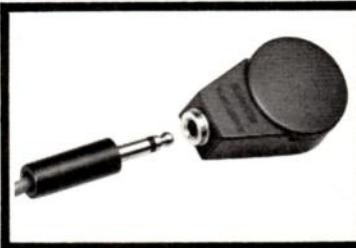
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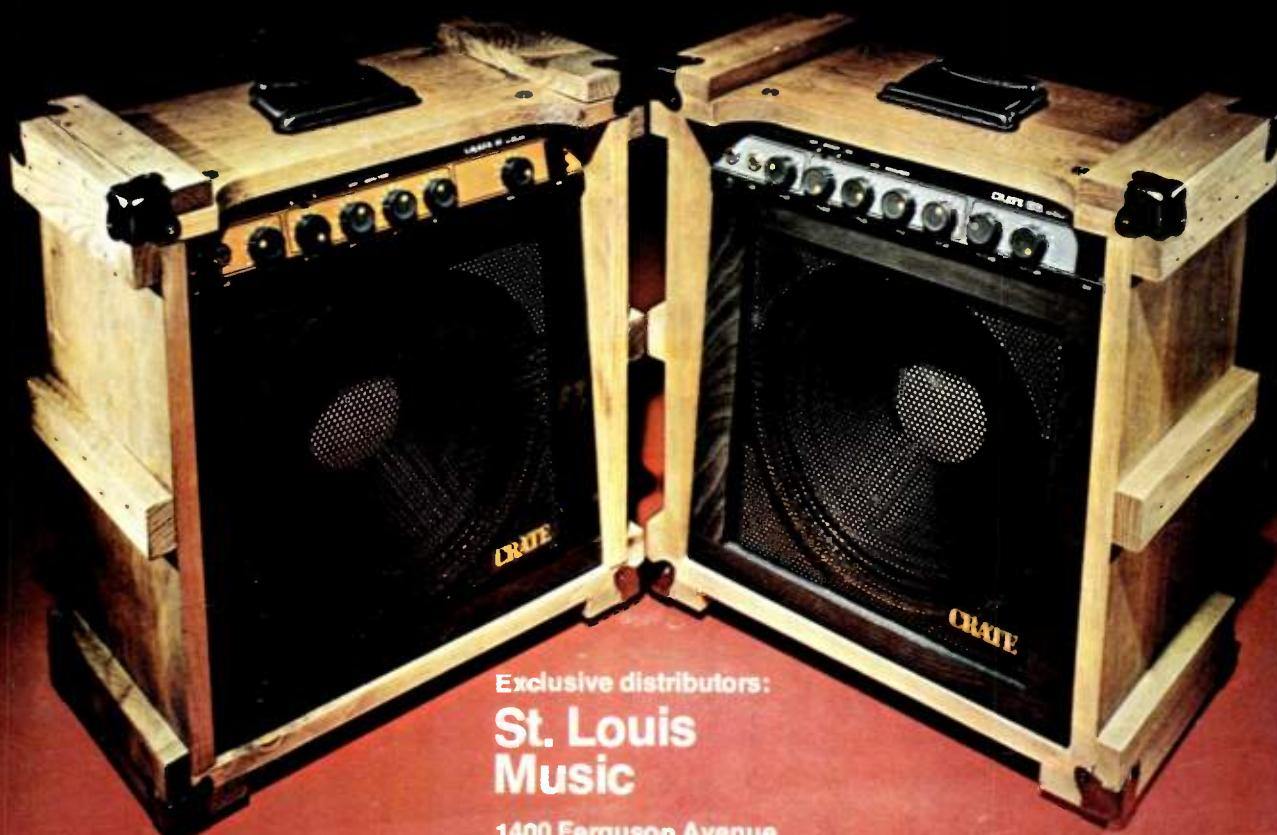
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