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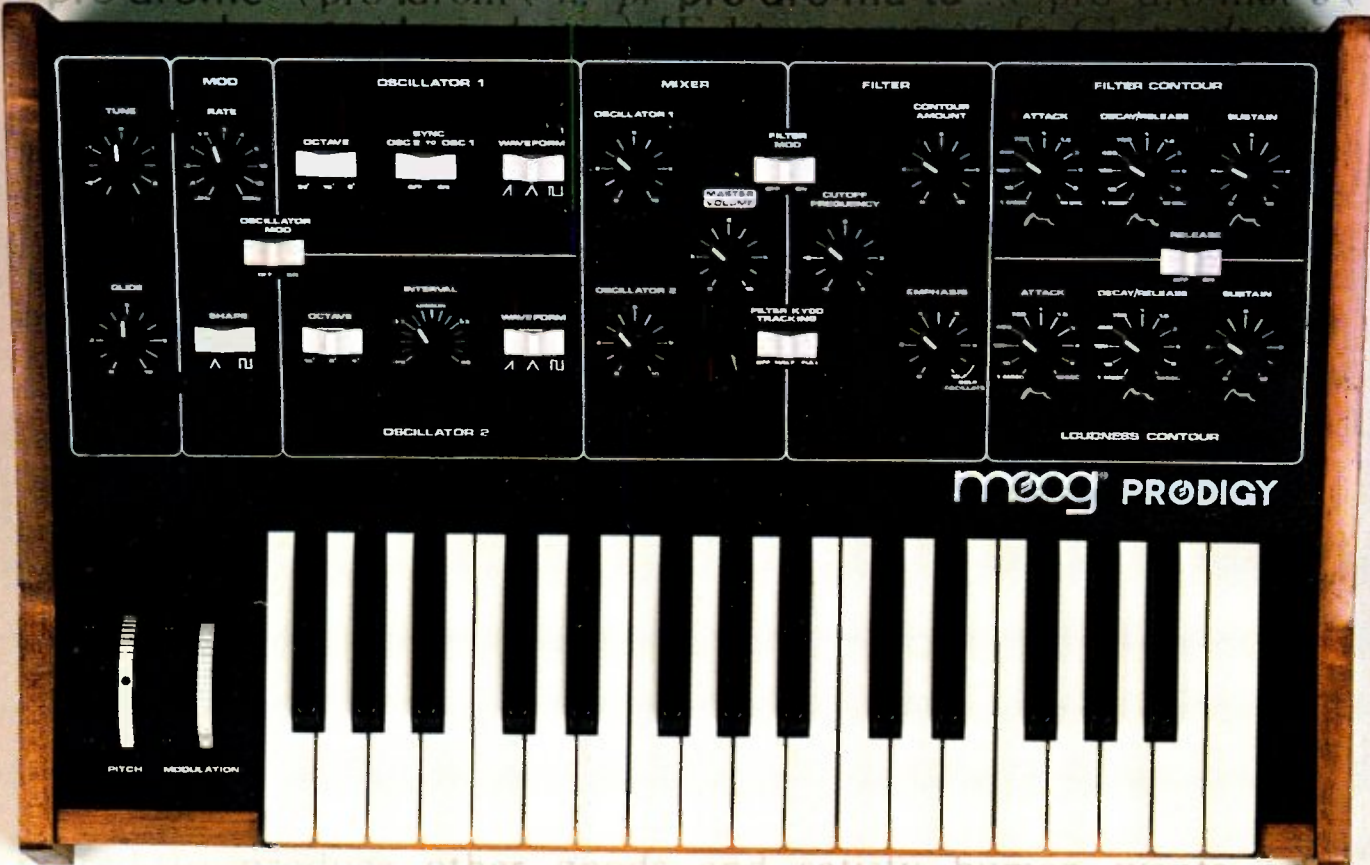
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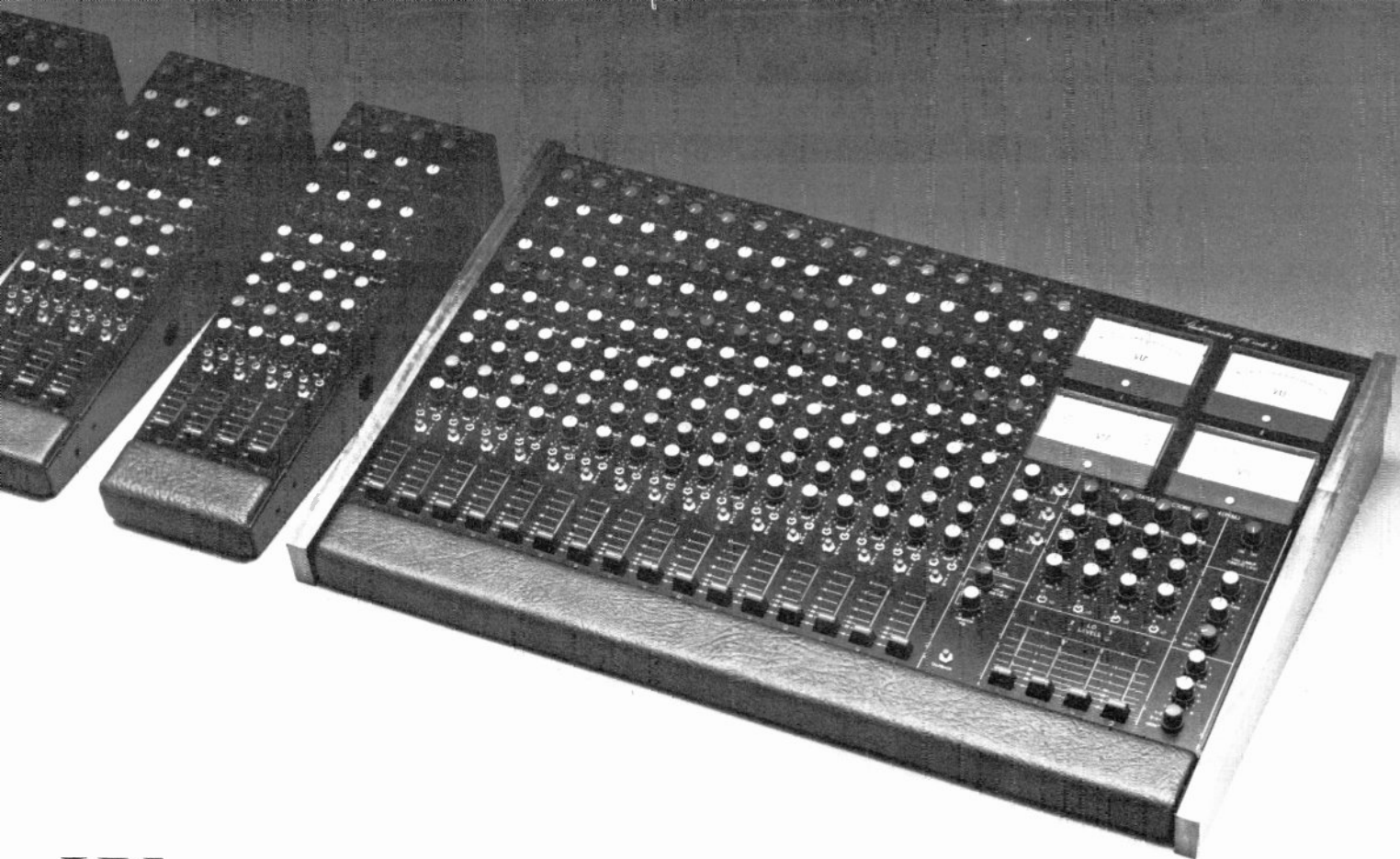
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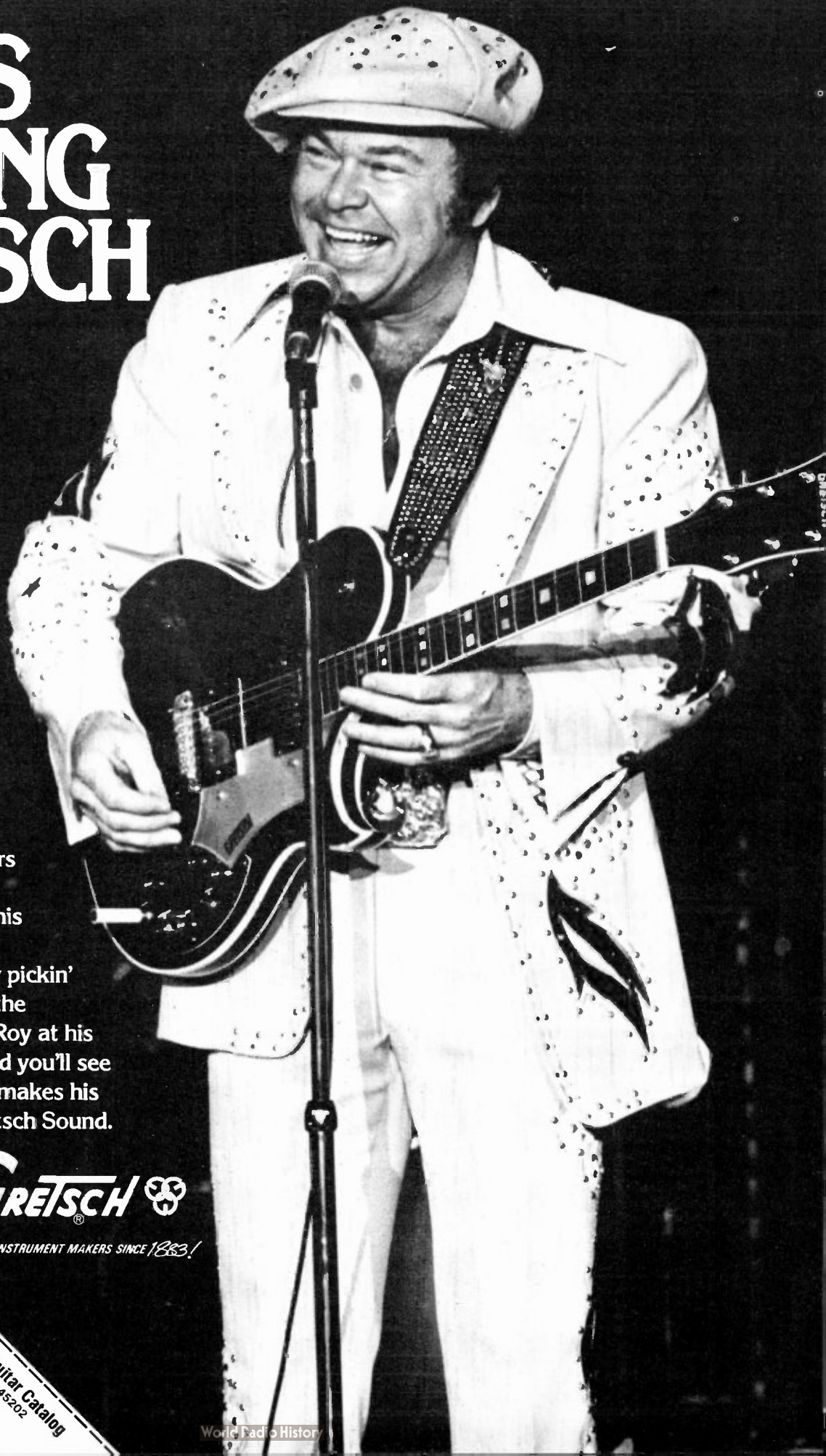
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# On Drums: Chester Thompson


I would like to discuss the subject of coordination or independence, rather than talk a lot about it. I will give a few examples of things to do that might help you to come up with your own exercises.


You can explore simple things in ways that are different from the way you would normally play. A good starting point is triplets:

Note – Hi-hat is played on 2 and 4.


A.)


Ride cym: 


S.D. 

B.D. 


B.)


Ride cym: 

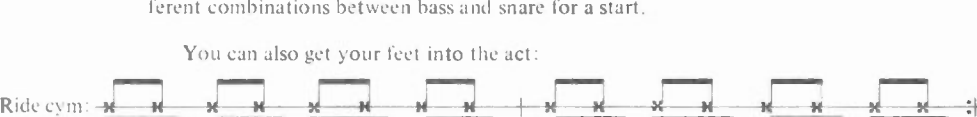
S.D. 

B.D. 

C.)


Ride cym: 


S.D. 

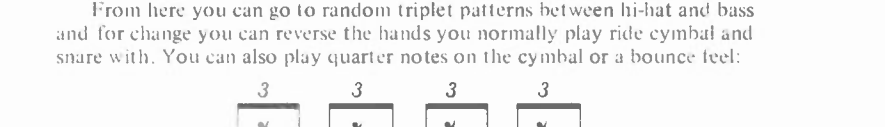
B.D. 

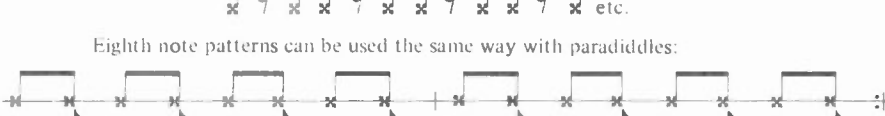
You can come up with your own variations between other drums or different combinations between bass and snare for a start.

You can also get your feet into the act:

Ride cym: 

H.H. 

S.D. 

B.D. 

From here you can go to random triplet patterns between hi-hat and bass and for change you can reverse the hands you normally play ride cymbal and snare with. You can also play quarter notes on the cymbal or a bounce feel:



Eighth note patterns can be used the same way with paradiddles:

Ride cym: 

H.H. 

S.D. 

B.D. 

Combinations of triplets and eighth or sixteenth notes can help keep it interesting:

Ride cym: 

H.H. 

S.D. 

B.D. 

All of these exercises should start slowly and gradually increase in speed until they can be played smoothly at a very bright tempo.

Now make up your patterns but remember they won't be effective if you only use patterns that you can already easily play. These are only examples of countless possibilities.

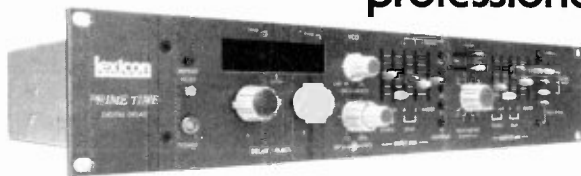
As far as I am concerned some part of every practice session should involve trying something new and difficult. When you are at a loss for what to do you can always take something familiar and play it backwards. That is play it left-handed if you normally play right-handed and vice-versa.

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## On Sax and Flute

Alan Holmes



The sax is the ultimate solo instrument. What other can vary its pitch, vibrato, volume, attack and tone in the space of a single note? A semi-tone of pitch and vibrato, instant change from a whisper to a shout, quiet breathiness to explosive bark, dove-like cooing to angry rasp, all at immediate command.

Whatever the brain can conceive in expression the sax can interpret faithfully and is rivalled only by the human voice in its musical ability to convey human emotion. The musical sentences between breaths are copied by keyboard and guitar players who have no need of breath but leave gaps as if they do, a habit which started with the influence of a sax player called Charlie Parker who changed the course of music and opened up solo possibilities used by many of today's players who have never heard of him but copy his licks nevertheless, at second or third hand.

Until guitar players like B B King and his copier Eric Clapton started bending their light gauge guitar strings, the pitch bending possibilities of the hawser-like Gibson Sonomatics were almost nil without the Bigsby vibrato tailpiece and without which Duane Eddy would have had no twang at all.

Keyboard players were without any bendiness until synthesizers with pitch bend wheels came along, even then it took some time until players like Chick Corea and George Duke found out what to do with them. These devices helped to imitate some of the dips and swoops of the sax in the hands of artists like Johnny Hodges, but subtleties of breath controlled expression are too complex to be synthesized.

Recording offers the ultimate in sound control so far as tone goes, but the sound still has to come out of the sax first before anything can be done. If the control and expression are not there, then no amount of knob twiddling can compensate. Because the sax is so expressive, it becomes open to abuse, rather like a violin in the hands of a stone deaf performer. The possibilities of bending the pitch also make getting back to the right pitch very difficult if a pitch centering is not programmed into the subconscious. The pitch tendencies of the saxophone are generally toward sharpness at the top and flatness at the bottom, depending on the performer's choice of instrument, reed and mouthpiece. So a vital process is the development of corrective lipping to compensate for the otherwise unacceptable degrees of sharpness or flatness. This practice can only really be done against a keyboard instrument, as other wind instruments all have their own tuning peculiarities.

*Continued on page 144*

*Alan Holmes is a top British session reedman who plays soprano, alto and tenor saxes, flute and alto flute, piccolo, oboe, clarinet and cor anglais. He played on the Beatles' Sgt. Pepper album and for four years he was a member of the Kinks. He now leads his own jazz-rock group.*

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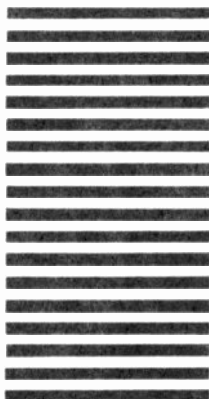
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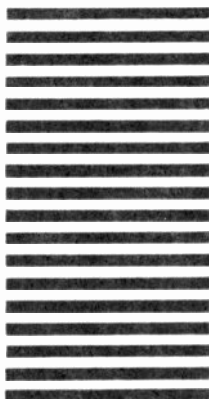
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- c) Means of preventing earth loops.

**2) What is EQ?**

- a) Extra Quality
- b) Equalization
- c) Equal energy per octave

**3)What is Snake?**

- a) Multi core
- b)Mains cable
- c)Guitar leads

**4)What is Talkback?**

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**INPUT CHANNELS** The 16 input channels each accept balanced or unbalanced inputs in the range 600 $\Omega$ m to  $\pm$ 15dBm. Input impedance is greater than 5k ohms optimum source impedance is 200 ohms. The equaliser provides  $\pm$ 16dB at 10kHz,  $\pm$ 16dB at 400Hz to 8kHz, continuously variable,  $\pm$ 16dB at 30Hz to 300Hz, continuously variable. There are separate level controls for sends to Foldback (prelate) and Echo 1 and 2 (postfader). Routing to the 8 output groups is selected by four push button switches, each one selecting left and right sides of the output to a pair of outputs. A FFB push button selects that channel to be read on the PFM meter. This allows the signal in the channel to be read on meter 8, and to be listened to 'solo' on the monitoring system.

**OUTPUTS** The eight output groups, as selected from the individual channel routing, represents the eight sends to the eight track tape recorder. Each group has its own fader, followed by a line amp with 10dB gain feeding the line out sockets on the back panel of the desk. The other outputs are the two Echo (effects) sends. (i) The foldback send (which may be used to drive a power amp or up to 10 pairs of 600 ohm phones directly). (ii) And the Monitor (loudspeaker) sends (to drive external power amps or 1 pair of 600 ohm phones).

**MONITORING** A stereo loudspeaker mix is derived from the eight monitor channels situated directly above the group output faders. Each channel may be selected to monitor either the group line out or the sync/playback return from the tape recorder (the signal presented at the line in sockets at the back panel). The meters follow this selection. A Foldback signal may also be derived from each monitor channel. These facilities allow the loudspeaker mix and the Foldback mix to be derived from either tracks being recorded or tracks already on tape. The loudspeakers may also be selected to be fed from the PFM system for channel checking. In this mode, meter 8 is switched to read the level in the PFM out, and from that level in the individual channels.

**TRACK STATUS SWITCHES** These switches have two positions - (i) Record, in which the desk operates as previously described. (ii) Remix, when the playback returns from the 8 track recorder are routed through mic channels 1 & 2. Outputs 1 and 2 are converted to remix groups and are sent to the two track (stereo) line outputs on the back panel. A stereo tape recorder may be left connected to these outputs in order to record the final re-mixed stereo program.

**AUXILIARY FUNCTIONS** 1. Echo Returns. These may be panned across consecutive odd and even numbered pairs of output groups of the monitors. 2. Oscillator. When activated, the oscillator output is sent to all output groups for lining up purposes. The signal is a 1kHz low distortion sine wave. 3. Talkback. A back panel female socket (XLR) is provided to accept a low impedance mkr which, along with a volume control and a conveniently placed button, allows the soundman to talk to Foldback.

**LEVELS** The 16/8 operates basically at the studio line level of a +4dBm (about 1.2v). Certain facilities have been included to allow it to operate successfully at other levels (i.e. 0dBm or 10dBm).

**CONNECTIONS** Mic inputs are D25 (female XLR) type, wired 1. Earth, 2. In Phase, 3. Out phase, line inputs are mono jack sockets, line outputs are mono jack sockets, echo send and returns are mono jack sockets, foldback sends are stereo jack sockets for direct headphone connection, or D3M (male XLR) wired 1. Earth, 2. Signal for connection to a power amp or headphone distribution system, monitor outputs are via two D3M's wired 1. Earth, 2. Signal for connection to a stereo power amp, and a stereo jack socket for direct monitoring on 600 ohms by the soundman, talkback input is D3F wired 1. Earth, 2. Signal, power input is via a multiple connector and requires a positive and negative supply of 15 volts each capable of supplying at least 750mA and an earth connection.

**EXTERNAL POWER SUPPLY** The power requirements of the mixer are supplied by an external power supply in order to avoid the possibility of induced hum from an internal transformer. The unit supplied with the 16/8 will produce in excess of 1500mA and hence will support a number of additional input channels.

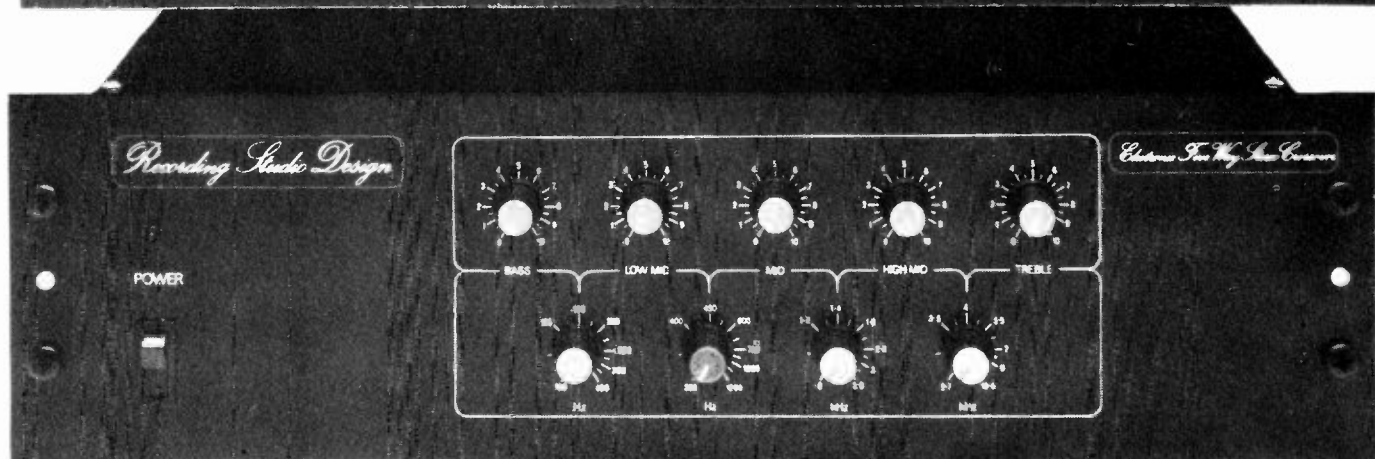
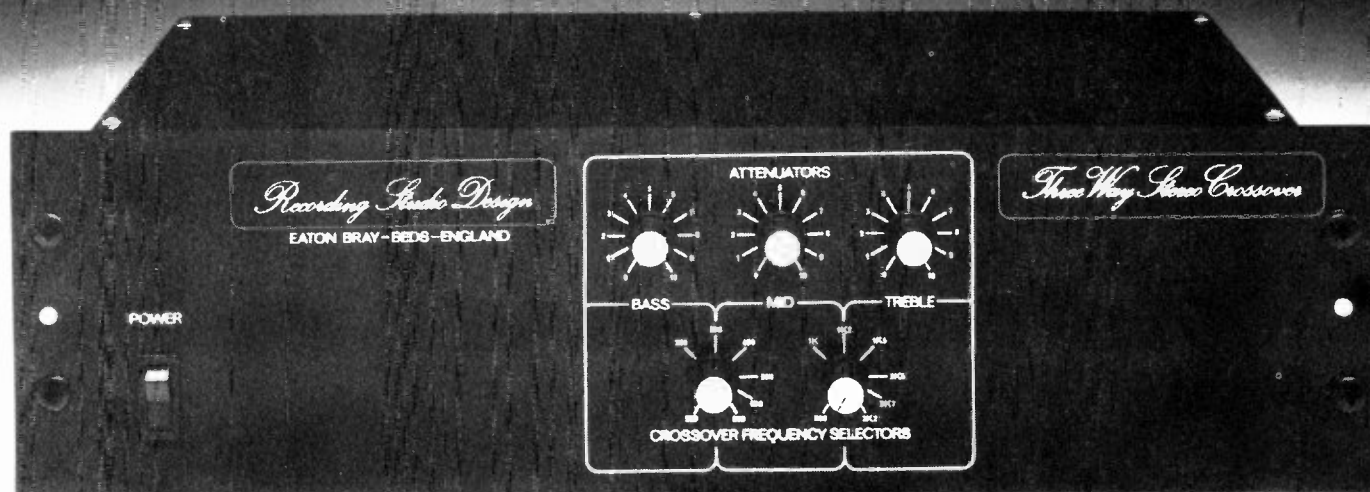
**SPECIFICATIONS** Inputs - Maximum gain +60dB, minimum gain 15dB, headroom  $\pm$ 20dBm, input impedance greater than 5k ohms, optimum source impedance 200 ohms. Equalisation - Treble  $\pm$ 16dB at 10kHz, mid  $\pm$ 16dB at 400Hz to 8kHz (continuously variable), bass  $\pm$ 16dB at 30 to 300Hz (continuously variable). Outputs - Gain after fader  $\pm$ 10dB, output impedance less than 10 ohms, minimum impedance 600 ohms (except Foldback - 8 ohms), maximum output level  $\pm$ 20dBm. Meters - 0 VU  $\pm$ 4dBm. Line inputs - Preset to level of +4dBm, will accept down to 10dBm. The following applies from a mic output to a line output with eq flat - 1kHz distortion (THD) at  $\pm$ 4dBm less than 0.15%, 1kHz THD at  $\pm$ 20dBm less than 0.15%, maximum gain through mixer  $\pm$ 70dB, maximum input level before clipping  $\pm$ 35dB, equivalent input noise (200 ohms input register, 16 7kHz 6dB/oct filter giving 20kHz effective noise bandwidth) less than 125dBm. Signal to noise ratio, line output faders down 90dB. Line output fader normal, channel faders down 88dB. One mic channel at 40dB gain 84dB, four mic channels at 40dB gain 80dB, sixteen mic channels at 40dB gain 72dB.

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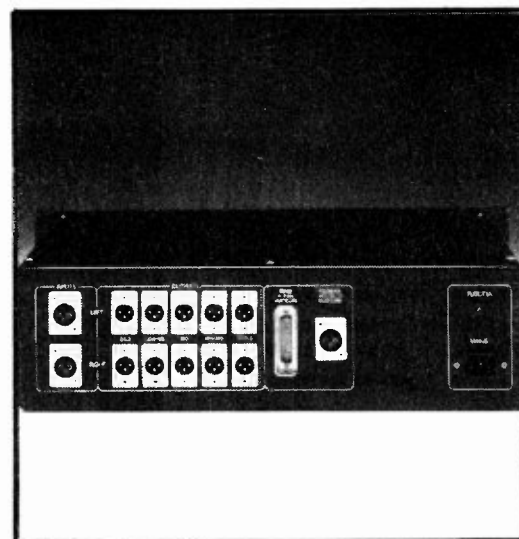
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“P hew!” breathes Donna Sue McLinton, a strikingly attractive woman who’s holding her nose as husband Delbert wolfs down a pre-concert meal of sardines in their New York hotel room.

“No groupies are gonna come around you tonight!” she jibes. Turning to me she adds, “People ask me how I keep the women away from Delbert. I tell them I just feed him sardines an hour before the gig.” She laughs heartily.

Delbert pays her no mind. He silently continues munching on one of life’s fishy treasures and finishes the entire can (at this hotel it’s BYOS — bring your own sardines). “There,” he says winding up not-your-everyday meal of sardines, crackers and Perrier. “Let’s talk.”

With probably a taco and chili dog-filled adolescence, Delbert McLinton was born in Lubbock, Texas, home of another rock & roll singer. He never met Buddy Holly (“He was about four or five years older than I was.”) primarily because the McLinton family moved to Fort Worth when he was 11. “We were poor,” Delbert says, “but I didn’t know it. I was a happy kid.”

His trim, youthful appearance belies the fact that at 38, he’s been singing for nearly 25 years. “I came home from school one day and a friend of my brother’s was sitting in the living room with his feet up playin’ his little Martin guitar with a hole in it and singin’ ‘Folsom Prison Blues.’ It just blew me away. I knew right then I had to do that. I got my first guitar when I was 13.”

Delbert had the sense and good fortune to grow up in Texas during rock & roll’s golden age, the late Fifties. Country music was his first influence, with Hank Williams and Bob Wills a major part of that diet, and with Elvis came the passion for rock & roll. But for a 16-year-old Delbert McLinton, even that was not the end-all.

“I can remember when we made the changeover from Elvis Presley stuff to rhythm & blues music,” he says. “That was like, 1957. Since Fort Worth was geographically in the center of Texas, late at night you could pick up radio stations like WLS in Chicago — good blues stations. That was a real revelation to hear some of that music.”

“That” music started appearing live in every Texas club worth its salt. In 1959-60, Delbert, playing rhythm guitar, had a band that invariably got gigs in Fort Worth backing up some of the leading bluesmen in the country, since, in those days blues acts toured without a band to cut expenses.



# FROM TEQUILA TO PERRIER

## *The McLinton Blues*





"We used to play a club called Jack's Place," Delbert remembers, "and we backed up Howlin' Wolf, Sonny Boy Williamson, T-bone Walker, Joe Tex. Hearing Jimmy Reed at the Skyliner Ballroom was the first time I ever heard someone play harp live (Delbert's current instrument). It near drove me crazy. When he started happening we backed him up a lot." But you couldn't expect to get invaluable on-the-job training like this AND make money, he laughs: "We did good to make 10 dollars a night."

As well as what passed through town, Fort Worth had its share of local talent. Guitarist Cornell Dupree and sax legend King Curtis fronted a local band. "They usually played at the White Sands Supper Club," Delbert adds. "That's where every motherfucker in town went to learn how to play guitar."

Through the diverse influences of country, rock & roll, blues and R&B, the Texas rock & roll style of Delbert McLinton was born, which, almost by definition has to include an amalgam of styles. Delbert has it down. He's got one of the most expressive voices in rock & roll — at times urgent, at times tender and always soaked in sweat and alcohol. He laughs at the "alcohol image" because lately he's been getting more and more away from that, substituting Perrier on stage, and his voice has improved.

"I used to drink tequila," he says, "but *goddamn*, sometimes it turns on you and when it does, there ain't no way you're gonna get through a set. I also quit smoking cigarettes about a year ago."

Even while sipping Perrier between songs, however, Delbert's shows have continued to be some of the most furious, balls out affairs in rock & roll, especially in club situations where he can let loose into the early hours of the morning. "To do it for only an hour is kinda frustrating," the trooper in him says. And as for his intensity, "I'm usually as good as I feel. If I feel real good, I'm a motherfucker."

Prior to the seven McLinton albums that are general knowledge (two with Delbert & Glen on Clean Records, three solo albums for ABC and two for Capricorn), by his own account he made "around 25 singles and a couple of albums" before that, starting in 1959, with most of the singles being local Texas hits. "I even had a song in '64," he says proudly, "that made the national charts for one week. It was called, 'If You Really Want Me To, I'll Go'."

Most of this stuff was done with the help of a Fort Worth character named

Major Bill Smith who has just put out two volumes called *Early Delbert*. Delbert actually doesn't mind them coming out just when he's starting to get national attention. "It's real," he shrugs. "I did it."

His first dealings on a national level came with his singing, along with long-time friend Glen Clark, to Atlantic-distributed Clean Records in 1971. The two albums that came out of this pairing are underground classics. Both wrote material and sang leads in what was an especially fertile period. T-bone Burnette helped get a studio band together and couldn't have come up with a more complimentary outfit.

"It was brand new," Delbert says of the sessions that resulted in *Delbert & Glen*. "No one in the band knew more than one or two other people and we all had a real good time. We created some music that was real intense and I think we did a helluva job. I'm still amazed when I listen to it. I'm proud, man. Goddamn. I think it's a helluva record."

The second Delbert & Glen album, *Subject To Change*, included such session people as sax player David "Fathead" Newman who delivered an exquisite solo on "I Don't Want To Hear It Anymore." "I remember the night he did that," says Delbert. "It scared me to death. It touched me somewhere deep down." This album included the now-classic McLinton original, "If You Don't Leave Me Alone (I'm Gonna Find Somebody That Will)."

On to ABC as a soloist for three albums which would take on more of a country flavor. "They thought I was gonna be their progressive Texan," cracks Delbert. "I think they're good records but they're not what I wanted to do. In fact, I think all the records I've made are good records. There's never been a record come out that I wasn't happy with and that was probably the biggest fear I had before I started recording."

In 1977, he signed with Capricorn, imported the Muscle Shoals rhythm section (Jimmy Johnson, Roger Hawkins, Barry Becket, David Hood) to Macon, Georgia and cut *Second Wind*, his best album to date. Produced by Johnny Sandlin who plays bass for Delbert, *Second Wind* had a new-found depth to the recording and, thanks to Johnson, Hawkins et al, an unshakeable rock & roll groove. A major league album. A powerful version of Willie Dixon's "Spoonful" was, amazingly, an afterthought. "We were just trying to finish up the album," Delbert notes, "and we said, 'What can we do? Let's do 'Spoonful'. We got it in two or three takes." ▶▶

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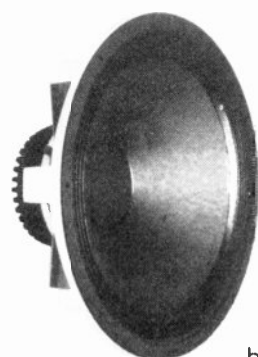
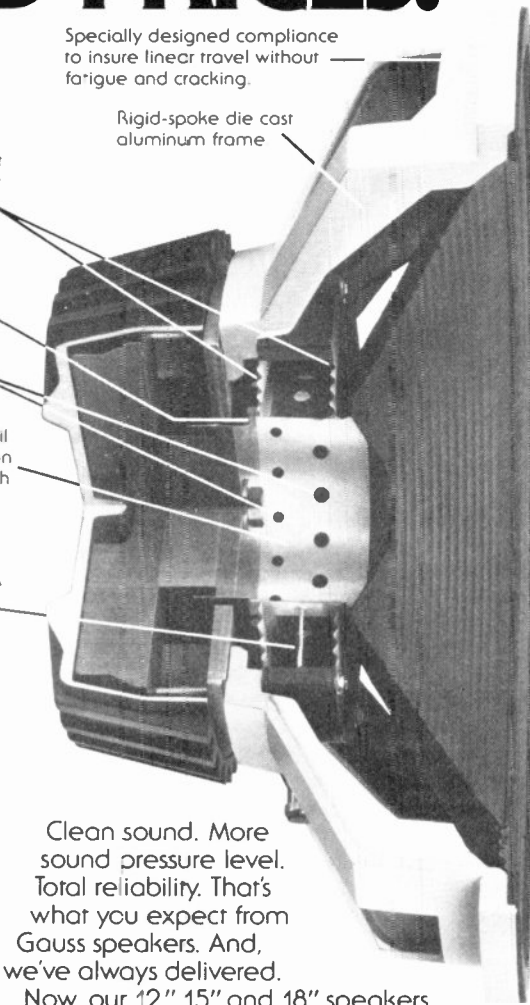
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World Radio History

## The McLinton Blues

As for working with the rhythm section, Delbert adds, "Goddammit those guys can play! They've also been playin' on everything I've wanted to sing on for the last 15 years. It sure was fun makin' that record."

Again with John Sandlin at the board, Delbert followed up with this year's *Keeper Of The Flame* and polished things up a bit. Randall Bramblett's *Plain Old Makin' Love* kicks off side one in a rock & roll barrelhouse fashion while Chuck Berry's "I'm Talking About You" does the honor on side two. Also included are two remakes of older originals — "I Don't Want To Hear It Anymore" and "I Received A Letter" from the very first Delbert & Glen album. The reason for this (though it's obvious after you hear them) Delbert says is, "I can sing everyone of my songs five times and do it a different way each time. Also, there's a lot of my songs that people are unaware of. Plus, I want to do them differently. That's why I go back and re-do a tune from time to time. Like I said, I can do those songs a thousand different ways, and if I think they can be updated, I'll do 'em again. And I may de 'em *again* after THAT (laughs) if I can't get anybody to pay attention."

Delbert's seven piece touring band includes two members — sax player Robert Harwood and guitarist Billy Sanders — that incredibly have played with him for 22 years. The remainder — Bill Stewart on drums, bassist Johnny Sandlin, Ron Cobb on keyboards and second guitarist James Pennybaker, present a formidable lineup backing Delbert's vocals and harmonica, but life is one constant personnel change, he says.

"I've been tryin' to get a band together for 15 years," he moans.

Is it impossible to take the Muscle Shoals Rhythm Section on the road with him?

"*Sheeit!*" he laughs. "Ain't nothin' impossible if you got enough money! Can you imagine what it'd cost to take the Blues Brothers Band (Steve Cropper, Donald "Duck" Dunn, etc.) on the road? Unfortunately, you don't have many bands like that on the road. But you can't blame 'em for not touring. Who wants to get burnt out in a beer joint? But at the same time (laughs) I think it'd do 'em good."

"Wouldn't that be nice? Goddamn. Boy, to walk in off the street and hear somethin' like that? *Sheeit*. We'd think we all died and went to heaven."

That's funny...that's what a lot of people think when they catch Delbert's act on a hot night in a sweaty club. **=====**

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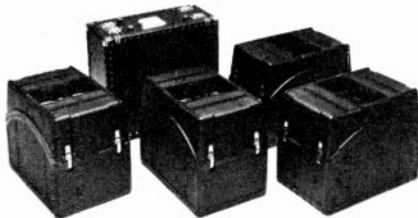
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# Take a closer look at the differences between the ARP Quadra and all other polyphonic synthesizers.

At first glance, you may believe that all programmable polyphonic synthesizers are the same.

Look again. The ARP Quadra is fundamentally different in design, function, and musical application.

It's a difference you can hear, see, and feel the minute you play the Quadra. And it's a difference that demands close examination.

## Many voices vs. many synthesizers.

All other programmable polyphonics offer 4, 5, up to 10 voices. The result of chording these types of synthesizers is similar to playing an organ or piano—all notes played have the same tonal characteristics.

The new ARP Quadra places *four separate synthesizers* under your control. Chording the Quadra is much like playing an entire orchestra. Each key depressed on the Quadra can produce up to four completely distinct sounds simultaneously. The Quadra's four separate synthesizers are tailored to certain kinds of sounds—string synthesizer, poly synthesizer, bass synthesizer, and lead synthesizer.

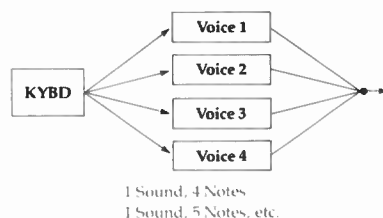
The effect created by mixing and blending these four sections is known as "layering," and is at the heart of the Quadra's tremendous commercial success. It explains why musicians and composers like Joe Zawinul, Ramsey Lewis, Styx, Billy Cobham, Kansas, Neil Diamond, and Electric Light Orchestra, have selected the Quadra for performing and recording.

## Programming and live performance.

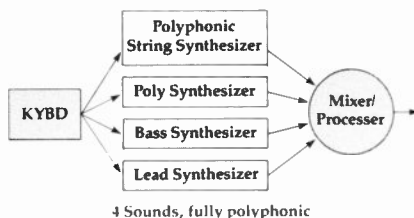
Programming—the ability for a synthesizer to store pre-determined sounds in memory for instant recall—can be a great benefit in live performance. In essence, programming allows you to change quickly from one sound to another. Yet, if not implemented in a sensible manner, programming can lock you into an inflexible group of preset sounds that cannot be changed easily in live performance.

No matter how many programs a synthesizer can store—and some allow as many as 40—it seems there are never enough programs to allow for the subtle changes in texture that live performance ensemble playing requires.

### ALL OTHER POLYPHONICS



### ARP QUADRA



An illustration of the basic design difference between the new ARP Quadra and other programmable polyphonics.

Here again, the Quadra is different. With 16 programs for *each* of its four synthesizers, the Quadra is uniquely suited to live performance control of the "final touches"—the balance between sections, animation, articulation, and so forth. A simple change in the mix produces a dramatically different sound from the same program position. Multiple use of each program, plus the multitude of live performance controls *always active*, makes each of the Quadra's program positions a source for numerous variations and textures.

## How to control programming before it controls you.

When there are too many things to do in succession, *programming can control you*. For instance, take the following typical sequence: "Press button one, press button two, press button three, play the keyboard." To change sounds, repeat this operation. Such serial operations seem more akin to computer programming than musical performance. ARP learned long ago that the best operational concept is the direct approach. That's why the Quadra makes extensive use of "parallel" control—you can get at any part of the instrument, change any sound, any aspect of any sound, *directly*. No sequence of complicated operations is required on the Quadra. And by using the 59 LED status lights, you

will know what's going on inside each program you are using. You can be spontaneous, and change with the flow of the music.

## The Quadra's microprocessor works harder.

All the big programmable polyphonics use microprocessors to scan the keyboard and operate the programming. The Quadra's microprocessor does much more.

For instance, try out the Quadra's live performance sequencer. Play a chord on the keyboard, hit the footswitch, and suddenly you have a sequence of the notes in the chord. You can transpose the sequence, extend and modify it, and alter its notes without missing a beat.

The Quadra's microprocessor also makes intelligent decisions, like splitting the keyboard so you never get bass and lead synthesizer parts mixed up, or helping you with phrasing on the string parts. The microprocessor plays trills, intervals, and transpositions, controls the phaser and stereo animation, and even determines what the foot pedals do. In other words, the ARP microprocessor is programmed to let you concentrate on the music.

## Creative outputs (and inputs).

The Quadra's rear panel has 24 jacks for uncompromised flexibility. There's an XLR mono output, animated stereo outputs, and even quad outputs for studio work. Systems interface jacks will make the Quadra "control central" for slave units and remote synthesizers. Five audio inputs bring outside signals into the Quadra or allow processing of the individual sections of the Quadra with outside effects devices.

## Sound is the bottom line.

No question about it, four synthesizers sound different than one. It's a difference you'll appreciate the first time you put your hands on a Quadra.

Take a closer look at the new ARP Quadra at selected ARP Dealers throughout the United States and Canada.



For the names of selected ARP Quadra dealers, write: ARP Instruments, Inc., 45 Hartwell Avenue, Lexington, Massachusetts 02173. Or call: (617) 861-6000. © 1979 ARP Instruments, Inc.

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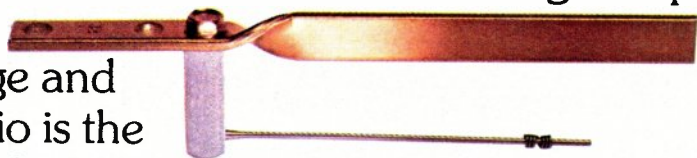
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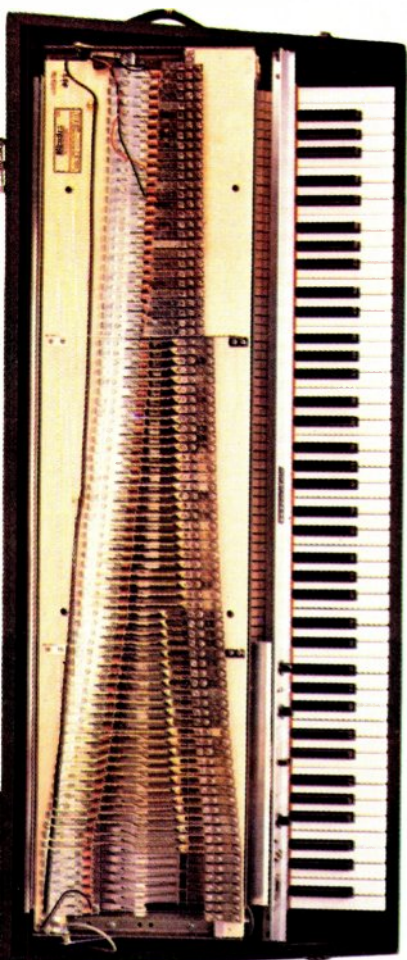
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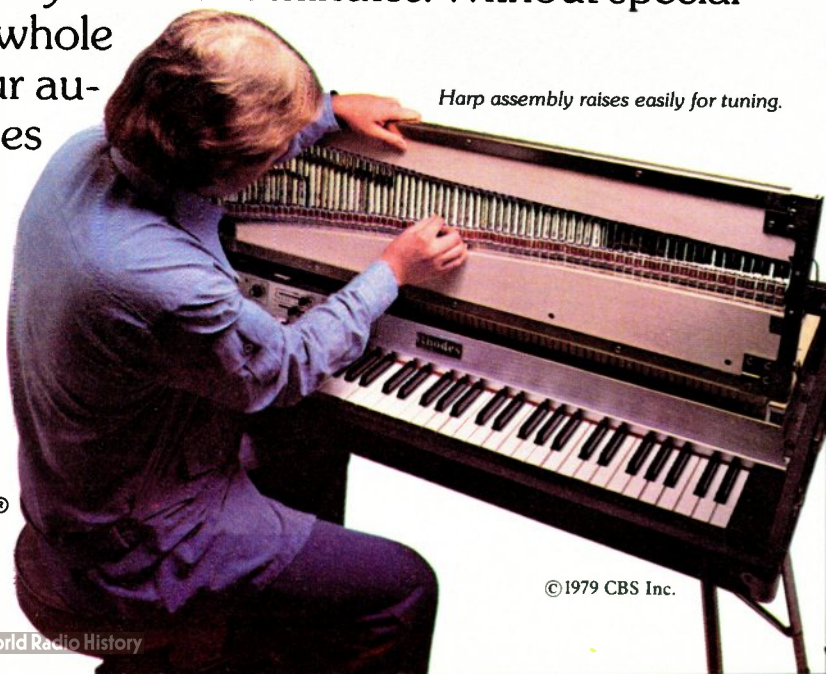


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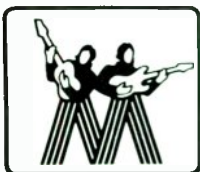
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# CARS '79

## Candy-O v. The Sophomore Jinx



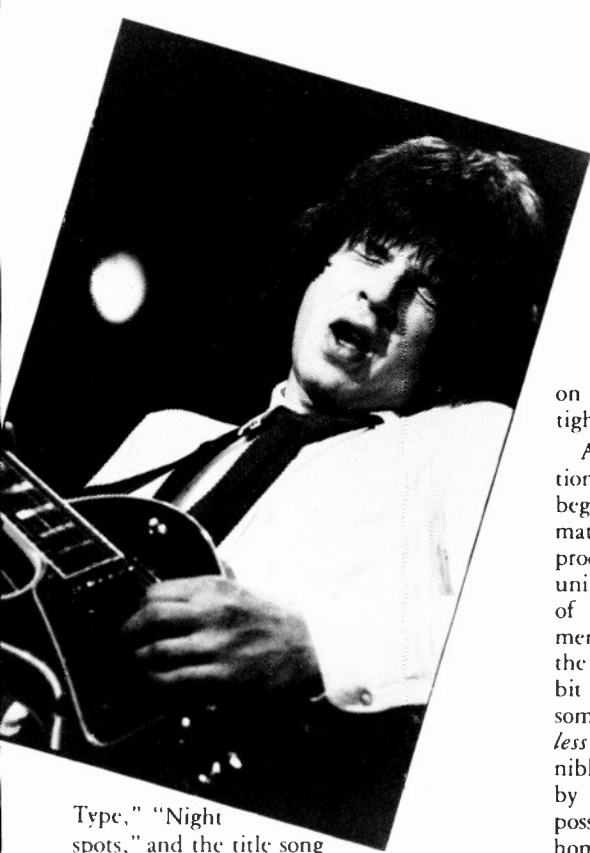
By Jean - Charles Costa

According to the immutable laws of public criticism and media hype, any rock & roll band with a "phenomenal" debut LP should be prepared to catch hell on the second go around. *The Cars* (Elektra 6E-135), a powerhouse opening statement if there ever was one with three tracks — "Good Times Roll," "My Best Friend's Girl," and "Just What I Needed" — that could possibly re-define rock for the Eighties, would prove to be no exception to this painful rule. Especially in light of the fact that the Cars, on the strength of that album, went straight to the top of the charts *and* the critics polls — a singularly rare accomplishment.

And so, after a series of delays caused by *The Cars* extended tenure in the Top 20, *Candy-O* was finally released. The

critics didn't go for the jugular right away — they never do with a group they have praised the first time around, it would make them look like the total fools everyone knows they are — but negative comments slowly began to surface. "No hits." "Too much synthesizer," or, in the same vein, "too cold, too much technology." "The car/girls thing has been done to death." "Boring" — a fairly standard '70s response and the capper, "Vargas is washed up," a truly enlightened comment on the musical content of the LP.

Critics notwithstanding, the listening public was immediately captivated by the infectious opening track, "Let's Go" and "It's All I Can Do," a song with a chorus guaranteed to rocket it into the Top 10. "Got A Lot On My Head," "Dangerous



Type," "Night spots," and the title song were soon popping up all over the FM band and Radio America was once again awash in Cars music. Admittedly, sales for *Candy-O* had been slowed by recession and the usual summer doldrums but the upcoming tour, which included several large outdoor venues, was designed to remedy that situation. And by bringing this somewhat mysterious band into the hot glare of big time public spectacle, the tour would also answer the hotly debated question of whether or not the Cars were just a "studio band."

Late August and the humid torpor of summer was thankfully drawing to a close. The Cars were due in New York to play the last official show in a series of Central Park concerts sponsored by Dr Pepper and the city. Again, trouble loomed on the horizon. Even though the show had initially been marked down as one of the "musts" of a tepid summer concert schedule, random bitching and/or studied disinterest was quickly taking over as the "pro-forma" attitude. The weather didn't help. High 80s with enough humidity to make *anyone* look and feel crummy. And late in the afternoon, a few short hours before the *outdoor* concert was scheduled to begin, it started to rain. The rain had tapered off by concert time and Central Park was jam-packed with Cars aficionados — a bit trendier than the standard Nugent/Aerosmith/Van Halen crowd, with an usually high number of beautiful young women in funky-but-chic clothing moving cool and slow through the sweat, grime and cannabis.

The Records, an up and coming new wave-ish outfit who backed Rachel Sweet

on the Stiff tour, opened the show with a tight set of originals.

After a typically understated introduction, the Cars hit the stage just as the rain began to fall again. Tearing right into the material from the newer *Candy-O*, they proceeded to rivet the crowd with an uninterrupted flow of excellent songs. All of this despite the fact that the band members were obviously bone-weary from the tour — the vocal harmonies seemed a bit frayed, the overall group cohesion somewhat sub-par — and consequently *less* animated than usual! The only discernible "stage moves" were provided by the afore-mentioned Mr Easton, possibly because he was playing for the home-town crowd. As the set gradually built in intensity, Easton topped things off by moving to the lip of the stage in the driving rain to crank out some pulverizing, but not over-extended, solos on the irresistible "Don't Cha Stop" from the first album. Less than an hour and one perfunctory encore ("Just What I Needed") later, they were gone.

Seeing the Cars in a larger outdoor setting answered many of my questions. Yes, they do play well live. In fact, the interchanges between Easton on guitars, Greg Hawkes on keyboards, David Robinson on drums and Benjamin Orr's powerful, loping bass lines produced several textures and nuances not readily discernible on the albums. No they don't move around much, especially lead vocalist/composer Rick Ocasek who seems to lapse into periodic trances while playing rhythm guitar. But where is it written in the rock & roll rule book that every band *must* exhibit constant motion during the set? Excessive stage business, people who jerk themselves around in a blatant attempt to generate synthetic excitement for an audience drowning in a pool of boredom and déjà-vu, is bad news. A hard fact of rock & roll life often overlooked by many bands, especially the prehistoric exponents of heavy metal music, is simply that milking an audience throughout a show invariably means the band is stinking out the joint.

The Cars, built on a solid foundation of exceptional songs with great changes and platinum hooks, don't *have* to kiss the fans' collective *démêrres* all night long. On-stage, they have the luxury of relating to each other while keeping the intros and between-song patter to a merciful minimum. That's how good *they* are.

## Elliot Easton Explains:

A few weeks before the start of the Summer '79 tour, I had the pleasure of interviewing Elliot Easton via the telephone. Although the band had stuck with their "no interview" policy during the recording of *Candy-O* and the interim period before the tour, Easton had made a special effort to accommodate *IM&RW*. He is an avid fan of all the music magazines, both past and present, and gracious enough to acknowledge that, "not only do I read *International Musician*, I subscribe to it." A rock & roll musician who actually admits to reading. Obviously a "dangerous type."

Not so. The menace projected by his on-stage demeanor — shades, leather pants, angular Dean Zelinsky guitars facing the "wrong" way (Easton is left-handed) — involves little more than looking cool, which is what rock & roll guitar has always been about. In conversation he is bright, witty and passionately interested in his work. Even with a bad head cold that would periodically send him reeling for the Kleenex, he took pains to describe his and The Cars' musical development in great detail and precise chronological sequence. An admitted "precocious brat" who first got turned on to rock & roll by way of television, Easton's constant references to "root sources" and the legendary trailblazers of blues and rock & roll reveals a lot about his multi-faceted, "authentic" guitar style.

Recounting the early genealogy of his career and his first influences while growing up in Long Island, Easton tells a story with a fairly typical beginning that becomes increasing *un*-typical as it moves through the years.

"But when I first really picked up a guitar and started to play songs all the way through from beginning to end, it was the Ventures. Just pre-Beatles 'surf' kinda stuff. I'm from Long Island and we used to set up a couple of Fender 'Champ' amps out on the patio and the neighbors would crowd around the fences. 'Apache,' 'Pipeline,' lots of instrumental stuff with reverb, cheap Japanese guitars with tremolo bars — 'cause we couldn't afford Mosrites! After that, the Beatles came out and a whole rush of groups followed and I got heavily into the pop thing. But, I find talking to a lot of people my own age the difference between me and them was,



when they were freaking out over the Yardbirds, Jeff Beck or Led Zeppelin, I was going to the budget rack at Sam Goody's and buying albums by Otis Rush, Buddy Guy, Albert King and stuff like that.

"At a very young age, for some reason, I had the consciousness to realize that these cats (Page, Beck etc.) were only a few years older than me and that they were taking these old records and forming their opinions or their interpretations of them. So I said, 'Fuck this, if I want to play like Chuck Berry, I'm not going to listen to Keith Richard for it.' Right back to it. It led me to people like Jesse Ed Davis, Robbie Robertson and Michael Bloomfield —

roots-oriented players. And I was also dipping into country music only because something in my ear told me I was hearing good guitar playing. At that time, I ultimately rejected the first wave of post-Beatles 'heavy' English stuff in favor of Chicago blues. I'm really glad I did it that way."

For some, these statements might sound immodest or, at the very least, like the rigid pronouncements of an arch purist. For those imbued with the heavy metal mystique — i.e. avoiding instrumental or vocal subtleties in favor of the Blitzkrieg approach — Easton might come off as an old-fashioned wimp compared to such he-men guitar studs as Nugent or Richie

Blackmore. Well, that's their problem. Anyone who understands the structural mechanics of rock & roll guitar playing or who's been around long enough to watch each successive generation of "rock" bands blunt the more subtle aspects of the music, instinctively knows what Easton is talking about.

Further along in our conversation, Elliot pinned down the axiomatic point of his thinking when responding to a question about why so many young guitarists today are mainly soloists with little knowledge of rhythm, fills, turn-arounds and other such basic notions.

"It's bad enough that those guys were weaned on Jeff Beck and Jimmy Page, but

## Guitars and Amps—Easton Originals

*As far as equipment is concerned, Easton has always had more problems than most because he is left-handed. Steadfastly refusing to play right-handed instruments upside down, he's contented himself with a series of new lefty Fender Stratocasters and Telecasters — "I played the hell out of 'em to make them sound good." With the well-deserved success of the Cars in the last few years, he has been able to expand his collection to match his extremely versatile playing style. A style that includes lean country fingerpicking (with and without flatpick), and straight ahead rock & roll flatpicking with all nuances, "tricks" (hammering on/off, harmonics from both ends — a combination of these techniques can be heard on "Nightspots" from Candy-O, that sizzling passage cutting through the middle of the song everyone mistakes for Hawkes' synthesizer — and an extraordinary variety of bends and glisses) intact.*

Currently, Easton's main instrument on-stage is a cherry-red mahogany Dean (Zelinsky) "ML" guitar with a 1/4" maple top (with flame veneer) and two black & white DiMarzio "Super Distortion" pickups. Shaped like a "V" from the waist down, and an "Explorer" from the waist up, Easton calls the "ML" his K guitar. All of Easton's guitars have to be immaculately set-up because he prefers a very low action all the way up into the higher registers, and the Dean is no exception. The very large and widely spaced peghead ("Dean is adamant about his design"), strings-through-the-body and superb finishing of frets and fingerboard help a lot. For looks Easton has special block inlays and the "ML" was rubbed with black to bring out the grain before the final staining and finishing. Easton is so "knocked out" with his Dean guitar — most of his Les Pauls are now used as "seconds" — that he is having Dean build him a special ice-blue "V" type

*guitar with gold hardware, DiMarzios, Martin "pin" frets, dot inlay, a pickguard (added to conform with the overall look of the guitar) and the controls laid out three-in-a-row.*

His collection of Gibsons includes a Les Paul "Custom" (new with a shaved-down neck and DiMarzio "Super Distortions" under the pickup covers) and "converted" tobacco-brown "Nashville" Les Paul Deluxes. Peter Stokes and Ed Murray of Eu-Co Frets (Wurlitzer Music in Boston, Mass.), who do all of Easton's custom work on Gibson guitars, shaved down the neck (Easton has small hands), installed DiMarzio pickups (PAF in rhythm position, "Super Distortion" in treble position) and refinished it in a gorgeous "Chinese Red" that immediately sets it apart from most of the Les Pauls around. The "Custom" is "the heaviest Les Paul I ever picked up" and provides a thicker sound, the red Les is more treble-ey. Stokes and Murray are also building a single-coil pickup Les Paul "Junior" for Easton — it includes Grover machines, metric dot inlay, solid gold side position markers, no heel and a fatter-sounding pickup.

All of Elliot's Fender guitars have been done by Seymour Duncan (Seymour Duncan Research & Design Labs, Santa Barbara CA), a particularly conscientious craftsman who has worked with James Burton, Albert Lee, Roy Buchanan and Jeff Beck (a Telecaster w/humbucking pickup you may remember from Beck's "Though We've Ended As Lovers") as well as assisting Fender with the development of their hot new "Lead I" and "Lead II" guitars. Duncan has already built a '53 Telecaster "from the ground up" for Easton — Blond with a black pickguard, it includes "aged" magnets for the pickups, exactly the right kind of varnishes and finishing for that era and Kulson machine. Easton also has a '61 candy-apple red Fender Strat with

*peghead to match that also boasts a "custom" Fender finish and a rosewood neck. To add to all of the confusion about instrumentation on Cars albums (a lot of mis-guided criticism against Candy-O stems from the fact that Easton's guitars are less distinguishable from Greg Hawkes synthesizers), Elliot is having Duncan build him an ice-blue Fender six-string bass. With this guitar, heavily flanged, doubling Hawkes left-handed playing or just creating a "drone" effect, no one will be able to tell who's playing what on the next LP.*

Easton's collection is rounded out by a recently purchased lefty Gretsch "Country Gentleman" circa 1962 (he bought it at Stuyvesant Music on New York's West 84th St. just before the New York show), a wine-red Gibson ES-335 with stop tailpiece and a Ovation "Glen Campbell" acoustic (shallow bowl) for those rare occasions when he uses an acoustic.

His amplification consists of a "doubled" set-up of Norlin Lab Series amps with Altec Speakers — and L-5 (212 combo 100 watts) and an L-11 (4x4 200 watts) hooked up in series with the setting between 4½ and 7 and the bright switch on. This provides both an open-back and closed-back sound. Avoiding any kind of tone boosting devices, Easton claims "each control knob does exactly what it's supposed to do," and he only has to bring up the volume on his guitar to get a fatter lead sound.

Easton's only effects — used very sparingly — are a Morley EVO-1 Echo Pedal and a Roland Space Echo with chorus controlled by a remote on/off switch so he doesn't have to fool around with a pedal board. He uses the "blue and purple" D'Addario strings with a .10 for the Top E instead of .09. He picks with "Cars Medium" picks, a replica of the classic Fender medium picks.



they'd only hear the top two strings (B and E) those guys were playing. That's the problem. Jimmy Page and Jeff Beck can play a nice rhythm but it's like when you play telephone, you line up in a circle and say a funny phrase and by the time it gets to the last person, you've only got a fragment left.

"Well, I've got huge ears — for nuance and phrasing or the particular way a guy is trying to say something. If I listened to Albert King, I got a lot more than 'dit-doing' (characteristic Albert King pick 'n' release technique). I'd get the whole thing. The neurotic bends, all that shit. I always had a feeling that I was hearing something my friends weren't. The most important aspect of that process is that I know where I am in this whole lineage of music."

This blues-rock precociousness led Easton in an opposite direction from that taken by most popular groups working the Long Island club scene. When asked about Sixties prototypes like the Rascals and The Illusion, his response is swift and lethal.

"I liked the Young Rascals for a while, but as far as The Illusion, Man, The Rich Kids, The Vagrants, The Deviants and all those kinds of bands, they're all like New England (heavy metal sludgers currently polluting the Northeast *Ed.*). You know what I mean? Those Italian lead vocals with the fast vibrato, Vanilla Fudge, Mark Farner — not for me. I always dug the Beatles 'cause they harmonized without vibrato in their voices. So I can't take it seriously when I hear those guys go 'Heartbreaker-r-r-r,' those kinds of trips. They don't do zilch for me and they never did, they never fooled me."

Easton's Long Island odyssey eventually led to playing in a house band for a strip joint. Playing what Eliot describes as "maniac, crazy-look-in-the-eye, jungle music," the band went on to win the Oyster Bay "Battle of the Bands." Having reached this lofty musical plateau, Easton left Long Island to attend Brockport, a state university near Rochester. Once there, he was *discovered* by a local Top 40 band — they heard him playing along with his record player and tracked him down — and he proceeded to fill in for the guitarist who was leaving to get married. He stayed on for a year, ignoring his studies and playing with the band while preparing for the Berklee College of music in Boston.

The following year, Easton finally made it to Boston to study arranging and composition. Recounting his experiences at Berklee, especially as they relate to *performance* (jazz guitar), he does *not* equivocate.

"I was going there to get myself out of the dark as to what all of it meant. Just theory. So it took me out of the dark on a lot of things, but I still can't read worth a shit. It's a mental block, probably 'cause I

don't want it that bad. I used to work on their 'method' for hours every day, but there's *no* way Berklee can teach you how to play jazz. They have two programs — 'Arranging & Composition' and 'Instrumental Performance.' Instrumental Performance leans more heavily on the playing aspect, but I thought that was crazy. It's really a waste of thousands of dollars a year to go there and study an instrument because there's nothing they can teach you that you can't learn yourself if you have ears and can buy some records. They tried to tell me how to hold the fuckin' pick! Not only that, but they

made you feel self-conscious about using a solid body guitar!"

After a disheartening experience with the citadel of jazz academia which lasted a year and a half, Easton started playing with a country band in Boston's notorious "Combat Zone." His fellow band members were all pushing forty and the lion's share of his audience was made up of hookers. For five nights a week at 25 bucks a night, Eliot was able to keep himself alive while searching out fellow rock & rollers. At the same time, he learned hundreds of country songs "and really got good with a Strat — fingerpicking ▶▶

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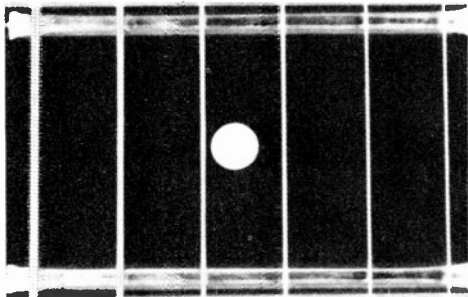
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## Elliot Easton

stuff, wrapping my pinky around the volume knob and playing pedal steel licks." Just another aspect of Easton's ultra-comprehensive style which can be heard most readily on "My Best Friend's Girl" as well as several other tunes.

Some time later, Easton happened to accompany a friend who was auditioning as sound man for a group called Richard & The Rabbits. No big deal, except that the band included Ric Ocsek, Benjamin Orr and Greg Hawkes on keyboards. The fateful gathering took place at a historic dive near Fenway Park named Oliver's, a club where Steely Dan used to play. Easton immediately twigged to the excellence of Ocsek's songs, but couldn't hook up with the band because the lead guitar slot was already filled by "a guy who played like (John) McLaughlin. He played a lot of fast runs and stuff — wherever he could fit 'em in. I knew I could fit in better but I had to wait."

That particular band soon broke up with Hawkes leaving to join Martin Mull's "Fabulous Furniture" and Ocsek/Orr doing the acoustic guitar, coffee house circuit. Ric and Ben were doing the same material, "only without the tasteless guitar." That duo evolved one more time into a band called Captain Swing, which also included Easton and several other musicians who shall remain nameless. After some typical hassles with pre-record contract dues-paying, the addition of drummer David Robinson (who was playing with DMZ) and the re-entry of Hawkes onto the scene, this primordial version of The Cars began to take shape. Focusing their material and cleaning up their "image," the band "started playing our asses off all over New England." New Year's eve 1977 marked the occasion of their first job and the band played 96% original material from the set-go. If they did a cover, they chose something off-the-wall like "We Did It Again" off the first Soft Machine album.

The strength and distinctiveness of Ocsek's songs created a rather odd phenomenon with many of their New England audiences. As Eliot tells it, "We'd play a whole set of original material and these bozos from the audience would come up and say, 'Man, that was great! Do some more Bowie!' We did a lot of songs that appear on the first album and one that's on the new one. 'You Can't Hold On Too Long' was an old song that we brought back — one of the first ones we worked up."

Shifting the topic to The Cars circa '79, Easton outlines the creative process behind the recording of a new Cars song.

"Ric won't even talk about guitars, he couldn't care less. He's a songwriter who has a gift for lyrics and knows enough on guitar to write a good song. He writes the

changes, the melody and everybody else, including Ric once he's brought it in, will start contributing hooks, lines and structure. Pull out a verse here, put it there — that kind of stuff. But he definitely finished the song first. He'll either put it on cassette or sit down and play it on the acoustic guitar for us and we'll all take it from there. He might sing the hook for me or I'll come up with one myself. The distinctions become blurred. We all contribute. David has a great ear for pop music and will tell me if I'm being self-indulgent."

On the often thorny subject of individual soloing, Easton has a refreshing point-of-view compared to some of his fellow guitarists.

"Solos are determined mutually and sometimes I'm just as happy *not* to take one. Fast flurries of notes with distortion between each one doesn't make for a very pleasing sound on record or on the radio."

As far as the Cars' recording technique is concerned, they "rehearse a lot before going into the studio. We don't do much writing in the studio, quite the opposite. We don't waste a lot of time. As to the sound, we try to get a really 'hot' basic."

Since Easton is a lefty, his instruments were always a little harder to come by than most. Fender Strats (new, vintage left-handed models were expensive and hard to find) have always served as his main instruments along with a few Telecasters. Nowadays, he also uses a dazzling array of red Gibson Les Pauls and black, custom-made Dean Zelinsky guitars for that thicker, humbucking sound. The new found wealth of playing with a hit band has allowed him to expand his collection.

"Now I can get vintage stuff. I just picked up a '61 Strat, candy-apple red with a peghead to match. Custom Fender finish and a rosewood neck — it's a killer. In a tweed case! Now, I only use the Fender on-stage for 'Best Friend's Girl' and 'Dangerous Type' off the new album."

With friends like Rick Nielsen searching the land for rare left-handed instruments, Easton's collection is growing fast. Relying on a minimum of effects, he uses Norlin "Lab Series" amps in a variety of configurations, depending on the hall.

As our marathon interview slowly winds down with a brief discussion of other players currently on the scene who meet his exacting criteria for good rock & roll guitar (Dave Edmunds, Chris Spedding, Rick Nielsen, Nick Lowe), Eliot Easton leaves me with another of his pungent, straight-from-the-shoulder observations, one that goes to the very core of what The Cars are all about.

"I've always had a built-in mechanism to separate the real thing from the jive. Let's just leave it this way, I'm *into* it."



BY SEAN HIGGINS.



# SPYRO GYRA'S JAY BECKENSTEIN

*The man behind the success*

Success has taken its toll of Jay Beckenstein, the driving force behind Spyro Gyra, jazz band with the funky style that has sent sales of its two albums soaring. As a producer and performer, now very much in demand, he has had one weekend break in the past seven months and admits that at times he never quite stops feeling tired.

The band was in England recently to complete a European tour in which they played prestigious dates at the Montreux, Munich and North Sea Jazz Festivals. In London, they joined more jazz giants on the bill at the Alexandra Palace during the Capital Jazz Festival and finished off with two rousing nights at The Venue. Before leaving for home they even had time to record their single *Morning Dance*, the title track from their second album, for British TV's Top of the Pops. Still, this has been a leisurely tour compared to a recent 60 cities in 80 days marathon in America.

Jay explained what sudden success has meant to the band. "With our records doing so well we just dug in. We're still at the stage where we're traveling by bus; we'd do a job, sleep in the bus on the way to the next city, pile out for a sound check, do the concert, sleep in the bus, pile out for a sound check, until when we finally got to a place that wasn't moving, none of the band could sleep. We were so used to bumpy roads — it was our only sedative.

"Europe has been so different, because we've had a day in between everything and all the traveling has been by jet, quite luxurious." The band's international rise to fame has been meteoric. After being turned down by major companies, its first album, *Spyro Gyra*, was eventually released on a low budget minor label, through Cross Eyed Bear Productions, a company formed by Jay in partnership with a fellow musician. It went on to sell over 200,000 copies.

"The initial shock came after three weeks when we learned we'd sold 15,000 records, because we couldn't believe that many people knew about us. Then the local radio stations picked up on it and the person we were distributing it through ordered more copies than the pressing plants could make. I remember Elvis Presley had just died and all the plants were making Elvis Presley records so it was really hard for us to get records," Jay added. "It's success was absolutely unbelievable because it was a real garage job, done inexpensively in bits and pieces

when we could afford it, but people seemed to like it a lot. With the budget we got for the second album, we were able to do it quite royally."

Jay attributes the feeling in his playing to doing long stints in bars. A move to Buffalo brought him into contact with a large community of musicians and he received a good grounding playing in bars with R&B bands. Living and working in Buffalo has obviously had a big influence on him. "Buffalo is absolutely dingy, rotten, freezing and bleak, and everyone in the place has got no choice but to really get off on each other or it's suicide! A lot of people drink in that kind of environment, so there are tons of bars

chose what I thought would be the best line-up."

Spyro Gyra was originally formed some three years ago in Buffalo, New York, by Jay and co-founder Jeremy Wall, who no longer tours with the band but still contributes material through work in the studio. Their friendship goes back to school days in New York where they both grew up and Jay first began to play saxophone in school bands. "They had a program in school where they'd start young kids on instruments and they gave me a clarinet. I took it home and my father, after one look at it, said there was no way that instrument was going to be making it, and had me switched to

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## **"Whatever feeling I have in my music comes from playing in bars."**

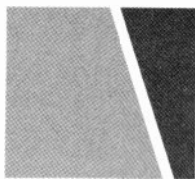
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which means a lot of places to play in. There's this really hot underground community of musicians there, constantly interchanging and I was playing in different bands for years. What I learned, I learned in bars, whatever feeling I have in my music comes from playing in bars. All this time I was developing my writing until I thought it was strong enough and then I stopped playing other people's music in other people's bands and starved for about a year. But since then it has all worked out very well."

It was during this formative period that he came into contact with the musicians who now make up Spyro Gyra. Jim Kurzdorfer (bass), another friend from school, Gerardo Velez (percussion), who once played with Jimi Hendrix, Eli Konikoff (drums), Tom Schuman (keyboards) and the latest addition Chet Catallo (guitar). "Eli and I met playing R&B and he's just about the steadiest drummer I've ever played with. Tom, although he's only 21, has been playing professionally since he was about 13. After Jeremy decided he'd be more of an advantage to us in the studio, Tom gradually took over and began to really carry it off on tour. Chet filled in that last gap on guitar. He complements us all beautifully. Our paths had all crossed at one time or another, and when I got around to putting the band together I just

saxophone. My mother was an opera singer and my father was a pianist, so I suppose they plotted to make me a musician before I could say no. They gave me piano lessons when I was about four or five and I still like to do my writing on the piano. My first memory of knowing I wanted to be a saxophonist was when I was about 11 and my father wanted me to give it up because I had braces on my teeth and he thought it was pushing them out. I told him to get lost and that's when I first realized I wanted to be a professional musician."

His early jazz influences were provided by people such as John Coltrane, Charlie Parker and Lester Young but in his late teens he started listening to Rhythm & Blues and Motown. "That music felt so good to me and I suppose it's what Spyro Gyra is all about. A combination of jazz improvisations on top of a Rhythm & Blues and Motown foundation. My playing is really R & B. I don't mind playing two notes in a solo. There doesn't have to be lots of notes because two will do if they're the right ones. I've never been a pyrotechnic and a lot of people can play faster than me. I try to play with feeling." His saxophones are Selmer Mk.6s, a soprano and alto, while his tenor is an old balanced action from the Thirties. "I got it off an older musician and it's a really funky old thing." ▶



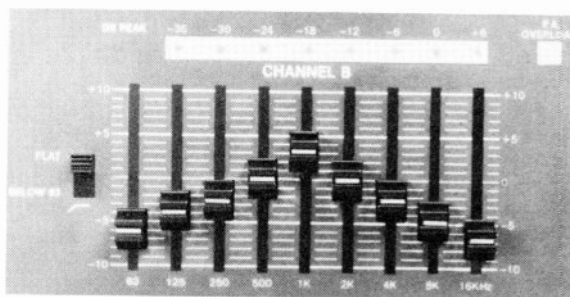
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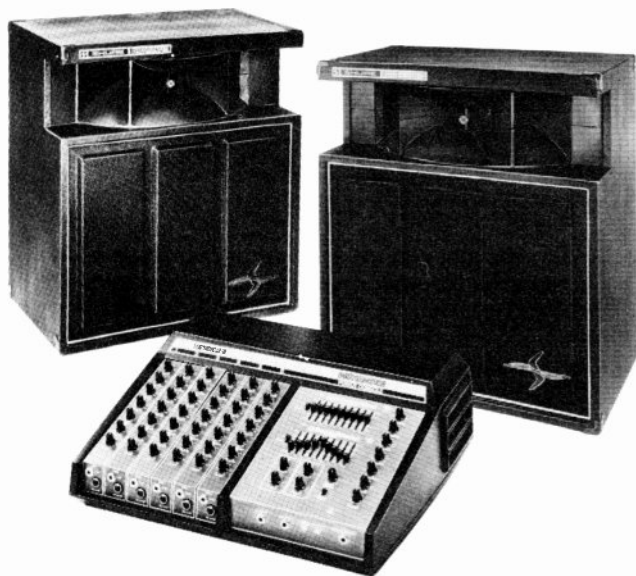
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# SPYRO GYRA'S JAY BECKENSTEIN

They started off playing the bar circuit seven nights a week, and developed from there with each member of the band submitting different material.

Major record companies were not interested in going up to Buffalo to hear them and the band could not afford to go to New York, or Los Angeles. The problem was solved when Jay went into partnership on the Cross Eyed Bear Productions project and they clinched an excellent studio deal in Clarence, a small farm village outside Buffalo. "It was a really small antique studio built into a barn. We asked the guy who owned it what his overheads were and offered to take his bills off him if we could have it for 10 days a month. It ended up that we had the use of the studio for a whole year at no extra expense. We had lots of musician friends and just went nuts recording everyone we knew.

"I was working on the production of disco singles, country music, everything. And then at night when we had time I'd work on my own stuff which turned out to be our first album and it's ironic that what was least intended to be commercial really sold. After being turned down by the record companies we put it out ourselves. There was tons involved, I got to be a performer, producer, promotions man, and I did the pressing, mixing and saw to the budgeting. After getting so involved in the music industry I'm now pretty sharp at business."

Spyro Gyra has since been signed to the new Infinity label and *Morning Dance* was recorded at Secret Sound Studios, New York, with guest spots from John Tropea and the Brecker Brothers. The band is currently halfway through its third album, with Tropea and the Brecker Brothers again in evidence. As a producer Jay seems to have acquired something of the Midas touch and his services are much in demand. "I don't think there's any other way to learn how to produce other than trial and error. The first album had lots of flaws in it because of cost and time factors, but I was really pleased with *Morning Dance* — there's nothing on it that I didn't want. And the third album is going just as smoothly.

"I like to work with layers, putting down the rhythm tracks first, listening to them for a few days, then going in and mixing the next layer and then the next layer. In the studio I'm a bit of an oil painter. I look at the overall picture and if there's, say, a yellow in the corner that I don't like, I'll paint it out and put something else in." In his role as a producer he is now more interested in listening to other people than ever before and believes there is something good in all genres of music. Playing at international

jazz festivals has brought him in direct contact with many other bands and artists.

"Lately I've been getting a tremendous chance to listen to people playing live, and I like to keep on top of new records to hear what other producers are doing with their artists. I'm also interested in listening to people being used on records because I'm now in the position where if a player sounds hot, I can hire him. One band I really like is Earth Wind and Fire, but there are so many people doing so many things that I'm just not one to pigeonhole the music I like. As a jazz musician I'm listening to Weather Report and people like that, but I even

like Donna Summer. As a producer I'm listening to the Bee Gees."

The Midas touch also seems to have rubbed off on others associated with Spyro Gyra. Jeremy Wall is now busy on many projects, which have brought his considerable talent as an arranger, to the fore. "Since our records took off, all of us in the band have had so many calls, because a lot of people are trying to emulate our style all of a sudden. At the studio where I've been working, they're getting a lot of people coming in who want to sound like Spyro Gyra. We've had a laugh about it because their material is never quite the same. We say 'let them try.'"

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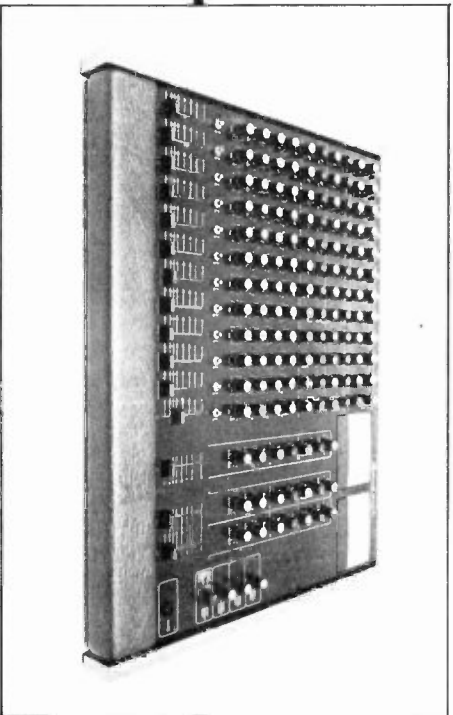
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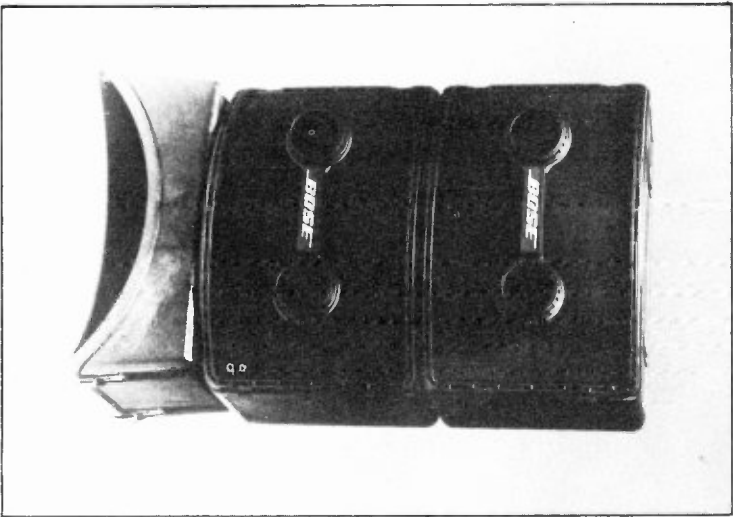
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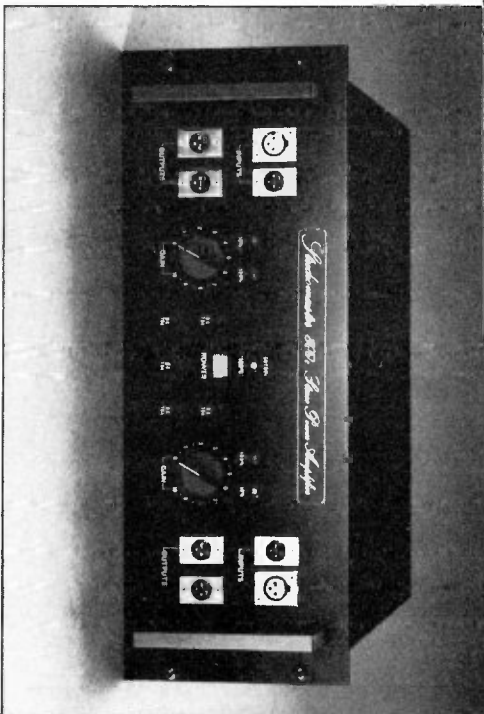
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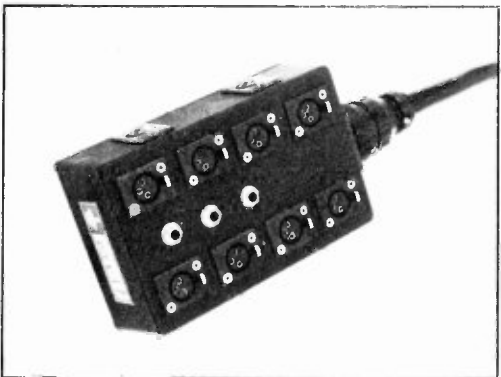
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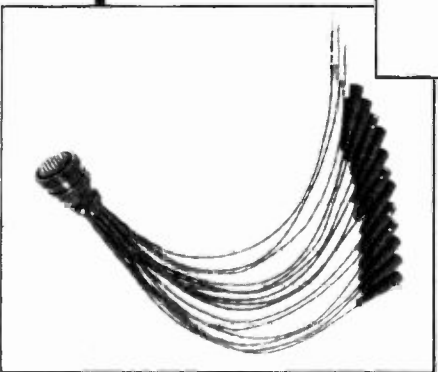
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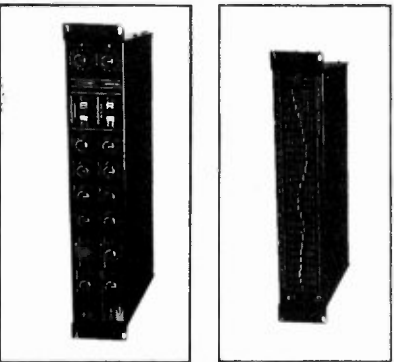
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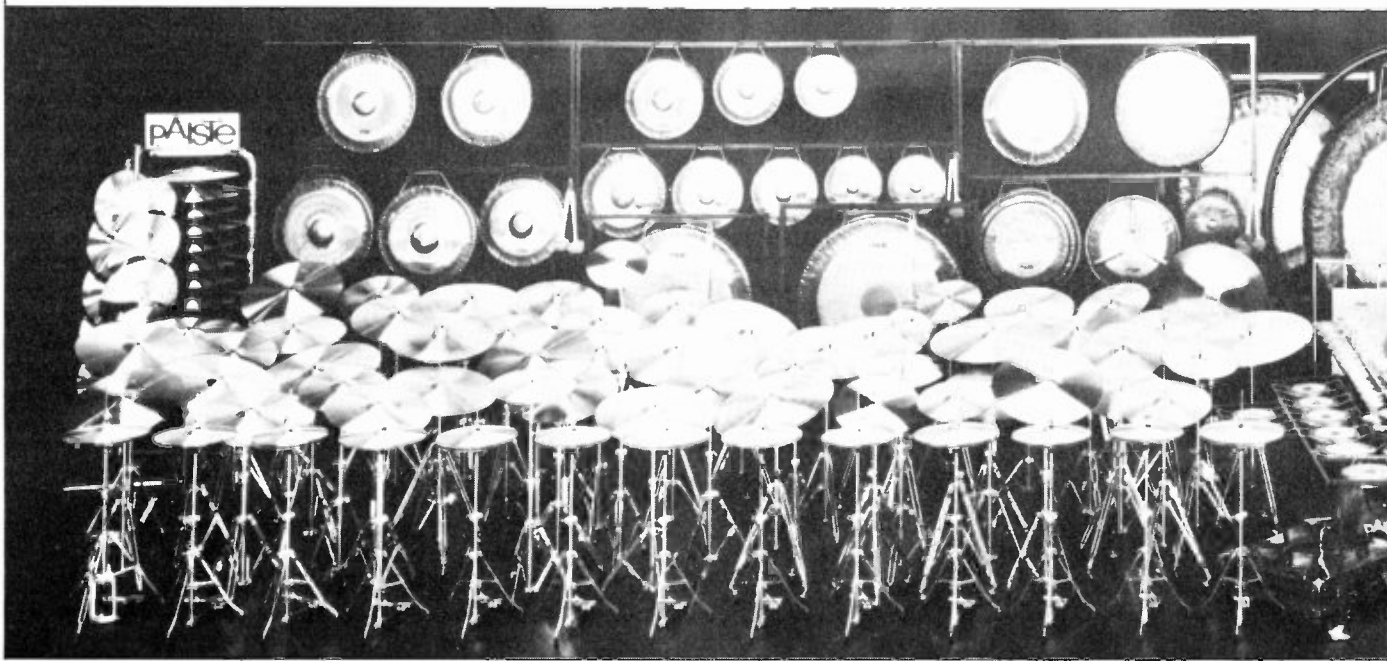
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### John Hiseman

Born in London and developed a real interest in music at age 13. Early in his professional career formed "Colosseum". Since then has been producing records and doing studio gigs. Plays seven gongs on stage. A Paiste artist.



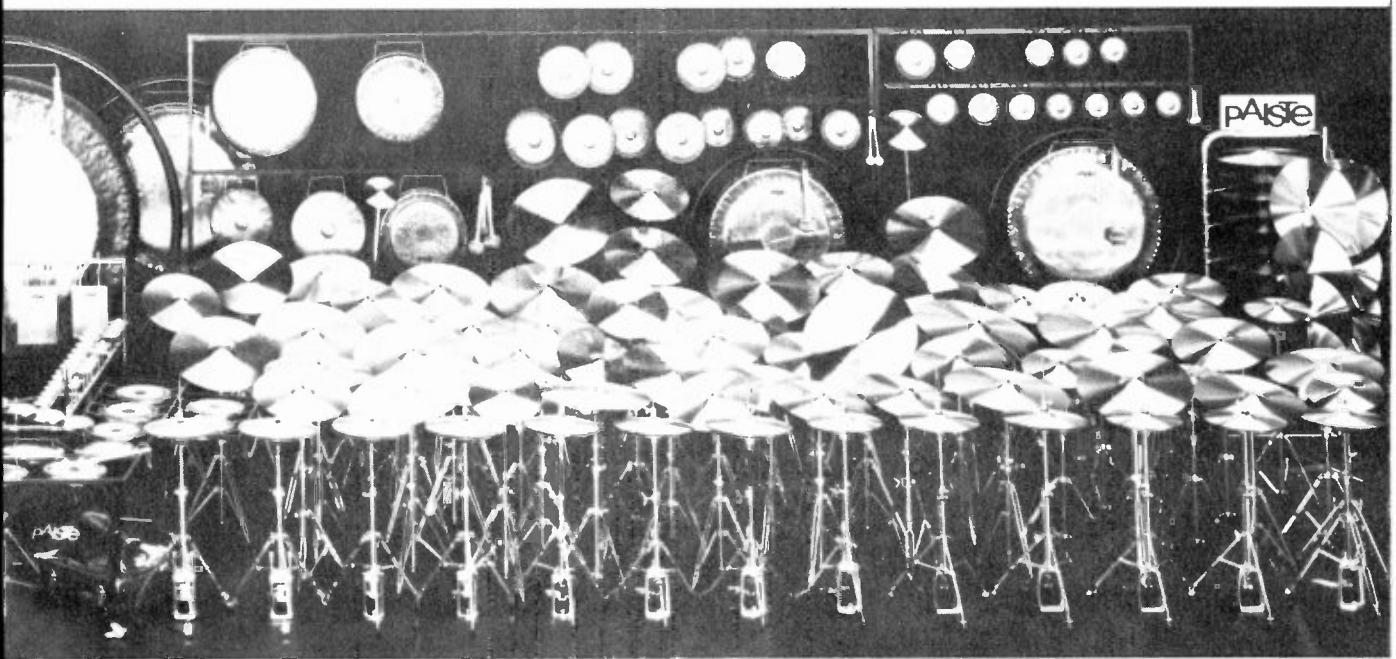
### Carmine Appice

At an early age helped form "Vanilla Fudge" and three years later joined "Cactus". After several successful years teamed with Tim Bogert and Jeff Beck to form "Beck, Bogert and Appice" trio. Currently with Rod Stewart. Uses a 50" symphonic gong in his set-up. A Paiste artist.

# PAiSte

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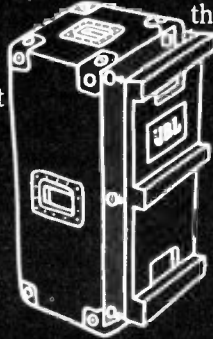
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# Synthcheck

Receiving this instrument to review was a very interesting experience. For years when the instrument was called a Mellotron, it played an important role on stage and in the studio. At first unrivalled, the Mellotron was gradually superseded by the onslaught of more and highly sophisticated synthesizers, but the instrument managed to hang in there with dedicated aficionados when string sounds or flutes were needed. And the Mellotron, now the Novatron, has survived to this day, albeit in a sense of controversy and partisanship.

The Mellotron began to show up around the turn of the decade on albums such as *In The Court Of The Crimson King*; being able to deliver whole string sections or choirs from a single player's hands was, indeed, revolutionary. At the time, it even incurred the wrath of the Musician's Union, who were worried about their members losing work through the invention of instant orchestra. Since these early, pre-synth days, the Mellotron gradually became eclipsed in the minds of some musicians by string synthesizers, and eventually, polyphonic synthesizers. But the instrument retained a hard core of users, both in owner-musicians, and people who rent the instruments for studio use.

Although I've been referring all along to the Mellotron, the instrument is virtually the same as the Novatron. The new title came about because of the demise of the original Mellotronics Ltd., the firm handling the sale of Mellotrons. The company actually manufacturing Mellotrons since 1962, Streetly Electronics Ltd. (which was not connected financially with Mellotronics Ltd.), then set up its

own sales organization and is now selling the instrument direct. And, so, the new name, Novatron, came about because the old name was no longer available to them. Streetly directors, Frank and Norman Bradley, who developed the 400 SM, continue to direct operations.

The modern Novatron is a large, white finished organ-like instrument with a two and a bit octave keyboard providing a sound source in a unique way. Depressing a key causes a tape of that note to play itself back by running over a tape recorder playback head. Each note can trigger a musical note of the tonality expected, by allowing a length of 1/2 inch tape to pass a playback head. The note will last for about eight seconds, whereupon the key must be released in order to allow the tape to wind back. This it does very quickly, as it is spring loaded. Any number of notes may be triggered at once, and each tape contains three parallel tracks of information, selected by a knob to the left of the keyboard. For instead of synthesizing any sounds required, the Novatron contains taped versions of notes supplied by the real instruments; be they violins, flutes, saxophones or human voices. Importantly, the Novatron people haven't just left you with three possibilities. There are 42 different tapes available, each containing three sounds each, enabling the user to have an inordinately large range at his or her disposal. And, the interchanging to the tape banks is easy and quick to perform with a minimum of fuss.

You can also make up your own tapes, even on standard 1/4 inch tape, and fit them in by using a 1/4 ▶▶

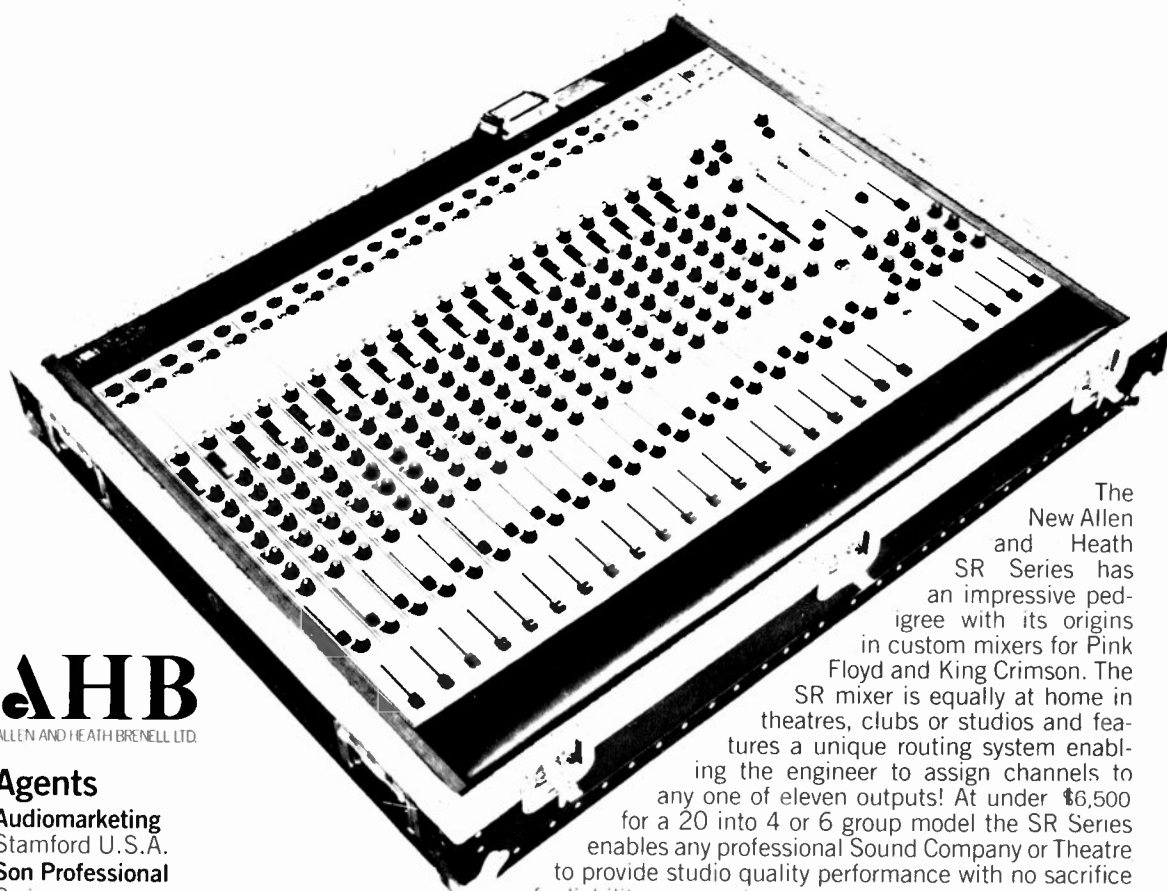
**Novatron**  
**\$4,200**



*Robin Lumley is a record producer and keyboard player who has won international recognition through his work with David Bowie's Spiders from Mars, Brand X and a wide variety of credits. He now divides his time between freelance producing and session playing both in Britain and the US.*

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# Synthcheck

inch tape conversion kit. You can score here by recording every note of a specific church organ, for example, and fitting it into your Novatron for recording or stage purposes, without trying the impossible task of actually transporting a huge object like a church organ around with you. Any bad name the instrument may have collected in some quarters is due, most unfairly, to either misuse, or mis-maintenance. Too often, a musician's opinion of a Mello/Novatron is colored by using a rental item in the studio and some rental companies do not, with common user instruments, keep theirs in top-line condition. (Manufacturers note: In addition, all Novatrons are fitted with a vastly strengthened mechanism, and this, together with the new rock-steady motor driver system, completely eliminates problems encountered with some early Mellotrons.)

The manufacturers supplied me with a little hint-list on how to get the best out of the review example, and it's worth reproducing it in paraphrase: "The output level is quite high, as compared with many keyboards, and with everything flat out levels can be up to plus 10dB. So it's best to run it at volume setting 1.00, which corresponds to about 0 dB on a VU meter. If, at this recommended setting, the signal is fed to an amp incorporating a pre-amp, then that pre-amp can be overloaded before the power amp end of things is in trouble. So it's best to put some kind of attenuator

in the line. A 10 Kohm pre-set potentiometer would be fine."

The recordings on tape can be EQ'd and echoed to advantage, and the use of a compressor after the unit can avoid a build up in level if lots of keys are pressed. The tapes are played back at constant pitch, but which pitch, is variable to account for tuning differences with any other instruments played along with the Novatron. The tapes run at 7½ ips, but still, according to spec, provide a signal to noise ratio, given clean heads, of better than .57dB. There is a simple, passive tone control which provides for a 10dB cut at 10k.

This instrument, despite its age of design and concept, still has an enormous amount to offer, even in these synth-ridden days, and should not be dismissed. It's an historic device, in the real sense of the word, and I found, by using a well-maintained unit, that none of the usual anti-Mellotron quibbles applied (eg noise, wowing, not staying in tune, etc.). Instead, I thoroughly enjoyed playing with REAL sounds in any way I wanted, reproduced with amazing clarity and control. The technique of playing the thing, and knowing one has only a finite time for a note to last, is one soon mastered and, after all, a voice cannot sustain a note indefinitely, no more than can a trumpet or a flute.

Give it a try, and forget its critics; you may be very pleasantly surprised.

Robin Lumley

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# Drumcheck

## Premier Baron Kit \$1998

Premier are without doubt the longest serving and best known drum manufacturers in Great Britain. Over the last two decades they have survived the challenge of drums with bullet-shaped and square nut-boxes from Germany, American nut-boxes of all shapes and sizes, home-built round nut-boxes and more recently no nut-boxes at all. Recently, of course, their most serious competition must have been from the Japanese and as far as I can see they seem to have been capable of resisting them.

Premier now own a brand new factory complex in Leicester which was opened in 1975 and continues in the tradition of their original Della Porta company which began before the war in Berwick Street, London. This large factory is evidently the only one in the world which builds every part of its product on the premises without recourse to outside contractors. (I appreciate that Slingerland, too, make much the same claim, but their heads are made by Remo whereas Premier make their own.) Their drums are 100 per cent British and proud of it (Premier won the Queen's Award to Industry), and they export drums to every country of the civilised world and arguably some that aren't.

The Premier "Baron" Set comprises seven drums: four single headed tom toms, one double headed floor tom, large size bass drum and a metal shell snare drum. The shells are made from a 5 run birch ply but have in the recent past been constructed from what one presumes is an African wood called khaya. All these shells have glue rings. To complete the set the Premier company supply a pair of cymbal stands, a 252 foot pedal, a hi hat pedal, side drum stand, a stool and sticks and brushes. Also there is a double floor stand for the two largest open ended toms toms. The set is available I understand either with Premier's cheaper "Lokfast" stands with finish bases or their more substantial, slightly more expensive "Trilok" range.

### Bass Drum

This 24 x 14 bass drum has twenty 'L' shaped tuners with cast claws, wooden hoops inlaid with plastic, a felt strip damper for each head and Premier's "outrigger-type" non disappearing bent-steel rod spurs which locate into a cast block which, with its 'O' ring insert, triples as tom tom holder and leg retainer too. Soundwise, there's one thing standard about Premier bass drums (whatever their size). They sound pretty good with both heads on. Even though they don't have a particularly warm sound they more than compensate for this with their penetration. I prefer them single headed (but I prefer any modern bass drum this way — Levon Helm's old Gretsch is the one exception) and to me they sound like a heavy wooden door slamming which may not be everyone's concept of a good sound but it's certainly mine.

The bass drum tensioners I feel leave a little to be desired since they aren't of the Timpani-type and are difficult to tighten up or release under adverse circumstances but, having said that, I would not be at all surprised to see Premier change them for America to the 'T' shaped handles available on their British "Soundwave" outfits.

Premier's tom toms have single nutboxes fitted as standard but the bass drum with this set has the traditional, old fashioned front to back double ones which I personally think cuts down the resonance and therefore the tonal quality — mind you this only applies really to toms toms where the long nut boxes don't allow the drummer to "breathe" properly and also, it is argued, create confusing sound-wave patterns around themselves which help to confuse the issue.

### Tom Toms

PD 717 has five tom toms 13, 14, 15 and 16 inch



all single headed and an 18x16 floor standing one which is double headed. The 9x13 has six nut box casings and tensioners and the other four have eight each. All toms have internal, spring steel, under balfer head operating dampers. The set I saw was fitted with "Everplay Plus" heads which gave a good bright sound. I have in the past criticised the "Melanex" heads from Premier which I consider to be not resilient enough. Nowadays though their 'Plus' heads are made from "Mylar" which is an American plastic film from Dupont which has roughly the same consistency as the Dupont film used by Remo. Nowadays Premier produce a C.S. type head too which has a black spot with a small hole in it's centre. (I suppose you could call it a wide ring). All these heads sound good and are a great improvement on the old Everplay "Extra". I don't honestly know about their lasting qualities, but so far have not heard any adverse comments on their longevity. A drummer coming to this set from a normal two or three tom tom set would have something of an orientation problem because the fifteen and sixteen inch toms are mounted on a floor stand over and above the large floor tom tom. However Premier provide two boom stands with the 717 which help with ride and crash cymbal playing and other than that, it's just a question of getting used to the relative positions of the drums.

#### Snare Drum

One of Premier's 35 metal shell snare drums comes with this set and I suppose it has been available for about three years now. It's much more American than any previous Premier drum, with 10 double-ended lugs, triple flange pressed steel hoops, a central shell-strengthening bead, cast adjustable-tension cam action strainer, 20-strand snares attached to their mechanism with string, adjustable internal under batter head operating damper and the aforementioned deep slotted tension screws.

A 5½" shell drum comes as standard and although this has a "breathy" sound due to its thinnish shell I would rather specify one of the 6½" models which have a little more "undertone" but with the same bite. The deeper drum (it's called a 36) is far more suitable for today's funky music, but this is not to denigrate the 35 which obviously has many other applications.

The metal drum is neatly finished inside with an inverse flange and a long graduated snare location area.

#### Accessories

Premier's Trilok stands have been available since late '76 and for those of you not familiar I'll describe them. They all have unique (at least when they were launched) U-section pressed steel legs and, along with all the other refinements to be found on the present generation of stands, they were the first to combine robustness with portability. Their power-to-weight ration, which until now has been somewhat disregarded consideration, is second to none.

The stands have one drawback (for me). Normally when setting up a tripod-type stand one grabs two of its legs about half way down and pulls

outwards. Unfortunately since the Trilok's legs are made of the U-section pressed steel there are two edges per leg with the potential to cut your hands. (The leg is made from 16 gauge steel or its metric equivalent.) If you were in a real hurry to set up (and get to the bar) you *could* damage your fingers. So the safest way to set up a Trilok is to grip the actual feet and pull outwards. All the stands have self-levelling floor glides and hidden inside these is a substantial sharp spike. To expose the spike it's only necessary to screw the rubber foot cone up a little.

Every stand has Premier's substantial T-bolts for height arrest and adjustment. These locate into large captive nuts held in place with a saddle, so that the adjustment bolts don't actually penetrate the tubes. The top of each stand's bottom tube is split to enable the wing bolt to exert pressure on *half* the circumference and force it against the tube inside it. The second stage of the cymbal stand has a split plastic insert at its top to take the wear and be replaced when, or if, necessary. A cast cymbal tilter is attached to the 5/8" top tube with an Allen screw so this too is conveniently adjustable. The legs themselves extend out 14" from the centre tube, the bottom tube (on all stands) is 1¼" OD and the second 1-1/8" OD. Its highest working height is 66".

The Trilok boom cymbal stand boasts all these features and has enough vertical adjustment to accommodate any human drummer, with more than enough horizontal adjustment on its boom. This boom is counter-balanced with an extremely substantial cast block which moves laterally on its boom rod and is locked into the desired position with a drum key operated screw.

Trilok's hi-hat stand has a cast one-piece footplate (to match the bass drum pedal's) and has a built-in adjustable toe stop. The tripod legs are like the cymbal stand's with the adjustable rubber or spiked levellers. Additionally there is a pair of adjustable sprung spurs ingeniously angled forward underneath the base framework.

The pull is via a plasticised industrial fibre strap (like the bass drum pedal's) which works well enough but I personally prefer the feel of a non-flexible strap. Having said that, this is the first hi-hat I've played which felt *exactly* the same as the "kick" pedal. This could be quite a consideration, say, for a twin bass drum player who has to go from pedal to pedal with his left foot. This plastic strap is fixed back on to itself after it goes around the parallelogram linkage to the centre rod. Which will, of course, help it to wear longer. Also, the pull is adjustable in length beneath the footplate with a drum key operated screw. I haven't come across any other hi-hat with this feature.

The action uses a pair of expansion springs which are joined to the centre rod diametrically opposite each other and move up and down in slots. These springs are adjustable at the top of the base tube in a most convenient position. A plastic saddle located two threaded rods which are joined to the springs and each rod has a pair of threaded, knurled washers which sit on each side of it. So, one tightens these washers above and below against the saddle (there's

---

*Bob Henrit has been a professional drummer since the Sixties and worked with a string of top bands, including Argent and Phoenix. A busy session musician, he has recorded with Roger Daltrey and Leo Sayer among others, and has also found time to present drum clinics.*

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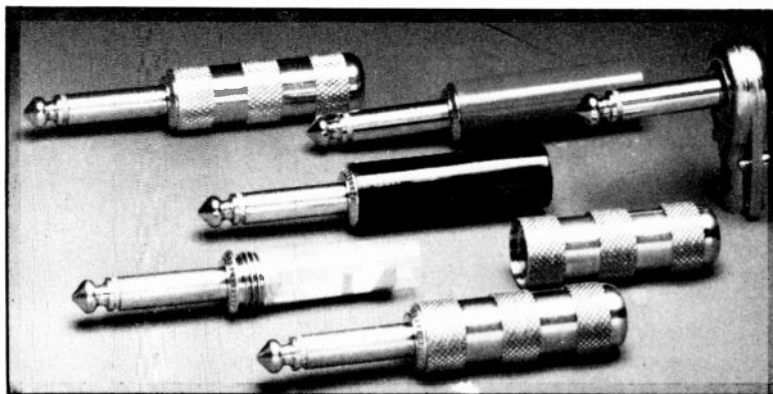
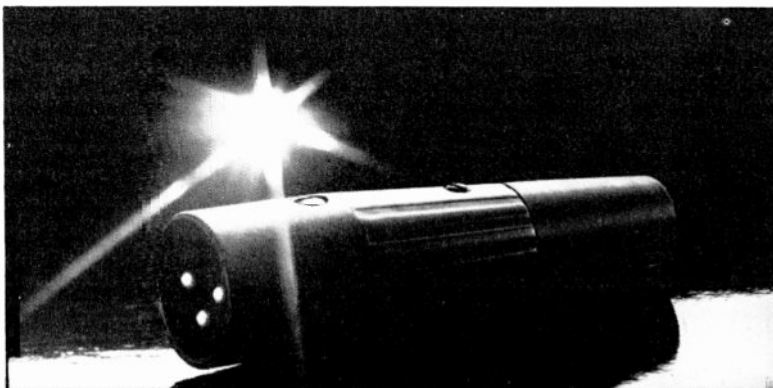
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# Drumcheck

a spring washer sandwiched in between to make sure). If you want a harder action you tighten the top nut while unscrewing the bottom one. For easier playing, you adjust vice versa. Though the action goes from very loose to very tight with ease, it's impossible to do this while playing. You need two hands for the operation because if you turn the top nut the thread and the spring turn too. The top tube has a large plastic bottom cymbal seating cup which is adjustable in angle with a knurled nut. The top cymbal's clutch has been beefed up recently. I understand, which should make it deal since the old one worked well enough. Anyway, this is a smooth, fast and easy to operate hi-hat pedal which complements the 252 bass pedal very well.

The Trilok snare drum stand is innovative in many of its features. It has, of course, the U-section tripod legs with the floor levellers and spikes, the large wing bolts with the slotted tube ends and an unusual drum clamping mechanism and playing angle arrest. This is, like all good drum inventions, very simple. There's an omega-shaped clip which fastens around the top tube and can move up and down it freely. The open ends of the omega can be squashed together with a nut and wing bolt which tightens it around the tube. The wing bolt also retains a small pivot arm (about 3" long) which is loose-riveted to the cradle part of the stand. So the omega collar, once loosened, runs up and down the top tube and since it is attached to the cradle which is able to pivot it moves the cradle (and the drum) to the desired angle. To secure the angle one simply tightens the wing bolt.

The cradle itself has two fixed and one movable arm which can be adjusted for length and locked with a drum key operated screw. This arm has a dozen location holes in it so should accommodate all snare drums as well as 12", 13", 14" and 15" toms. I don't know about a 16", though. The final pressure adjustment uses a wing bolt which pushes the moveable cam vertically through a captive nut until it presses hard against the drum. (These arms are sheathed in white rubber.)

The 252 bass drum pedal has become a favourite of mine. It has a single post and like the hi-hat an industrial plasticised fibre strap. The cast one-piece footboard has one adjustable and one fixed top stop and its actual angle to the bass drum head can be adjusted either to left or right for more comfortable playing. The whole unit is clamped to the drum hoop securely and can be tightened sensibly and conveniently from the playing position. Non-slip rubber feet are positioned directly under both the hoop clamp and heel, and two adjustable forward-angled spurs are fixed to the pedal to immobilise it. It has an accelerator cam action, 1/2" needle bearing and a compression spring which is also adjustable from the playing position. The stroke of the felt beater is adjustable on a splined ratchet which has a large knurled knob.

The 252 has a positive, speedy action which I became used to in a very short time. The rod for the beater has been thickened a little which is not a bad thing since there's no longer any possibility of it whipping and bending with energetic playing. All in all, this pedal is unfussy, works well and has just the right amount of adjustment to enable the pedal

to fit any player and not vice versa.

Premier's double tom-tom holder is something of a hybrid. It works well and is sensibly set a long way forward on the bass drum and allows really close tom-tom placement. The down tube stem of the holder is oval shaped and located into a pressed steel block bolted to the bass drum shell. Two large wing bolts hold the height adjustment securely by pressing on each side of the oval tube which by its shape effectively stops the tom-toms from circling on this pivot around the bass drum. At the top of this tube is a T-shaped casting with a pair of substantial screw locked ratchet tilters which hold and contain two knurled "L" rods. These thick rods locate into a spur-type blocks and are secured with a large wing bolt.

The 15 and 16 inch toms are mounted on a Trilok floor stand which has at its top exactly the same PD392 double tom tom mounting as on the bass drum. It's very stable but should be used with one of its legs pointing directly to the drummer.

I used to criticise the double holder's receiver plate for being too large and felt it could perhaps adversely affect the sound of the drum. However, these days every manufacturer seems to have a "monster" fixture and it now seems completely acceptable.

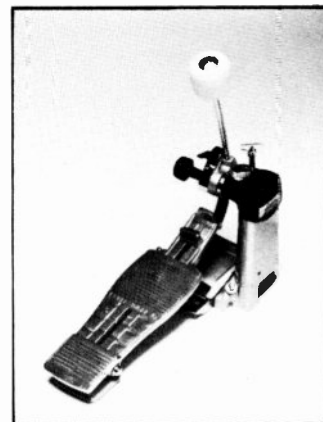
The Premier stool has been made stronger recently and nowadays it's unnecessary to have the saddle shape which contributed a little painfully to my career in its formative years. We now have the luxury of a thick, round foam-rubber squab. Evidently Premier invented the three-post stool and I must admit that I have found them up to now to be unstable — mind you, this new one seems a lot stronger and heavier. (I would have confidently expected Premier to have made a Trilok stool by now, but if they have I haven't seen it.)

## Appearance

There doesn't seem to be any finish from Premier which I actually hate: they do all of the modern solid colours, like the Americans and the Japanese, as well as a handsome natural wood. Most of their polychromatic finishes are actually shrunk on to the wood after glue has been applied. I think my favourite at the moment is a sort of cream colour. Also there's a very mysterious, subtle dark red which is normally used by the company for their military drums. Premier, of course, also supply solid black and solid white duroplastics.

Nobody could dispute the quality, appearance and standard of the Premier chrome work. It really is top quality and must be the envy of the other manufacturers.

Bob Henrit



# Soundcheck

## Park 1210 Amp \$1,095

The design of the new Park 1210 "head" Amp from Ideal Music (a member of the Marshall Group of Companies) is derived from their 1240 combo launched earlier this summer. The amp, as the manufacturer informs us, is more or less a "head" part of the combo, therefore, the electronic part of the design remains very similar to its origin. We should also mention that the 1210's outside make-up, including the enclosure size, is still kept in the traditional "Marshall" shape but with certain changes and new details, which the manufacturer has introduced in this design and will be described later on in the review.

### Construction

Traditionally, starting with the control panel, there is a difference. The AC line power switches are on the far left and the

¼ jacks on the far right side, the remaining controls are grouped in three boxes, i.e. right to left: Gain input (A) — High; Gain input (B) — LO, followed by an EQ box with Treble, Middle, Bass, edge rotary controls. These are followed by the output level control which, as I thought at first glance, does not work exactly as the traditional Master level control. The output level pot is inserted in the splitter circuitry and adjusts the clip point of the phase splitter stage. The whole control panel background is then finished off in a silver color as are the operating controls. Power controls are rectangular IEC switches marked zero and one, for On/Off operation.

At the rear, there is a pair of jacks matching amp output to load applied with a manual output impedance selector calibrated 4 ohms/8 ohms/OFF/16 ohms. I'm not really sure what Ideal means by the "Off" position here and how to use this option. I guess this selector switch is there in loving memory of their 1240 combo where the external load connected to the "free" output terminals, which made some sense.

The AC Line selector switch allows for 120/220/240 volts operation and this switch, similar to the impedance selector, must be operated with the use of a screwdriver. It is not a 100 per cent idiot proof, but it still protects the amp somehow from unsuitable settings and damage.

A Euroconnector type of 3 pin safe AC line power socket and fuse holder completes everything at the rear. The fuse ratings are as follows: two At for 220 — 240 volts operation and four At for 120 volts. The nominal power consumption is claimed by the manufacturer to be about 375 watts and a mains frequency of 40 — 60 Hz will be accepted.

Now the performance. The audio performance, other than distortions, is exemplary and I was delighted to find that Ideal have greatly improved the THD levels which are quite phenomenal for a valve designed amplifier. At this point, however, I must mention the subjective test. When I played my guitar, the decrease in harmonic distortion did not change anything of the "valve" character of the amp. In actual fact, I liked the quality of sound even more, particularly combined with the newly introduced gain differentiating footswitch, which has a greatly improved operational side as the high sensitivity input gain is controlled by a pair of cascaded controls. A check was made on the Input Sensitivity relative to about 100 watts level of the output power — less than nominal 120 watts bearing in mind the historic Marshall equation:

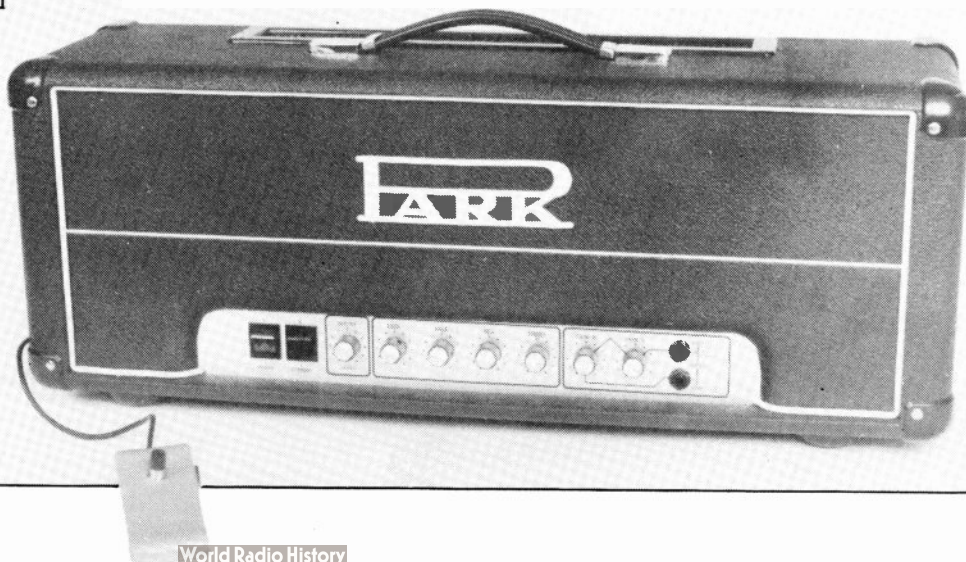
$$4 \times EL\ 34 = 100 \text{ Watts RMS into } 4/8 \text{ ohms}$$

The power difference again was rather academic and both inputs proved to be aligned to the usual guitar requirements.

No problems of a serious kind were experienced when a standard check was made on the stability except for a small overshoot with a capacitance load applied, which should not be noted in musical practice. Changing the subject — in the heart of the 1210 amp we find a motherboard PCB with mainly gain stage /EQ circuitry nicely planned with color coded wires on the sides and a range of professional grade components. The power stage valve sockets, I should underline, are not riveted to the chassis but fixed with nice brass screws which simplifies replacement if necessary — which happens in valve amps sometimes. The ratings of passive components seems to be adequate for even the hardest life and the overall impression was of the



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amp's ruggedness and suitability for heavy duty operation. The EL34's penthodes are secured individually by a pair of steel cadmed springs on both sides of each octal socket.

#### Conclusion

I must conclude this Soundcheck by recommending the Park 1210 guitar amplifier for its professional design, overall performance and classy finish which as French people say "tjoujous a la

mode" (always in fashion) with new styles and requirements. as a valve amp, the Park 1210 uses a lot from contemporary electronic technology, for example, the quality fiberglass printed circuit boards etc. It would be pure hypocrisy not to refer to Marshall's name in this review, but even so Ideal Musical Instruments have a winner here as the 1210 amp is very good in almost all respects.

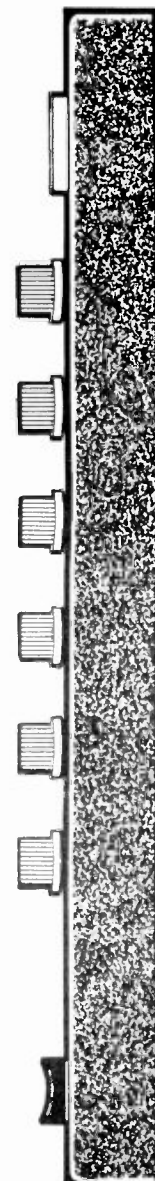
Mark Sawicki

PARAMETER	RESULT	TEST CONDITION	COMMENTS
Specific Power Output: Watts RMS. Ref 1kHz	129.96 WRMS 104.53 WRMS	Onset of clipping into 4 ohms Onset of clipping into 8 ohms	Ideal Music claim a power level of 120 WRMS @ 4% THD or 170 WRMS @ 10% THD Park Model 1210 "head" uses four 6550 valves in the power stage, and three ECC 83s (double triode) in voltage-gain-EQ Splitter stages.  Both power measurements presented here were taken in "LOW" - channel (B) with tone controls FLAT and output level control on MAX. Transformer details: Output stage: Drake type C2668 Power Stage: Drake type T4145 P/S Choke: Drake type T 100
Total Harmonic Distortions (THD) Ref. 1kHz	0.682% 0.561% 0.523% 0.875% 1.15% 0.95%	@ 120 WRMS) into 4 ohms @ 100 WRMS) measured in @ 70 WRMS) input (B) @ 30 WRMS) "LOW" @ 10 WRMS) @ 5 WRMS)	Quite low levels for a "valve" design amplifier. The THD levels rise up significantly with lower power levels. In Mid-High power regions harmonic distortion figures remain very similar. Predominance of 2nd harmonic components was observed on these tests with both 4 and 8 ohms loads.
Input sensitivity in m VRMS for 100 WRMS (20 VRMS) output signal Ref. 1 kHz	7.1 m VRMS 0.8 m VRMS	Input (B) "LOW" Ref. 4 ohms Input (A) "HIGH" dummy load. Tone controls Flat.	Satisfactory. Both inputs are designed for standard guitar application. Two Gain potentiometers control inputs (A) and (B) separately. "Output Level" adjusts clip point at the splitter stage which is different from the normal "Master" type of control.
Tone Controls (Swing in dB)	36.5 dB swing 12.3 dB swing 34.3 dB swing 8.2 dB swing	Treble/10kHz) Ref "LOW" Mid./600Hz) Bass/50Hz) Input (B) Edge/8 kHz)	Man. Claims the following: 8 dB Ref. Edge @ 8kHz 11 dB Ref. Mid @ 600 Hz 32 dB Ref. Treb @ 10 kHz 32 dB Ref. Bass @ 50 Hz. Experimental evidence confirms that Park's "EDGE" control acts as a sort of Presence type of EQ, defined at approx. 8 kHz for control of "Low-Treble" region of amp's frequency band. Treble and Bass controls are a 'wide range' with Mid. at 600 Hz similar to Marshall's.
Signal/Noise Ratio	Better than 65 dB	Treble/Mid/Bass/Edge set FLAT. Ref. 120 Watts output into 4 ohms load	Unweighted true RMS reading on ANM2 Radford noisemeter with reference to nominal power output. All the ECC-83 valves are both magnetically and electrostatically protected by a specially provided "push-twist" type of screening hardware. Input (A) HIGH may be used in conjunction with the footswitch provided. (A/B change-over). When Channel (A) is used both Gain (A) and Gain (B) potentiometers are cascaded and acts simultaneously.
Capacitance Load test	OK	2 uF non-electrolytic capacitors and 4, 8 16 ohms dummy load	Satisfactory. However small overshoot observed.
Open circuit Stability test	OK	Dummy load removed, tone control set Flat, Channel Gain/ Output level set MAX.	Reasonably stable during O.C.S. tests.
Short Circuit Test	30 seconds	full drive	No ill effects however all anodes of the four EL 34 penthodes turn red hot very quickly. Worked perfectly OK after short was removed.

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# Keyboardcheck

## Yamaha CP80B Electric Grand \$4100

When Yamaha introduced the CP70 electric grand a couple of years ago there was little doubt in anybody's mind that a major breakthrough had occurred for the benefit of keyboard players. Here at last was the answer to all those problems that arose from having a grand piano on stage and trying to get it heard in the context of electric music. Pickups for acoustic pianos were (are) fiendishly difficult to set up and unless they are set up *absolutely* correctly certain notes will sound far louder than others — feedback is always lurking ready to jump out at you when you least need it, and anyway half the pianos aren't worth bothering about in the first place.

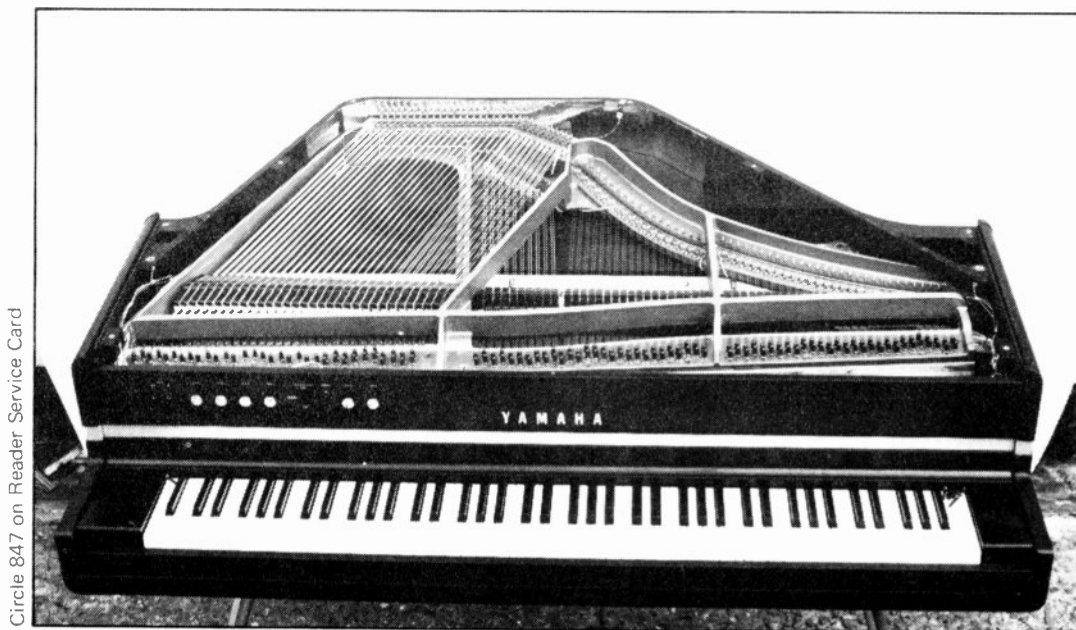
So, what follows is less a review of the electric grand — more an enthusiastic appraisal coupled with a description for those not fortunate enough to have encountered one yet. Also, note that this particular instrument, the CP80B is a logical development of the original CP70 in that it has 88 notes (i.e. the full piano compass up to C<sup>5</sup>) whereas the CP70 has 73 (*cf.* Fender Rhodes 73 and 88). Now as well as manufacturing a vast array of electronic musical equipment (synthesizers, organs, amplifiers, mixers, domestic speakers, PA's . . .) not to mention motorbikes, outboard motors and guitars, Yamaha has been making acoustic pianos for many years.

Their concert grands are fine instruments with superior tonal characteristics, displaying massive bass and the singing brightness that one expects from the best pianos such as Steinway, Bosendorfer etc. So it follows that with all this experience to draw on, Yamaha was ideally placed to produce an instrument that merged both acoustical and electrical properties. Naturally, the new piano would have to be more compact and robust than the concert grand (which doesn't travel too well at the best of times). This philosophy (ease of transport and maintenance) was taken a stage further by the simple (!) expedient of designing it in two sections — (1.) Strings and main frame which fits onto (2.) the action and support.

The main design problems were producing the "grand" tone from the necessarily shortened strings and in keeping the action as similar in feel to the concert grand's yet able to stand the travel and occasional mishaps that occur on most tours. The strings are the same as those used on the acoustic counterpart, except for the lower two octaves where they had to be specially developed. In reality, it is the bass end which shows the electric grand to be the compromise it is — no criticism intended and Yamaha forestalls any when they state that the piano has "very nearly the sound and feel of a concert grand". That "very nearly" is a good example of the integrity and thought that has gone into this design. How unlike the claims made by the makers of the more inferior species of electric pianos who will glibly put the label PIANO on a rocker switch and then go on to state in the unfortunate owner's manual, that this will produce a "really lifelike piano sound" or some such falsehood. Watch out for them — the shops are full of instruments like that.

Anyway, (tirade finished) the bass end *does* lack the sonorous bite of the larger acoustic instrument. Moving further up the keyboard the quality of sound, providing you are putting it through good clean "hi-fi" amplification and monitors, is realistic and, even though the electronic element is easily detectable, a pleasure to listen to — to be even more subjective for a moment, I've always found the sound of these instruments quite inspiring — and makes you want to play. The action is conducive to this as well — it's almost identical to the repetition action found on the concert grands, the only differences being the adoption of harder wearing buckskin on the hammers and improved damping. The action helps to make the piano extremely responsive; it is positive, no trace of lateral movement and medium-heavy in weight — just like the real sorry acoustic thing in fact.

We've established that the instrument sounds good or better than that and is great to play. What more can you ask for? That it should stay con-



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stantly in tune? It's not quite as simple as that. It does need tuning fairly regularly (every other gig) if you are touring though, it is much more stable than an acoustic grand would be. Yamaha has worked hard on this problem. The tuning-pin block is weather-proof (short of direct contact with rain!) and the pins lock in position solidly though when you do want to tune, this is facilitated by the fact that the pins (a) won't rust and (b) are designed to turn easily when required to. For the rest you can only be careful and hope it won't get dropped off the back of the truck.

The principal behind the electronics is basically simple — a piezo-electric pickup for each string mounted at the point furthest from the hammer, a pre-amp that mixes the highs, mids and lows together in a curve that as nearly as possible resembles the real thing. This may be further modified by the three tone controls (plus/minus) and (on the CP80B) a three-way switch that boosts any one of these areas. I've always favored a slight increase in the treble control but beware of turning the bass up too much — if there's a lot of noise on stage the vibrations can build up (transmitted through the floor probably) and the Yamaha will start to produce a low howling feedback — you start looking around enquiringly to see where the foghorn is, but as I mentioned earlier, that's the only way you'll get extraneous noises out of it and the answer is probably to have it standing on a piece of foam.

There is a jack input and output for effects, and pedals but I don't feel that phasers or flangers do a lot for an instrument which, despite being electronic, sounds so acoustic. But echo/reverb does sound good and certainly it's a good thing that the option is there. There is also a tremolo section with an on-off switch and controls for speed and intensity. As there are two outputs from the instrument the tremolo is in stereo, the same way as that on the Fender Rhodes with which you may by now have noted the Yamaha has many features in common. Incidentally, there is a choice of outputs — balanced XLR 3-pin or phone jack.

On the last tour I did the electric grand stood out in the mid-day furnace heat of a Spanish bullring, suffered the moist humidity of a wet Mediterranean night, shivered in the cold breeze of a Norwegian open air festival and never once let me down. So I'm biased — if you can afford the extra money the CP80B is the one to have — it takes up more room and is slightly heavier, and while we're on the subject these pianos ARE portable but by not less than two people. One last thing — if it is a choice between one of these and an acoustic grand (preferably medium to large) and the instrument is going to stand in your front room with the express purpose of being played there, then choose the acoustic instrument — I'm sure Yamaha would agree with me. After all you could always buy one of theirs.

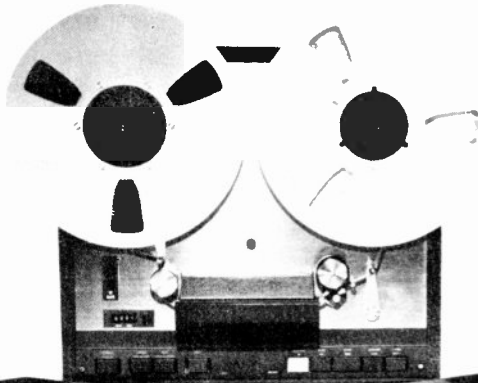
**Tony Hymas**

*Tony Hymas is a keyboard player and composer with experience in rock, jazz and classical music. He has played with groups ranging from the Jack Bruce Band to the London Symphony Orchestra, and recently toured with the band fronted by Jeff Beck and Stanley Clarke.*

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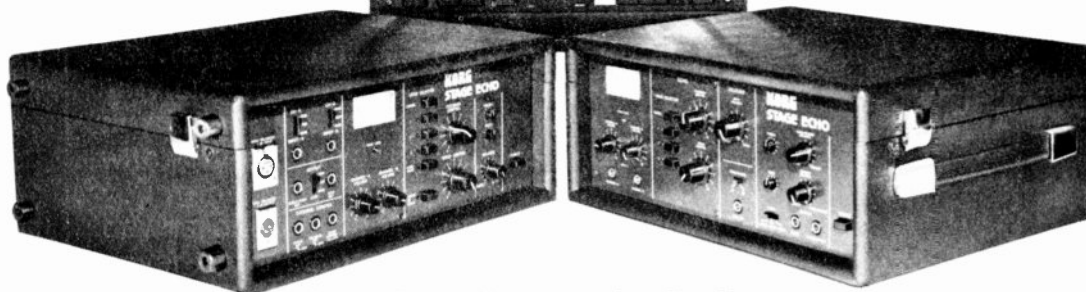
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# KORG

# Guitarcheck

## Moonstone Guitar \$1,850

Designed by luthier Steve Heglin, the Moonstone, a custom-made solid body guitar distributed worldwide by Morley, is being sold on its "sophisticated complex of electronics" and the fact that it is "sculpted" from a solid piece of maple *burl*.

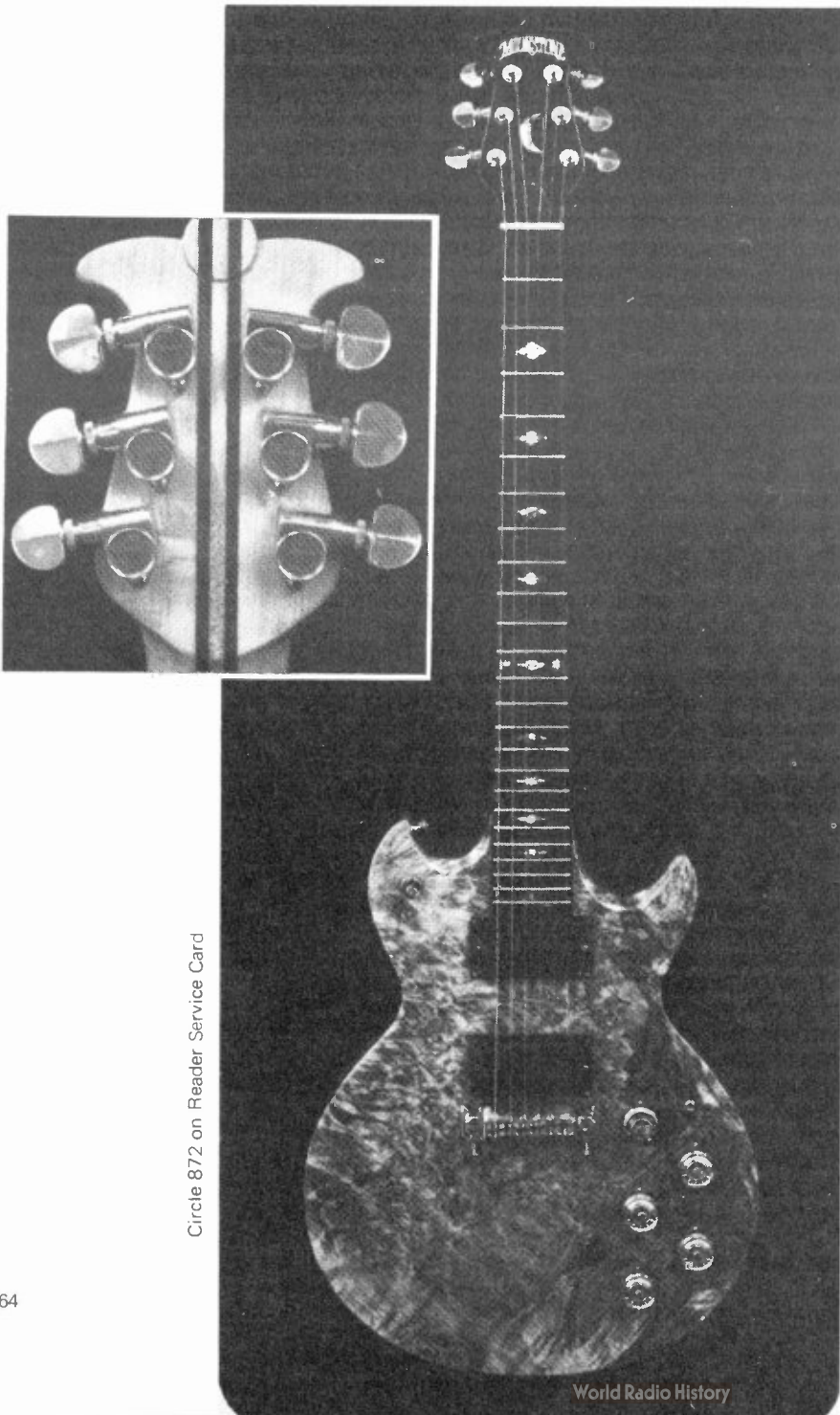
Literally defined as a "large, rounded excrescence (abnormal, disfiguring outgrowth) on the trunk or branch of a tree," *burl* is a particularly dense wood with a highly-faceted and unusual grain that seems to explode in a variety of random, swirling patterns. Traditionally a decorative wood used for making pipes, this "aberration" of the maple tree does have an elemental hardness which

undoubtedly contributes to the Moonstone's crisp, ringing response; but maple *burl*'s status as "nature's *most* resonant sounding board," or even as the most desirable type of maple for building a guitar, is still very much an open question. For now, *burl*'s most obvious advantage is its dramatic "marbled" grain, the basis of a visual appearance that immediately distinguishes the Moonstone from other guitars in its class.

The Moonstone's "sophisticated complex of electronics" is based on two Bartolini "active electronic" humbucking pickups whose versatility and unusually clean, well-defined sound mark them as a strong contender in the hotly competitive business of replacement pickups. The lead pickup, an "ES-1," features a built-in pre-amp circuit on an integrated chip located between the coils which offers the player three sound modes: "High Gain" theoretically provides "33 times amplification over normal (Gibson Humbucker)" and the unbridled power of this function tends to strain the implicit clarity of the Moonstone's sound to its limits. A certain discretion, i.e. backing off on the volume and tone controls, is required to avoid muddying up the sound. "Low Gain" provides "27 times amplification over normal" and is intended to approximate the metallic howl of a Fender Stratocaster at advanced decibel levels. By far the more effective of the two *boost* functions, "Low Gain" retains its sharp edge or definition no matter how much you distort the sound. The "Normal" or low-level volume function completes the sound. The "Normal" or low-level volume function completes this lead pickup configuration.

The rhythm pickup, a "Beast 2," features a five-position varitone switch for different tonal combinations and, in general, functions independently from the lead unit. Actually, the inter-relationship between rhythm and lead pickup on the Moonstone is somewhat ambivalent. The pre-amp gain function *only* works in tandem with the lead pickup; switching to the rhythm pickup while the guitar is still in a *boost* mode results in a drastic, almost unacceptable drop in volume. In fact, if the varitone switch is not all the way down on position 1 (single resonant peak), there is an all-too-appreciable drop in volume levels between lead and rhythm pickups under normal conditions — making for clumsy transitions between the various modes when first playing the guitar. The five position varitone, which offers "single resonant peak," "double resonant peak," "1/3 out of phase," "2/3 out of phase" and "full out of phase" combinations, works only in conjunction with the rhythm pickup; Morley's claim that "it can be heard mixed with the lead pickup" seems tenuous since they are talking about a finite difference in overall sound barely detectable to the trained ear.

On the whole, the Moonstone's electrical controls work well and are laid out in a simple, efficient manner. The individual tone and volume controls for rhythm and lead pickups are arranged in a conventional parallelogram with a much appreciated "master" or overall volume control knob neatly tucked into a space just under and a little behind the rhythm pickup, a location intended to facilitate the "violinizing" technique



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with the little finger. A miniature three-way selector switch under the master volume knob controls the pre-amp circuit while a sturdy three-position toggle switch on top controls the transition between lead and rhythm pickups. The black plastic varitone switch is too small (a classic case of aesthetics interfering with function) and too hard to turn. The control knobs are of the solid brass (Telecaster-style) variety often found on custom solid bodies, with a wide range and a smooth, supple mechanical operation. Both volume and tone controls have an even, linear response and, except for a lack of numerical indicators or graduated markings of any kind — a not very helpful new trend already pointed out by Stephen Delft — there is little to criticize here.

The internal wiring is clean and intelligently laid out in a series of channels which have been routed out of an already deep internal control cavity. Unlike other guitars with complex "active" electronics systems, the Moonstone's internal layout shows considerable foresight and planning. Everything, even the nine volt battery, has its place and is securely attached to the surface of the cavity which is covered with a thin coat of lacquer. The five Allen Bradley 250k "solid shaft" varitone switches are obviously quality components and the soldering stands up to close inspection.

As previously mentioned, the body of the Moonstone is made from a solid, one-piece block of maple burl, carved into a slightly unbalanced double cutaway shape with a gently arched top and a slightly pinched waist. The neck is a five piece laminated maple construction with two "stringers" of decorative padauk interspersed for added strength and some California "flash." It is glued to the body at the 18th fret, resulting in a rather unobtrusive heel shaped in such a fashion to allow comfortable access to the upper registers. A 24 fret guitar with a chunky body and unusually small headstock, the Moonstone is nevertheless a well-balanced instrument which, apart from the wide neck (53mm at 12th fret), is a joy to play. Since burl is a very irregular wood with generous *craters* or holes in the surface, extensive filling (epoxy and burl shavings) had to be done to insure a uniformly smooth finish. Considering the difficulties inherent in finishing burl, the overall finish ("catalyzed" varnish) is quite well done.

The neck has a slightly rounded back shape which flattens a bit just before the heel. The ebony fingerboard is also quite flat with a barely perceptible camber. Bound with thin strips of padauk, it is fitted with medium width frets *adequately* (some inaccuracy at the fret ends and visible gluing finished off and inlaid with delicate diamond and snowflake patterns of abalone — excellent work!). The bone nut is massive and set just high enough to maintain the pristine clarity and built-in resonance of the body up to the headstock, which, curiously enough, actually slopes down and away from the nut, starting at a point *below* the level of the fingerboard.

The small "cramped" headstock on the Moonstone is really the most obvious design flaw on what is largely a well-planned instrument. In a futile attempt to create a different "look," the

manufacturers have come up with a puny and rather unattractive peghead that does nothing to help the intonation while further complicating playability — the six Ibanez machines are set in tight, sloping rows up to a confining and useless wooden "lip," the most annoying part of the design, creating severe access problems to the machines. The gears for the D and G strings require a special series of contortions. The peghead is covered with a darker, stained piece of burl and the filigreed Moonstone logo (abalone) is carefully inlaid into the surface before finishing. This is all well and good, but the lousy design of the peghead and the use of the Ibanez machines represents a serious lapse that markedly toned down my initial enthusiasm for this guitar.

The strings are anchored to a gold-plated Leo Quan "Badass" combination bridge/tailpiece, also an obvious choice for custom instruments because of its accuracy and the lessened space requirements implicit in a one-piece unit. This in turn is solidly attached to the body with large screws fitting into metal sleeves sunk deep into the body. The action supplied was a little *too* low, causing most of the strings to rattle. Raising it a tiny bit helped immeasurably while still keeping the action low enough for those lightening single note runs we've all come to dread so much. A slight sharpness in the intonation set-up of the top E and A strings, easily corrected with the Quan bridge, is the only other complaint to stem from this area of the Moonstone. The ebony fingerboard helps implement the lively, "springy" sound of the guitar, with no obvious dead spots or warps to interfere with the sustain.

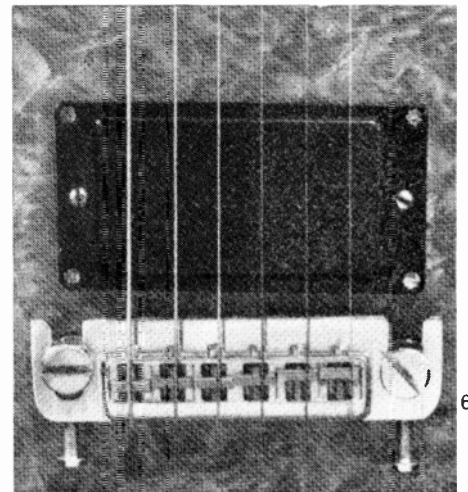
### Conclusion

A well-built and conscientiously finished guitar, the Moonstone offers an extensive variety of tonal colors characterized by a crystalline, ringing sound that recalls the best tendencies of middle Sixties Fender and Rickenbacker (12 string) instruments. The Bartolini pickups provide a sound that is hot *and* clean via an electrical control system that is nearly faultless. The only major criticism of this guitar, besides the slightly "ass-backwards" pickup switching, is related to the poorly designed and executed headstock. It is annoying enough to distract even the most forgiving player. That, and the more basic discrepancy between the list price of the Moonstone in relationship to its excellent but not "otherworldly" workmanship and materials.

Jean-Charles Costa

### Measurements on Moonstone Guitar Serial No. 7969

Scale length 659mm  
String spacing at bridge 51.5mm  
String spacing at nut 40mm  
Depth of neck at Fret 1 19mm  
Depth of neck at Fret 12 21mm  
Depth of neck at Fret 15 27mm  
Action *not* as supplied (action supplied too low, excessive rattling/had to be raised)  
24 frets on fingerboard  
Body joined neck at Fret 17  
Heel begins at Fret 15



# Effectscheck

## Ibanez AD220 Analog Delay and Flanger \$750

As far as controls are concerned the AD-220 is a straightforward analog delay and multi-flanger. On the left there is an input sensitivity control next to which are a row of LED's which indicate signal level. The input impedance is 100k ohms unbalanced with sensitivity of  $-40\text{dBm}$  to  $0\text{dBm}$  making it suitable for use with guitars and microphones all the way up to line levels. The maximum overload is  $+20\text{dBm}$  and as such is compatible with overload levels found in the vast majority of professional mixing desks.

Moving along the front panel there is a section which includes four controls. Delay time, delayed range, delayed level and regeneration. The delay ranges are 75, 115 and 500msecs. This control combined with the delay time control allows delays from 10msecs up to the maximum indicated on the range control, making the unit very flexible in terms of delay times and comparable with any other analog delay unit available. The delay level control adjusts the mix between original signal and delayed signal at the output, while the regeneration control adjusts the amount of signal which is fed back from output to input and hence the repeat.

The next section on the front panel control consists of two knobs marked width and speed. These controls adjust the flanger section of the unit. The width control varies the delay time shift and can be adjusted from no effect to full pitch bending sound. The speed control adjusts the flange speed and to give a visible indication there are LED's above the control, one is on as the flange oscillator sweeps up while the other switches on while the oscillator is sweeping down allowing a very useful visual display of the effect. The delay available is from 1m to 22msec, a useful range allowing many effects to be generated. Doppler shifting, vibrato, flanging and chorus are all within the scope of this section of the unit. Following along the front panel of the next section is an output level control with an output socket and also a delay output. The output levels available go up to a maximum of  $+20\text{dBm}$ . Used with a mixing desk this is obviously quite adequate for most applications. Used with a guitar and a guitar amplifier the amount of output available is very suitable for overdriving a guitar amp. When the effects are not being used the AD-220 will still be acting as a pre-amp. The delay output is a useful addition and allows a separate delay output to be fed into a mixing desk making it possible to do yet another mix and increasing greatly the flexibility of the whole system. The delay output signal level is controlled by the delay level knob.

The last section on the front panel has a control marked delay, normal and flanger. This switches the function of the system from delay through to flange and by-passed. Beneath this there is a socket marked foot switch which allows remote control to be used, switching the unit between either delay and normal or flange and normal allowing the unit to be brought into operation for stage use or remotely from the mixing desk in a studio without having to go across to the unit.

### Lab Tests

Taking the AD-220 into the lab and measuring its performance gives some of the reasons why I consider this unit to be worth while and highly recommendable. Naturally, the delay times input and output level performances were all met and reading the specifications will simply give you these figures. A measurement of noise performance returned a quite remarkable  $-88\text{dBm}$  (input shorted IHF-A curve). This kind of figure is what one would normally expect to find on the very best studio effects units and for comparisons sake is around the same order as a top quality mixing desk. Distortion performance in the normal mode, which means using the unit as a straight pre-amp, returned a figure of 0.08% at 1kHz. This is an excellent standard of performance and is superior to the vast majority of on-the-road mixing desks which are available. This, I think, certainly gives some comparison. In the delay modes the distortion was a maximum of 1.2 percent at 1kHz. This again is an excellent figure.

### In Use

In the short time that I had the AD-220 it was used on stage with guitar and also as an insertion on a mixing desk at live gigs. As far as guitar effects system is concerned, I can only describe the AD-220 as amazing and very refreshing. Refreshing in so much as when delays or flange is switched in you don't get the hail of background noise associated with most echo and flange units made for guitar use.

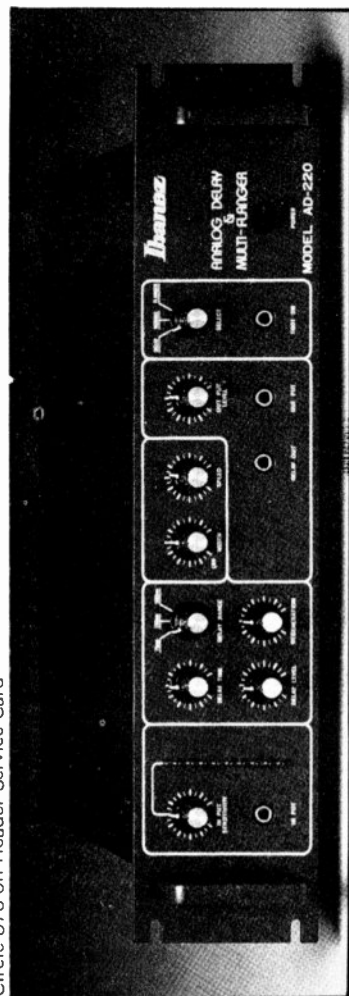
When it comes to what the unit can do, it's echo range is in all fairness no greater than most units available. However, the ease with which the unit can be used and the clean way in which it operates seems to make its echo function more acceptable as far as sound is concerned and from the guitarist's point of view, he will probably find it more flexible because he can achieve the sound he is thinking of. In the flange mode, the unit again performs very well — the flange range is no greater than any other units available, but the smooth transition from up to down has to be heard to be appreciated. There is no abrupt change, the oscillator sweeps the flanger cleanly and the only way I can describe the sound is comfortable.

Using the AD-220 with a mixing desk, I again found it easy to achieve the desired effects and also again refreshing not to have the background noise and distortion which many effects units give you.

### Conclusions

I like the AD-220 very much. I would like guitarists to consider the merits of the AD-220 before dismissing it as too expensive. Certainly in the time that I had this unit a number of guitarists went away wondering whether their XYZ dyecast box was worth quite as much as they had paid for it, even though it was cheap. As far as using the unit on the road as an insertion on a mixing desk, that it is ideal. In the studio this unit will provide the vast majority of requirements at a low price.

Chris Rogers



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To start with there's a very special silver metallic paint job and 'Anniversary' motif. To prove the authenticity of the instrument, each owner gets a certificate logging the origin and serial number. Other features include nickel silver frets, a special serial number, full electronic shielding, new deluxe machine heads and a new superior molded case. All anniversary stratocasters have maple necks and tremolo.

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arry







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Can you handle a guitar as hot as a Fender Lead I or II?

# The Lead I & II

# In the beginning was th



The Fender Mustang Bass (left) and the Fender Jazz Bass. The Mustang is a short scale bass design, built with a split pickup. Players have a choice of maple or rosewood fingerboard and an adjustable string mute allows exact control of string damping. The Jazz Bass is a classic Fender bass design offering a warm, highly controllable sound. This twin pick-up instrument is controlled by two volume blend controls and one master tone control. Scale length is 46 $\frac{1}{4}$ ".



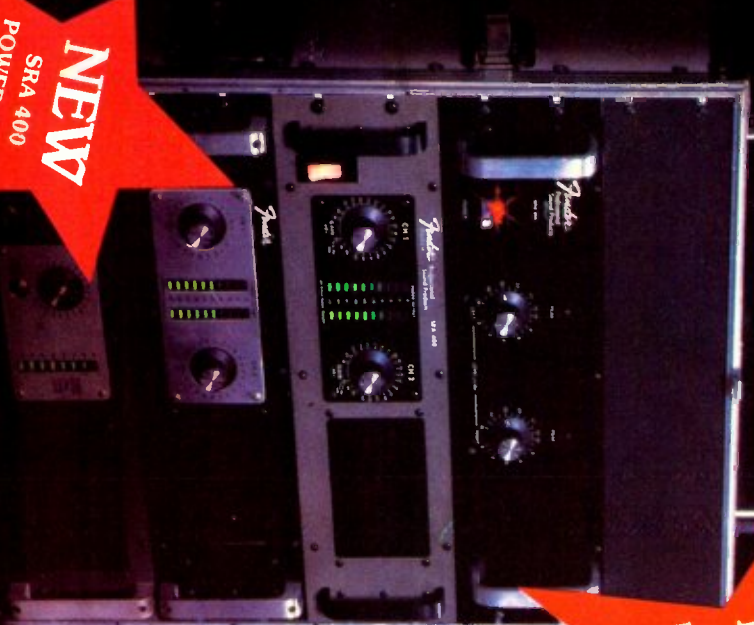
The Musicmaster Bass (left) and the Fender Fretless Precision. For players who want a short scale bass without losing that Fender sound, the Fender Musicmaster Bass is the answer. This bass combines great sound and looks at an affordable price. The Fender Fretless Precision is for the professional musician who wants upright string bass feel and versatility combined with the precision bass sound. Available with rosewood or optional one-piece maple fingerboard.

# e Precision Bass

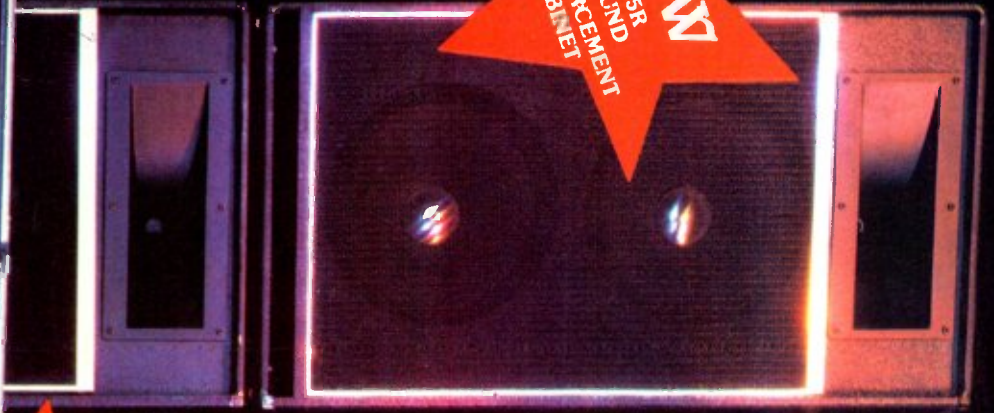


Fender invented the Bass Guitar. The Precision Bass brought bass players into the front line and gave rock 'n' roll its punch. Today — as always — the Fender Precision Bass is the world's most popular bass guitar. There's no other way to get that "Precision Sound." The Fender Precision Bass has one split pick-up, rock maple neck and multi-adjustable neck.

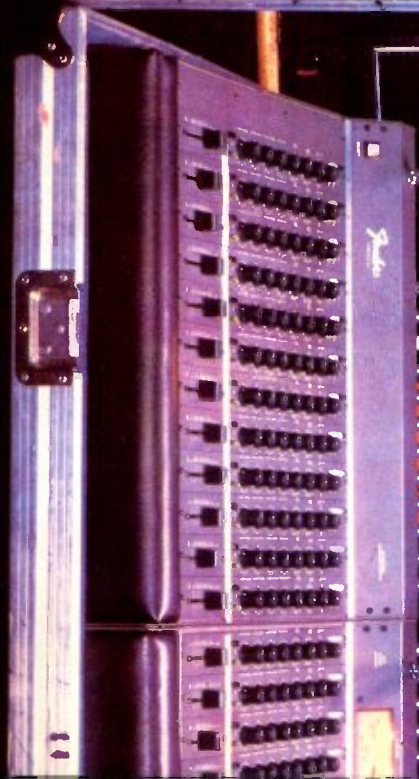
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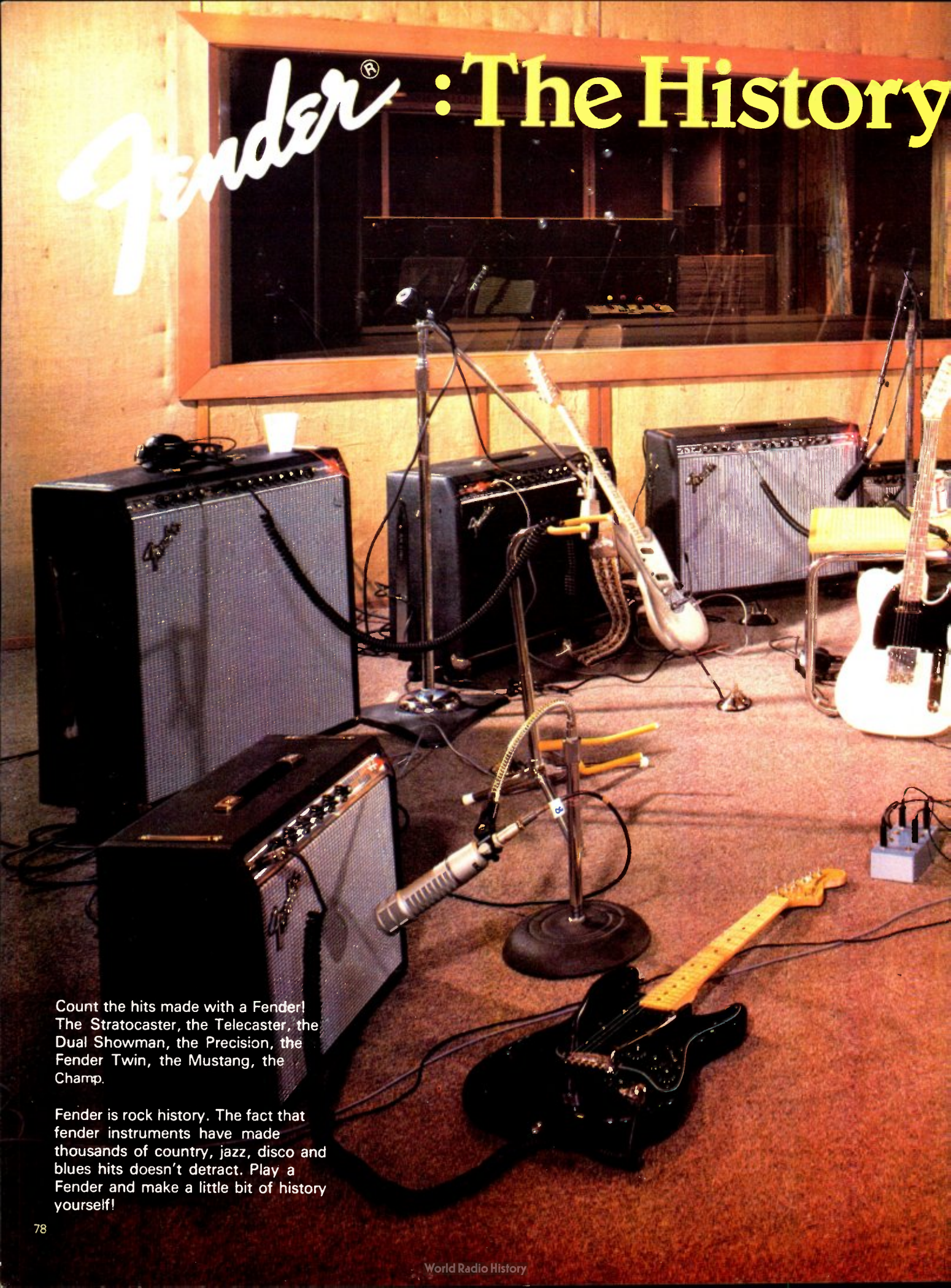
For maximum projection Fender has developed new PA enclosures, the 215 R cabinets. These full range units are built to take punishment the road hands out. Two 15in drivers and one high frequency horn is fitted. For better hearing on stage Fender has developed the 1-12M stage monitor, a unit designed to provide accurate reproduction with minimal feedback characteristics.

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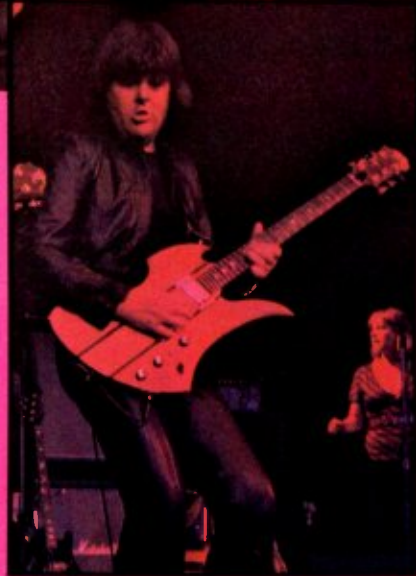
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World Radio History

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Where the others leave off is where the Jupiter-4 really begins. We've included a built-in Chorus Ensemble that eliminates the need for detuning banks of oscillators to achieve a fat sound, and our stereo output can span the effect across an entire stage. An incredibly versatile feature is our built-in Arpeggiator which cascades the entire keyboard in any of four patterns. The arpeggio can be controlled either internally or by an external trigger from a digital sequencer or Roland Compu-Rhythm.

The Jupiter-4's spring-loaded Bender is functionally engineered to be the simplest, most effective design possible for adding expression to your music. The Key-Assign mode allows you to select which oscillator bank goes to which key you depress, and if you want, all four oscillators can be played in unison making the JP-4 an unbelievable lead line synth

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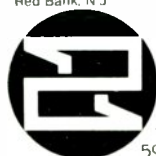
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World Radio History

The number of French rock stars on the international music scene are few and far between. And the number of rock violinists can be counted on one very small hand. All of which makes Jean-Luc Ponty a rarity, because he is both.

There can be no doubt that the appearance of the electric violin in the late Sixties added a new and exciting sound to an already exploding musical world. Ponty was one of the spearheads of that sound, particularly through his work with Frank Zappa on the *Hot Rats* album and later with John McLaughlin's Mahavishnu Orchestra. Today he fronts his own band

and has become deeply involved in complex electronic music.

A far cry from his classical days in France when he was considered something of a child prodigy. However, from an early age he discovered an interest in jazz, which opened up a whole new world of music for Jean-Luc, particularly the aspect of improvisation.

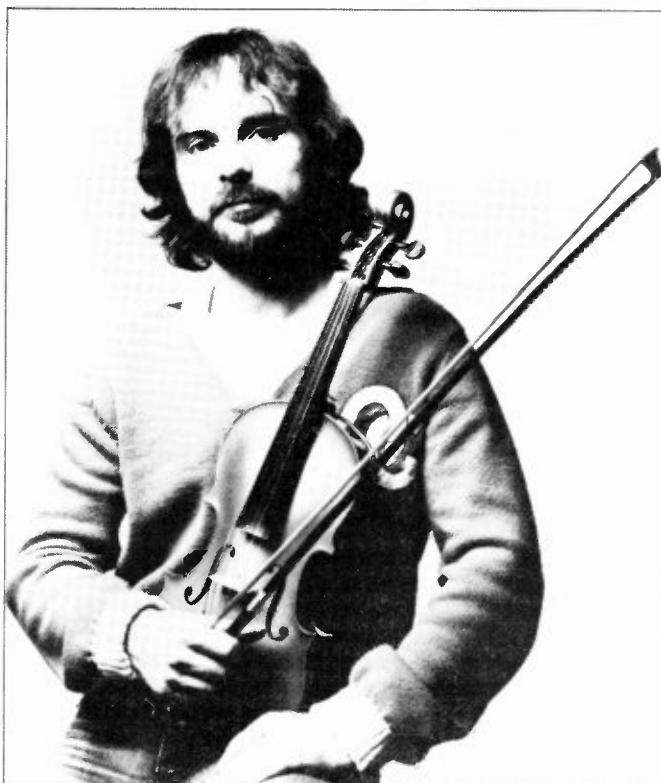
It was while he was playing with jazz bands that the question of amplification occurred. "When I started jamming in clubs, I was a classical player basically so I would go along with my acoustic violin and have to play through the PA into a mike, and I'd get a stiff arm after five

minutes. Also, I have always played with energy and the drummer was always getting excited behind me. First of all he would be playing with brushes, but very quickly he would grab the sticks and start cooking and I just couldn't make it.

"So out of necessity I went out to buy an amp and a De Armond pickup, which was made for violin but was very poor. It was just for the volume, just to be heard in a band with a drummer. Of course from a purist's point of view I was reluctant. After all, I was influenced by my classical education and it was kind of a sacrilege to put a pickup on a violin.

"I found out very quickly that feedback was a problem, and another problem was that with a De Armond the sound was totally uneven. The lows were very fat and boomy which I liked because it somehow gave me the tone of a tenor sax, but it was too much sometimes. It didn't peak at the very high frequencies which the violin goes up to, so when I played very high notes on the E string it would just be acoustic.

"The first amp I had was small, 40 or 60 watts, and the sound was rather screechy. Also I found that the people who sat at the first tables of the clubs where I was playing were complaining. This was because I wanted to project my sound out



# JEAN-LUC PONTY

## 'COSMIC' VIOLIN

BY DAVID LAWRENSON.

into the club, so I directed the speaker towards the people. I didn't know anything about sound, and everyone was complaining that they had never heard anything so loud and piercing.

"I later became conscious of EQ and the tone control on the amplifier, so I developed a mellower tone. It was an electric sound which was a bit fatter than the traditional acoustic sound and I found it a help to integrate my sound into a jazz band."

The biggest step in his career was probably the move to the US in 1969. Prior to this Jean-Luc had done virtually everything that was possible on the European music scene, including leading his own band and recording with numerous name artists like Stephane Grappelli and Stuff Smith.

Soon after arriving in the States, he acquired his first real electric violin which was to provide the jumping off point for his electronic excursions. "I met John Barry (of Barcus-Berry fame) in 1969 in California and he introduced me to one of his first electric violins. It was a revelation for me because for a long time electric violinists were lacking good equipment, it was real Mickey Mouse stuff.

"John Barry was the first man to create



a serious good electric violin. All the electric violinists agree that they are still the best. I work closely with them and every time they come up with something new they like me to go to the factory and try it and give my opinions about it.

"When I seriously started thinking about electronics, I said that since I have to deal with an electric violin, I will get the best out of it. Also I was looking to develop a new sound. I'd already forgotten about trying to reproduce the pure classical sound of the violin. I didn't want that sound any more anyway, because I was getting a kick out of the new sound. It was fatter and more adaptable to rock or jazz or whatever contemporary sound.

"I wanted to develop it more and more and this was becoming my identity, that electric violin sound — it was me. When it comes to volume, thanks to the quality of equipment, I can play as fat as a guitar and as loud as a guitar if I want to. Right now, I'm using amps like Crown, which is really hi-fi equipment, together with JBL speakers or Altecs with horns, and although I never consider myself totally happy, the equipment I have now is the best I've ever had."

Jean-Luc's rise to fame in the rock world came through his work with two of the most talented, and respected musicians in the US, Frank Zappa and John McLaughlin. His guest appearance on Zappa's *Hot Rats* album probably first brought him to the attention of the rock public and he later toured with Mothers' pianist George Duke.

During the early Seventies Ponty also assembled a band of his own, before going back to work with Zappa and later joining John McLaughlin's second version of the Mahavishnu Orchestra. The effects of working with two such major talents were obvious on the developing new world of Jean-Luc, although the demands of each were different.

"With Mahavishnu, what he wanted from me was very specific — he wanted a violin, an electric violin. Therefore I was not using too many different sounds, which I do now more with my band. It was pretty flexible though, I'd do a solo with an Echoplex for instance, and it was in the middle of a long suite, and he would let me go into that just on my own, totally free. He liked that and encouraged me to do it. Otherwise, what he wanted most of the time was a straight electric violin sound.

"Zappa was another story, a different situation where instrumental music and improvised solos were not really the name of the game as much as Mahavishnu or my band. It was part of the show, but there were a lot of other things too, therefore I had less room to play and experiment.

However, Zappa was very encouraging towards experimentation with sounds, he was one of the first ones to get into new devices. He seemed very excited every time a musician would try something new.

"At that time it was really the beginning of experimentation for me and also the beginning of devices becoming available. I'm talking about the early Seventies when we started seeing a few devices in shops that were usable on stage. Until then, effects were mostly done in studios and it was not possible to reproduce them on stage most of the time. So my interest grew at the same time as the development of those devices. Now, every six months there are new things and that's helped me tremendously. I had the same interest in researching sounds before, but there were not as many available."

Ever since his early screechings sent French jazz club audiences running for cover, Jean-Luc has been very conscious of his live sound. There can be few more painful experiences than listening to an ailing violin, particularly an amplified one. Jean-Luc has had a fair amount of sound problems but now, he feels it's all down to a good sound engineer, good equipment and good musicians.

"You have to have entire confidence in your sound man, because you don't know what's happening in the house when you play on stage. It's entirely in his hands — or should I say his ears — therefore the choice of a sound man is very important. I have a great one on this tour and have had pretty good compliments everywhere we played. The volume is very controlled.

"Also, we have better equipment on stage this tour, and different musicians who understand better the discipline of volume. With the previous band two years ago, it was getting to a point where I couldn't control it. You can't do it without dynamics and this band is great for that."

Since concentrating on a solo career in 1974, Ponty has released five albums, *Upon The Wings of Music*, *Aurora*, *Imaginary Voyage*, *Enigmatic Ocean* and the latest, *Cosmic Messenger* (all on Atlantic). He admits that the music is hard to categorise and reflects his many influences.

"Even for me sometimes it's hard to analyse because I just let the inspiration come out, and that's the way I write my music. Once an album is finished, then sometimes I find where the inspiration has come from — if it has been more influenced by my classical background, jazz, or my experience with rock. Let's say that my music is in its own place, a new music, a new form, issued from jazz and rock and my own classical experience.

"I'm not trying to produce modern ▶▶

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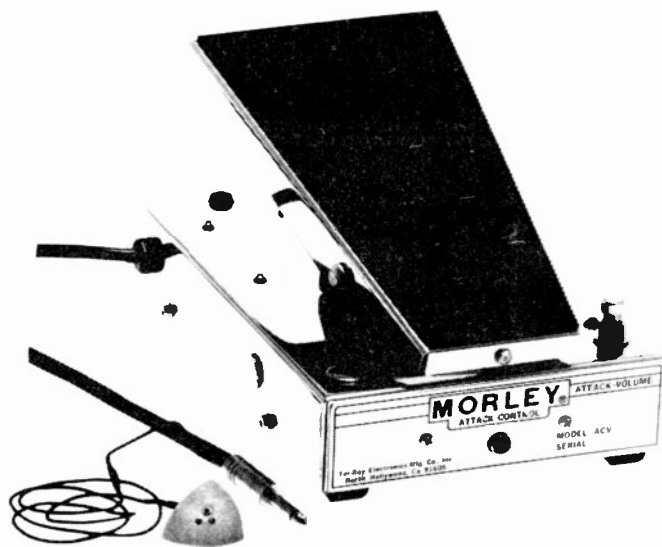
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# JEAN-LUC PONTY

classical music, but since I've learned or experimented in classical music, then ideas like the writing of a suite come from this classical background. From my jazz background, I still use some rhythm concepts for solo sections and improvisation. Basically the concept of my band is to be an instrumental band where there are arrangements and compositions to play. Sometimes they are very orchestrated, but it is usually half and half, the solos are open and the musicians are free to improvise.

"For example, the suite *Imaginary Voyage* is in four parts. Part one is totally written in a classical concept, I even wrote the bass and drum parts. That lasts for two and half minutes before going into part two which is extremely open, all I have is a bass riff pattern. I indicated to the drummer to give a kind of rock feel behind, and I have chord changes. It starts with a solo, so suddenly it's very open and very loose, then I don't say any more. I mean, I give a choice of a pattern to the bass player but he's free to elaborate on it.

"So it really depends on what I want to do, where I want to go with a piece, but even when there is a lot of structure, it always ends up somewhere on a very open section. It is a mixture of strict discipline and freedom."

During the time of the Jean-Luc Ponty Band, there have been several personnel changes. Often musicians who appear on the album fail to make the touring line-up. This happens for a variety of reasons, but Ponty is quick to point out that the musicians are there to play his music and if they cannot follow the direction he is taking then replacement is inevitable. More often than not, availability is a big factor in deciding what musicians he employs in his band. For instance, he featured British guitarist Allan Holdsworth on the *Enigmatic Ocean* album, but wasn't able to include him in his touring band, or on subsequent recordings.

"After our European tour in 1977 I came back to LA and suddenly got the idea of having a second guitar player in the band. I had heard his playing on the Tony Williams album and I couldn't believe how much affinity I was hearing with his playing. His sound was exactly what I was looking for, the icing on the cake.

"The reason I called him was because I wrote a piece called *Nostalgic Lady*. While I was writing it, I was hearing him playing and improvising, I was hearing his sound. I never told him about this but after we'd finished recording he said to me, 'My best solo is in *Nostalgic Lady*', so I had guessed right about his affinity musically. He was not on the next album because I needed someone who was available for touring

and Allan wasn't. For me albums and tours are linked together, so I don't always get the people I want."

Jean-Luc also points out that the individual members of his band are always free to opt out whenever they wish, to pursue other projects either with other bands or following a solo career. he explained, "Basically, I don't want to be stuck with musicians forever, like in a marriage, because we all draw in different directions at different times."

With all of his experimentation in electronics it would be quite easy to forget about playing acoustic violin. However,

Jean-Luc has been careful not to neglect the instrument with which he began his musical career: "I don't use it on stage on this tour, but it's true that it is still part of my sound.

"To me, my life has been adventuring with the sound of the violin and therefore I have a spectrum of many sounds, but that includes the old traditional music sound as well. My identity as a violinist today is my electric sound really, but I don't feel it replaces the acoustic sound. It's something new which exists in its own place now, but fortunately there is still the beauty of the acoustic violin."

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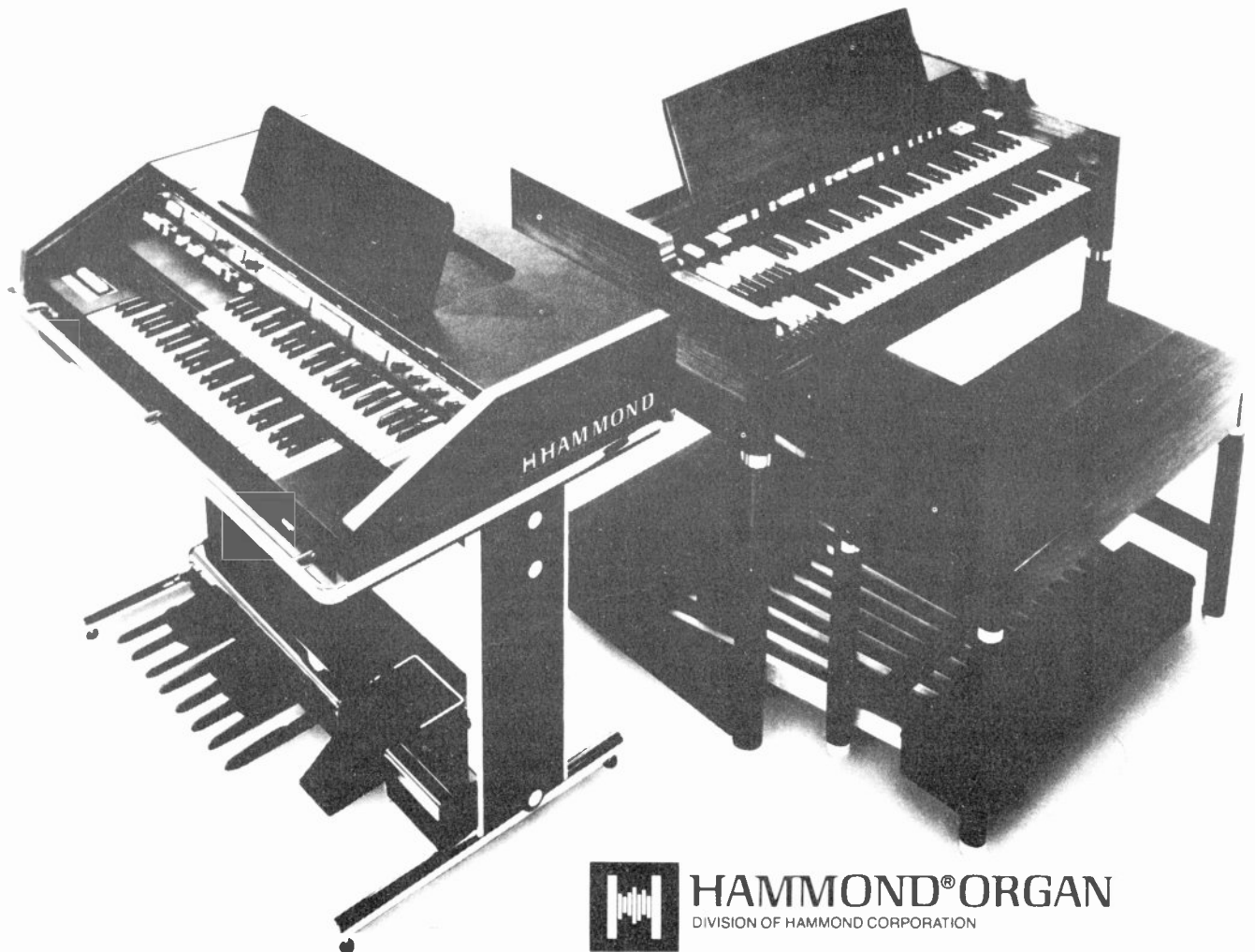
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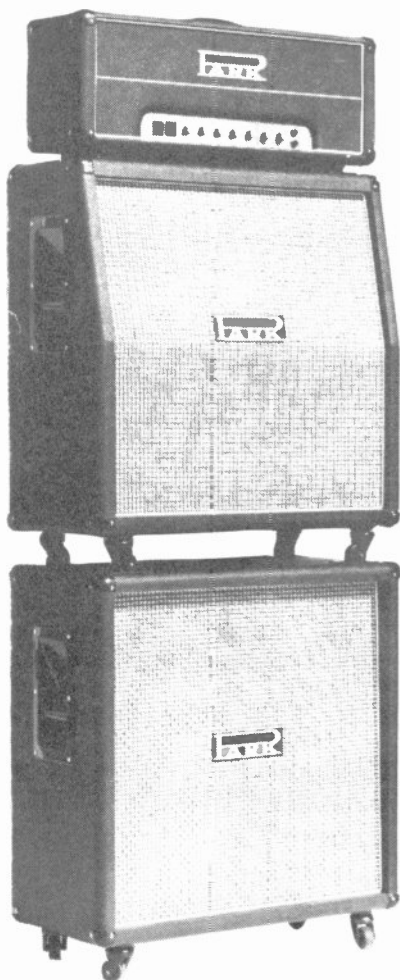
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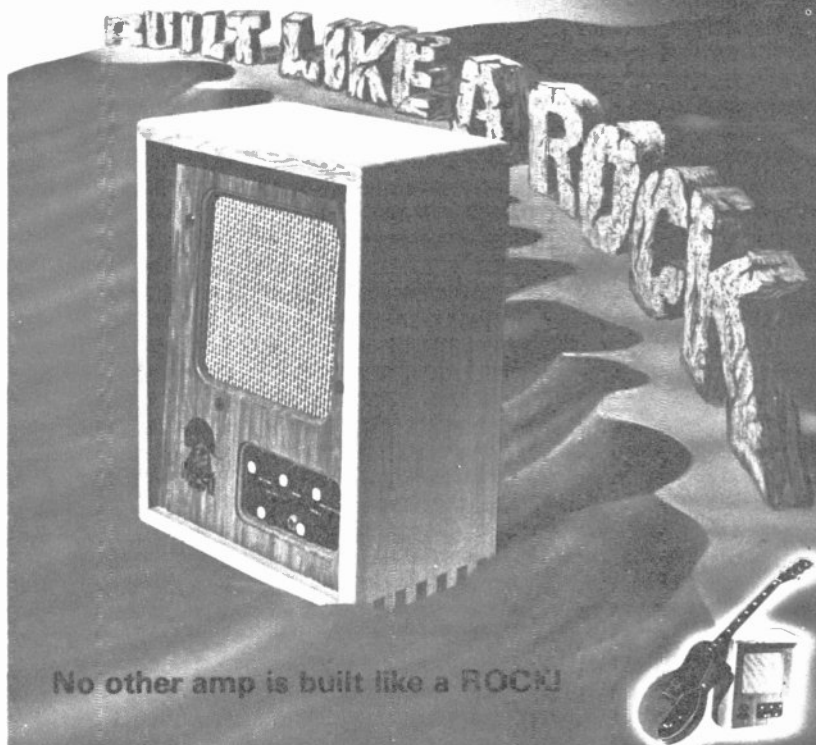
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# JOHN FAHEY

## The classical flat-top guitar

John Fahey would like to put the record straight and clear up a few faulty assumptions that have been made about him. He did not study under Segovia, has never taken LSD, does not smoke marijuana and is not a blues guitarist. He is more of a pioneer who has attempted to go where no man (or woman) has gone before with the acoustic guitar.

He recently visited Britain for the first time in over eight years, and we took the opportunity to talk to this mythic figure. John's work first became prominent during the hippie era of the late Sixties with the result that, "people still think I come from the psychedelic generation." As John explains, "I played in San Francisco a while ago and received a letter

from a guy who said I've got such a lovely soul — if only I'd get off that LSD. People still think I take LSD but I've never even tried it. People make assumptions about me and some of them are just preposterous. I don't smoke marijuana because it makes me too disorganized. Now alcohol . . ."

Born in Takoma Park, Maryland, in 1939, he spent years studying the roots of American music and the techniques of the bluesmen. Evolving his own unique style with the use of idiosyncratic tunings and an intensely rhythmic approach to the guitar, he then moved on from playing straight blues songs into a new area. And for this purpose he formed his own record company, Takoma Records. "I thought the steel-strung American guitar was a



legitimate concert instrument as much as the gut string guitar, which was made into a solo instrument by Segovia. The big record companies weren't interested, but I thought the instrument in its own right if you learn to play it properly, deserved concert status. With Takoma there would be an outlet for people like me."

Even classical music has had an influence on him because, as he says, "I play like a romantic conductor, slowing things down, speeding them up — the use of dynamics. I'm trying to get the guitar to sound like an orchestra, more than a guitar." As a teenager he began to learn to play guitar from listening to old records, an interest which originally stemmed from observing how popular other young guitarists were with girls.

"I could see all these other dudes playing guitar, singing Country & Western and they were picking up girls, so I thought maybe if I got a guitar, I'd be able to pick up a girlfriend. It didn't work but I learned some basic guitar. The first guitar I had was a really cheap Silvertone bought through a mass mail order company. It was a really awful guitar. Then about 1956, I was listening to the radio to a Country & Western station and the disc jockey said he was going to play a very old record. He said it was all scratched but he loved it and played Bill Monroe's 'Blue Yodel No.4'. It was between the Monroe brothers and bluegrass and it blew my head off. To my ears it was the bluesiest thing I'd ever heard.

"After hearing it I went out to buy it, but at the record store they said it had gone out of print years ago. I was advised to go and find a record collector and sure enough a few days later I met one. A man of catholic taste, he had a gigantic collection and I began to get interested in all kinds of music. He started teaching me what to listen to. Everyone seems to think I'm mainly a blues man or something but I'm not. I like jazz, early bluegrass, blues, and rock is what I listen to in my car."

His study of American folklore led to a book on blues singer Charley Patton and brought him into contact with a few of the old bluesmen famous during the early part of the century. "I wrote the book because I was trying to propagate the faith of Charley Patton. For me, this was just the best blues singer that ever recorded. He died in 1934 and left some 40 recordings, the last few not so good, but his early records — wow! Some of the licks he played, I swear they sound like gun shots. I averaged it out and he never did 12 bars, it was almost 14. The 12-bar blues is an intellectual construction, almost a dissertation. It's as if you're in the country

hearing this different type of music and you go away trying to remember how to do it. You reconstruct it and come up with something called the 12-bar blues.

He says that on stage during a show, he does not feel happy unless he is moving around. Throughout his long sets — they usually go on for four hours or more — no concert piece is short or regular. John has two Martin guitars, a D78 and the D35 he used at the Venue, along with a Hawaiian Kona guitar. "I play long medleys for half an hour or at least 15 minutes because you can't really get going otherwise. I use tunes found in folk music and try to get these rhythm ideas in. I keep improvising, the tunes are never improvised, but the rhythm is."



In all, John has made some 18 albums and it was the *Transfiguration of Blind Joe Death* which first brought him to prominence. In 1969, his "Dance Of Death" was used on the soundtrack of Antonioni's "Zabriskie Point." Takoma Records has now been sold to Chrysalis as the only way out of what John describes as "a bad contractual situation." John used to be responsible for vetting all the demo tapes that were sent to Takoma and remembers the day he first heard Leo Kottke.

"We started getting lots of demo tapes in, and a lot of them were no good, until eventually a Leo Kottke tape came in and I thought — wow! Everyone in the office said he'd never sell because he played just like me. We put him out and really started making money. He plays songs similar to those I play and have written with so much energy and speed, yet with subtlety and dexterity. He's a good influence on me and I'm a good influence on him."

John says his early influences revolved around early bluegrass and blues artists of the caliber of Charley Patton, who became his favorite, and Blind Will Johnson. He was also responsible for rediscovering old

bluesmen such as Bukka White and Skip James. "What I consider one of the interesting things about the blues singers is that so many of them became preachers, and how they reconciled being blues singers with being preachers. Some of them just changed all the tunes into religious tunes with religious lyrics. The old preachers in the country took the Bible literally and preached against very simple things such as gambling, blues singing and certain types of dancing. They didn't have a higher concept of sin. People grew

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**"People still think  
I come from  
the psychedelic  
generation."**

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up on the idea that a few very simple things could send you to hell.

"Skip James had been a preacher at various times and when we found him he said 'you want me to play guitar again? I've not played for 30 years. I don't even have a guitar.' I don't know why he took it up again but after we found him, he made a few recordings and they were full of the old tension. By the time he got up North, he was crooning, relaxed, and singing for the white folks. I asked him about this and he'd decided that if he put his soul into secular music, he'd go to hell, but if he just crooned and didn't put his soul into it, he'd still get into heaven. They all solved this problem in different ways or came to grief. All of them believed this was the big conflict in their lives."

John once seriously considered becoming a minister himself but decided not to go through with it. "I nearly became a minister at one stage but I'm too unstable for that." In America recently he has been doing more live performances than ever and was disappointed that during his short visit to Britain, he didn't have time to do more concerts than the one at the Venue. However, with a new album due for release he looks set to continue his unique exploration of guitar playing.

Sean Higgins

# Albums

## Nils Lofgren

## Link Wray

## Peter Tosh

## Chuck Berry

### Nils Lofgren

*Nils (A&M)*

Since the brilliant *Cry Tough* album intervening releases from ace guitarist Lofgren have been hit and miss affairs — competent material mixed in with the magnificent. *Nils* follows the same pattern and the downright magnificent is headed by his version of Randy Newman's "Baltimore."

He sings with real passion about his home town and a slithering, aching guitar snakes in and around dramatic bursts of organ from guest player, Doug Riley, in this bruising tale about "a hard town by the sea." Only one song, "No Mercy", the anguished story of a prize fighter, is written by Nils and the rest are co-written, — three in collaboration with Lou Reed. Another guest artist is Dave Sanborn, who plays saxophone on "A Fool Like Me."

It is a well produced album laced with Lofgren's unmistakable solos on guitar and side two opens well with "Steal Away" and "Kool Skool", dramatic scorches which simmer along in his own inimitable style.

**Sean Higgins**

*Recorded at the Power Station, New York and Soundstage, Recording Studios, Toronto. Produced by Bob Ezrin.*

### Link Wray

*Bullshot (Charisma CAS 1143)*

Very much an early Sixties album, *Bullshot* is just a further chapter of Wray's long and successful career. Categorically speaking, it falls into the Bachman-Turner Overdrive and Dr. Feelgood class, a raunchy R&B album.



Nils Lofgren

The rendition of a Dylan song, "It's All Over Now Baby Blue" and both self-penned numbers "Good Good Lovin'" and "Just That Kind" are typical of that statement, also they are very good 'single' material. Complete with four jaunty instrumentals that resemble the wave of music in '61, Link closes the album with a Leiber-Stoller number, "Don't", a big Elvis hit, but he hasn't made any changes in style and beat to bear any originality.

Definitely an album of nostalgia, nevertheless rock 'n' roll is here to stay.

**Dave Bassett**

*Produced by Richard Gottehrer. Recorded by Instant Records Inc.*

### Peter Tosh

*Mystic Man (Rolling Stones Records)*

Lavish arrangements and synthesized sounds cannot disguise the basic flaws in this album. Poor songs with pop melodies played without any real commitment are hardly the right ingredients for good reggae. Has the step up into the big league gone to his head? With the exception of the title track followed by "Recruiting Soldiers," this is a very uninspired effort.

The arrangements and production leave no room for any bare emotion and lyrically Tosh is well below par. On "Buck-In-Hamm Palace" he sings about how happy reggae music is — how it can blow all your cares away. Inspired no doubt by Bob Marley because "Mystic Man" contains little to smile about. Get back to your roots Peter and make us all happy.

**Sean Higgins**

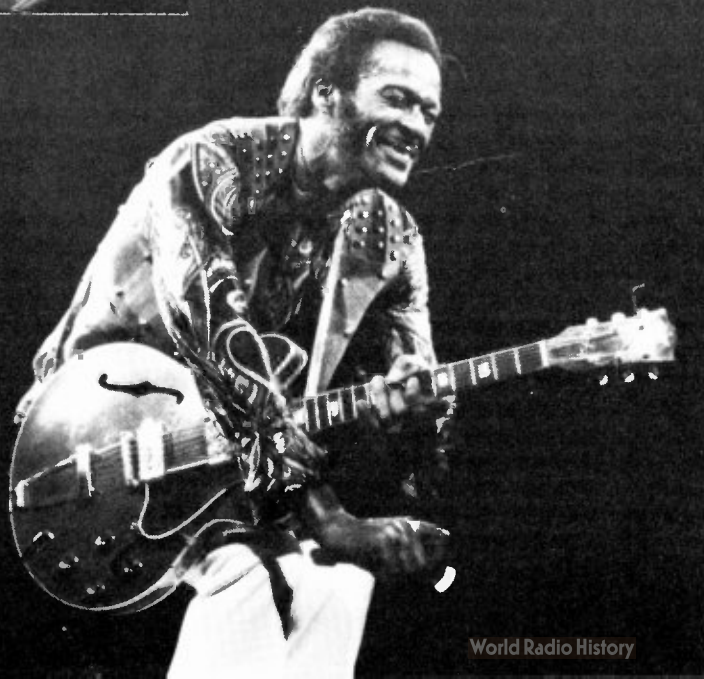
*Produced and arranged by Peter Tosh. Recorded by Geoffrey Chung at Dynamic Sound Studios, Jamaica.*

### Chuck Berry

*Rockit (Acto CS 38-118)*

Concluding a rather overwrought but affectionate critique of Chuck Berry in *The Rolling Stone Illustrated History of Rock & Roll*, Robert Christgau proclaimed that "Berry's career would appear closed. He is a rock & roll monument at 50, a pleasing performer whose days of inspiration are over." A dispassionate look at Berry's recorded output following the "Golden Decade" at Chess Records tends to confirm this somewhat condescending judgment, but writing off a man of his stature for life is risky business. *Rockit* clearly demonstrates that the "brown-eyed, handsome man" of rock & roll has a way to go before the final curtain.

Through the good auspices of Keith Richard, whose guitar style is built on a solid foundation of Chuck Berry riffs, ATCO recently signed Berry to a recording contract. Given Atlantic (the parent company) Records' glorious tradition of rhythm & blues music, die-hard Chuck Berry fans like myself had reason to expect a "breakthrough" of some kind. Executive Producer (and company President)



Chuck Berry

## Dave Edmunds

Doug Morris' sympathetic approach to this project has done a lot to justify our tentative hopes.

Most of the material on *Rockit* is new; the two *oldies*, "Havana Moon" and "Wuden't Me," have undergone significant lyrical and musical up-dating. The production is clean and straightforward, focusing the listener's attention on each song. Throughout the LP, Berry is backed by an excellent complement of veteran musicians including Kenny Buttrey on drums, Jim Marsala and Bob Ray on bass, and Johnnie Johnson, the brilliant pianist on Berry's classic Chess recordings whose seminal contribution to the art of rock & roll has consistently been overlooked.

A cursory listening of the album might raise some doubts about how "new" these songs really are — the chords are familiar and the textbook Chuck Berry guitar fills unchanged except for a thinner, less distorted timbre, the result of some studio flanging. But as Christgau pointed out in the afore-mentioned piece: "Repetition without tedium is the backbone of rock 'n' roll, and the components of Berry's music proved so durable that they still provoke instant excitement at concerts two decades later."

Berry's revitalized spirit and undiminished gift for writing lyrics that provide a wry commentary on the American scene while perfectly matching the forward motion of his music are the key factors here. Tunes like "Oh What A Thrill," "House Lights" and "Move It" sound fresh and vital but still offer a link to the past. "I Need You Baby" shows the bluesier side of Chuck Berry which occasionally surfaced on older material like "Wee Wee Hours" and "Ida Red." "Havana Moon," a transcendent exercise in bittersweet humor, has a reggae feel to it this time around. "Pass Away" is a languid exercise in spooky resignation that surely qualifies as one of Berry's most bizarre-sounding recorded works.

*Rockit* is not a "great" record — a few of the songs are hackneyed and Berry's playing is not as supple as it was — but it is certainly good enough to justify his presence in the studio. And, speaking as a Chuck Berry freak, all I can say is that *Rockit* is the first album since *Golden Decade* (a double LP collection of Berry's greatest hits no longer available in domestic release) to get continual play on my turntable. Free Chuck Berry.

J. C. Costa

Produced by Chuck Berry.

### Dave Edmunds

#### *Repeat When Necessary*

"With Rockpile it's straight ahead stuff and I think it infuriates people that we get away with it, because it's all been done before. But it's the *attitude*." Or so says Nick Lowe, master of self-depreciation, pop arbiter and Dave Edmund's long-

time musical sidekick, in a recent interview with Lisa Robinson. And even if the "Basher" doesn't lean as heavily on the kick-ass ethic of rock & roll as Edmunds, he has perfectly captured the essence of *Repeat When Necessary*.

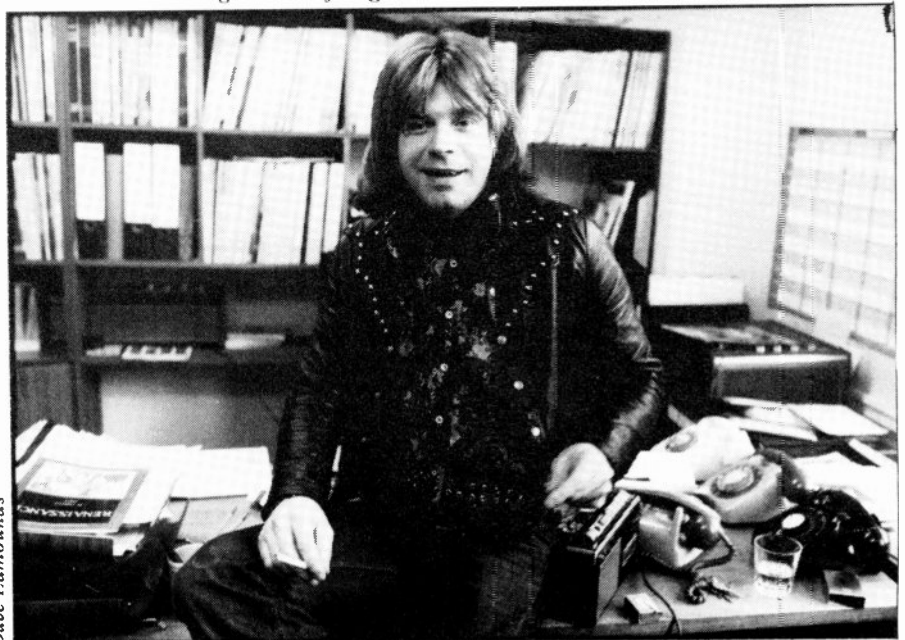
Besides his obvious talents as a singer and guitarist, Dave Edmunds has been able to transcend the potential limitations of familiar sounding material through a seemingly unquenchable supply of energy, musical smarts and a basic commitment to the rock & roll ethic. *Repeat When Necessary* is proof of his talent for finding excellent songs to record — Elvis Costello's nice 'n' nasty "Girls Talk," Graham Parker's brilliant "Crawling From The Wreckage" and Huey Lewis' (Clover) hilarious "Bad Is Bad" are three of the more obvious examples. And even when the material isn't quite up to snuff — "Home In My Hand," "Goodbye Mr. Good Guy" — Edmunds comes up with some crackling musicianship and brilliant production touches to beef things up.

A rock & roll album in the best sense, *Repeat When Necessary* manages to showcase a variety of styles within the genre. "Queen Of Hearts" is pushed along by a dynamic acoustic guitar reminiscent of Eddie Cochran, Patti LaBelle's old hit "Take Me For A Little While" is slowed down and given the Phil Spector treatment and "Sweet Little Lisa," a shit-kicking rockabilly (accent on the *billy*) tune if there ever was one is raised to even greater heights by Albert Lee's awesome lead guitar work.

And most of those songs comprise the "B" material on *Repeat*, the three classics mentioned before "Girls Talk," "Crawling From The Wreckage" and "Bad Is Bad" offer a perfect synthesis of melodic freshness, lyrical wit and the right *attitude* — which is what Dave Edmunds and Rockpile are all about.

J. C. Costa

Produced by Dave Edmunds;  
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Dave Edmunds

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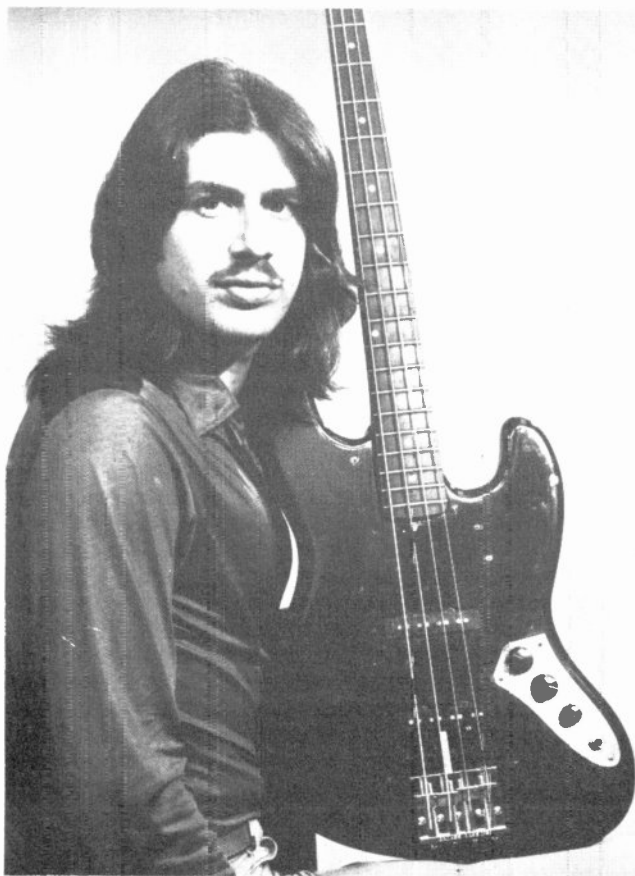


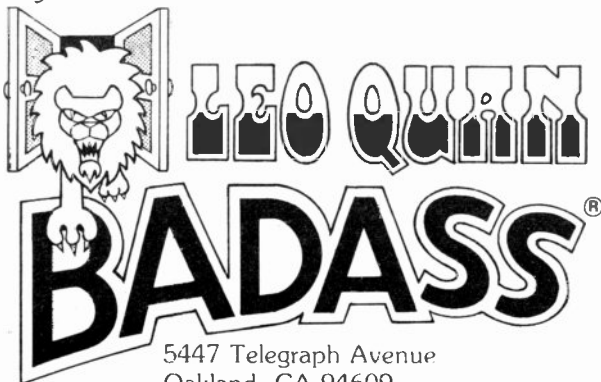
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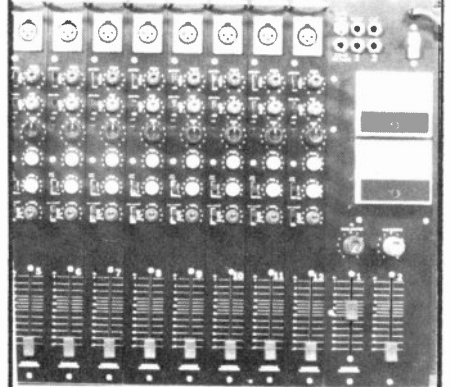


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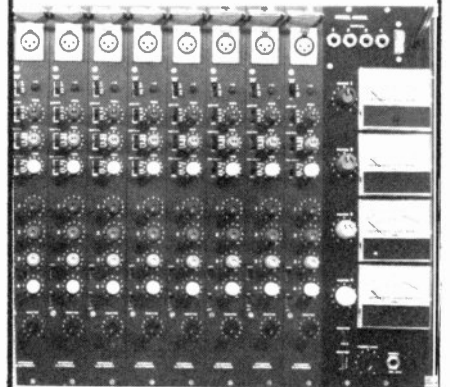
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# On the Road

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Holiday-inning it across America can have its ups and downs. And "the best surprise is no surprise" may be fine for vacationers, but for the traveling musician no surprise usually reflects the inability of hotels to cater for the special needs of performers: all-night room service, adequate parking, etc. To be sure, there are many excellent hotels around the country that serve as natural stopping off places for musicians, but none are as adequately prepared as Close Quarters: Nashville's answer to home on the road.

The new hotel derives its name partly from its size — it's a renovated three-story apartment house boasting a total of 15 suites — but its proximity of the Music Row district of Nashville and its atmosphere also contribute to the epithet.

The idea for a "musician's" hotel was actually conceived by Steve Bauer when he was with the Los Angeles branch of Studio Instrument Rentals (SIR). There was an appropriate building on the Columbia lot where the facilities were located, but the idea really took root when Steve moved to Nashville to operate the rental company's new location. In fact, Close Quarters could aptly be called a general extension of the basic idea behind SIR, i.e. serving the specific needs of the diverse involvement of musicians.

For example, the new hotel is particularly geared to the touring groups that concertize in Nashville. There is 24-hour room service, a similar gofer service ("If Elton John needs shaving lotion we have people who know where to find it without him having to get out on the street," explains the hotel PR director Sally Hinkle), equipment repair service around the clock (directly tied in with Studio Instrument Rental's regular capabilities), and limo and equipment cartage service whenever they may be needed.

But these are the fringes; the heart of what Close Quarters has to offer the modern day troubador is a suite that feels like home in the midst of people who understand and respect his or her needs. Other considerations come in the form of closed circuit TV security, and around-the-clock doorman/valet and a wall that separates the building's single entrance

from the street (which is in a quiet residential section of Nashville but mere blocks away from anywhere the guests may need to go).

Operated in conjunction with and as part of Close Quarters is a private club with membership limited to 300 guests who must be part of the music industry; hotel guests automatically gain access to the club area (including the great Jacuzzi that gives extra character to a glassed-in dining room). Membership limitations of the club, called The Backstage Pass, insure celebrity guests being isolated from groupie types when they desire peace and quiet and it enhances the value of membership to local residents for contact expansion.

Even closer to the heart of matters is the hotel's rate structure; all of the suites are priced at \$50 per night with \$5.00 extra per additional person. Two bedless-but-sleeper-sofa-equipped efficiencies are available at \$40 per day for acts that find themselves coming through Nashville perhaps for part of a day and simply need a place of relative reclusivity for a short while; these rooms are also available for Backstage Pass members to use for meetings and are located close by the bar and kitchen.

Owner Bauer admits it took him a year to find "the right building" for this new enterprise, elaborating that the location and size/design were crucial factors. Remodeling was tediously slow but initial response to the opening has been enthusiastic from within the local music community and from artists' managers around the country who have inquired as to availabilities for major tours coming through Nashville this fall (including Elton John).

All entertainers have experienced at other hotels that out-of-the-routine (for them) requests create a stir; Close Quarters was carefully staffed with people who are familiar with the music industry, who understand that fiddle cases are not handled with the same grasp as suitcases, and who find nothing unusual in 20 people who have just finished a concert wanting to eat at three o'clock in the morning or the same number needing to catch a plane at 5:30 a.m.

Tempered by successfully serving studio and touring musicians in Nashville as to the wide range of their equipment logistics needs, Steve Bauer calmly understands the necessity and/or whims that can arise and has acquired people who can deliver. In keeping with that attitude, the next step of expansion will be a 16-track demo studio in the hotel's basement. Bauer stresses the word *Demo* — "we are not getting into a commercial studio situation because many of SIR's customers are studios and I'm not at all interested in going into competition with my customers, but I think it would be nice for us to have a good demo studio available in the hotel — that's the kind of hotel it is."

Indeed.

Bill Littleton



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# On the Road

## IT'S ALL IN THE SOUND (COMPANY)

*There are a multitude of sound companies across the country that can supply the PA for anything from a high school dance to an outside "monster" concert. Each has its own peculiarities and specialties, but only a few of those capable of building medium-to-big systems are guaranteed to get the call when a major rock band decides to hit the road. So, we decided to take a look at just three of the major names in the business and see what they have to offer — profiled here: Clair Bros. Audio, N.W. (Northwest) Sound and ElectroSound Productions, Inc. All three head up any road manager's list, and we thought you'd like to know why.*

### N.W. (Northwest) Sound

PO Box 3586, Portland, Oregon 97208

Founded by Bob Stern back in the "Woodstock days," Northwest Sound has grown rapidly as a company with a reputation for building "quality" sound systems for the kind of groups who play both mellow acoustic music *as well as* high-energy rock & roll. Given their flexibility as to the types of sound they can provide, it comes as no surprise that their client list represents a great variety of musical styles. In recent years they have provided sound and lights for Alice Cooper, America, Blue Oyster Cult, Boz Scaggs, Crosby Stills & Nash, Dan Fogelberg, the Eagles, Dolly Parton, the Grateful Dead, Joni Mitchell, Neil Young, Parliament Funkadelic, Peter Paul & Mary, the Steve Miller Band and Willie Nelson.

To build systems that "have enough quality but with enough power when someone stands on it," Northwest uses Yamaha crossovers and mixers, Marantz power amplifiers — the former chief technician at Marantz who designed their power amp now works for Northwest — and JBL or Technical Audio Devices (division of Pioneer) speakers built into special enclosures built by Northwest's own manufacturing division.

### Clair Brothers Audio

PO Box 396, Lititz, PA 17543

Founded by Roy and Gene Clair in the early Sixties, Clair Bros. Audio first got its start providing the sound for a Dionne

Warwick concert in a local theater. In 1964, they went on the road with the Four Seasons, their first venture into touring sound. A few years later they made the transition from pop-oriented groups to the Jefferson Airplane, a band "who taught them everything they know about rock & roll." From that point on, the Clair Brothers have forged steadily ahead to become one of the nation's largest sound companies with a list of exclusive accounts that includes Elton John, the Moody Blues, Billy Joel, Yes, Fleetwood Mac, Kiss, Chicago, Bruce Springsteen, Atlanta Rhythm Section, Boz Scaggs, Queen, Renaissance, the Grateful Dead and Peter Frampton.

They have the facilities to provide up to 140,000 watts RMS for "normal" outdoor use and, when pressed, a company spokesman admitted that they could build a system up to 800,000 or a million watts total output if someone was crazy enough to request it. They use a variety of electronic brands that includes Phase Linear and SAE amps, JBL and Gauss speakers and Clair Bros. and Midas mixers.

### ElectroSound Productions, Inc.

10701 Vanowen Street, North Hollywood, Ca 91605

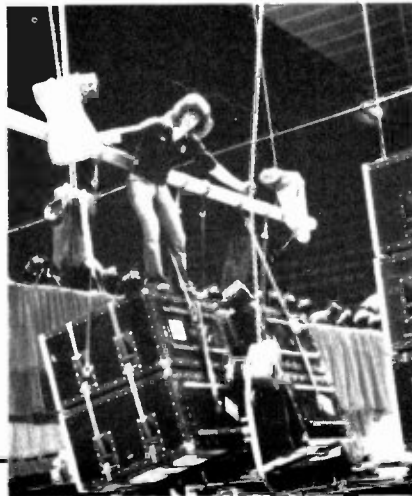
Formed in London by the legendary Ricki Farr in 1972, ElectroSound was soon providing "comprehensive sound touring systems" for some of the largest rock tours in Europe and Great Britain. Two years later, they merged with ESP Lighting to



create a sound and light company and, soon after that, ElectroSound merged with the American company, Tom Fields Assoc. of Boston, to become an international sound and light company known as TFA-ElectroSound.

From this point, the company grew by leaps and bounds and, two years later, was providing up to six major touring sound systems at once. ElectroSound specializes in those massive outdoor festival PAs — they've done the sound for the California World Music Festival, The Texas "Jam" and The California "Jam" of a few years ago. As far as touring *sound* is concerned, their client list includes Ted Nugent, Aerosmith, Rod Stewart, Cheap Trick and the Cars. They also provide regular lighting systems for such rock luminaries as the Beach Boys, Chicago, Neil Diamond, Queen and Bruce Springsteen.

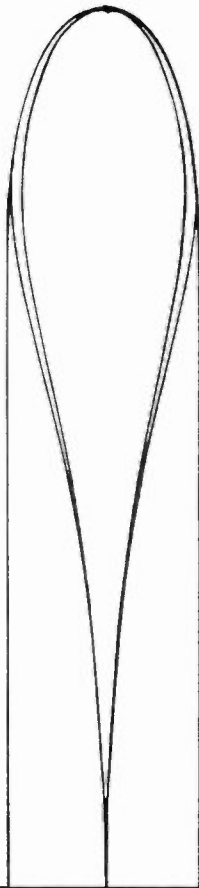
The sound division is headed up by Englishman Colin Waters and the lighting division is led by American Tim Mahoney. A representative sampling of brand names used for ElectroSound systems includes JBL amps and speakers and ElectroSound mixing consoles and custom-built speaker cabinets.



# sound lasers

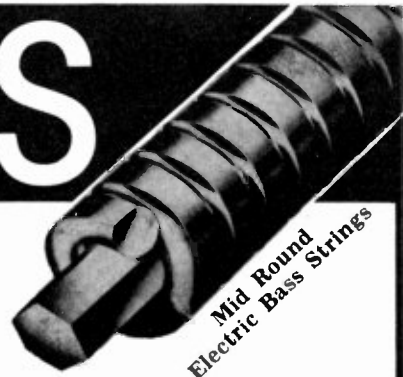
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# EMS sound synthesis

The emergence of synthesizers as a stage instrument brought about a new age in modern music. Not only were a myriad of instrument sounds at the hands of a single player, if the synthesiser is polyphonic, all these sounds could be played at once by one musician. But how does this player effectively co-ordinate all those parts as if they were an orchestra? This dilemma was overcome by the inventors of the EMS Polysynthi.

The Polysynthi is not an ordinary synth, not even an ordinary polyphonic synth. The Polysynthi was designed from scratch to be the most rapidly and easily played polyphonic synth built.

A completely stable, easily tuned oscillator bank covering nine octaves is the primary sound source. A four-octave standard keyboard with three simultaneous outputs – polyphonic, position dependent CV and pressure dependent CV – activates the oscillator bank. There are two voltage controlled LFO's with variable waveforms and the two ADSR's with LED indicators are triggerable from either VC LFO or from the key-

board. ADSR1 may be triggered from the envelope follower. An analogue delay line can provide echo, chorus, flanging and reverb effects.

The Polysynthi features LED indicators and colour coded source, control and treatment panels for rapid operation. The LED's indicate control voltage switching and the colour coded, logically layed out panel shows a wide range of easily patched, repeatable effects. An optional add-on polyphonic sequencer, using advanced microprocessor circuits, can edit and commit to memory ten minutes of polyphonic music.

As well as producing 49 simultaneous outputs through three alternative waveforms, the VCO bank has a range switch to move octaves produced from 1' to 32'. The VCO's can be tuned to other instruments and their circuitry is drift free. Pitchbend is controlled by a centre sprung red coded knob or footpedal. Keyboard Memory determines infinite sustain or no sustain. The ADSR release is set to short automatically when keyboard memory is off.

White noise or an external input can be mixed with the oscillator bank before being sent through the filter. Balanced or unbalanced, line or microphone, high or low impedance inputs are accepted through the rear panel. If no external input is used, the Polysynthi can produce various effects with a VCO bank feedback signal.

The low-pass, switchable VCF is of the two or four pole voltage controlled type. ADSR and LFO voltage can be used to control it and ADSR 1 can sweep the filter frequency by any amount set on the "Direct Control" knob. Frequency can also be controlled by a footpedal. The VCA can be controlled in the same way, and a pedal can be used to control its amplitude.

The Polysynthi's Analogue Delay Line uses an output voltage from the VCA, and, remixed with the original signal, gives a +4dB low impedance signal. Delay time of the various echo, reverb and chorus effects can be controlled by either ADSR, LFO or keyboard voltage. A switch selects long or short delay time ranges and another, chorus or Echo

*Music synthesis is a new art, unfortunately many musicians haven't really begun to appreciate its possibilities. We're proud to offer the EMS Polysynthi because EMS synthesizers are leading the synthesizer world the way they have for the last seven years.*

*Many of today's top selling synth items were first commercially developed by EMS including the Vocoder and peg patch synthesizers. Now the Polysynthi reaches out to the "state of the art" boundaries on synthesis.*

mode. The 49-note C-C keyboard, as well as providing polyphonic information to the VCO's, produces two control voltages. One corresponds to the highest note played and the other is pressure proportional.

Jack sockets for output, input and three pedals are fitted to the Polysynthi back panel and can be switched for line or microphone. Provision is made for the fitting of the optional Sequencer.

*The remarkable EMS Polysynthi*

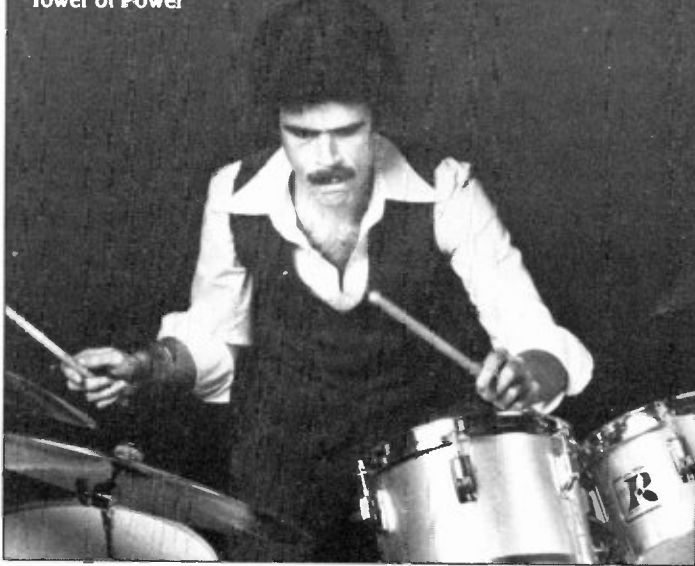


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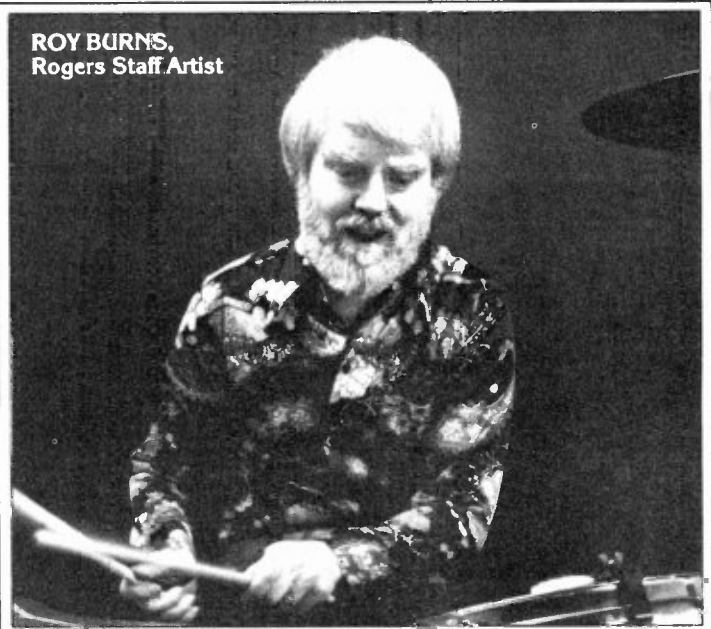
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# Building a Solid Guitar

If you have completed the work described in last month's instalment, you should have a neck which fits securely into the socket in the body, at a precise and repeatable angle, and which has been trimmed until, at this angle, the outside of the joints look good. The next stage is to cut the holes for mounting the bridge, pickups and controls.

## Bridge mounting

Slide the neck fully into the body socket and clamp it in place. If the socket is wider than the neck tenon, permitting the neck to wobble sideways ("in a plane parallel to the front of the body," if you

prefer Engineering terminology), decide at this stage, where and how you are going to wedge or shim the joint.

Make the packing pieces and mark them so that you can repeat their alignment and the order of assembly. Ideally, your joint should fit perfectly. But if it does not, you must at least find out how to pack the joint so that the neck has the same setting each time you assemble it. When you have achieved this, consider the packing pieces as an integral part of the neck assembly and use them every time you fit the neck to the body.

Either by skill, or determined persistence, you should now have a neck which fits all the way into the body socket and does not wobble. Now hold it in place with a clamp from back of body to fingerboard, roughly level with the centre of the joint. Next, the alignment of the neck must be transferred to the front of the body, so that the bridge and pickups can be placed correctly.

In doing this you will establish a new 'center-line' on the front of the body, which is an extension of the center line of the neck. This new line supercedes the original line down the center of the body, because an exact alignment of bridge, strings, pickups and fingerboard is more important than having the bridge exactly in the center of the body. You may find it convenient to remove as much as possible of the original center-line with a sharp-edged pencil eraser.

To find the new body center-line, you will need the same straight-edge which was used last month for setting the neck angle. Lay this straight-edge flat on the front of the body and along the edge of the fingerboard. The upper surface of the straight-edge will probably be below the underside of the fingerboard at the neck-body joint, so the straight-edge could possibly slip into the gap left for the wedges supporting the end of the fingerboard.

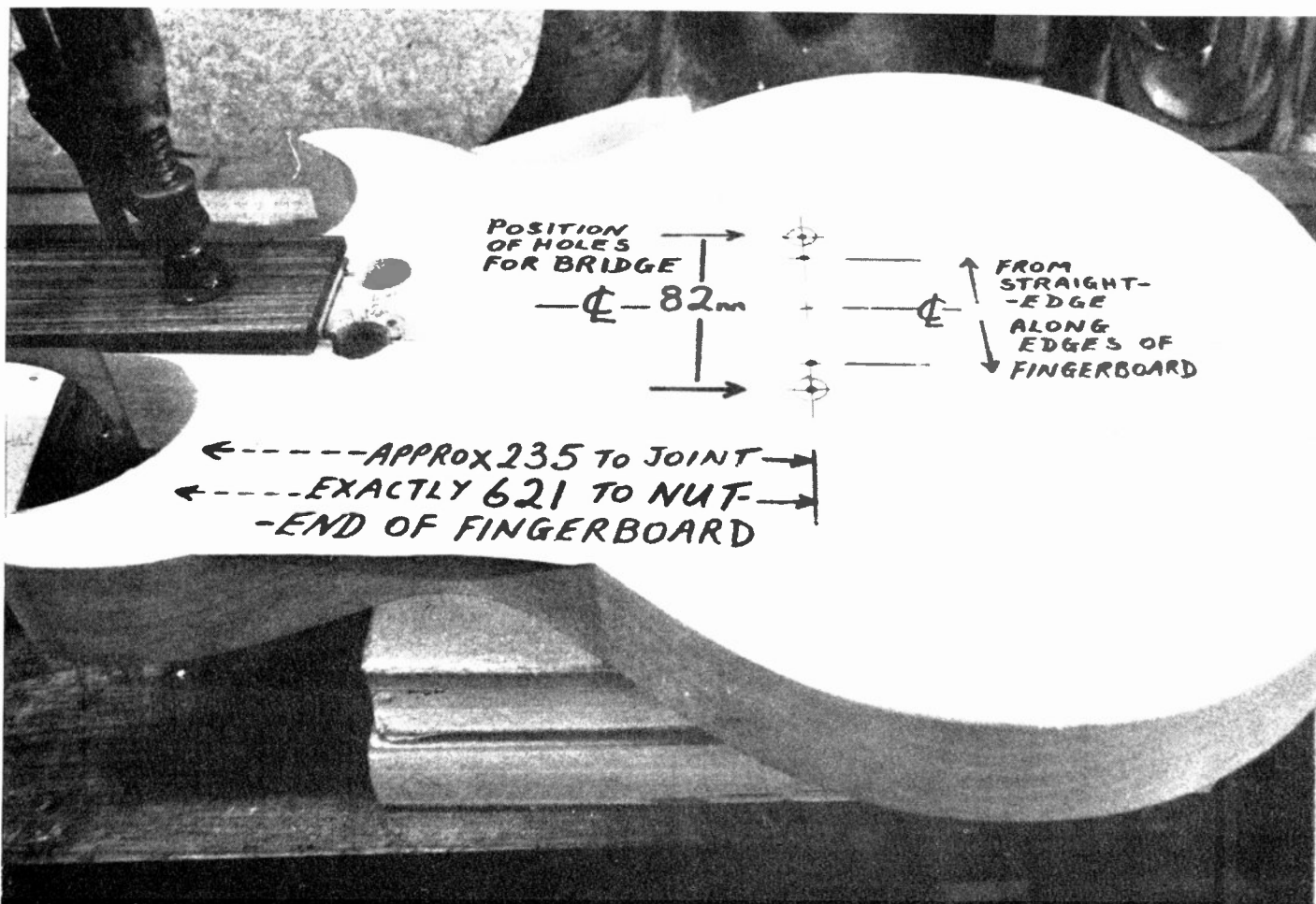


Photo 1



If this happens while you are marking the bridge positions, any hope of accuracy goes out of the window. Fortunately, the solution is very simple: put a piece of plastic sheet, or very thin plywood underneath the straight-edge so that it is still level with the edge of the fingerboard, but not so low that it can slip into the gap. A scrap of 2mm Perspex is usually about right.

Draw a faint pencil line across the front of the body at 235mm from the neck joint. This is not an exact measurement.

Hold the straight-edge along approximately the middle of the edge of the fingerboard and draw a short line where its far end crosses the faint line you have just drawn on the body. Repeat on the other side of the fingerboard. If the straight-edge is not long enough to reach from the nut position to this line, it can be moved down the neck until the far end does overlap the line, but I would not recommend using a straight-edge shorter than about 600mm. If you can get help to hold the straight-edge onto the fingerboard edge, you can press the other end gently down onto the body while marking from it. This is more accurate, but *only* if you can ensure that the rest of the straight-edge is still pressed along the *center* of the fingerboard edge. The faint line is not needed any more and may be erased.

Mark the centre of the width of the fingerboard at each end, and draw a center line down the front of the fingerboard. Check the nut end of the fingerboard, it should be square to the front of the fingerboard and to the center-line, and 386mm from the neck joint, taking the average of measurements down each side. If necessary, clamp the neck to the bench, or hold it in a padded vice, and trim the nut end of the fingerboard until it is correct. (If you have just less than 386mm to the neck joint, don't worry). Trim the end of the fingerboard square both ways, taking off a minimum of wood. As the bridge position is measured directly from this end of the fingerboard, the exact distance to the neck joint is not critical).

You will probably find it impossible to trim the end of the fingerboard properly, unless your chisel is sharp is really flat on the side which ought to be flat. I normally use a chisel about 15mm wide for this job.

When this end of the fingerboard is right, measure exactly 621mm down each side of the fingerboard and draw short lines across the two short lines you already

have on the front of the body. You now have two points of intersecting lines on the front. Join them with a pencil line and you have the line on which the bridge-mounting holes are drilled. Do *not* drill the bridge mounting holes at these intersecting points.

Find the center of this line between the two marked points. Mark 41mm out each side along the extensions of this line and you have the exact centers of the holes for the bridge-mounting pillars. Check that the distance between them is 82mm + or - 1/2 mm.

Draw a line also from this center point, to the center of the body-end of the fingerboard, and you have the new body center-line for aligning the pickup holes. As you may have noticed, this part of the

job has a lot of detailed marking out which does not seem to be leading anywhere. Then, at a certain point, everything should suddenly fall into place.

Now you have read so far, take a look at photo 1 which shows all the important details for marking the bridge holes. The center-line indicated is the one which is generated as described in the above paragraph. The original line down the center of the body has nothing to do with these measurements and any faint trace of it which cannot be erased should be identified, and then ignored.

If you feel you may still be confused by the remains of the old line, cover it up with masking tape. Its only purpose was to assist in marking out the neck joint at the beginning of the work on the body.

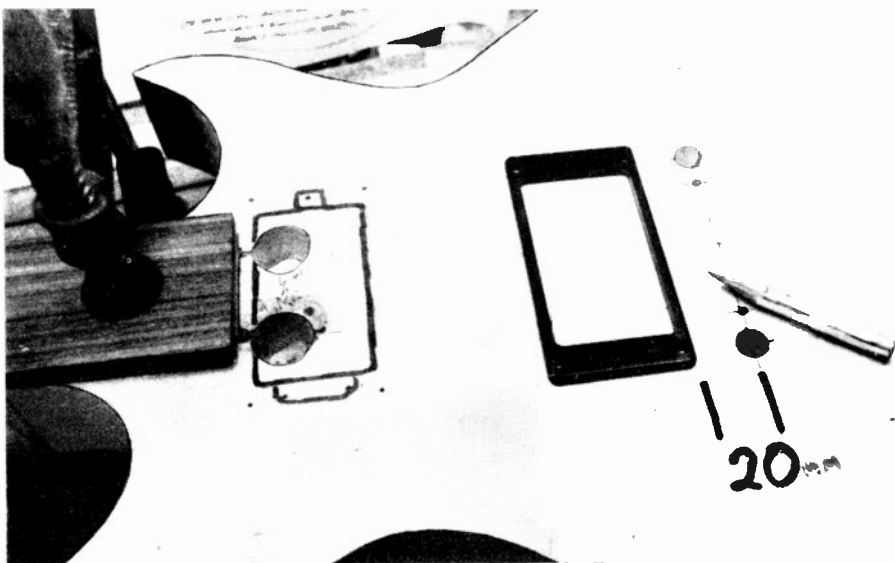


Photo 2

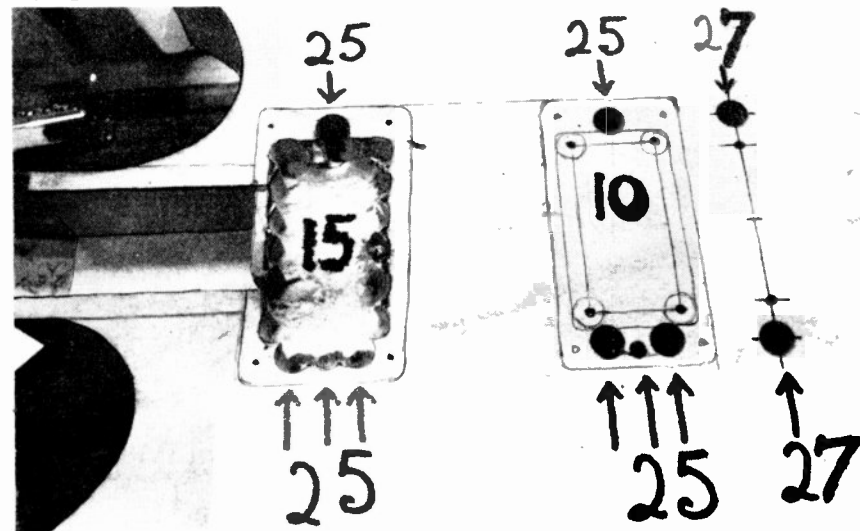


Photo 3

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## Pickups

I suggest you use Guild Humbuckers. They are well made, relatively easy to fit, and are roughly in the middle of the possible variations of tone from humbucking pickups. Almost any pickups could be fitted to this guitar, but these instructions are for a pair of bridge and fingerboard Guild Humbuckers which should be available from any Guild stockist.

The same fitting principle could be applied to other makes of pickup, but accuracy will depend on how well the surrounds are moulded, as I am going to use the surrounds as mounting templates.

Unwrap the two pickups, and examine them for any damage to the fine wires leading to the connections underneath. It is normal for one pickup to have 2 tags and the other to have 3. It is also normal for each pickup frame to have 3 height-adjusting screws, not 2. One of the surrounds should be higher than the other: This is the one which is fitted next to the bridge.

Both pickups surrounds have the double-height screws on the Bass side of the body. Mark one pickup and its surround underneath for identification, and take off the surrounds. Keep all the screws and springs. Make a fine scratch in the exact center of each longer side of both surrounds. These scratches must be aligned with the new center line drawn on the front of the body. The fingerboard pickup surround is fitted against a line drawn 20mm in front of the centers of the bridge mounting holes. See photo no. 2.

With the surrounds held in place, take a sharp pencil and draw round the inside of all the holes and (lightly) around the outside. Remove the surrounds and place the pickups in position so that the threaded holes in the mounting brackets underneath, line up with the marked positions of the height adjustment holes. You may need to bend the brackets a bit to line up all three holes at once. Make sure you have the right pickups in the right positions and draw round the bottoms of the brackets. This will show you how much clearance is required for the pickup support brackets. The outline of the hole for the pickup body will be too small and you should draw another outline carefully, 1mm outside the first one, for each pickup.

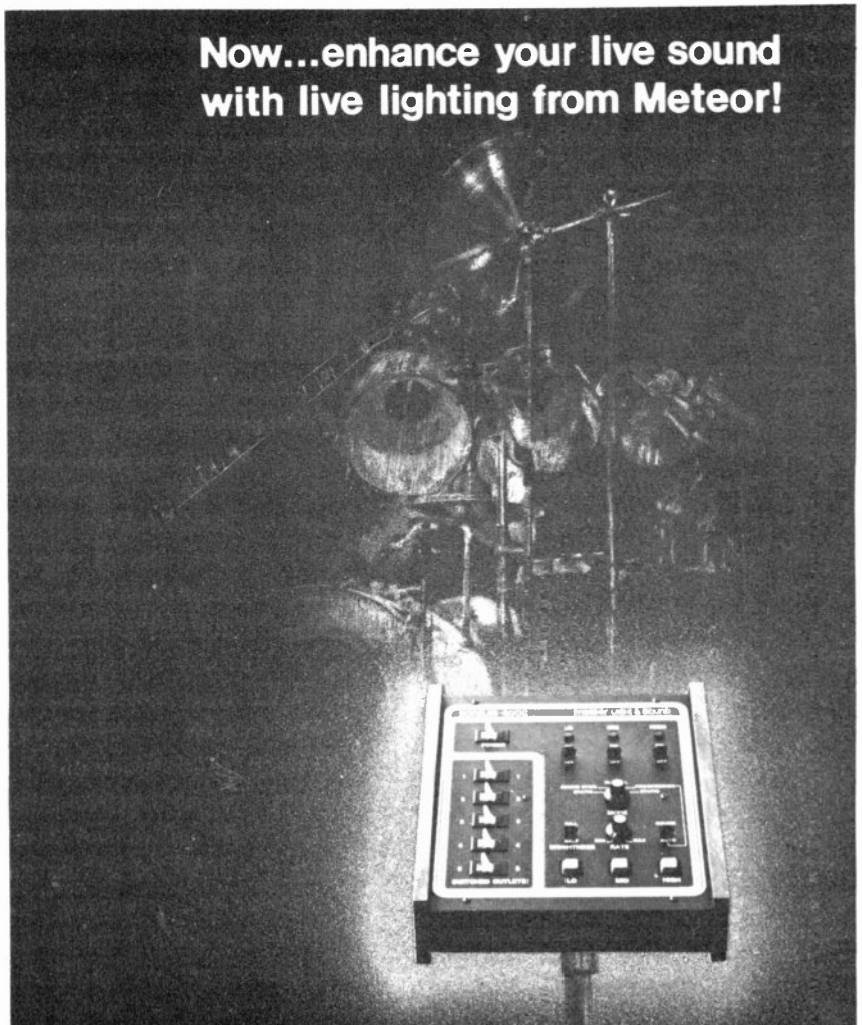
Practically all the recessing needed for the pickups can be done with either a Drill press or a Woodworkers' Brace. You will need an 11mm or 7/16 bit. Either a spiral 'Lip and Spur' bit for the machine drill or

a 'Jennings-pattern' bit for the brace. You could use one of the better and more rigid portable electric drills on a vertical stand, and a Ridgeway or Irwin 'Flat-bit'. Beware of Oriental flat-bits; most are inaccurate. Check the length of its central point to ensure that it will not come through the

back of the guitar by the time the full width of the hole is 27mm deep, at its shallowest point.

Draw 11mm and 12mm circles around the centres for the bridge-mounting holes. These will give you a check on the positioning of the drill as you start the

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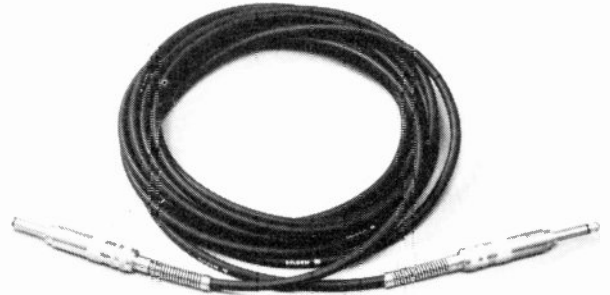
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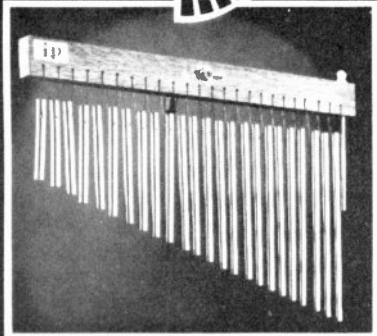
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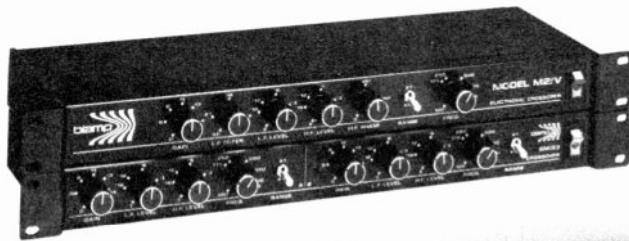
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Building a Solid Guitar

hole. Remember, the distance between the centers of the positions of the height adjustment screws for the pickups, with a sharp centre — punch. Do not punch the centers of the holes for fixing the pickup surrounds to the guitar body. These are not drilled until the guitar is nearly finished.

This guitar was designed to work correctly with one of the Japanese versions of the 'Badass'-type bridge, as illustrated last month. American readers should be able to obtain the genuine Leo Quan Badass guitar bridge. I have checked one of the later versions (with a 'Made in Germany' sticker) and it seems to be entirely suitable as an alternative.

The only obvious modification concerns the size of the holes drilled for the threaded bushes in the guitar front. For American-style bushes, these holes should probably be drilled 1/2 inch diameter and a little longer than the bush (typically between 3/4 inch and 1 inch).

The Japanese style bridge, as distributed by Ibanez, usually requires a hole 7/16 inch or 11mm diameter by 27mm deep.

The holes to provide clearance wells for the pickup brackets should, in either case, be 7/16 inch or 11mm by 25mm deep.

You will also need a smaller hole also 25mm deep between each pair of bracket clearance holes to assist in removing waste wood. 6mm or 1/4 inch is about right. (The pairs of holes are just too close for the safe drilling of a third 7/16 inch hole between the first two). See photo no. 3.

Then drill a series of adjacent holes to remove the waste from the pickup recesses. The fingerboard pickup will need a recess 15mm deep and the bridge pickup will need 10mm. You could alternatively use a portable router to remove the waste wood to depths of 10 and 15mm.

Clear out the remaining bits with a chisel. Do not try to drill overlapping holes unless you are using a "Forstner bit", (which is expensive, a pig to sharpen, and *intended* for drilling overlapping and/or flat bottomed holes). That completes the pickup holes for the moment. For next month you will need either a large Jennings-pattern bit and a Carpenters' brace or a pillar drill (or good drill stand) and a 'Flat-bit': in either case to drill a hole approx. 1 1/4 inch diameter. If you plan to use a powered drill, you *must* be able to clamp the guitar body to the drill table, and you should preferably also have some sort of face shield. You will also need about 300mm of 6mm or 1/4 inch Silver Steel rod or drill rod, a hammer, and something to use as an anvil, such as a sledge-hammer or an old "flat-iron" of no particular value.

# Understanding Synthesizers

PART 8

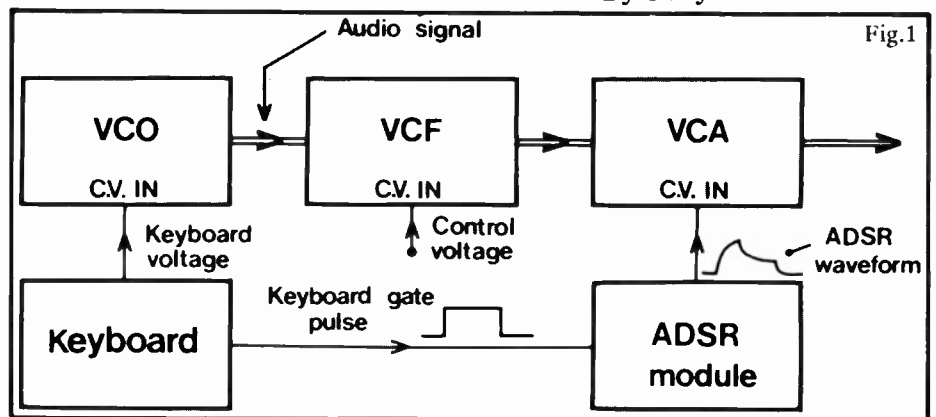
By Tony Horsman

In this series I have now covered most of the important modules you will find in every synthesizer: the keyboard module, voltage-controlled oscillator (VCO), voltage-controlled amplifier (VCA), low-frequency oscillator (LFO) and ADSR module. There is one remaining module, called the "voltage-controlled filter" (VCF), which, like the others, is an essential part of every synthesizer. Although VCOs can supply a variety of wave-forms, each with its own characteristic tone quality, it is filters that are largely responsible for providing tonal variety in synthesized sounds.

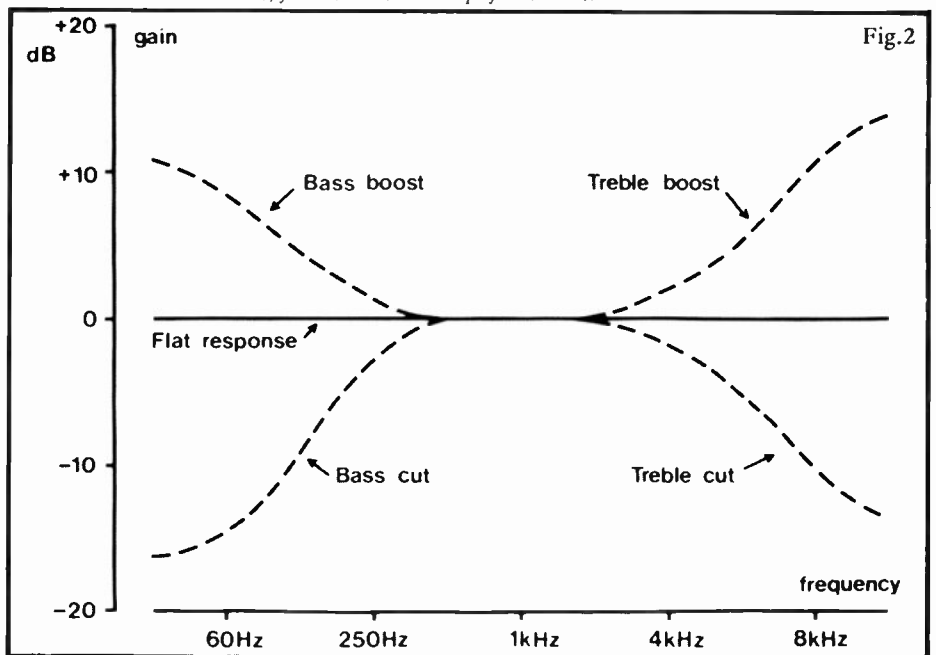
Before I describe in detail what filters are and what the voltage-controlled filter (VCF) does, let's first see how the VCF fits in among the other synthesizer modules I have already described. (If you're not familiar with these, have a look at Parts 4 to 7.) Fig. 1 illustrates how the VCF is positioned between the VCO and VCA. In this diagram I have shown the VCO receiving its control voltage from the keyboard module as usual, and the VCA receiving its control voltage from the ADSR module. (I will be describing the various sources of the VCF's control voltage later.) By varying the control voltage supplied to these three central modules, you can alter the three essential musical characteristics of all periodic sounds: the *frequency* (pitch) with the VCO, the *harmonic spectrum* (tone quality) with the VCF and the *amplitude* (volume) with the VCA.

## Frequency response

Everyone is familiar with the tone controls on hi-fi amplifiers or combo-amps: the "bass" control boosts or reduces the low frequency content of the sound and the "treble" control does the same to the high frequencies. In technical terms, what the tone control knobs do is to change the *frequency response* of the amplifier, as illustrated in Fig. 2. It is conventional to measure the amplification at any given frequency relative to the amplification at 1kHz, so in this figure the amplification at 1kHz is shown as 0dB (see Part 1). The dotted curves show the typical effect of altering the bass and treble controls on the frequency response of an amplifier. One point to bear in mind is that the frequency response describes how the amplifier will increase or decrease the amplitude of *sine* waves of any frequency. All other waveforms contain harmonics which are multiples of the fundamental frequency (see Part 3), and in effect the amplifier treat all these harmonic components individually. For example, if the "treble" is turned down, the upper



Block diagram of a basic synthesizer showing the three most important voltage-controlled modules: oscillator (VCO), filter (VCF) and amplifier (VCA).

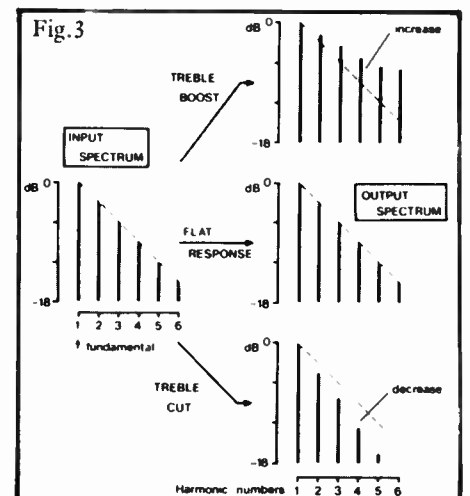


Typical frequency response of an amplifier with bass and treble controls.

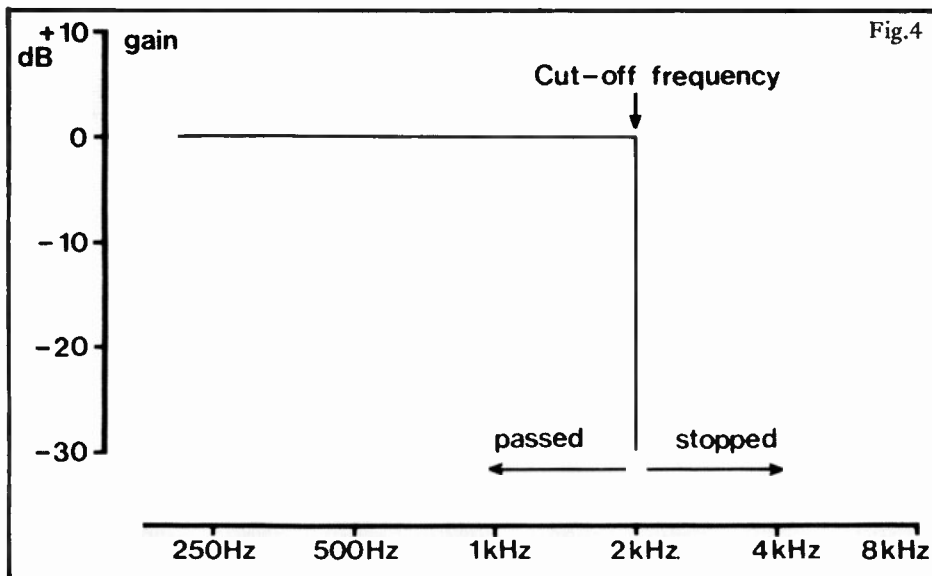
harmonics will be progressively decreased in amplitude relative to the fundamental, as shown in the lower part of Fig. 3. In other words, the tone controls modify the harmonic spectrum of the wave form emerging from the amplifier.

## Filters

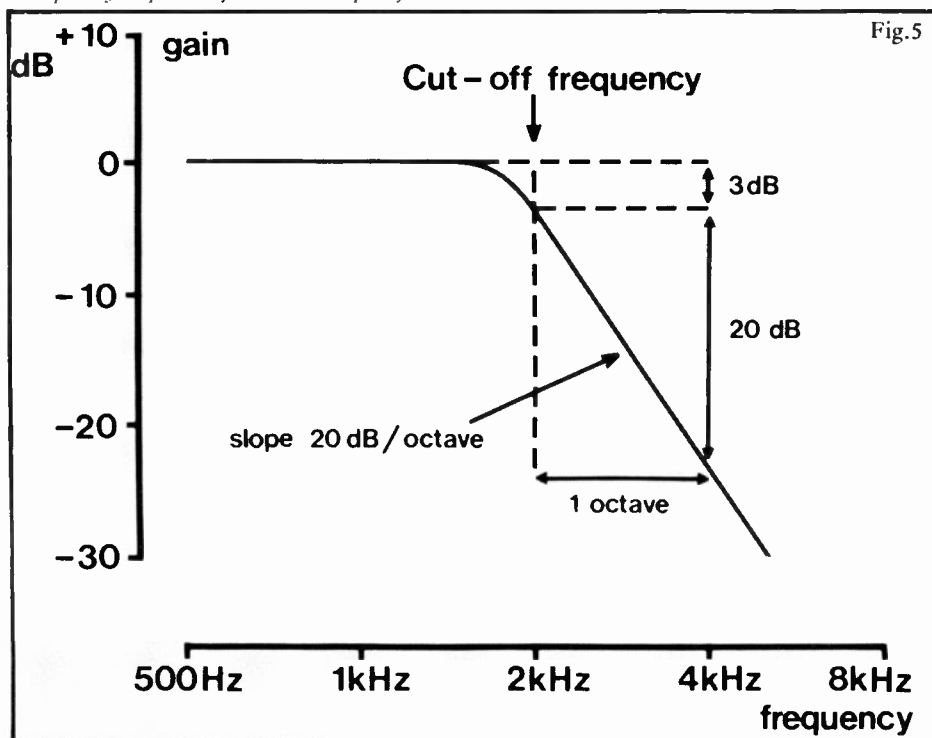
A filter is an amplifier with a particular frequency response tailor-made by the designer for a specific job. It can be made so that it almost completely removes all frequencies *below* a particular value. This type of filter is called a "high-pass filter" because it lets higher frequencies pass through unchanged in amplitude. Alternatively, a filter can be made so that it removes all frequencies *above* a particular value; this type is called a "low-pass filter" because it lets lower frequencies pass through unchanged. Synthesizers always contain a low-pass filter (the VCF) and many now contain a



Effects of treble boost and treble cut on the harmonic spectrum of a sawtooth waveform (only the first few harmonics are shown).



Frequency response of an ideal low-pass filter.



Typical frequency response of a synthesizer's low-pass filter, showing how the cut-off frequency is defined.

high pass filter (which I will be describing next month).

#### Low-pass filters

An ideal low-pass filter has the type of frequency response shown in Fig. 4. This diagram indicates that the filter will pass through it without alteration sine waves (or harmonics) having any frequencies up to a certain limit called the "cut-off frequency." If the cut-off frequency was 2kHz, a 1.5kHz sine wave would pass straight through the filter and a 3.0kHz sine wave would be completely stopped. If a 1.5kHz *sawtooth* wave was sent into the filter, its fundamental (1.5kHz) would get through, but its harmonics (3kHz, 4.5kHz, etc.) would all be stopped: so in

this case the "sawtooth" would emerge from the filter as a perfect sine wave.

In practice, low-pass filters cannot be made with the ideal frequency response shown in Fig. 4. However, good filters come close to the ideal, and Fig. 5 shows the frequency response of a typical synthesizer low-pass filter. Because there is no sharp break in the frequency response, the cut-off frequency is defined as the frequency at which the filter's output falls by 3dB (see Fig. 5). The *slope* of the filter should be as high as possible and is expressed as "dB per octave." Good filters have slopes in excess of 20dB per octave, which means that above the cut-off frequency (in the case of the low-pass

type), the amplitude of the output decreases by a factor of at least 10 (= -20dB) every time the frequency doubles. **Voltage-controlled filter (VCF)**

The voltage-controlled filter (VCF) in smaller synthesizers is invariably a low-pass filter in which the cut-off frequency is determined by a control voltage. As the control voltage is lowered, the cut-off frequency decreases, and conversely as the control voltage is raised the cut-off frequency increases (see Fig. 6).

As in the VCO and VCA, the VCF's control voltage can come from a variety of sources, and consequently VCF modules (like VCO and VCA modules; see Parts 5 and 7) contain an input control voltage mixer to add together the contributions from the various sources. Fig. 7 shows a typical VCF panel with sliders labelled "Cut-off," "LFO," "ADSR" and "Keyboard," together with a special control called "Resonance" which, unlike the others, does not form part of the input control voltage mixer. (The "Resonance" control modifies the shape of the filter's frequency response as I will be explaining next month.) The VCF module is shown schematically in Fig. 8, where it can be seen that the input sliders adjust the contribution of each control voltage source (e.g. The LFO and ADSR modules) to the final control voltage fed to the VCF itself.

It is very important to realize what the function of the slider labelled "Cut-off frequency" actually is. The slider only completely determines the cut-off frequency in the absence of other contributions to the VCF's control voltage. It is as well to think of this control as determining the initial cut-off frequency because it is exactly analogous to the VCA's initial gain control (see Part 7). Note too that if the cut-off frequency slider is set at maximum, the other sliders (except perhaps the LFO slider) will appear to have no effect; the cut-off frequency will already be close to or above the upper limit of the audio band and pushing it even higher will make no audible difference to the sound the synthesizer is producing.

#### VCF effects

1. *Cut-off frequency slider.* As I have already mentioned, this control determines the filter's cut-off frequency when all the other controls are set to zero. With the cut-off frequency set to maximum you hear the full spectrum of harmonics contained in the VCO's waveform. As you gradually reduce the control towards zero, harmonics are progressively cut out and the sound becomes gradually less harsh. (If you use a pulse wave with a 5% mark/space ratio (see Part 5) and move the cut-off frequency control down very slowly, you may actually be able to hear each harmonic disappearing.)

2. *LFO slider.* When the LFO's sine wave output is added to the voltage provided by

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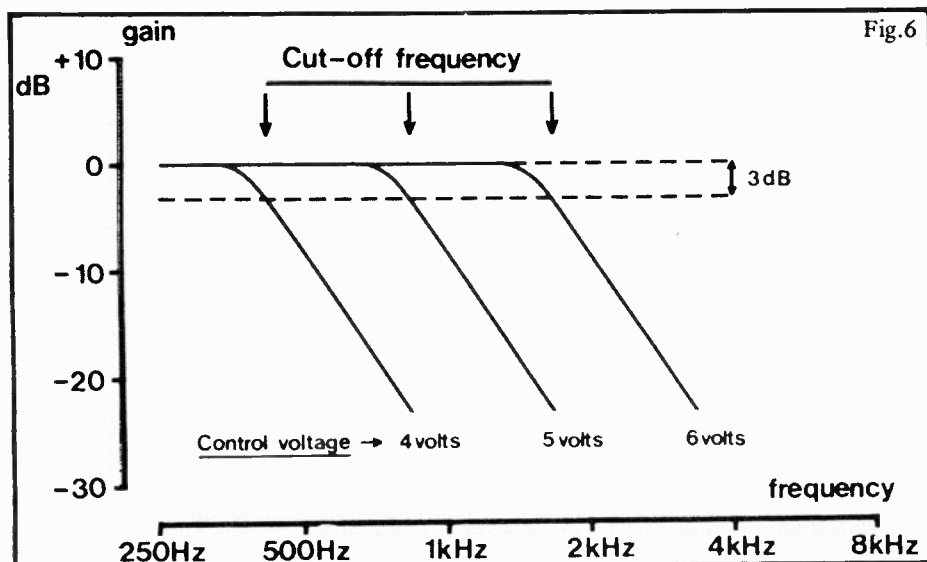
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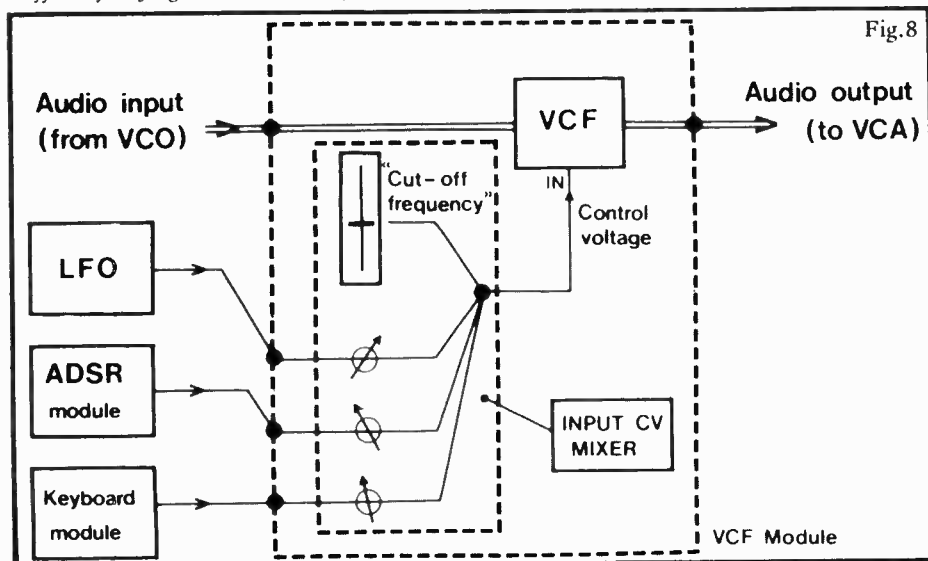
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Effect of varying the control voltage input to a VCF.



Schematic diagram of a VCF module showing the control voltage mixer receiving inputs from the "Cut-off frequency" slider and from the LFO, ADSR and keyboard modules.

the "cut-off frequency" slider (see Fig. 8), the VCF's cut-off frequency is periodically moved up and down about a central value by an amount which increases as the setting of the LFO slider increases. The audible effect of the periodically changing harmonic spectrum which this produces has been called "growl" for want of a better term. (Remember that LFO modulation of the VCO and VCA produces "vibrato" and "tremolo." The growl effect is useful for adding realism to synthesized instrumental sounds such as the saxophone and trumpet, but it can, of course (like every other synthesizer effect), be used to achieve much more extreme variations than are produced in acoustic instruments.

**3 ADSR slider.** In the same way that the volume of a note can change throughout its duration, so too can its harmonic spectrum. In Part 7, I described in some detail how the ADSR module and VCA in

combination produce short-term changes in volume during each note. If the ADSR's waveform is used to vary the VCF's cut-off frequency, a very characteristic sound is produced. The filter is initially "opened" (i.e. the cut-off frequency is increased) during the attack phase, and finally "closed" during the release phase, the movement of the cut-off frequency paralleling the ADSR waveform throughout the four phases (see Part 7).

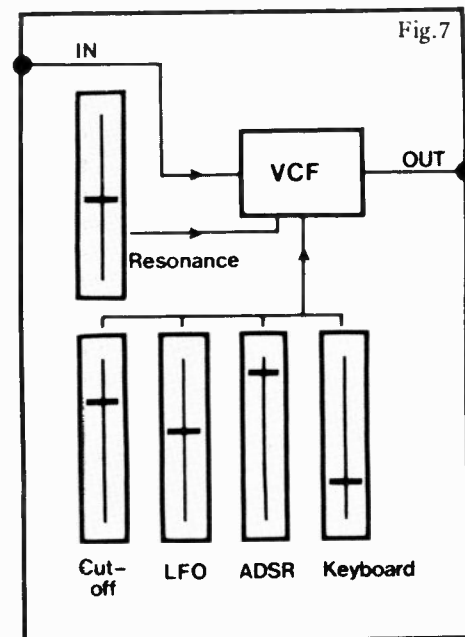
The output of the AR module can be used to similar effect and in fact a major advantage of synthesizers having both ADSR and AR modules is that usually either one can control the filter and either one the VCA. (So, for example, the AR module might control the VCF and the ADSR the VCA, or vice versa.) This added flexibility makes it easier to avoid the familiar "growl" sounds produced by the ADSR/VCF combination and also makes

it easier to synthesize attack transients.

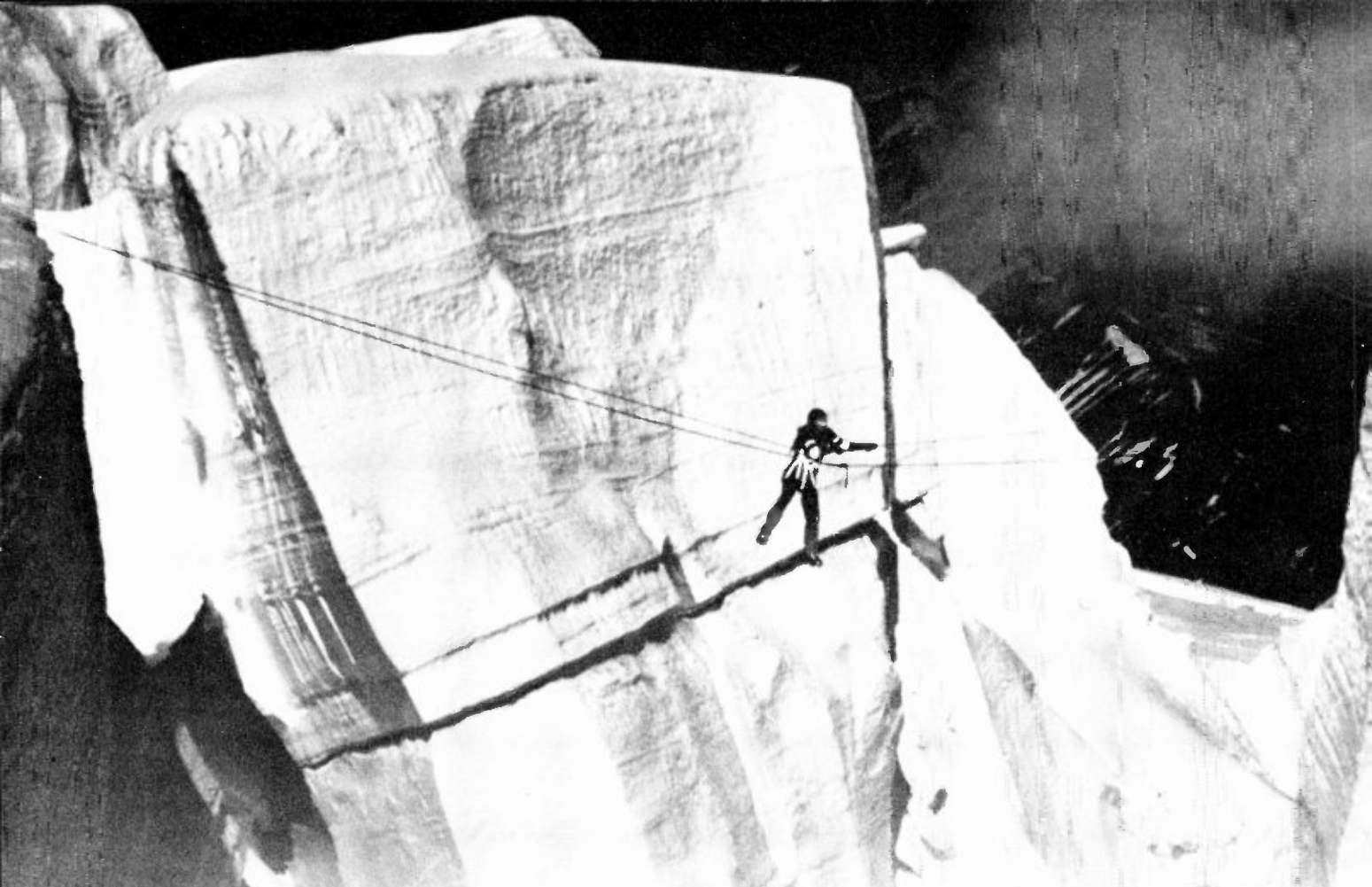
**4 Keyboard slider.** At first sight, it may seem strange that the keyboard voltage should be fed to the VCF module (see Fig. 8). However, the reason this control is provided is very simple. Imagine the VCF's cut-off frequency is set to 440Hz (the frequency of the A above middle C) and imagine playing up the scale of C from the bottom of the keyboard using the sawtooth waveform of the VCO (8' pitch). By the time you reached the B below middle C, you would be hearing only the fundamental (all the harmonics would be above the cut-off frequency). By the time you reached the B above middle C you would hear nothing! (The fundamental would now also be above the cut-off frequency.) This is an extreme example of the spectrum of the waveform emerging from the VCF changing as the fundamental frequency of the input to the VCF is changed. (This effect can be useful lower notes having more "bite" than higher ones.)

The keyboard slider on the VCF module is provided so that sounds can be synthesized having a tone quality which remains constant (or more nearly so) irrespective of the pitch of the note being played. When the keyboard slider is moved away from zero, the higher you play on the keyboard, the greater the keyboard voltage which now increases both the pitch of the VCO and the cut-off frequency of the VCF.

Next month, I will be explaining what the resonance control does and introducing the other types of filter.



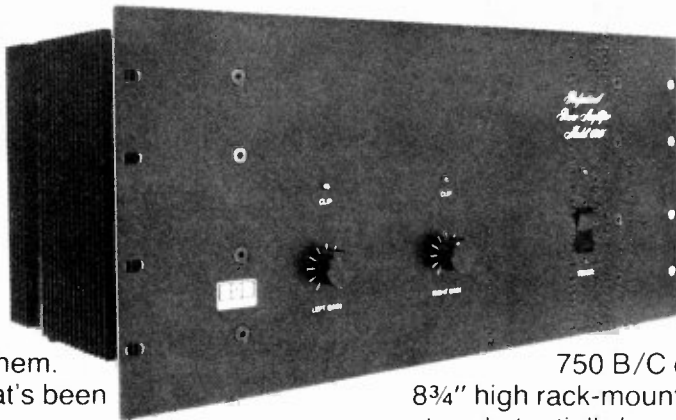
VCF panel showing the various controls which determine how the cut-off frequency will vary. The "resonance" control is exceptional in that it modifies the filter's frequency response.



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# New Products



## DiMarzio Publish 'Customizing' Guide

The new DiMarzio Guide for the Practical Guitarist is a comprehensive pictorial instruction brochure covering not only how to fit and adjust DiMarzio pickups and accessories, but giving general information on alignment and "making sure your guitar works properly".

The new guide was conceived as a practical publication and is very successful in the way it anticipates and deals with the problems the practical guitarist might meet. Each process is covered in detail, from pickup changing "on a few guitars the wires will be soldered together inside

the body . . . . . in this case either loosen the soldered binding or tape over unwanted wires. . . . ." to nut alteration, "a small round edged jeweller's file should be used. . . . until each string just clears the first fret when held down between the 2nd and 3rd."

Incorporating instruction leaflets for all the main types of DiMarzio pickups, this brochure will be invaluable to those who like to do their own 'customizing'. It's clearly written, excellently illustrated, fully detailed, yet always concise. Available from DiMarzio inc., 1388 Richmond Terrace, Staten Island, N.Y., price \$1 (to cover postage and handling), in USA and Canada.

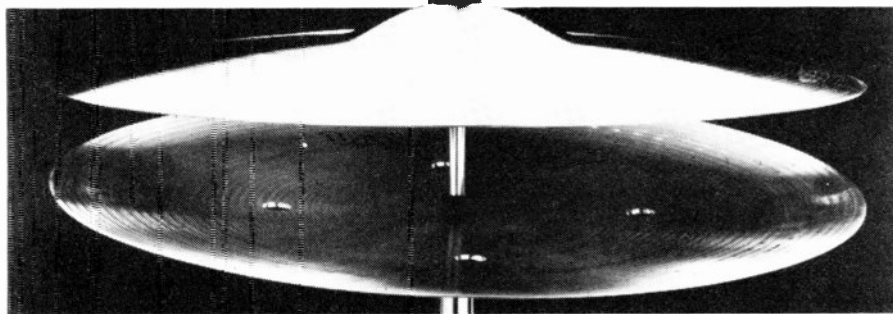
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## Zildjian's Quick-Beat

The Avedis Zildjian Company has designed a new set of Hi-Hats called Quick-Beats, said to be specifically manufactured for rock and disco use. They feature a heavyweight, flat-bottom cymbal with four 3/8" holes spaced at precise intervals near the perimeter of what would

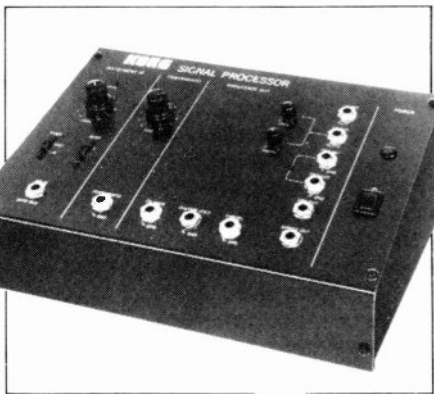
typically be the bell or cup area. The matching top cymbal looks more conventional, but when played, the pair is said to produce a short, tight, compact sound. The new cymbals are to be marketed in 14" and 15" sizes.

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## Korg Finds The Missing Link

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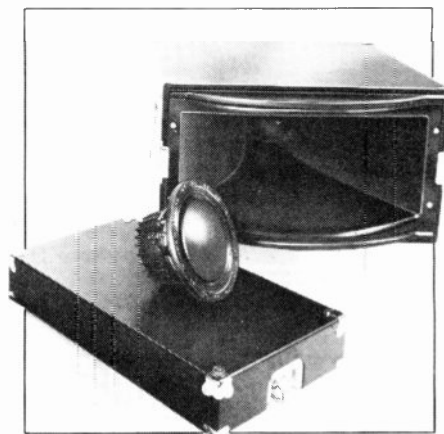


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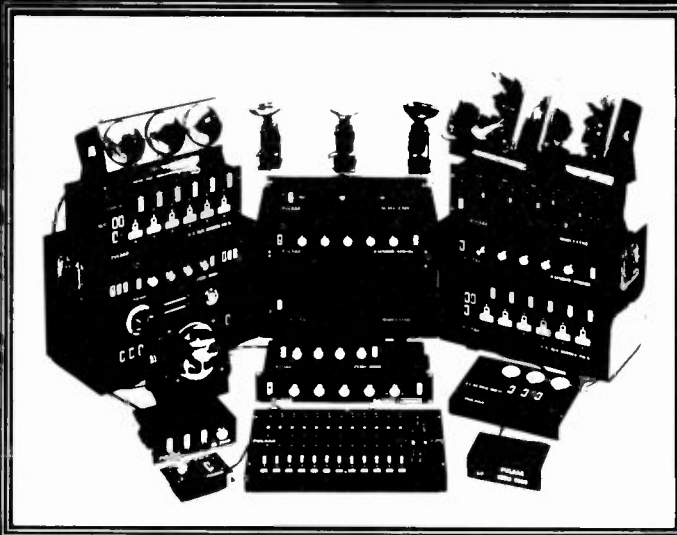
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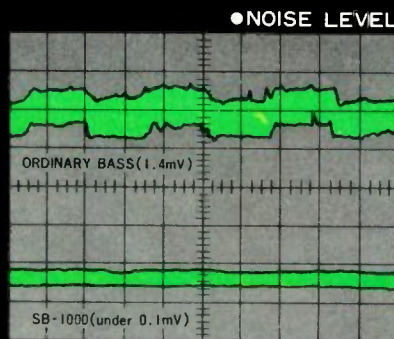
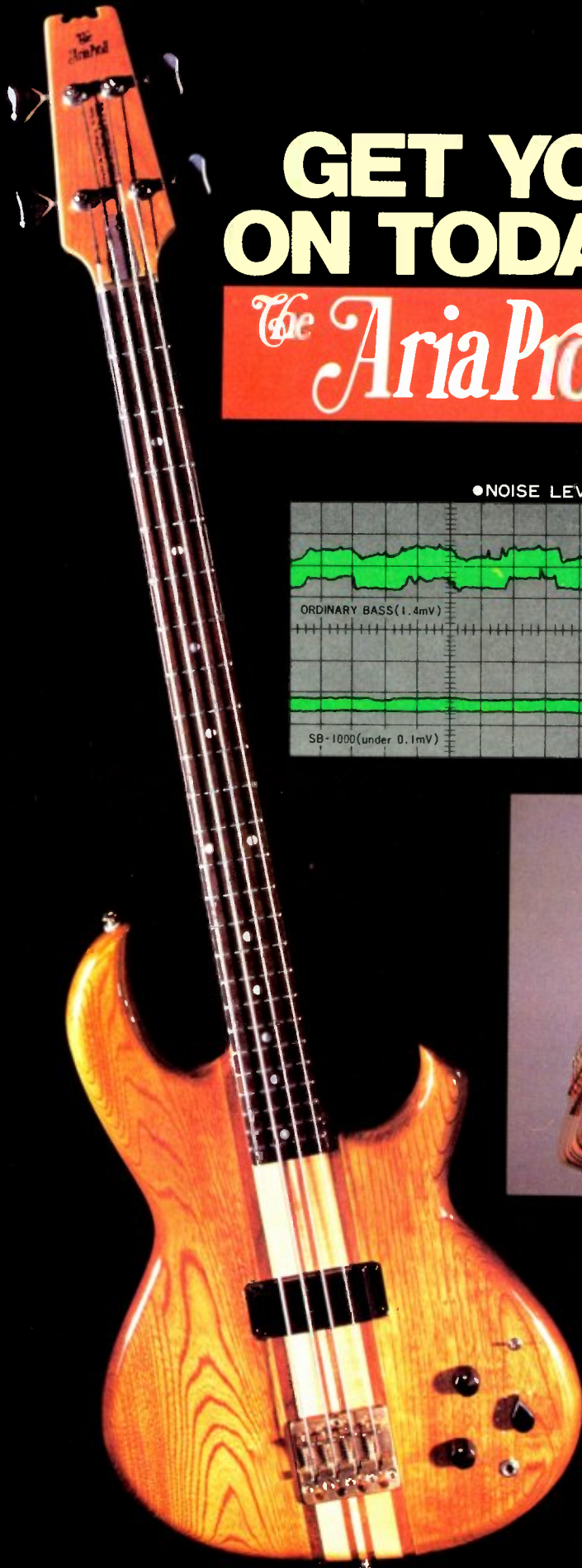
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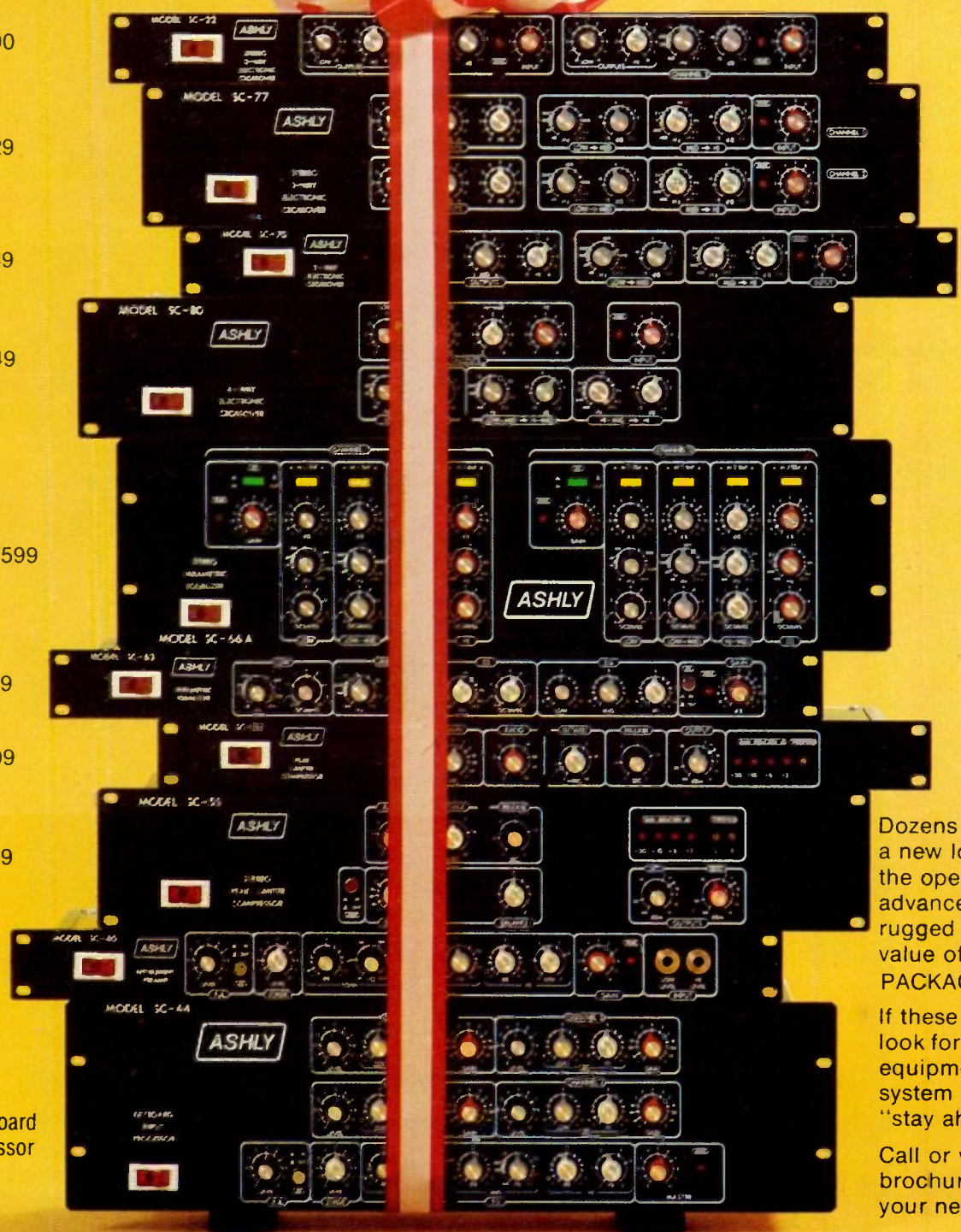
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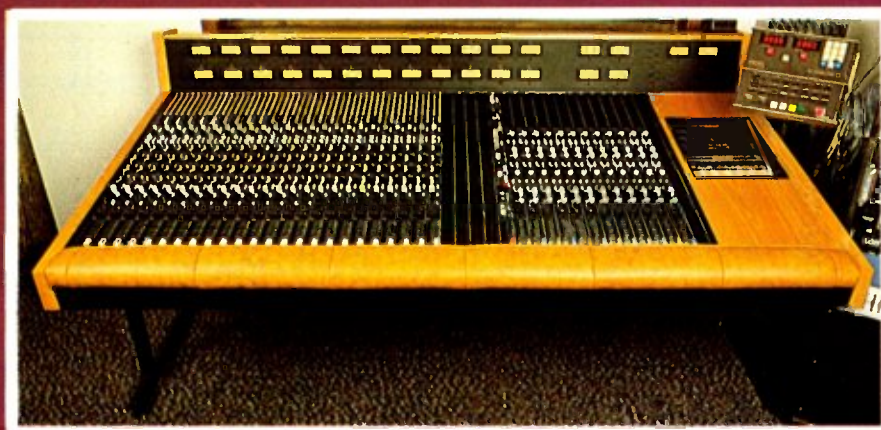
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# Speakercheck

The Shure SR112 and SR116 are a pair of exceptionally small, high performance, two-way loudspeakers intended for sound reinforcement applications in clubs, theaters, smaller concert halls and for cabaret — in fact, for practically any application where space restrictions preclude the use of more conventional loudspeaker systems and where exceptionally high sound pressure levels are not required. Floor mounted, the unit also makes a superb monitor loudspeaker. The only difference between the two models is that the SR112 is the basic cabinet intended for permanent installation, while the SR116 is fitted with steel corner protectors, plastic feet, carrying handle, etc. for use on the road.

The cabinet is a pretty basic affair, consisting of a shell of 16mm plywood with a detachable back panel, finished in a textured black vinyl covering. Apart from the rail to which the back panel is screwed, there is no other form of bracing and the back panel is particularly flimsy owing to a large cut-out covered only by a thin aluminium panel which carries the input connectors and switched attenuator. The cabinet is lined on its inner surface by a 30mm thickness of dense Fiberglass wool. The SR116 is additionally fitted with sturdy steel corner protectors, plastic feet and a sensible carrying handle correctly positioned off-center so that the weight of the whole unit is balanced about the handle. A slip-on protective cover is available as an optional extra, as is a special swivel bracket to facilitate mounting of the SR112 on to a wall for permanent installation, and a cradle assembly by which the unit can be tilted at any required angle for use as a stage monitor loudspeaker. The SR116 is supplied complete with a heavy duty 15m rubber clad connecting cable terminated in heavy duty two-pole jack connectors. It is rare indeed to find such a comprehensive range of hardware available to cover almost any possible application. Even a line transformer accessory is available to enable the unit to be connected to constant voltage line distribution systems.

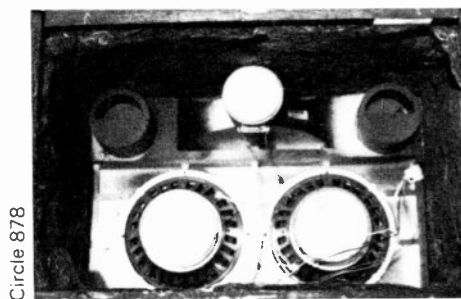
However ordinary the cabinet might be, the baffle assembly is rather clever. It is moulded in a tough, shock resistant thermoplastic resin in a single piece incorporating the baffle panel for the two eight-inch drive units, two reflex tubes and the flare section of the high frequency horn. It is braced with reinforcing ribs and very nicely made. The two eight-inch units and the pressure unit are screwed directly to the inside face of this molding and the whole assembly is then screwed to the front of the cabinet shell. This type of assembly is one that can only be viable in mass production quantities, but provided that the initial tooling costs can be justified, it will in the long run considerably reduce production costs, without any detrimental effects on performance. With this baffle sub-assembly however, I can see no reason why there is any need to remove the back panel as well, and the cabinet shell would be structurally far more sound if it was made as a complete sealed box as a single glued-up assembly.

The two eight-inch loudspeakers are of particular interest and are built on neat pressed steel chassis and fitted with fairly large ceramic type magnets. I do not immediately recognize these, but I suspect that they might be Jensen. The front suspension is particularly soft and is of the PVC "roll" type frequently found on hi-fi loudspeaker units where long cone travel is necessary to reproduce the bass notes. It is most unusual to find a suspension system of this type on a loudspeaker intended for live music or discotheque applications, and one must assume that the tuning of the two reflex tubes has been very accurately determined. If this were not the case, the loudspeaker cones would be heard flapping when driven hard and the sound would be noticeably colored — which it most certainly is not. The pressure unit is a very basic affair indeed, consisting of a ceramic magnet and diaphragm assembly, mounted by three screws to the entry flange of a horn plate which in turn is molded as an integral part of the baffle panel.

Shure is to be particularly congratulated on the superb data sheet which accompanies these loudspeakers, as this must be the most useful and informative document I have ever seen in relation to a manufactured loudspeaker system. In it, the product is fully described, an exceptionally complete technical specification is furnished (including such matters as distortion figures, directivity factor, etc.) and full installation and operation instructions, circuit diagram, replacement parts list — right down to the last screw and washer — and full servicing information, including diaphragm replacement instructions, etc., are all included.

From a performance aspect, it can be seen that the unit confirmed the manufacturer's specifications almost to the letter. It is not particularly sensitive, but then one would not expect high sensitivity from a unit of this size. The frequency response can be seen to be reasonably uniform, and is useful between about 50Hz and 16kHz, although even with the high-frequency attenuator set to the +2dB position, there is a noticeable roll-off at the top end. The several traces shown on this curve above 5kHz show the response of the system with the high-frequency attenuator set at its four positions — working from the lower trace toward the upper these are -4dB, -2dB, 0dB and +2dB, respectively. The polar response is nicely controlled — especially considering the small size and somewhat utilitarian construction of the horn unit. Note that the undesirably wide vertical dispersion characteristic so often found with the smaller type of horn is considerably suppressed in this design, this being probably due to a combination of the choice of a sensible crossover frequency and to the baffling effects of the cabinet. The asymmetric vertical polar plot is due simply to the fact that the eight-inch cone drivers and the horn are not mounted centrally on the baffle panel, but this is not likely to have any profound effect on the overall performance of the unit. Note that the impedance curve is virtually linear, but in this instance, this has probably more to do with the design of the crossover network rather than to the use of linear motor units.

The crossover network is unusually complicated for a loudspeaker of this type. The crossover frequency is 2.6kHz and has a slope rate of 6dB/oct. with respect to the low-frequency units and 18dB/oct. with respect to the horn. Incorporated in the crossover is a stepped attenuator, giving adjustment in four steps of 2dB, operated by means of a screwdriver adjustment switch on the rear panel. The power rating/distortion test was carried out at



Circle 878

Shure PA systems



Circle 877

SR112B:  
\$ 367

SR116B:  
\$ 415

78 watts RMS sine wave, as it is stated in the manufacturer's data sheet that this is the maximum rating for constant voltage operation of the unit. In my view, this is not an unreasonable restriction on a unit of this type, as music material is not of a continuous sinusoidal nature. It is good to see information of this type included in a manufacturer's specification as one then knows exactly what the parameters are. So much better than a cover-up operation, only to find that the unit has blown through being overdriven.

From a subjective assessment, the unit gave a good punchy sound quality from a variety of recorded material including LP tracks from Queen, Fleetwood Mac, Richard and Linda Thompson, Steeleye Span and Genesis, and was generally liked by my listening panel. The unit was considerably easier to listen to high volume levels than were some of the units with which the SR116 was compared and without exception, my panel picked out the Shure as the favorite. Apart from the fact that for me, the unit is lacking a little at the high-frequency end, I must admit that I would agree with this finding. Unfortunately, the unit failed my test using recorded Welsh male voice choirs. Very little, if any of the pedal notes of the Royal Albert Hall organ were audible at all, and virtually all the sibilance normally clearly audible, as the choirs accurately mouth the consonant sounds, was lost. The low frequency coloration usually shown up by this type of music was, however, not present and the low-frequency information that was reproduced seemed clean and controlled. Remembering that it is

- Dimensions:** 590mm wide x 400mm high x 385mm deep
  - Weight:** 18kg (approx. 40lb).
  - Finish:** Black vinyl covered cabinet with anodised aluminium trim.
  - Connectors:** SR112: screw terminals. SR116: two standard jack sockets.
  - Units fitted:** Two eight-inch cone drivers, with HF horn.
  - Crossover frequency:** 2.6kHz.
- Performance Specifications and Test Results on SR116 Ser. No. 7708155UA.

Parameter	Manufacturer's Rating	Test Result
Sensitivity	95.5dB at 1W at 4ft	96dB at 1 watt at 1 meter on axis averaged between 400Hz and 4kHz
Useful frequency response	45Hz-16kHz unqualified	50Hz-16kHz at -20dB
Power	Use with amplifier of up to 100W rating to 8 Ohms.	Confirmed — see text.
Distortion	2% THD at 1kHz at 106dB at 4ft	4% average, increasing to 10% below 300Hz.
Impedance	8 Ohms	6-9.5 Ohms.
System resonance	Not stated.	85Hz.
Polar response	120°H implied	106°V x 108°H at 1kHz 102°V x 98°H at 2kHz 68°V x 116°H at 4kHz 52°V x 56°H at 8kHz.

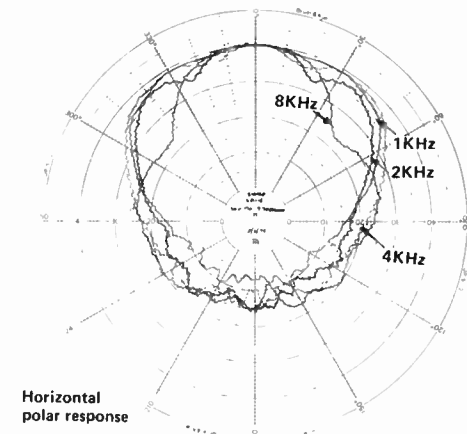
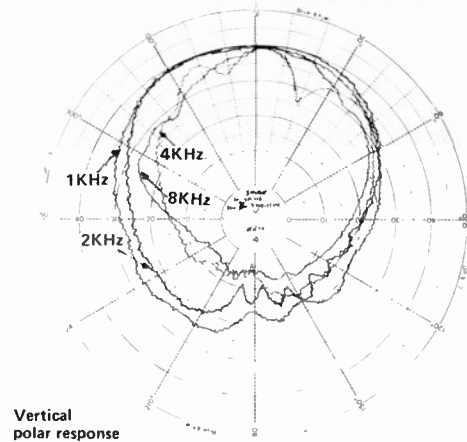
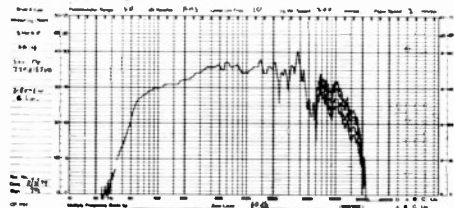
a PA loudspeaker that we are considering, and not a domestic hi-fi product, the SR116 gave a very good account of itself indeed — especially considering its small size and low weight factor. From its overall performance, I would expect this to be a particularly useful loudspeaker for PA in a smaller venue, such as bars, clubs, etc. and for use by the not-so-noisy type of band, such as folk groups, country music bands, cabaret entertainers, etc. and also as a discotheque loudspeaker.

However, one must weigh against these attributes the comparatively high price, and it must be said that one is paying for the small size in no uncertain terms. While the performance is generally good, there is nothing at all about its construction that can possibly justify this price. It is adequate for its purpose, but certainly not outstanding. Most of the component parts, with the exception of the crossover network, are pretty basic and apart from the rather clever baffle moulding, the cabinet quality is nothing to write home about either.

Altogether, I like the overall performance and liked the sound quality. I also appreciate the small size and convenience and attractive finish. For its application, the SR116 is a nice loudspeaker system, but you are paying a lot of money for what you are getting in terms of hardware and overall quality.

**Ken Dibble**

*Ken Dibble is an ex-musician with a background in engineering and manufacturing sound equipment. He now works as an electro-acoustic consultant.*





# RECORDING WORLD

## San Francisco

With most of the groups and artists putting the finishing touches on their current projects things have slowed down a bit. Fantasy Records' studio in Berkeley has had *Sonny Rollins*, *David Bromberg*, *Bill Summers*, *Toni Brown* and *Country Joe McDonald*, all working on final mixes... The Record Plant has hosted *Boz Scaggs*, *Pablo Cruise* and the *Jefferson Starship*... The Automatt's David Rubinson has gone to Japan to produce a series of live and direct-to-disc recordings with *Chick Corea*, *Herbie Hancock* and V.S.O.P. (featuring *Herbie Hancock*, *Ron Carter*, *Wayne Shorter*, *Tony Williams* and *Freddie Hubbard*). Also Jim Gaines, one of the industry's top engineers, has joined the Automatt's staff. Jim's previous work include mixing *Steve Miller's* "Fly Like an Eagle" and "Book of Dreams"... Wally Heider's has had Berkeley artists *Greg Kihn* and *Earthquake* back working on new projects. Ex-*Jefferson Starship* percussionist *Johnny Barbata* is producing a demo for the *Mendocino All Stars*. *New Orleans* wizard *Allan Toussaint* has also been in Heider's producing *Jorge Santana's* new album for Apple Records. *Doobie Brother* percussionist, *Keith Knudsen* has also been busy producing ex-*Clover* percussionist *Alex Call's* solo project, with a little help from fellow *Doobie Brother* *Michael McDonald*. And, finally, former *13th Floor Elevator-ite* *Rocky Erickson*, along with his *Aliens*, have been busy on project... Different Fur has had *Doug Sahm*, *Freestone*, *Stoneground* and *Crime* in their studios, as well as gospel star *Walter Hawkins* producing his wife's first solo album... Bear West Studios is hosting *James Levi* (Herbie Hancock), still at work on his project, as well as *William Talen* and the *Edge*... Mill Valley's *Tres Virgos* has had ex-*Cold Blood* bassist *Ron Elliot* working on a project, as well as comedians extraordinaire, *Duck's Breath Mystery Theatre*... Tewksbury Studio is hosting the *Readymades*, the *Psychotic Pineapples* and the *Liers*... as well as *Gloria Balsam* and the *Charmers*... 1750 Arch Street has had *Kaleidoscope* folk artist *Kate Wolf* finishing up her project... Meanwhile, *John Altman's* studios in San Francisco has had the



Elkie Brooks

*Grateful Dead's* lyricist's (*Robert Hunter*), back-up band *San Francisco* (formerly *Comfort*), as well as *Patrice and Her Nasty Band*.

## Los Angeles

As usual, the L.A. studios continue to host the limelight of today's musicians. At Sunset Sound *Toto*, *Booker T. Jones* and *Ray Kennedy* are in putting down their latest licks as is *Neil Diamond*... Over at the Capitol Record Studios *Barbra Streisand*'s still working on her newest LP and *Freda Payne*, *Bob Welch* and *Sanda Farina* are in along with *B.J. Thomas* who's making a comeback effort... *Rod Stewart* is at the Record Plant mixing his TV special and the dynamic disco duo, *Pink Lady*, is readying their effort for America. Also at the studio is the *Jefferson Starship*, *Elkie Brooks*, *Sheryl Lynn* and a host of other bands... At Larabee Sound, the studios are scooping off a good many disco bands with *D'Elegance*, *James Wells* and the *Eastbound Expressway*. On the gospel side, the studios are hosting *Stan Lee & the Cavaliers* and the *Whitney Family*. *Shirley Bassey* and *Ann Margret* round out the talent at Larabee... Tom Dowd is putting the finishing touches on a *Best of Rod Stewart* album at Cherokee Studios where *Pablo Cruise*, *Amy Holland* and *Metropolis* are putting down tracks... *Johnny Mathis* and the *Village People* make up the talent filling the A&M Recording Studios where *Herb Albert* is producing his newest LP... Over at Gold Star Recording *John Sebastian* is back to produce his own work for CBS and the *Ramones* are finally mixing their work with Phil Spector at the helm. And the *Dwight Twilly Band* is also making use of the facilities.

## New York

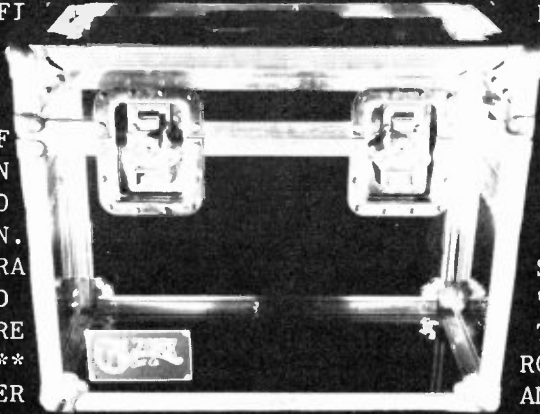
Things are beginning to heat up a bit in the Big Apple with *Aerosmith* putting it together for Columbia at Mediasound. *Richie Havens*, *Celi Bee* and *Laura Lee Cliff* are also making use of the studios as is *John Robie* and *Night Life Unlimited*... *Earl Klugh* is now working out at Electric Lady Studios where *John Ferrara* is putting together a few disco tracks... At Chelsea Sound, *Max Romeo* is

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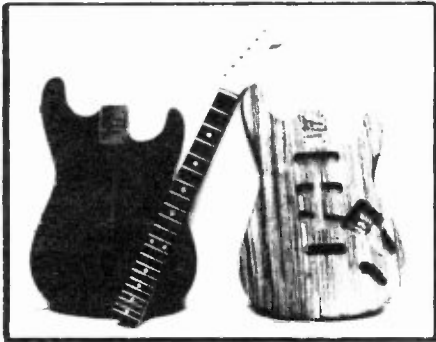


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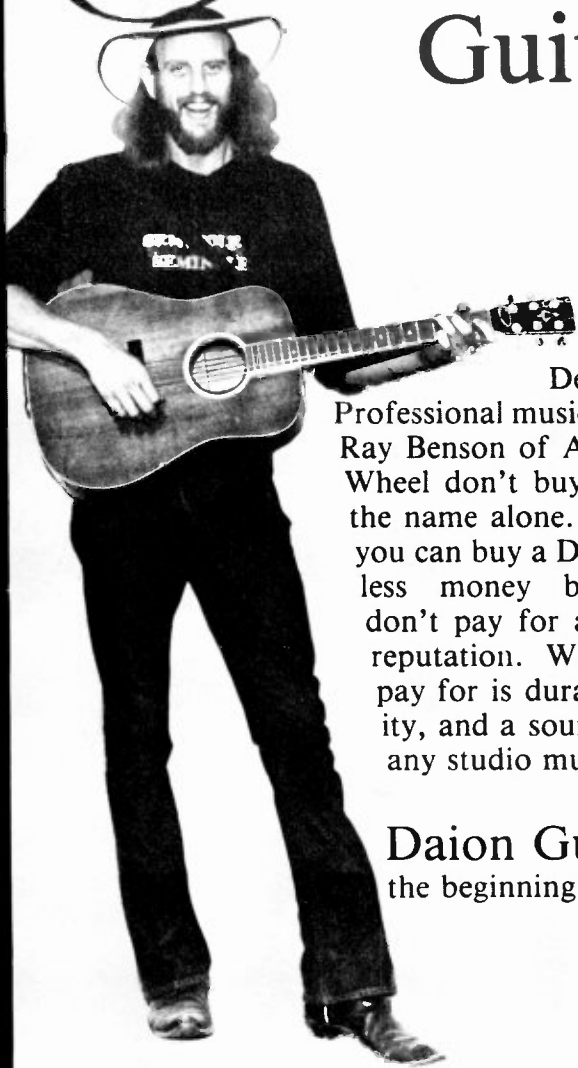
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## RECORDING WORLD

putting down some of his reggae sound while *Phyllis Heyman*, *Sylvia Cole* and *Dianne Ponzio* are cutting their latest disc... *Seaminn'* *Jay Hawkins* is over at Blue Rock Studio where *Brian Eno* is producing his own album for EG Management with *David Byrne* of *Talking Heads* on the session. *Elizabeth Swados'* "The Runaways" is also being produced at the studios by *Joseph Papp*.

### Nashville:

The trend on elongated studio commitments continues to grow in Tennessee recording circles, with producer Kyle Lehning camping out (not literally) with *England Dan* and *John Ford Coley* at Doc's Place in nearby Hendersonville with a week blocked out at Sound Stage on the Row, and producer Phil Benton and artist *Teddy Baker* coming in from Atlanta for a month at Glaser Sound. Further news — BIG news — from the Glaser facility: Brothers Tompall, Chuck and Jim, have taped a segment of the syndicated TV'er "That Nashville Music" and they have "spent some time in the studio lately" recording together, although no one will make any promises or predictions as to release dates or even if a record will come out, although the prospects are healthy. The *Glaser Brothers* won "Country Vocal Group Of the Decade" from RECORD WORLD a decade ago and have not performed together since not too long after that — seeing and hearing them together again on new material would be in contention for "Joy of the Year"... Other activity at Sound Stage has included *Johnny Russell* sessions for Mercury and a *Dave Boyer* album for Word as well as Elektra's *Jimmy Bowen* booking the back room for remixing for some two months more on than off... At Jack Clement Recording Studio *Don Williams* has begun work on the first album under his renewed contract with MCA with *Charlie Rich* and *Freddie Weller* taking studio time around him: we understand Freddie is into some interesting new directions and we know that Charlie's OLD directions are still quite interesting... Variety has been the key at Creative Workshop during the dog days of August: perennially cool *Dottie West* has been working on a new album with co-producers Brent Maher and Randy Goodrum. *Dan Hill* has been in for a week and would you believe a *Mike Douglas* Christmas album?!

## The Automatt Ultimate Computerization

By SCOTT KUTINA

It seems only right and natural that sooner or later computer technology would enter the field of recording where, since the advent of multi-track recording consoles, music has become increasingly complex and intricate in its structure and texture. With the influx of digital recording and the continual advancements to consoles, recording studios have become a wonderland of computer technology, and San Francisco's Automatt has been a prime influence in the nationwide move to embrace the technological wizardry.

Designed, owned and operated by 37-year-old David Rubinson, one of San Francisco's first multi-gold and platinum record producers, the studios have undergone massive changes since they were originally known as Coast Recorders. In the Sixties, they were a haven for such bands as Quicksilver Messenger Service, but in the last part CBS took over the operation and quickly turned it into one of the most advanced recording complexes in the industry.

In 1976, David took over studio C which wasn't being used by CBS and along with engineer Fred Catero and design engineer Michael Larner, began construction and development of an automated recording system that resulted in the first such studio.

Studio C began to draw such pop luminaries as Santana, Herbie Hancock, Peter Paul & Mary and the Pointer Sisters. Many came because of past experiences with David and Fred, but some beat a path to the studio because of the innovative techniques that were developing there.

CBS decided a year and half later to leave San Francisco and sold the studios to David who in early 1978 dubbed the studios the Automatt. David expanded the remaining facilities of the complex and today has a recording studio that is known throughout the industry as containing the ultimate in automated recording facilities.

Studio C is the heart of the Automatt and with its Harrison 4032 Master Recording Console and Allison Research (second



generation) Memory Plus 65k bit automation system, it sets itself up to perform recording "miracles". Couple all of this with a special computer "chip" designed by Michael Larner, known as the Zilog Z-80 microprocessor computer system, and a visual monitor screen (Autoscreen) and you have a formidable array of technology.

A good example of the "miracles" the studio can perform is one of its most recent projects, the production work on Francis Ford Coppola's *Apocalypse Now*. The entire mix consisted of 90 tracks and would have taken about 30 people months to complete the mix properly. With the computerization available, however, David Rubinson and his staff were able to complete the project in just a few weeks.

The actual function of the interfacing allows the production team at any time to recall any mix perfectly. Through use of the Autoscreen, the mix can be visual-



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ly monitored by a bar graph. With this visual aid, mixes can be compared, matched and adjusted according to the wants and needs of the producer in minutes instead of the hours previously necessary. This saves the musicians time and precious money in the studio.

The recall function allows the producer to free himself for the more artistic end of producing, the actual shading and texturing of the sound. He can, if he's not feeling too good about things on a certain day, store the mixes until he feels ready to work them round to his sense of perfection.

Another advantage of the system is that lyrics, track assignments, musician's names song titles and authors, recording personnel and other

pertinent data can be stored and then recalled for reference on the Autoscreen.

There are certain disadvantages to all of this automation, of course, but as David said, "this can usually be traced to human error." He attributed much of this to an engineer or a producer using this automation as a crutch, and not as a tool.

"The criteria of a piece of music should be," he continued, "is it a good song, or is the producer compensating for a bad song with a good superstructure? A song should be judged by its substance, or its lack of it. Too much polish can ruin it, and that's what's wrong with much of today's music."

When Studio C was fully automated, and David took over the entire facilities, it was only a matter of time before Studios A and B were too. Now both have the Allison 65k automation/Zilog Z-80 interfacing. The major difference being that Studio B has the Harrison 3624 console, while Studio A, one of the largest studios on the West Coast at 1500 square feet, has the Trident TSM 40-34-24 console. The Trident is one of the latest pieces of recording technology available, with 40 tracks in, 32 monitoring tracks and 24 tracks out.

Each studio has its own personality. Studio A's size allows for a much more orchestral sound which is also ideally suited to a "live" sound. Studio B is 500 square feet, and its compactness makes it perfect for laying down tight, basic rhythm tracks.

Studio C is perfect for solving those technical problems that arise every now and then, as well as for overdubbing and the "sweetening" process. There is also Studio D, but that is a small rehearsal studio that is not open to the industry at large.

The studio monitoring systems in all three studios is fairly standardized. They are powered by MacIntosh 2300 power amplifiers. Studios A and B have 813 time-aligned main monitor speakers, while studio C uses a Big Red system, with Mastering Lab crossovers. All three rooms

have JBL-4311 and Auratone speakers as well.

Tape recorders are also standardized with MCI 24-track recorders in each studio, each having the capability of an additional 24 tracks when combined with another MCI 24-track. Each studio has two remotely controlled MCI 2-track outboard recorders available including two Nakamichi cassettes and an Ampex 440 4-track.

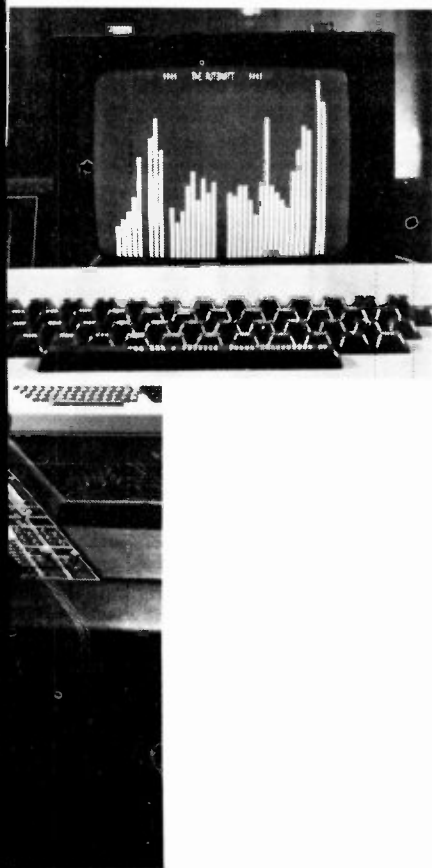
Outboard equipment for A and B include a Pultec Lang Equalizer, Teletronix, Universal and RCA limiters, and a Lexicon Digital Reverb unit. Studio C's outboard gear reflects its technical sophistication with RCA, Urei 1176, LA-24 and LA-3A limiters, Pultec mid-range and Lang full equalizers, a 40x24 Line return and Phase Reverse network, as well as a Lexicon Digital Reverb unit.

A large selection of microphones are available including AKG, Beyer, Electro-Voice, Shure, Sony, Sennheiser, Neumann, KM88 and Telefunken. A full range of instruments and sound modification equipment is also on hand. A disc mastering room is also available for those who would prefer to master on the spot.

The Automatt is also unique in that Rubinson has a small but exceedingly fine collection of 30 to 40-year-old jukeboxes on display. David is well known as a collector and juke box aficionado, and the "boxes" are all well stocked with rare '78's from the appropriate eras.

Game rooms, free pinball machines, shooting galleries, lounges, popcorn, coffee, tea and other beverages round out the services provided, with hourly rates of \$135 plus an additional \$25 for automation purchasing the entire package.

Both David and Michael see the future in pure, digital, solid state memory cores with no more tapes or moving parts. All the production work will be done by typing or vocal commands directly to the memory core doing away with cutting and splicing. And as for the future of the Automatt, Rubinson waxes most optimistically for the studio and continual upgrading of its state-of-the-art electronics as well as its chosen site, San Francisco.





## George Martin Beck, Beatles & America

If anyone deserves the title "the fifth Beatle," then surely that honor would go to George Martin. As the producer of all their albums, he contributed more to Beatles' music than anyone outside the Fab Four themselves.

His fame would have been assured if he had done nothing else after accepting their demo tapes and giving them a record contract with EMI. But he went on to achieve legendary status by producing pop music classics with every Beatle album including, of course, the revolutionary *Sergeant Pepper*.

It would be easy to talk about his career just in terms of the Beatles, but that would exclude much of his excellent work with such diverse artists as Jeff Beck, Stan Getz, John McLaughlin and America. Yet even now, 10 years after his last album with them, the Beatles won't leave him alone, for he has just produced a Beatles Concerto album featuring pianists Peter Rostal and Paul Schaefer and the Royal Liverpool Philharmonic Orchestra of England.

Ironically, George started out as a classical pianist and only took a job at EMI, "as a stop gap on my way to becoming Rachmaninoff the third." He began helping the guy who ran Parlophone Records and soon became hooked on early recording techniques. He worked on records in the early Fifties, but wouldn't go as far as to say he was a producer in

those days.

"Records weren't so much produced then, the guy was more of an organizer at the session, in fact, he wasn't called a producer, he was called an Artist Recording Manager. He used to supervise the engineers and be the link man between the artist. It was a very rudimentary form of recording, so there wasn't much you could do.

"I'd already done a lot of 'spoken word' records before the Beatles, I had a corner in the comedy market. I used to do all the records for Peter Sellers and Spike Milligan, and the *Behind The Fridge* boys, Peter Cook and Dudley Moore. That was the beginning of being a record producer because you were a kind of drama producer as well. Particularly in stereo, you were planning a sound picture."

Toward the end of the Fifties, rock & roll came along but the groups were mainly lead singers with a backing band, like Cliff Richard and the Shadows or Rory Storme and the Hurricanes. George used to work with Jim Dale and also had the Vipets skiffle group, but he was already looking out for something new. When Brian Epstein came along with his demo, he found it.

"Brian came to see me with this demo and I didn't know at that time that he'd been to everyone else in town, including my own company, and been turned down. It wasn't very good, but I thought it was

quite an interesting sound and so I said, 'The best thing you can do is bring the boys down to London and I'll have a look at them and give them a recording test.' I didn't know they'd already done a recording test with Decca.

"So I spent an afternoon with them in Number Three studio at Abbey Road, got to know them, liked them and signed them. It was entirely on my say so that they recorded, we had the power of life and death in those days."

The rest, as they say, is history with George working on all the Beatles' albums. They were, he says, very much a team effort and after the initial year of success the four became more involved in studio work and were very quick to learn and latch onto new ideas. The willingness to experiment led to some memorable recordings, and George himself developed studio techniques which were to change the whole history.

"Speeded up tape was my idea and the reversal of tapes and playing things backwards was another little gimmick I introduced them to. It was all those technical little things I'd learned over previous years by manipulating tapes for myself. Once you know what can be, it isn't so much the cleverness of doing it as choosing the right moment to do it.

"For example, that backward bit was first used on a Beatles' track called 'Rain.' I just happened to find a piece of backward music of John's voice that fitted exactly with the right chordal sequence and made a very interesting pattern. Those kind of things were done through experimentation in the studio, and John and Paul used to leave those kinds of things to me. That was the kind of thing they tended to shy away from. They were what John called 'production gimmicks.'"

George was one of the first people to use phasing, which came about through the invention of artificial double tracking, (ADT), the product of one of the Abbey Road backroom boys, Ken Townsend.

"I said to Ken that it was such a chore to get people to record things twice over, can't you just do something with a time-slip to make it sound like two people? He went away and thought about it and devised this tape delay system where he took an impulse off the record head. Of course, when you mix, you take it off the replay head which is behind, and by delaying that was able to bring the second image very close to the first.

"We found out, by trial and experiment, that around about 30 milliseconds was the optimum time difference between

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the two images to get a really good artificial double tracking sound. More than that, we found that if you let it float you had an extra effect, because not only did you have a good distance between the two images which varied, but also the slight variation in speed in the second image created an undetectable 'wow' which altered the harmonics of the voice or instrument. So it would not sound like an exact image, so that enhanced the effect."

They discovered quite by chance that if by taking this image close to the original until it actually became one, you would get a phasing effect. The Beatles loved the effect, particularly John, who according to George never liked the sound of his own voice and constantly asked for it to be distorted.

George also has an interesting story about how the word 'flanging' came about. Apparently, one day John asked him to explain how ADT and phasing was done. "We used to joke about a lot and I said, 'Well it's really a bit too technical for you, John, but what you do is get the double bifocated splashing flange and that goes through the Doppler effect.' Having said that he used to ask, 'Would you like to do that flange thing on my voice.' So every time, he called ADT 'flanging.'

"Then many years later I found out that the word flanging was being used, and the derivation of it which was given to me was rather curious. It was that in the early days, British engineers started ADT, and found they were able to vary the speed of the second image by putting their thumb on the flange of the plate — hence the word flanging!" successful, and he particularly remembers trying for a long time to get a 'speaking instrument' without much success. Of course, we now have the Vocoder which does just that.

Today, studio gadgetry and that dreadfully overworked phrase, "state-of-the-art technology," has become big business. Studios vie for the latest and most sophisticated hardware which is flooding the market. As a pioneer of so many effects, how does George Martin rate all these new innovations?

"I've tried them all out, but they're fairly fringe kind of things. They make minimal difference nowadays. I think a good delay system is worthwhile but I've always been used to making my own effects. It's quite useful to use tools if you can speed up the process, but some of them take more time to set up than they're worth. Sometimes you get better

results doing it the old way, but it depends. Harmonizers are very useful and obviously you have to have a lot of out-board gear in a studio, but I don't go out and buy every machine that comes on the market."

However, George found that he needed all his experience and technical know-how when asked to work on his final Beatles album, *The Beatles Live at the Hollywood Bowl*. The project was fraught with problems and, at the outset, George wasn't very enthusiastic. He was present at the original concert and remembered that the sound was awful and the boys hadn't been singing in tune. He naturally thought the tapes, which were recored on three-track 1/2" Ampex machines, would never see the light of day.

His first reaction on being asked to listen to the tapes was, "You're flogging a dead horse." He knew the Beatles wouldn't approve and he was against reviving something sub-standard just to make money. However, he reluctantly listened to the tapes — and was pleasantly surprised.

"I must say that, without working on them, I was amazed at the excitement generated on them. The feeling was obviously nostalgic for me, but I did say to myself, 'If I could do something with this, it would be great.' So I said I'd work on them, but wouldn't make any promises.

"The tapes were in a terrible state, they were about 12 years old and were all crinkled at the edges because they'd been very badly stored. First of all, it was very difficult to find an Ampex three-track machine because they don't make them any more. Eventually, we did find one, a vintage machine, and the first job was to transfer it to 24-track because we couldn't keep playing the original tape.

"To begin with, when we played it once the machine began overheating, so we had to bring in a vacuum cleaner and blow cold air on it. Because of the crinkled edges, we had someone standing by with a pad of cotton wool holding the tape while it was going past the head. Once we got it into 24-track, it was easier. Each of the three tracks I put onto three of the 24 so I had nine tracks and we then played with each track.

"On the original three-track, you had voices in the center, bass and drums on one track and both guitars on the other. The audience reaction, surprisingly, wasn't on the vocal mikes but mainly the instrumental mikes. What I did, for example, on the bass and drum track that had been transferred to three tracks, on one of

the tracks I would concentrate on the bass sound, on another I'd concentrate on the top end of the drum and the one underneath, maybe the bass end of the drum. So we'd actually get three different sounds out of one sound and then we'd place them in a stereo picture so it gradually evolved — the copious editing. It was a labor of love really, and I think it worked out alright."

It seems that whenever anyone mounts a project involving Beatles' music, a call to George Martin is required. It is not something he encourages because, as he explained, "It was a lovely period in my life, but I don't like digesting it every moment of the day." He admits that the Beatles Concerto album is the type of thing he usually shys away from. Still, he became interested in the project, reproduced the album, and thought that it was the best arrangement of Beatle material in classical form that he'd ever heard. "To me it's the kind of thing where you're listening to a piece of classical music, and you're pleasantly surprised to find you know some of the tunes."

Of all the artists George has worked with outside the Beatles, Jeff Beck seems to be the one which would perhaps raise a few eyebrows. The polite, respectful character of George Martin appears to be at the other end of the spectrum to Beck the moody guitar hero. However, the partnership worked extremely well, and the results, *Blow by Blow* and *Wired*, brought Beck back into the limelight.

"I had a message from Jeff's manager," said George, "asking if I'd be interested in working with him. Maybe the only strange thing was that Jeff should think of me, but I've always admired him as a guitarist — I think he's a marvellous guitar player. People advised me against it, saying, 'you'll burn your fingers with Jeff, he's a strange bloke, you won't be able to make records with him.'

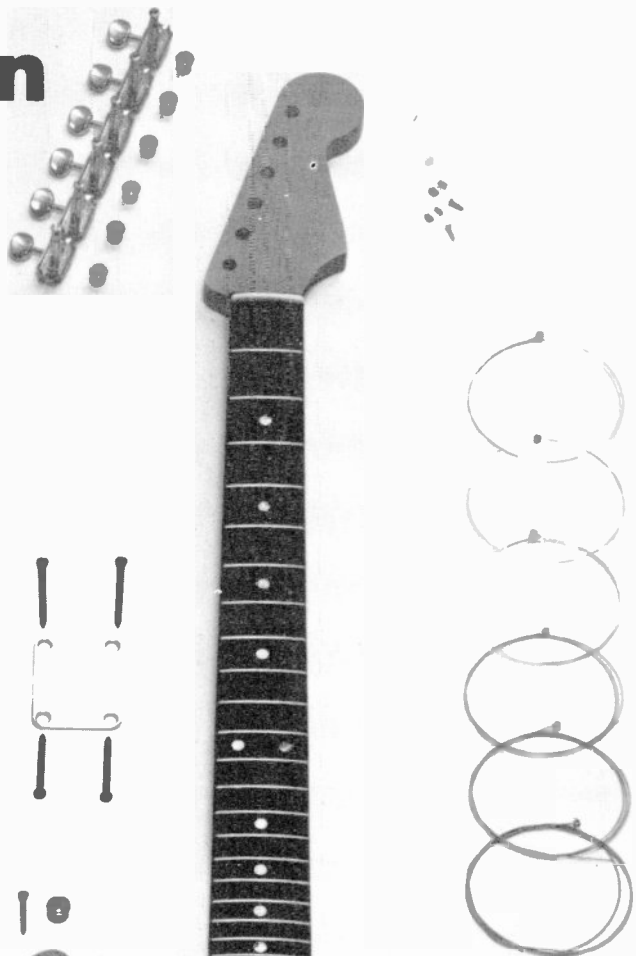
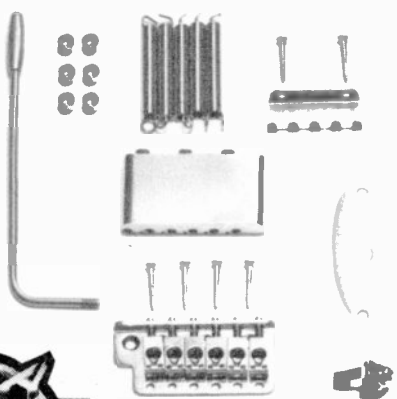
"Well, *Blow by Blow* was the first one, and it wasn't easy, but it was very rewarding. I thought Jeff was remarkably pliable, and when I suggested putting strings behind him, which was a pretty dangerous thing to do, he went along with it and loved what we did, and the album went gold."

America was another band who benefited from the Martin magic. He teamed up with them after their third album had flopped, and went on to make seven albums with them, four of which went gold and one platinum. In spite of this ▶

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long association, there has never been any hint that he would form a relationship which would in any way be similar to the one he shared with the Beatles, and this was a very conscious policy on his behalf.

"After the Beatles, I didn't seek to have any long relationships with anyone. I like doing individual albums. So I like doing the odd album with Mahavishnu, then going on to make an album with John Williams, that kind of thing. The great thing is that I can make an album with someone and not make a commitment to do another.

"I did three albums with Stan Getz, for example, because I liked doing the first one. I've just done an album with Gary Brooker. I liked it and enjoyed working with him. I might do another, I might not, but I don't have to, which is great."

Nowadays, George divides his time between producing, mainly in America and running his own studios. He set up Air Studios in the Sixties and is currently putting the finishing touches to a new one on the Caribbean island of Monserrat. As someone who has worked in studios all over the world and also own his own, it seemed natural to ask George what he thought of studios today.

"Studios are so near each other these days, that the things one tends to look for are the little finishing touches. Obviously, the board has to be a good one, a clean one, and your monitoring system has got to be something you can cope with. We have all Neves, and the new Neve board in Monserrat is the best board I've heard in my life. In the US, the boards I like are Trident and API. I have used MCI and they're very clean but I don't like the smallness of their knobs. I like something you can get hold of and know what you're doing.

"I have recorded in quite a few Eastlake type studios, but I'm not crazy about them. They're comfortable physically, but not acoustically. I find the control rooms rather oppressive and small. But there is a high standard now, so it's the little extra touches you look for when booking a studio. In Los Angeles, I use Cherokee a lot because the people there are very nice to work with, and put themselves out for you."

When asked to name a favorite producer, George doesn't immediately reel off a string of names. He mentions Phil Ramone's work, and is careful to go for the "legitimate" producer rather than an artist who just happens to fancy his hand at producing.

This leads onto the question of today's producer now being held in as high esteem as the artist, something which is a

long way from the job he started out doing. "I regret that, I think it's wrong. Obviously, it benefits me, and I'm not unhappy about it except that, being impartial, a producer is *not* as important as the artist and I think it is wrong to put him in that position.

"I think the unfortunate side effect of that is, because he has become as impor-

tant, the artists regard the production credit as a vital one and always want to do it themselves. I don't think they do as good a job, I think everyone needs the impartiality of a producer, if he's a good producer. I regret this swing in emphasis — although, I must confess, it hasn't done me any harm!"

David Lawrenson

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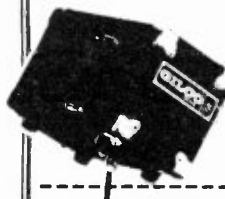
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## Allen & Heath SR20 mixer \$6400

**D**on't take one look and think to yourself, I can't afford a mixer like that, and turn over the page. At least see what I have said about the SR20 and then think about it. The SR20 is as its title implies, a 20 channel mixer, but a glance will show it has a lot more to offer than a basic 20 channel desk. Before I get into testing the SR20, a brief history is in order. Allen and Heath has been making studio mixing desks for a great number of years. The SR20 came about simply out of demand. A number of famous bands who have used Allen and Heath desks in studios wanted something superior and more versatile for use on the road. With this in mind Allen and Heath built various custom desks to order, not only for bands, but also for use in theaters. As a result, the SR20 came into being.

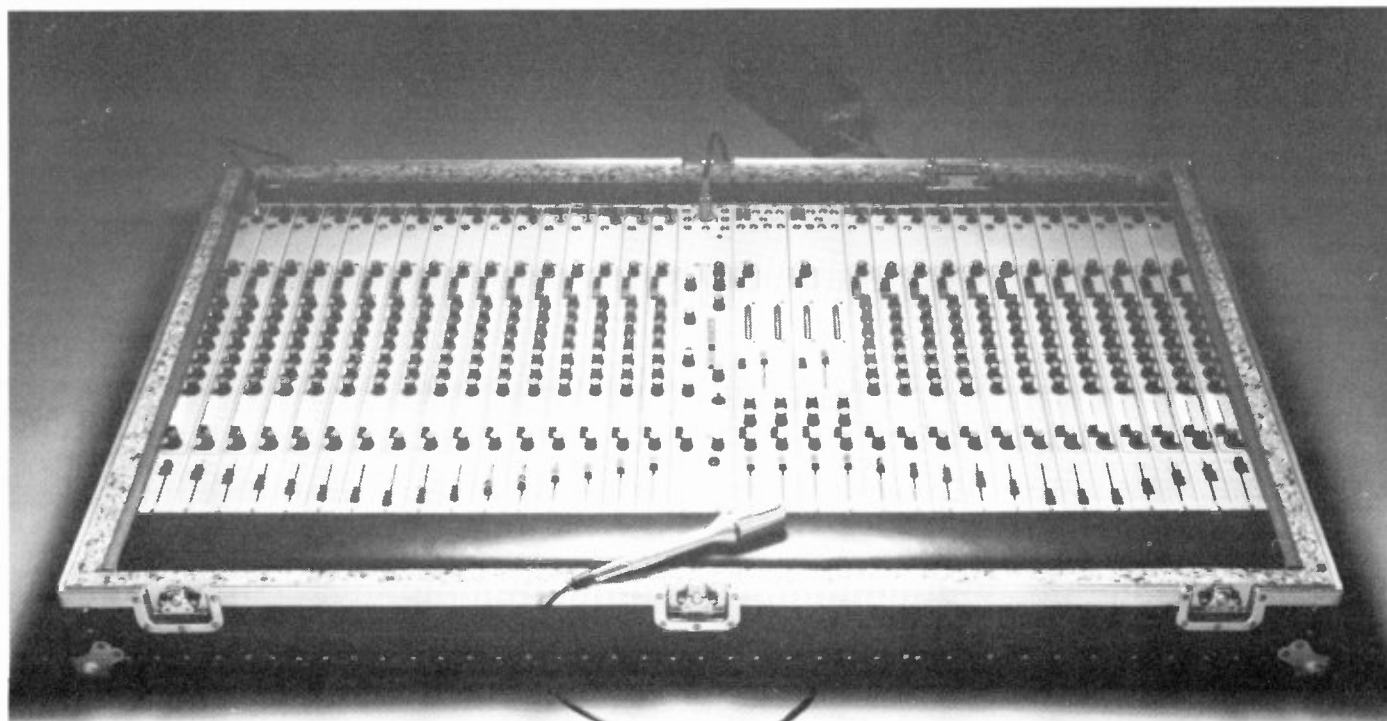
### Description

Descriptions can be long and tedious, but I'll do my best to keep it brief and explain various functions as I progress, before describing each section. The SR20 is fully modular which means that any

channel or output section may simply be unplugged and replaced with another. This means that should a failure occur out on the road somewhere, it does not necessitate the whole desk going away for repair, merely the section which is faulty — another one can simply be inserted in it's place.

Starting with each channel section, at the top, there are three sockets, two jacks and one XLR. This is a balanced microphone input, which by a simple connection under the panel may be phantom powered for condensor microphones. Next to this there is a three-way jack insertion point which allows the signal path to be broken at line level for the insertion of graphics, compressors or whatever other device you wish to use. The final jack socket is for line level and is unbalanced.

Moving down we have the microphone gain control which is followed by three push button switches. These are a 20dB pad for reducing microphone gain, a high pass filter which rolls bass off below 100Hz and a switch to select between microphone or line inputs. There then follows four tone controls one for treble, two mid band



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controls which form a parametric equalizer, the frequency of which is variable between 1.8 and 7.5kHz. The lift and cut available in the mid band is +18dB. Finally, there is a bass control. Beneath these four controls is an EQ cut switch which allows the tone control section to be by-passed, a quick reference between equalized and unequalized is then readily available. Next there is a group of three auxilliary send controls. By changing a link under the control panel it is possible to have these auxilliary sends pre-fade or post-fade. As supplied, one and two are pre-fade and three is post-fade. In normal road use auxilliary one would be used for foldback. Two and three may be used as sends for effects of various kinds. With some effects it is well worthwhile having them vary with fader level, this being simple with post-fade send.

Next in line is a group of five push buttons. The first four are for routing to sub groups. The final button is marked solo and is for monitoring, allowing the channel selected to be routed to the monitoring system pre-fade. The last rotary control above the fader is a conventional pan pot. Finally, we have the channel fader.

## Control Module

The next section of the desk is where things start to get apparently complex, but in actual fact this is where the flexibility of the desk really comes into it's own, making life very much simpler and more versatile. At the top of this section there are eight mono jack sockets and a five-pin XLR connector, this being used for the remote power supply. The advantage of having a remote power supply is that there is no powerline connected directly to the desk, this helps to minimize hum problems and powerline transients which can play havoc. Three of the jack sockets are the respective auxilliary outputs. There is a talk back to stage outlet, an echo return, a monitor output, return from stage input and finally an oscillator output.

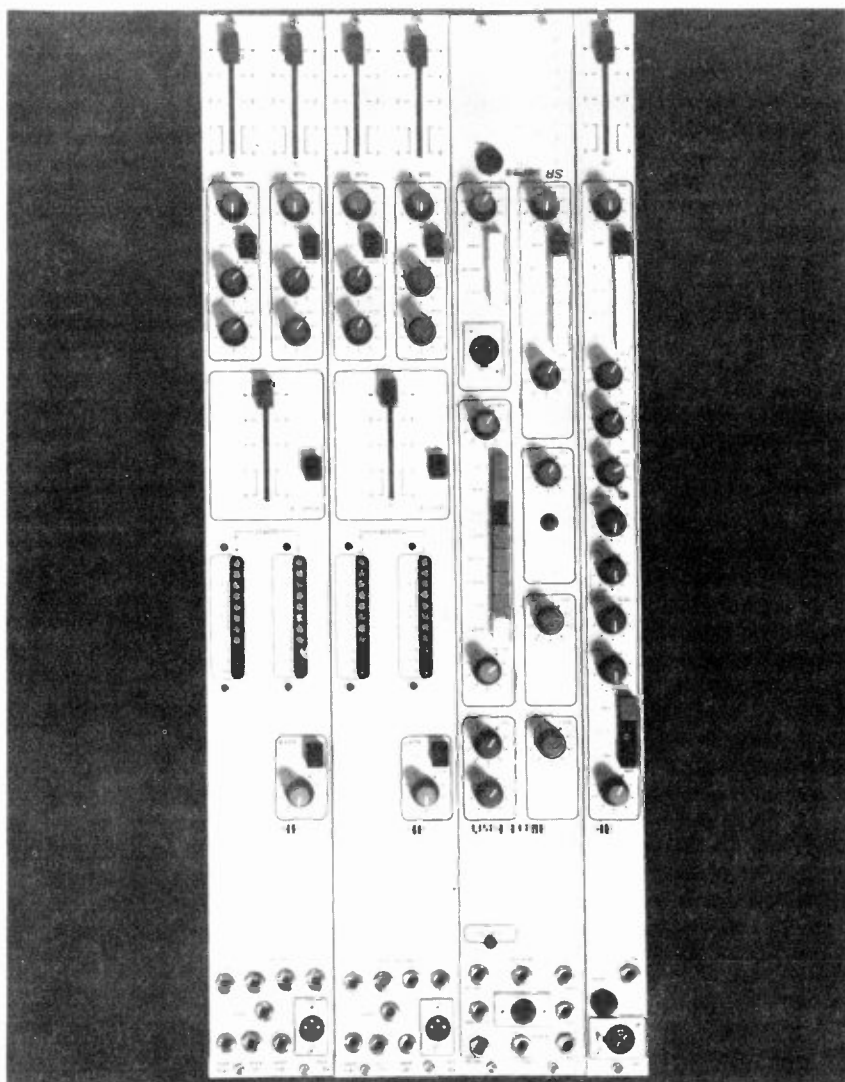
Moving down to the controls of the section we first come to the oscillator controls. There is an output level control combined with on-off switch and a frequency control. The frequency control

is not calibrated in terms of frequency but is merely variable, marked high at one extreme and low at the other. This enables the oscillator section to be used for setting levels if you wish to match channels, or calibrating tape recorders merely as a test signal for checking things out. This oscillator may seem something of a luxury but I can assure anyone, that when needed it's worth its weight in gold — it certainly enables you to solve problems quickly and balance various things with ease. The next section comprises three level controls which fix the outputs of auxillaries one, two and three. Alongside these controls are a set of buttons for the monitoring

system which I will discuss fully in conjunction with the output modules which I will come to in a moment.

There then follows a headphone monitoring socket. To the left of this is the echo return department. Above the echo return level are five push buttons, labelled for the various sub-groups plus a solo button of the same format as the single channels. Also

Beneath this section is the talk back facilities. Three push buttons allow you to talk to auxilliary one — which would normally be used for foldback, talk through the main PA and finally to talk to the separate desk to stage line. ▶▶



included in this section is a separate control for routing echo to auxiliary one. This allows foldback to be mixed with echo separately so that musicians on stage can hear the echo effects being used.

## Output Modules

The final two sections of the desk are the output modules. A standard XLR is provided for output the remainder of the connections being jack. There are four echo returns for the varying sub-groups allowing stereo echo or any other effect you wish. Added to this are insertion points for each sub-group and the main outputs allowing limiters, compressors, graphics or whatever other effects you may wish to use.

The first controls you come to are auxiliaries seven and eight. These are output controls so that anything routed to sub-groups seven and eight appear at these controls and may be used for a multitude of things including echo send or tape output if you wish to record what's happening, or possibly as rear channel speakers. Both are equipped with pre-fade listen buttons. Beneath these are the main meters which I will discuss in a moment. Moving down we have master output faders. These are labelled five and six and correspond to sub group five and six, therefore, anything routed to five and six will go direct to the output faders. Both have pre-fade listen buttons. Each sub-group has two echo returns allowing quite complex echo or effects facilities to be added at the sub-group stage. Beneath these are solo buttons for each sub-group. The final rotary controls for all four sub-groups are pan pots allowing sub-groups to be panned. Finally, then, we have the four faders for sub-groups one to four.

The sub-group systems may sound somewhat complicated but far from it, it makes life very easy; if you route, for example, eight microphones on a drum kit to sub-groups one and two, this allows the overall level of the drums to be raised or lowered — a far simpler task than having to adjust eight individual faders. By the same token if you have a number of vocalists all with their respective levels set, you can then route these to a sub-group which allows vocal levels to be shifted up and down with ease. In a situation where a band is doing instrumental numbers and vocals, if all the vocals are routed to a sub-group it is a simple matter to knock out the vocal channels when not in use.

## Monitoring

The last section of the desk is the comprehensive monitoring and metering functions. The meters used are not normal ballistic types, but are LED displays going from -20 to +6dB. From 0 to -0 the LEDs are green while above 0dB they are red. The meter characteristic is peak reading allowing the kind of peaks one gets from live music to be easily viewed, peaks which would escape a VU meter and allow transient overload conditions. There are four of these meters two on each output module. On the control module is a row of eight push buttons which select the meter functions. Along with these is a control for monitor level and an echo return which allows echo to be routed to the monitoring system and hence allows echo for cueing purposes.

The first button at the top, titled meter, selects whether the meters will read the four sub-groups which they are above (post-face), or whether the remaining buttons will select the meter functions. With the meter button depressed the right hand pair of meters will always read main output (post-fade), while the left hand pair will then read whichever function is selected by the remaining buttons. The next button labelled return is for monitoring return from tape or any other external source that you wish to monitor. There then follows a main output which, while being the duplication of the right hand metering, routes the main output to headphone monitoring and the monitor outlet. The following two buttons monitor auxiliaries one and two. Next a black monitor auxiliaries one and two. Next a black button labelled solo selects pre-fade listen monitoring. This in conjunction with all the other pre-fade buttons on the desk allows access to any part of the system, allowing the signal to be monitored at any stage. It is very easy to have the input levels correct and the output levels correct, with all kinds of horrendous situations occurring within the desk. With the comprehensive solo system such problems are totally eliminated. The next button is marked mono. This allows signals to be monitored and is of great use when checking microphone phase and placement. The final button is marked dim and merely reduced monitor signal level by 20dB, again a luxury but a useful facility.

## Complicated?

What I have described may sound complicated but I can assure you it is not. To someone who has never used a desk such as this, it appears complex to begin with but having gained some working experience with it, it is surprising how easy the task becomes — far simpler than operating a desk with lesser functions.

## Laboratory Tests

The test results shown are, I believe, more in keeping with what you'd expect to find on a studio desk rather than some of the desks sold for gigging work. Certainly, the results are all of a very high standard and leave virtually nothing to be desired. The excellent noise figures are obtained with transformer balanced inputs and noise figures like this are what I would like to see on far more of the desks which are sold; unfortunately, too few achieve this high standard.

## Conclusion

Think for a moment how much a band spends on instruments and stage equipment? Certainly it will be quite an amount! Then think how musicians are about their sound.

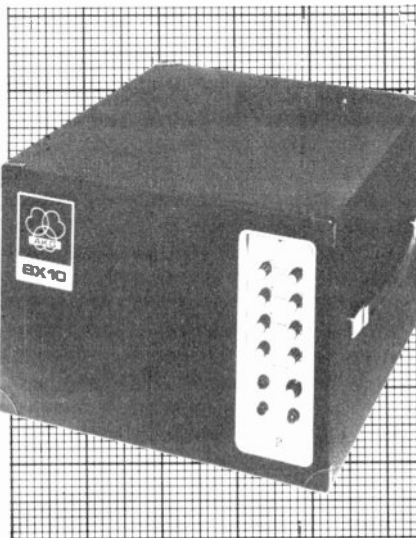
What has this to do with mixing desks? Quite simply, a low cost desk is never going to be the absolute tops in sound, the subtleties and expressions of instruments or vocalists will probably get lost. If you intend to be in the business for more than five minutes, you want your audiences to hear what you're doing on stage, and you want your sound engineer to be able to mix it that way. It is senseless to pay attention to the last detail in your instrument, if you are only going to have the sound messed up before the audience hears it. If you consider all these points, the cost of this desk is not particularly high. The standard of reproduction which it is capable of is certainly very high. I would like to see far more people using sensible equipment such as this. I am certain the standard of reproduction which we get at gigs would be far higher if more bands were to consider what happens to the sound after they have carefully and lovingly produced it on stage. I believe that the SR20 sets a high standard in mixing desks for use on the road and semi-permanent situations.

**Chris Rogers**

## New Products

### Audio Processor by GLI

GLI Integrated Sound Systems recently introduced their 1010 Audio Processor. The 1010 features complete tape facilities, including two sets of tape monitors with dubbing. A low-noise, three-band active equalizer is provided, switchable into line or tape paths, and the unit possesses electronic logic patching for stereo reverse, mono and other combinations. The unit features a signal/noise ratio of 90dB and frequency response of 20-20 KHz +0.25 dB. Intermodulation and harmonic distortion are less than 0.01 percent, and slew rate is 9V us. The unit's bass frequency control is +12 dB at 100 Hz, with midrange control of +6 dB at 1.2 KHz — high frequency control is +12 dB at 10 KHz.



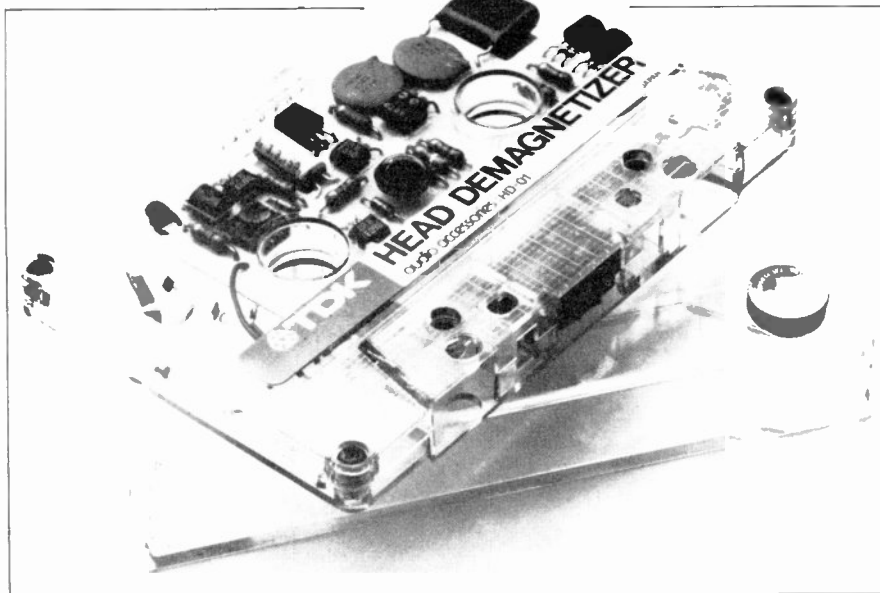
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### TDK Demagnetizes

TDK has redesigned their HD-01 Head Demagnetizer and housed its electronic circuitry in a transparent cassette shell. With its self-powering, self-contained battery, the HD-01 is simply inserted into any cassette deck. With the deck switched to the "play" mode, any residual magnetization of tape heads is neutralized in about one

second. A burst of alternating magnetic energy, at a frequency of 630 Hz and with a maximum flux density of 200 gauss quickly demagnetizes the tape head without any possibility of head surface damage or accidental tape erasure. The process is completely automatic.

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### AKG's Portable Reverberation

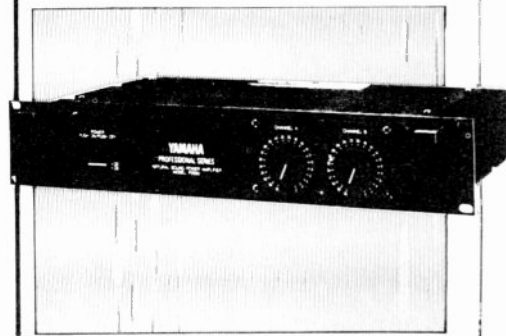
AKG Acoustic has introduced their new "E2" version of the BX-10, which they claim has been "significantly improved over the original BX-10E. The improvement, which is said to be due to a re-design of the Torsional Transmission Line system plus addition of equalization to the TTL system electronics, reportedly results in audibly smoother and cleaner sound. The BX-10 has found applications in recording studios, road sound reinforcement and film production facilities, and for speech applications (AM and FM radio) there is a special short-decay time version available: the BX-10E2-Short — available by special order only.

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### The Power of Yamaha

Designed for the professional market, Yamaha's new P-2050 power amplifier is rated at 45 watts per channel into 8-ohms. A stereo power amp, the P-2050 has dB calibrated, stepped input attenuators for repeatable input level settings. Each channel has an unbalanced female XLR and two standard phone jacks, eliminating the need for cable adapters and simplifying the job of driving multiple inputs from a single source. The two outputs are standard five-way binding posts that accommodate direct connections or banana plugs. Overload protection circuitry reduces power when the load is less than 2.5 ohms. The unit can be mounted in a standard 19 inch rack.

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# On Bass

Continued from page 15

are usually started by the very same people who couldn't make it there, people who you'll probably never hear on record or see live. Which is a shame, because a lot of these folks are very talented.

In conclusion, you'll note that I haven't mentioned a word about how to get into session work. Nor did I suggest how and when to play with reputable players or how to start your own band. That will come later. Right now, I want to tell you something that the greatest musicians in the world already know about themselves. That they don't know ANYTHING. And they mean it! And it's *true*. Because, if you weigh the total amount of musical knowledge of everybody on earth and then try to imagine what could really be accomplished in music if we all kept right on growing, you'd get the point of what I mean.

I am not ignoring the monsters of music who've astonished audiences around the world — from Purcell to Bach through today's leading players and composers. Comparing one musician with another, you'd see that some bass players are obviously better than others. But if you looked introspectively, you'd see that you haven't even begun to play the bass guitar. Neither have I. But that's the fun: I am guaranteed to be busy all my life with my bass. When a musician or a teacher makes musical suggestions to me, I can't wait to check them out because that little exercise will bring me to another point-of-view on the bass that I may not have thought of before. The challenge and the fun of it is to play a line or a new tune that I haven't done before. Because, before I go into the studio with Bill Bruford, or into the studio to "sell" dog food, or before I sit in with Bill Evans, Chick Corea or Gary Burton, or before I get a paycheck for that jingle I did, I am a bass *player* who will hopefully be better next week than I am today. That's the responsibility.

# On Sax and Flute

Continued from page 17

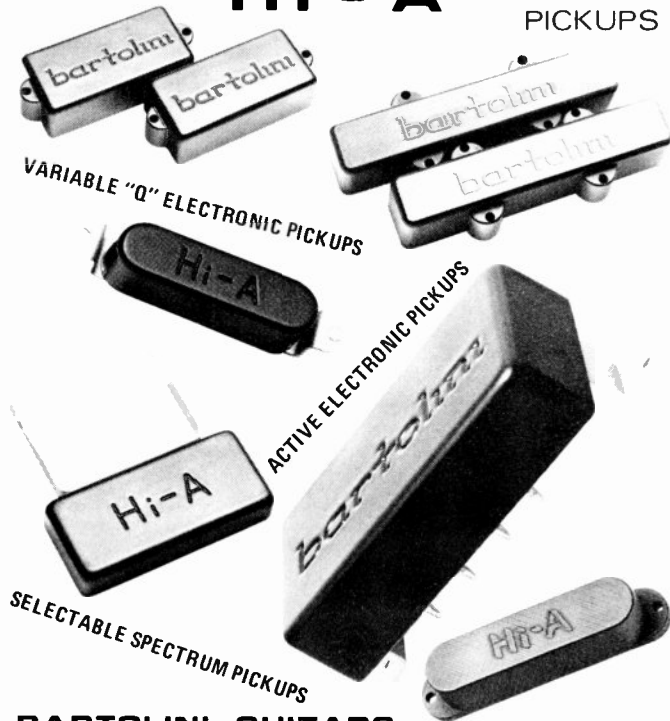
In all tuning and pitching practice *you must always blow first* then compare the standard pitch. All too often one sees players trying to tune a sax with their hand around the mouth-piece, blowing in a very different way to lip the note in and then going on to play dreadfully out of tune because they were not tuning up by blowing in their usual way. It is almost impossible to tune a sax to just one note. To average out the pitch between the top and the bottom, high E should be tried then the A or B below that, middle D lower octave A or B and lower E or F sharp. It is a very useful and educational exercise to try playing against a tuning meter, where a needle will register sharp or flat. When you have found the correct average tuning then you can put a mark on the crook cork with which to start on your studies of tuning. You can usually do this at your local music store, but if you can afford it you will find a Korg or Pearl tuning meter very useful to develop good intonation.

Without a tuning meter you will need someone to play a properly tuned piano, they are seldom right unless they have been very recently tuned, or an organ which has its pitch control set correctly, to compare your note *after* you play. If you hear the note first and then play, it is very much easier to pitch and ultimately you will have to hear the note before you play accurately in your head. Music only exists between a certain amount of pitching error and although nothing is ever perfectly in tune all the time, you must keep within those limits if you are to avoid a cacophony.

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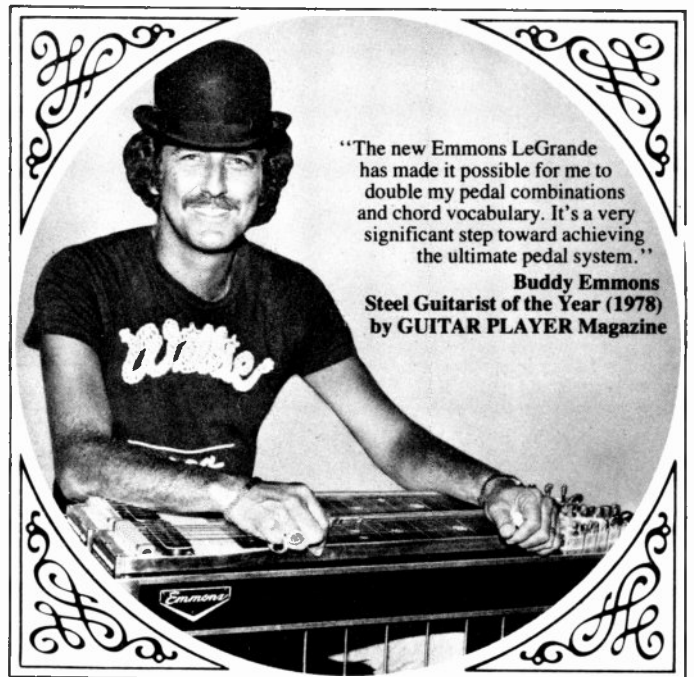
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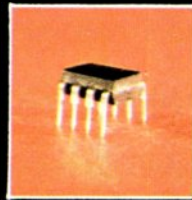


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