

Dave Jordan on Producing and Engineering

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AND RECORDING WORLD

USPS 331-630

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JULY '80 \$1.50

PAT TRAVERS

Beyond Guitar Hero

Michael Walden
Craig Chequico
Carl Palmer

Studio Tests: Studer B67 Tape Machine
Yamaha F2200 Power Amp. Shure SM57 Mike.
Delta Lab D14 Line Delay..

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SEE THE NEW WESTBURY
AMPS ON PAGE 60



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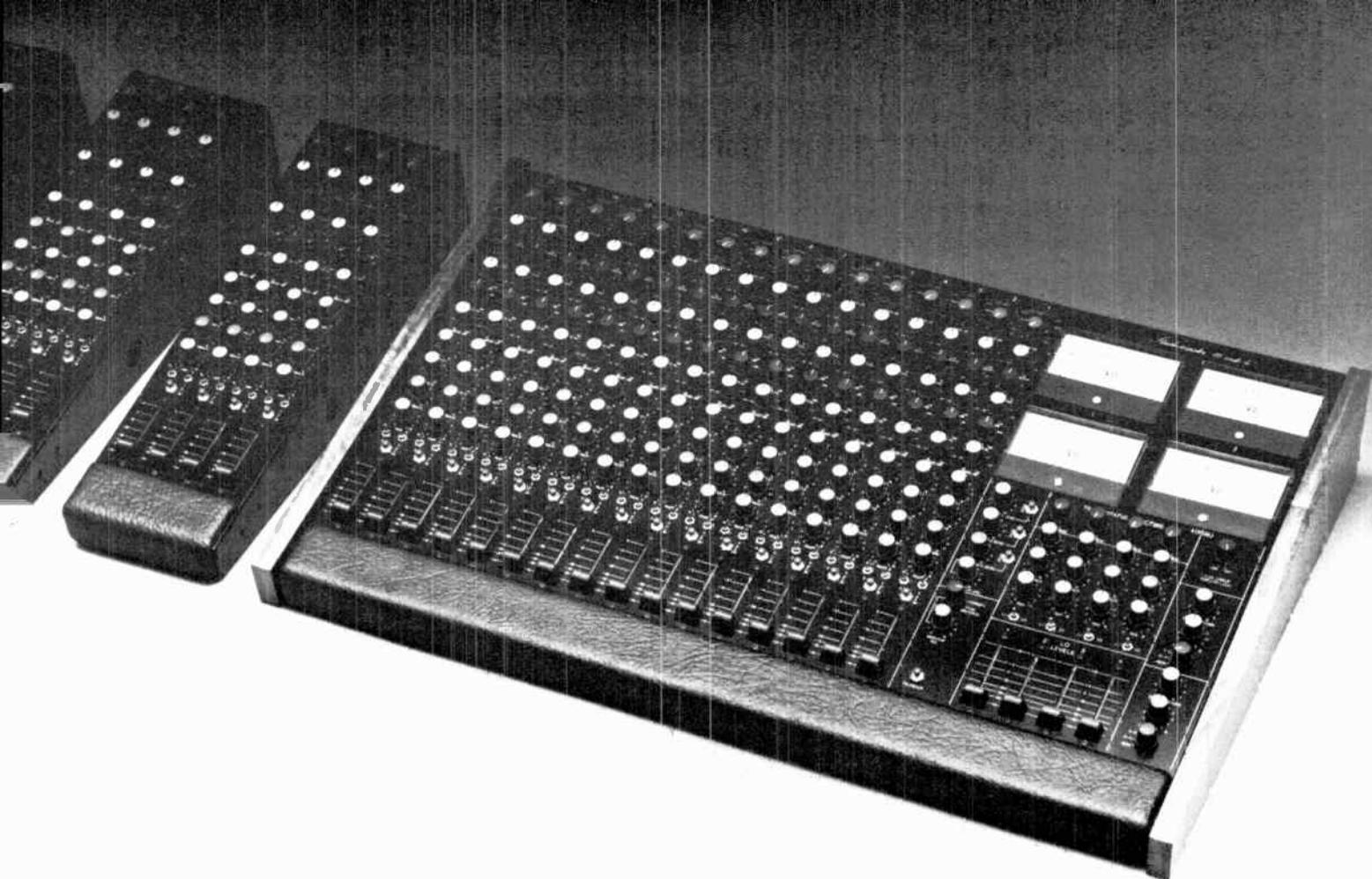
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Our features are expanding. As pioneers in the more-feature-per-dollar area, *Studiomaster* was the first to offer 5 way equalization on an affordable mixer. We still are. Our 16X4 mixer was the first studio quality desk that allowed the operator to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

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

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

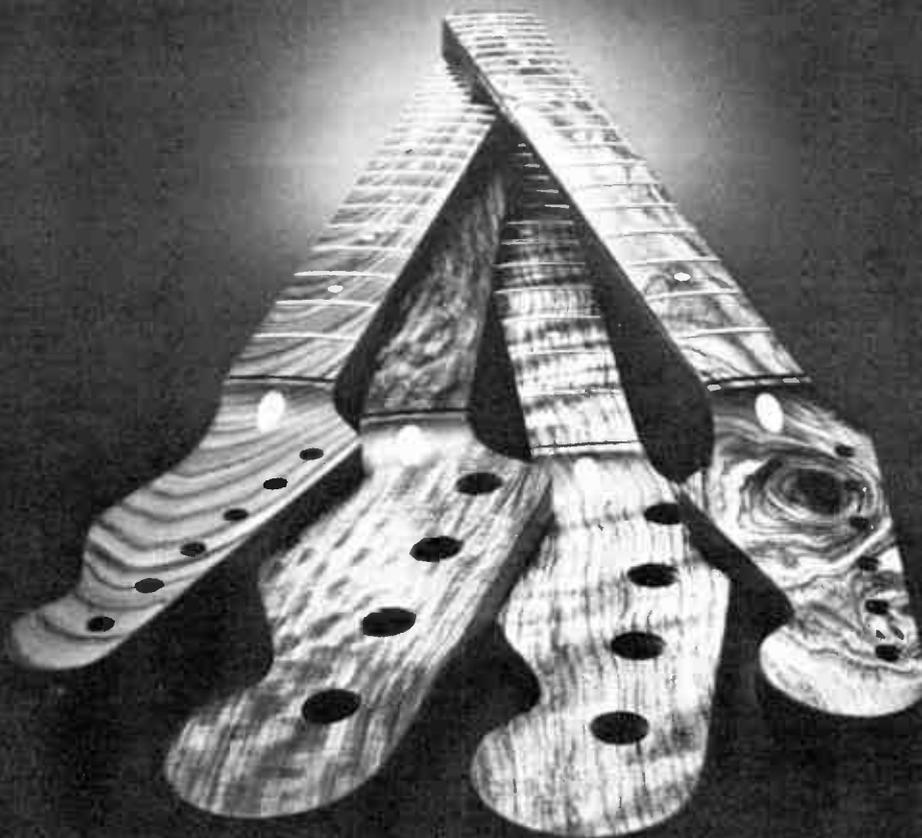
The only thing that really hasn't kept pace with our other phases of expansion is our price tag. It has escalated only a fraction in two years . . . and that only to justify the extras we offer. So we are still the most affordable 16X4 mixer that money can buy in our performance category.

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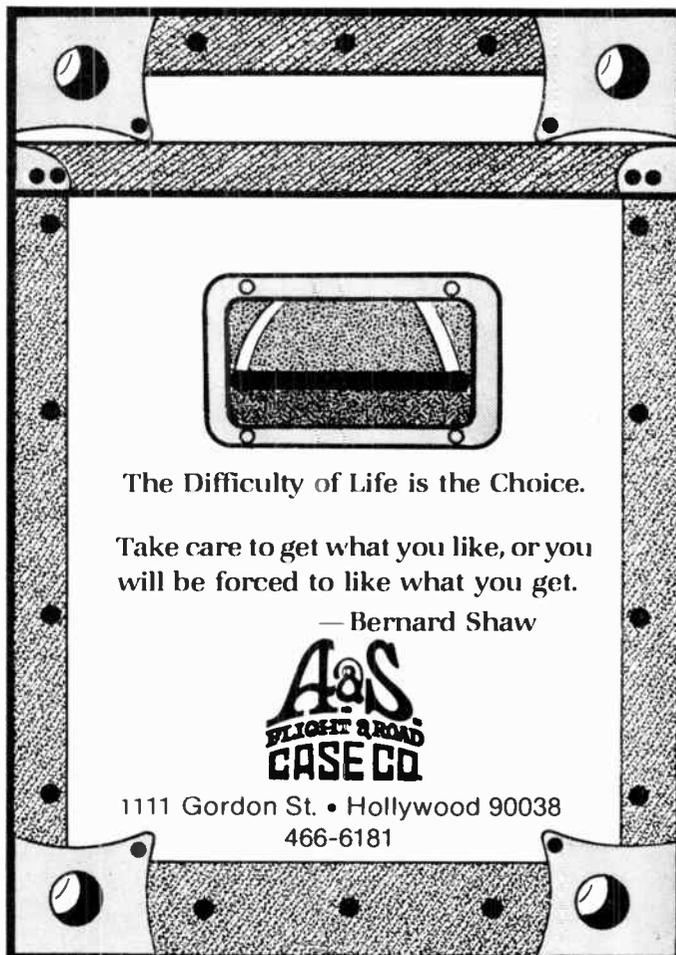
A Personal Look At I.M.&R.W.

Continuing our spotlight on the inner workings of the *International Musician & Recording World* New York offices we come to Marian Needham.

Marian is currently Advertisement Executive working under the auspices of Alan Kesselhaut, the Advertisement Director. Marian was born and raised in Mamaroneck, New York in Westchester County. She received her college education in Texas where she majored in Sociology, and spent her free time playing acoustic guitar and singing. This interest in music developed and in time Marian found herself working around the country in a profes-

sional capacity.

It was no surprise to her, therefore, that she gravitated naturally to the Music Industry and gained valuable experience doing record and radio promotion work for a religious recording and publishing company in Texas. Soon, her diligence paid off and Marian found herself in the area of classified and display advertising space salesperson for *Advertising Age*, and subsequently joined us at *IMRW's* US edition in September 1979, where she is responsible for important international accounts in the acoustic audio and instrument manufacturing fields.



The Difficulty of Life is the Choice.

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

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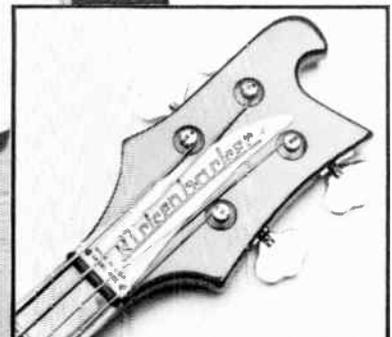
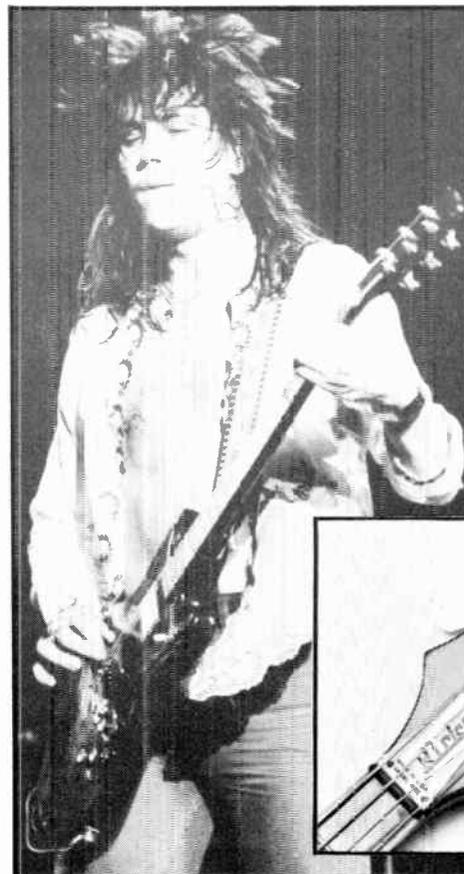
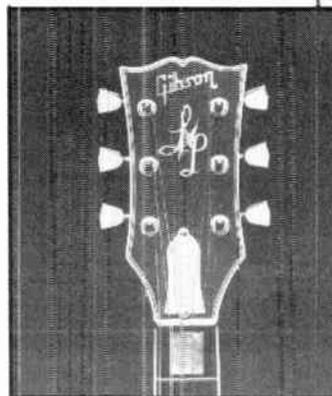
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World Radio History

Letters

130 Feet of Queen

I just finished Ken Dibble's review of the Clair Bros. PA for Queen. Wow, I wish I'd seen that gig — 224 phase linear 700 B11 power amps? The mind boggles. That would be a rack of amps over 130 feet high. Ken's math is a little flawed though. The 700 B11 is rated at 360 watts per channel (into 8 ohms) so 224 of them would have a total power output of 161.28 kilowatts; that's over 216 horsepower!

Seriously, I loved the article despite Ken's questionable counting. I'd like to see this sort of detailed information on what equipment people are using become a regular feature. As a roadie and soundman for a local new wave band, I learn a lot by seeing how other people handle the problems we all run into.

Lastly, a couple of suggestions. How about a test of a Mesa Boogie amp? And how about a feature on the day-to-day life of a roadie for a big touring act? Also, keep up the articles on new wave musicians. I gave up *Guitar Player* because of their elitist attitude. I took up guitar to play like Steve Jones of the Sex Pistols. I think you guys strike a nice balance between new wavers and "others."

*Rob Doorack,
Wee Hawken, NJ.*

From the mysterious Mesa Boogie an amp will show up in these offices soon for a test and as to the roadie, we're game.

Ring Modulator

While normally I enjoy your magazine, I must point out an amazing mistake in your February issue. In his article, *Understanding Synthesizers*, Tony Horsman speaks of the "ring modulator, so-called because it can be used to synthesize bells, chimes, gongs, and the like."

A first-year electronic music student knows that a ring modulator derives its name from the fact that the basic circuit design consists of a ring of point contact diodes. I hope Mr. Horsman researches his articles more carefully in the future.

*Rock Wehrmann
Artist-in-Residence
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Drumming up info

I am writing with interest in your March 80 article concerning Hipercussion equipment. In particular, I'm interested in the floor tom and microphone holders.

Please send me information or an address where I could write for more information.

*Lloyd Isley,
Groton, MA.*

You can contact Hipercussion at Calderoni Musica, Percussion division, Via Perugino 44, 20093 Cologno Monzese, Milano, Italy. As far as we know there is as yet no US agent for these drums.



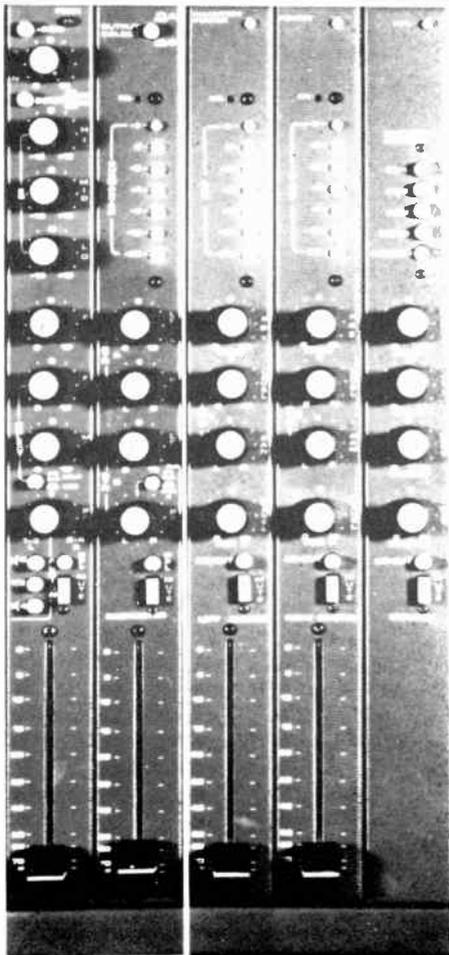
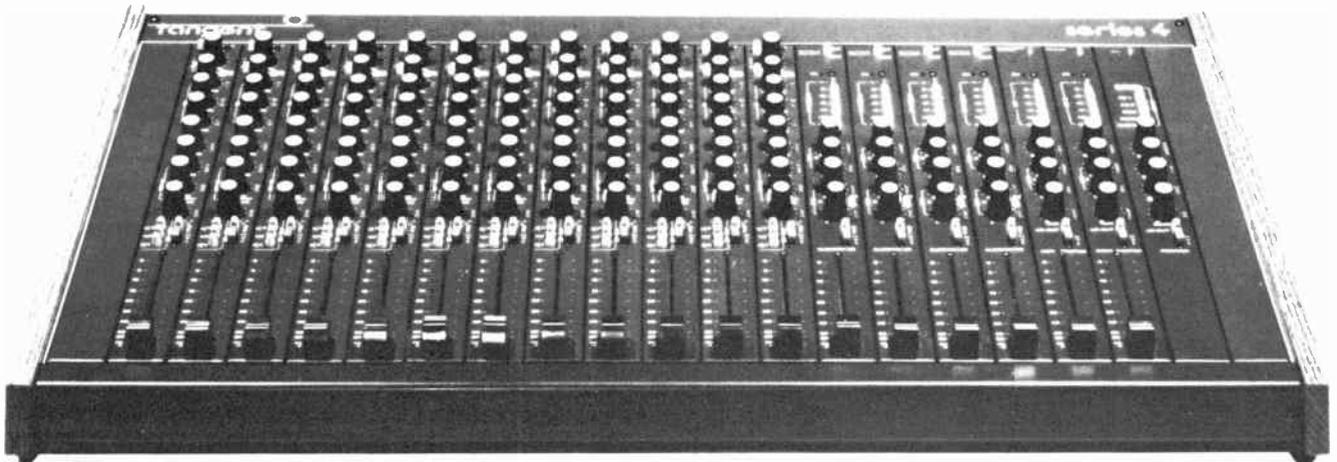
Queen

Pic: Steve Emberton



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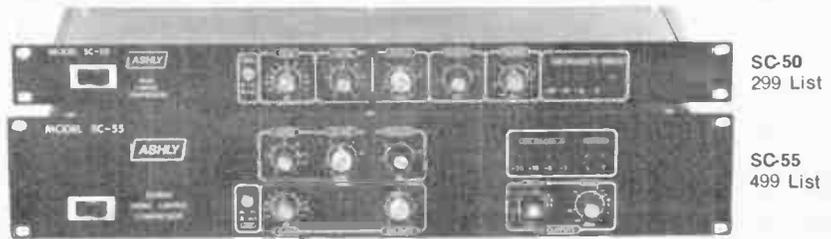
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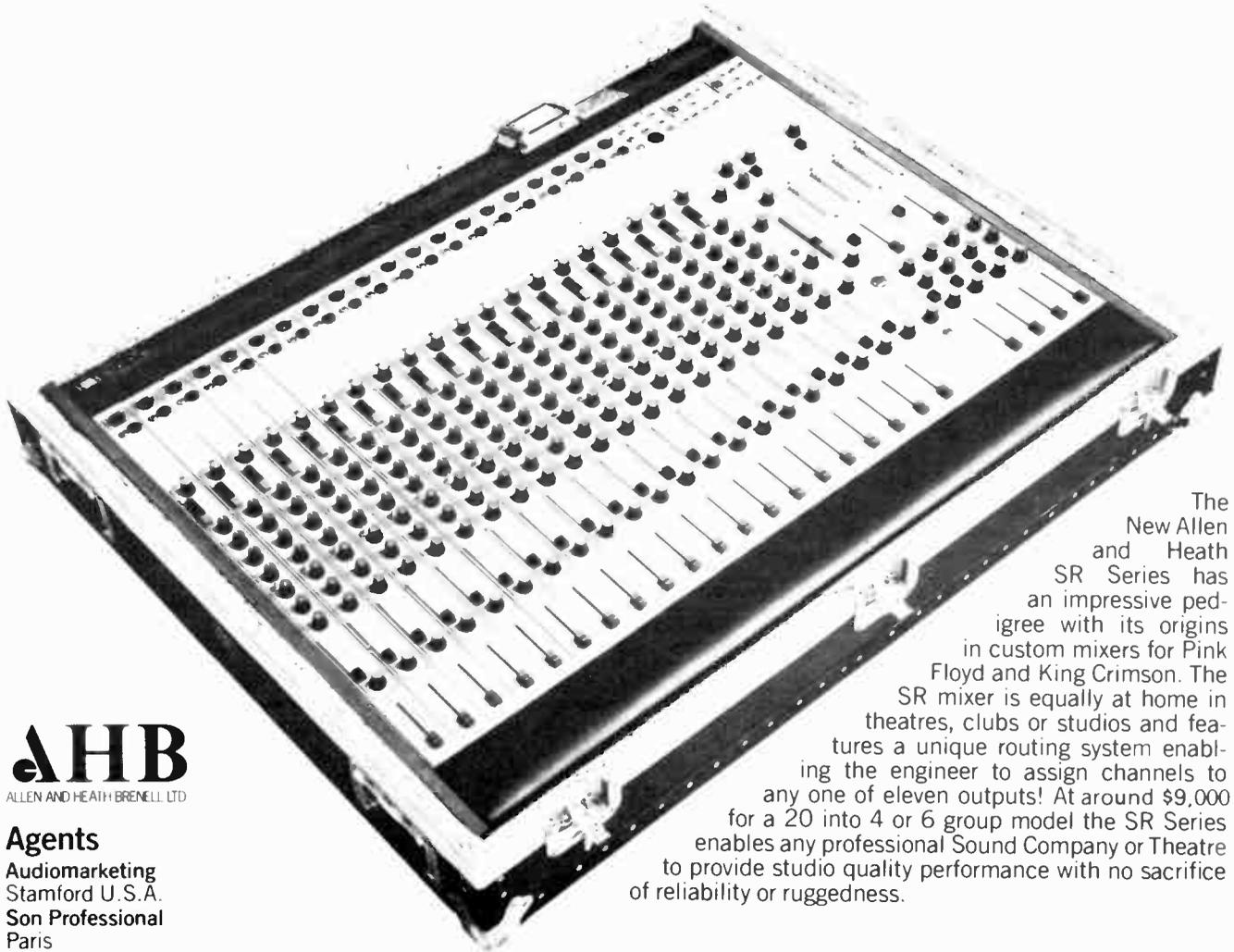
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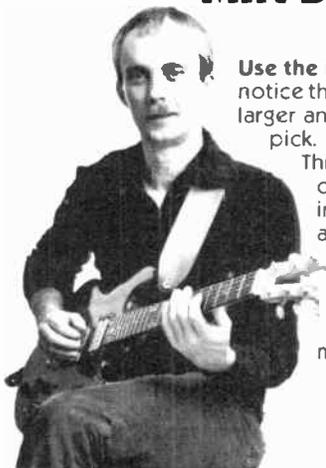
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On Sax:

Alan Holmes



I recently produced a record on which I played some soprano saxophone and, as is usual in the producing game, had to play the finished master to a large number of people in the record business. The most common comment among those who like to *think* they know about the finer points, was along the lines of "That's not a Soprano is it? They don't play in tune." Suggestions that it was speeded-up alto or tenor were made. I noticed a general lengthening of faces among session musicians whenever the word "soprano" was mentioned. So why is it that the smallest of the saxophone family has picked up the stigma of being out of tune and generally a waste of session time? There are a number of reasons.

Firstly, the tuning is very much dependant on the performer. The sort of careless intonation (which is far less noticable on tenor) suddenly springs into focus when it is an octave higher on the soprano and causes obvious dissonance against guitar and synth. This is because the smaller bore of the instrument magnifies any imperfections in the manufacture, reed, mouthpiece or performance. Secondly, because it is seldom the players' main instrument and very often is a cheap old instrument which was not built to play well in tune and is very much underpractised by the performer. Lastly, and this fate befalls even very well-made expensive instruments, it has fallen into the hands of somebody who thinks it should sound like an oboe. If such a person does not, in fact, play any other sax, it is usually because they realise that weirdness confuses and that they can fool more people into thinking they can play alto or tenor too. If they are also in possession of certain substances then your worst fears are confirmed — they are in the musical bullshit business and quite likely to cause you brain damage should you be silly enough to get involved with them.

So gross incompetence in the performing department, cheap instruments and the mistaken belief that there is something inherently oriental about it (or that it should sound like an oboe or have a slightly wobbly vibrato) have obscured the basic truth that it is a *saxophone* and is meant to take its place as the lead instrument of the saxophone quartet. Then you can display a tone that will turn ladies knees to water and tuning which is an example to the other three — alto, tenor, and baritone.

Short of learning the oboe, which reduces the problems of playing soprano sax to the insignificant level of a black belt Karate expert fighting old ladies — how does one set about achieving the lofty pinnacles of musical excellence?

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Continues page 127

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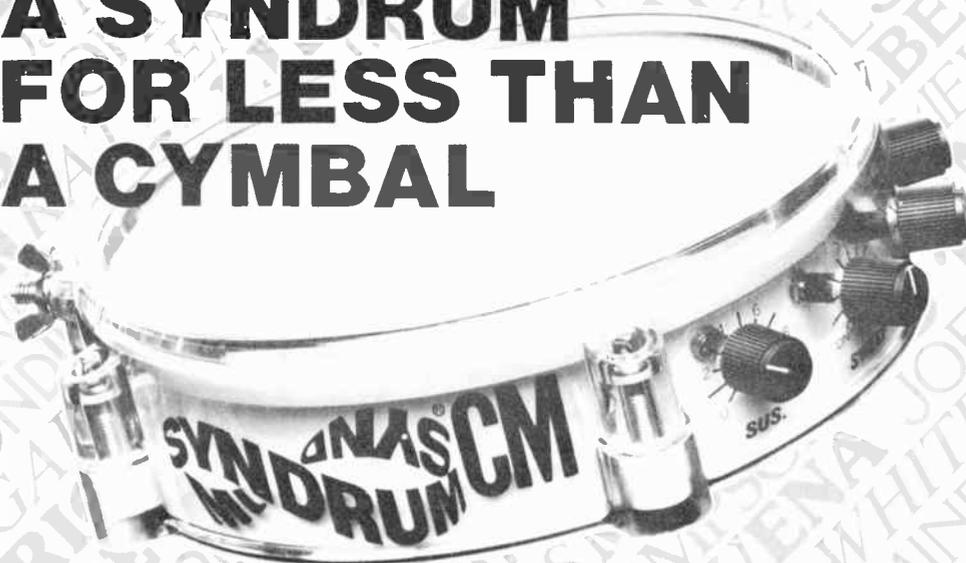
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On Drums

Lenny White



I don't want to just talk about the technical aspects of the instrument I play, but the musical attitudes that affect not only the drums, but *any* instrument that you might play. Because you have young guitarists out there, they get stuck in certain ruts and they'll listen to records as much as they can. And records can really be great teachers, that's how I learned. I had an extensive record collection and when I was younger I got to play with all of the great stars. I played with Miles Davis, John Coltrane...right along *with* the record in my basement.

But the major point about doing that is not only in conceptualizing what you do, because you take it in and *assimilate* it and then you bring it out when you play. You're not just copping licks. Guys listen to records all the time and they cop all the hip licks — Billy Cobham, Steve Gadd, any of the top drummers — then they go out and play in public and either they sound like Billy Cobham or Steve Gadd clones or they end up asking themselves, "Hey man, why don't I get the same effect?" And that's basically because of their concept and approach to the instrument.

Placement is the one thing that's really important. For instance, take my premier influence as a Be-Bop drummer, Philly Joe Jones. He played the same rudiments that all drummers practice when they're coming up — paradiddles, etc. — but he "placed" them within his style and his music at certain strategic points to make *him* sound like Philly Joe Jones and to make him shine. Tony Williams

Music is not necessarily limited at all, but the technical element *is* limited, 'cause there's only twelve tones and there are only a certain amount of rhythmic combinations you can make up. But, taking those

combinations and putting them together in different ways can give you an infinite amount of possibilities. So placement is very important when playing music — developing a personal style based on your particular sense of placement. When you listen to your favorite drummer, listen to *where* he places the licks that he plays. Also, you should go back and listen to his influences to find out *why* he played that particular thing at that particular time. And this doesn't just apply to drummers.

I remember a long time ago when I first met Michael Shrieve (Santana, Go, Automatic Man) — he'd icked the way I played and I was just getting into popular music at the time, so I made a tape for him that included what I thought were all of the great drummers. I took excerpts from each tune, like a Tony Williams song and then, right after that, I'd put on a Philly Joe Jones song. And that showed Michael the correlation between the two. This was actually a great tape and a few years later he was on the road and he met up with Billy Hart and he played the tape for him. Billy Hart came to me after that and he told me, "Man that tape you made was great because I could see what you were telling him to do by putting those drummers together in that way". That's what you have to do. You have to listen to the influences.

(Next month: Power vs Finesse)

Grace Notes

I bought my first Japanese-made "copy" guitar at New York's Terminal Music in 1965. A cherry red 335-style semi-hollow body with an exceedingly reasonable price and a brand name lost to the passing of time, the guitar was blunt, awkward, hard to play and the sound was anything but impressive. In fact, the reason I put down hard earned cash for this particular instrument stemmed mostly from the fact that I'd already spent the lion's share of my cash allotment on a "decent" Fender Princeton amplifier. As soon as I got hip to the fact that guitar *might* just be as important as the amplifier to my overall sound, I quickly dumped the copy in favor of a 152 Fender Telecaster.

My years spent working within the general confines of the music business have demonstrated within the general confines of the music business have demonstrated a truly astounding 360 degree turnaround in this situation. A continual upgrading of manufacturing standards and a marketing approach increasingly in tune with the American musician spearheaded by solid companies like Yamaha, Ibanez, Aria, Alvarez-Yairi, Hondo Tokai and others has given the Japanese-copy phenomenon a whole new look. The fact that some of these companies building instruments loosely based on classic American "archetypes" like the Gibson Les Paul or the Fender Stratocaster are, for a variety of reasons, doing at least as good a job as their U.S. forerunners is already something to marvel at. In the years to come, copy guitars that are virtual "clones" of the originals down to the last pickup adjustment screw will be popping up at your local retailers — guitars that not on-

ly look exactly like the vintage classics but *sound* pretty damn close too (see upcoming issue for a review of the Tokai Les Paul "Reborn")! And then there's a company like Yamaha.

When you think of it, Yamaha is an astounding company simply based on their extensive line of products (guitars, keyboards, drums, amps, hi-fi stereo, motorcycles, recording equipment and who knows what else?) and the extraordinary consistent manufacturing standards running throughout that product line. Speaking as a guitarist, Yamaha has always impressed me by their rather unusual (given the traditional market for Japanese-made instruments) and uncompromising attitude vis a vis their guitars. Their reasonably priced and underrated acoustic flat top guitars have been a well kept secret among leading musicians of the day — especially because of their excellent response in particular recording situations. The SG-2000 or "Carlos Santana" guitar represents a stunning "re-think" of the basic electric solid body guitar, with only the vaguest concession to the domestic Gibson SG as a basic style reference. The SG-2000 distinguishes itself through a beautifully proportioned body size/design that is both comfortable and *unique*, as well as through materials and products standards far above the accepted norm — the rather hefty price tag on this guitar seems to be there for a reason. The main point here is that Yamaha never seemed subservient to or "buffaloed" by the existing American competition. They have consciously set out to design and build instruments that transcend every last vestige of the "replica" phenomenon — their guitars are meant to compete *head-*

to-head with the very best America has to offer.

The Yamaha SA 2000, again conceived and designed with only the slightest nod to the semi-hollow body "thin-line" guitars that historically preceded it, represents another major coup for Yamaha. The fact that Tommy "I can play *any* style" Tedesco, the multi-faceted LA studio veteran, used one of these as his main axe on the job already tells us a lot about the SA 2000. This guitar, like its solid body counterpart, features immaculate construction and finishing work, powerful but crisp humbucking pickups and an overall design that is reminiscent of the ES-335 series but still totally distinctive in its own right.

A cursory examination of the guitar brings the Tedesco analogy into focus: The neck, fingerboard (fretwork) and intonation are superb — playing the guitar reveals a smooth, *professional* feel with the difficult balance of fast playing *and* controlled articulation easily maintained. The sound of the guitar is basically mid-rangey with a crisp ringing tone underpinning it — this might be partially due to the SA-2000's center block inside the guitar which is made of maple and spruce. The basic sound can be molded and shaped into many configurations — hence its studio flexibility — from the soft, warm timbres traditionally associated with hollow body "jazz" guitars all the way to a powerful but civilized (controlled) distortion sound that ranks up there with the best of them. The more you distort the signal, the "darker" the sound becomes, something you rarely find with this kind of instrument.

The materials include ebony (fingerboard), a birch and beech (somewhat unusual

choice) laminate for the top, back and sides and mahogany for the neck. The powerful but distinguished humbucking pickups boast a very smooth and even response (ideal for recording) based on a powerful alnico magnet. Yamaha characteristically throws in that little "extra" touch by providing the player with three point supports for easy adjustment of pickup height and angle. The massive *and* pretty stud tailpiece bolts right into the body for added sustain and the equally ample bridge is custom-designed to "reduce sympathetic vibrations between it and the bridge." The truss rod is held in an aluminum groove or housing for added protection against warpage — when I first received the SA-2000 it had a rather pronounced bow in it, a luthier friend of mine made a radical adjustment to compensate and it seemed like the neck was never gonna come back. After a day or two of worrying about it, the neck not only came back, it virtually locked into a ideal position and has stayed that way since — even when changing string gauges.

All in all, except for a minor complaint about the machines which, on the model tested, seemed to pack up and slip occasionally (unusual considering the guitar's elevated standards), I could go on raving about this excellent instrument for pages (which we don't have to spare). The bottom line for this whole situation is simply this — one musician to another — if you still have unfounded prejudices about Japanese-made instruments in general, you'd better take a look around because they are not just a fact-of-life, many of them are in the forefront of contemporary guitar technology.

J-C COSTA

Recording Studio Design

ABOUT R.S.D. INC.

Recording Studio Design Incorporated is the U.S. arm of a British company founded over ten years ago. The company was started by Paul Dobson, an ex-sound engineer, to build custom recording consoles and PA systems for some of the world's most famous bands.

Among the long list of users of R.S.D. equipment are: Wings, The Kinks, Darts, Suzi Quatro, Average White Band, Rick Wakeman, Stockhausen, Genesis and Abba.

Today R.S.D. has evolved into a highly sophisticated manufacturing organisation building professional recording desks for use by musicians and studios all over the world. R.S.D. Inc. on Dynamics, Anaheim, CA 92806, is the arm that serves US musicians. From here R.S.D. desks are distributed throughout North America and full sales and service back is available nationwide.

The range of R.S.D. equipment available on the US market encompasses mixing desks, power amplifiers and crossovers and in the near future, several exciting additions will be made to the range.

MONITOR MIXING WITH THE R.S.D. 20/8

The R.S.D. 20 into 8 mixer is designed to do one very specialised job extremely well, it is the ultimate MONITOR MIXER.

R.S.D.'s long experience in building desks for "live" situations has provided the development research vital for building a successful monitoring desk and the 20/8 has the facilities for providing up to eight SEPARATE monitor mixes.

The mixer accepts 20 separate inputs (usually taken in parallel with the main P.A. mixer) and each of these separate inputs may be routed to as many of the eight output channels as required. Individual gain controls are provided for all eight channels. The result is that the incoming signal (for example, lead guitar) may appear at any chosen level in any of the eight separate mixes leaving the board. This system allows total "on stage" monitoring control and, from a side stage position, a sound engineer can effect the various

monitoring changes that are necessary during the progression of most performances.

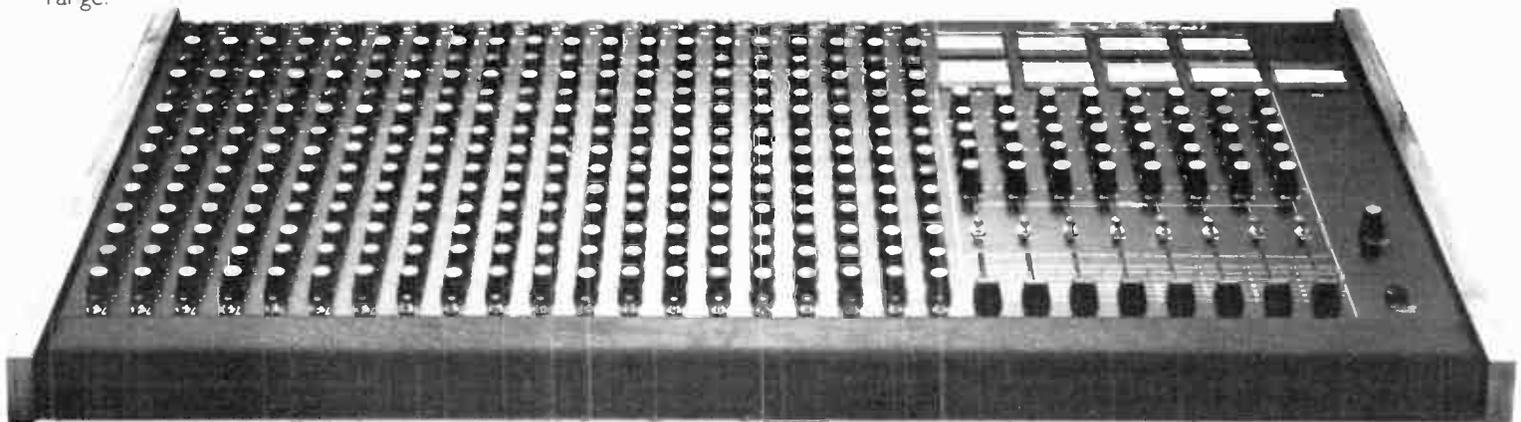
Each input channel is flexible enough to take mike or line inputs and PARAMETRIC equalisation offers almost total control over the frequency shaping of each of the 20 incoming signals. Rotary controls on each of the 20 main input modules allow routing to the eight output channels and, at this stage, the engineer may set up the level at which any particular incoming signal will appear in the separate monitors. To make life easy R.S.D. have built a PFM (Pre Fade Monitoring) button at the end of the incoming signal chain and pushing this button allows the engineer to mute all other channels and listen to that channel only - useful for EQ adjustment!

PARAMETRIC equalisation is also provided on each of the eight output channels. This allows the engineer to shape the overall frequency curve of

each monitor and as well as providing the musician on stage with the type of sound he likes to hear it also allows the engineer to "iron out" any peaks which might produce premature feedback and thus reduce monitoring levels.

Meters are provided for all eight output channels and slide faders govern the exact signal levels sent to monitor amps. An additional VU meter is provided for checking the levels of individual channels or groups when necessary.

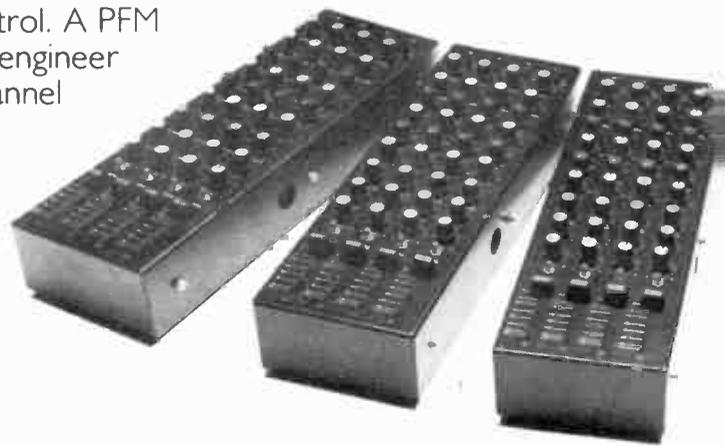
The R.S.D. 20/8 Monitor Mixer is a unique product, designed to perform a unique function. It is superb at its task and provides any stage act with a totally efficient and reliable method of hearing themselves on stage.



The R.S.D. 12/2 mixer is a professional desk design to provide close control over sound in small situations. Unlike most other desks, however, you don't have to junk the R.S.D. 12/2 when the venues get bigger and the money gets better. The R.S.D. expander modules allow you to add four channels at a time. You could end up at the Hollywood Bowl with a 32/2 R.S.D. desk still using the same basic R.S.D. 12/2 mixer you bought a year before (if only it really happened that quickly!).

The 12/2 offers input attenuation allowing you to provide mike, D/I or line input into any of the channels, full equalisation on each channel,

foldback mix facilities, effects or echo send and return and full stereo pan control. A PFM button allows the engineer to listen to any channel on its own at the touch of a button and naturally there are separate



ONE STAGE



**Recording Studio Design Incorporated,
1365C Dynamics, Anaheim,
Los Angeles, California 92806.**

slide faders for each input channel, fold-back and the stereo outputs. Twin VU meters offer a visual indication of level's.

If all this sophistication sounds a little heavy for a small

12/2 mixing board, remember that the basic concept is EXPANDABILITY. Every R.S.D. 12/2 desk that's produced is fit and ready to become a 32/2 the next day if required:- Without any increase in noise, without any loss of facilities and without costly "main frame" work becoming necessary.

The benefit to you is clear. Start with a professional mixer that's the right size for your performances. As you grow it can grow with you and instead of accepting insulting trade-in terms for your old mixer you'll always be able to keep control of your sound *and* your costs.

AT A TIME



R.S.D. CROSSOVERS

In high sound level situations, the right crossover is vital to gain the maximum from your speaker system and amps, and to ensure component protection.

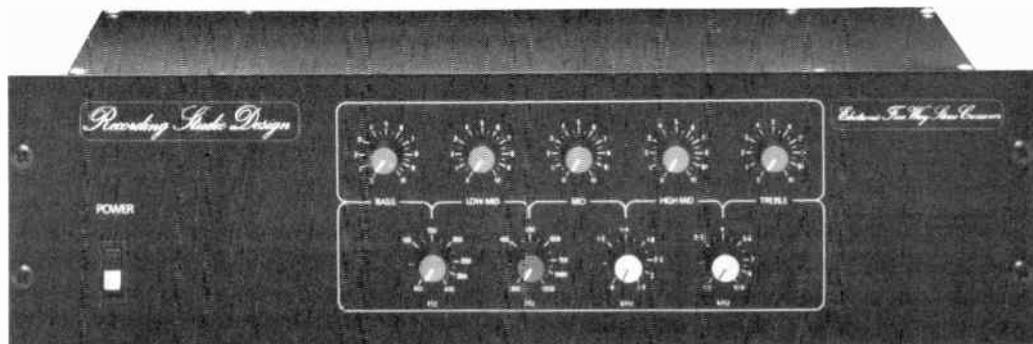
R.S.D. have a long history of producing high quality electronic crossovers and the current three or five way systems offer professional sound users reliable control over this difficult area.

Both crossover units appear immediately after the mixer in the sound chain, splitting the overall outputs to three or five separate power amps (depending on whether the three or five way Crossover is in use). Both units are stereo and accept stereo inputs.

On the R.S.D. Five Way Crossover the sound segments are split as follows: High Frequency, Treble, Middle, Low Middle and Bass. Each segment would be amplified separately and the individual levels controlled. The points at which each segment starts and

stops are variable by rotary controls on the front of the rack-mounted crossovers. On the Three Way Crossover the sound spectrum is divided into Bass, Middle and Treble with full controls governing the point at which each segment starts and stops.

Both Crossovers have been proved "in the field" for several years with many thousands of units in regular use around the world. They are quiet, efficient and totally reliable. They are professional tools for the professional soundman.



R.S.D. POWER AMPS

Power amplifiers have one main responsibility in life: RELIABILITY! After that they must be quiet, efficient, able to perform to their specifications and be economically acceptable. R.S.D. Power Amplifiers pass all these tests.

The R.S.D. 400C and the 800C are Power Amps built to withstand life on the road. They're designed to be rack mounted, but all necessary protection has been made internally and, with R.S.D. amps, the sound man can always be sure of the right result when the mains switch goes to red.

The two models offer a choice of power levels and sophistication. The 400C is a stereo amp offering 200 watts into 4 OHMS each channel (RMS of course) with a THD figure of .007% at 1kHz, full power before clipping. Twin VU meters on the front panel

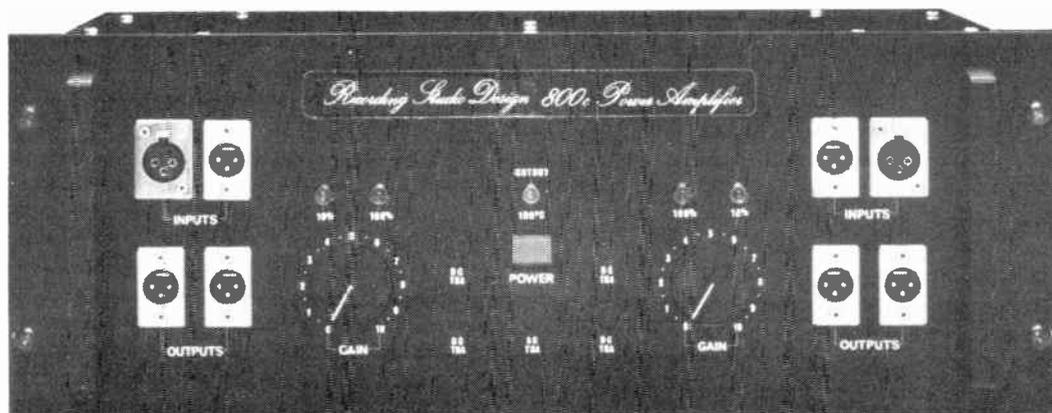
provide a visual output indication and all fuses and connections are mounted on the front panel.

Protection systems cover short circuits, wrong loads and general fault protection "pulls" the amp out of line briefly protecting the speaker systems

and amp itself. Thermal protection is incorporated, although the force cooling system built into the R.S.D. power amp range reduces the likelihood of requiring such protection to a minimum.

The 800C offers 400 watts per channel into 4 ohms

with a similar THD figure. On the 800C, additional features include status LEDs which show thermal cutout operation, 10% of full power indicators and clipping points. Rotary control allows manual adjustment of individual channel output levels.



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On Synth:

Mike Moran



The pre-occupation amongst keyboard players with electronics is, in itself, a healthy enough syndrome, but I am being made increasingly aware of the fact that a lot of would-be professional keyboard players are sadly lacking in the basic tools of the trade. You can, up to a point, fool the general public, your buddies etc. into thinking you are wonderful when surrounded by micro-composers, Fairlights Oberheims, digital sequencers and other offshoots of computer software, but you cannot fool a good musician (or yourself) for very long if someone asks you to play the piano and you cannot come up with a fluent solo without using mod wheels pitch-bend or any other electronic aid.

Why do players like Herbie Hancock, Chick Corea and George Duke exercise such command over the full range of instruments and perform fluently on anything from pianos to digital synthesizers? Well, allowing for the natural brilliance of those gentlemen, one thing they all have in common is a sound piano technique. If you want to master your instrument then make sure you have control over the physical parts of you that do the playing.

One of the commonest faults amongst players is lack of economy in movement, big arm movements may look impressive but contribute nothing to accuracy or volume. The shorter the movement, the more precise it becomes and the closer the fingers are to the keys the faster you become. Impressive amounts of volume can be delivered from an acoustic piano and volume is achieved by weight not by velocity.

It is essential to build up the weaker part of the hand (i.e. the 4th and 5th fingers) so that they are not in a disadvan-

tageous position for playing as compared to the stronger 1st, 2nd and 3rd. Players who complain of a weak 4th finger often put it at the worst possible disadvantage by allowing no room for leverage. The fingers being of different length fall in a natural semi-circle, so between C and G the 3rd finger would nearly be touching E flat.

Training the fingers to play in the centre of each key is one of the basic conditions of digital accuracy and is also the surest way of curing the common fault of "splitting notes."

There is not, and never will be, one clearly defined way of practising the piano. Every player must discover his or her own way, and while there are no short cuts to piano playing there are conditions which save time. Technical practice should incorporate five-finger exercises, scales, arpeggios, thirds, octaves, leaps and gradation and shading of tone. Concentrated practice will bring the rewards of technical accomplishment and this in turn will be enhanced by the discipline of listening acutely to yourself. The chief difficulty in playing any musical instrument is not to play the right note but to place it in its logical and artistic context. Thought should also be given to the question of which finger to allocate to which note — sounds pretty basic eh? But you would be surprised how many people struggle over a particular phrase or run, simply

Continues page 127

Some people can do what they like. On Monday they can sip Pina Colada on a balcony overlooking the new carnival in Rio. On Tuesday they can water ski in Acapulco. On Wednesday they can pilot their private aircraft across virgin Canadian wilderness. On Thursday they can finance two Formula One race car teams and maybe a show jumping outfit thrown in for good measure. On Friday they can browse through Country Life and buy up a couple of country estates in England. On Saturday they can go to elegant parties and sniff cocaine worth enough to pay the entire welfare queue in Harlem on Monday morning. On Sunday they probably rest.

Or then again, they could form a rock band.

Just like Carl Palmer.

At the height of their popularity Emerson, Lake and Palmer strode the rock world like giants, as hip and unassailable then as Pink Floyd or Genesis are now. They were megastars, raking in dough like it was open house at a Swiss bank. They shifted enough vinyl to sink an Atlantic liner, filled enough stadiums with enough people to populate a medium-sized country. When they first formed, the product of three separate bands in the early Seventies, they were *Les Enfants Terribles*, a kind of successful Blind Faith, mixing a curious blend of pseudo-classical music with a specific brand of pomp rock.

Naturally, they made too much money. Naturally, the gap between albums became longer and longer. Naturally, the eager young embryo superstars with a burning desire to play became jaded, disinterested, ultra-successful grown men — too rich, too famous. And as a consequence ELP died.

But where did that leave Carl Palmer? It left him with a band called PM.

Post Meridian, its full name, is a band conceived long before the members were brought together — just like a lot of other bands. Carl Palmer wanted another band to play in, something not too heavy, not too lightweight, and completely dissimilar from ELP. Wouldn't you if you'd been forced to play ELP's music for close on to 10 years? So the word was out — Carl Palmer wants a band. In came the tapes from the applicants. Palmer tried a few things in Britain before deciding that no British musician could fit his plans. Then he set his sights on the USA. He listened to 400 tapes. He checked out a good percentage of the hopefuls. He played with a few people. Eventually he boiled down the would-be PMers to the current line-up.

Barry Finnerty is the lead guitarist, coming to PM via Blood, Sweat and Tears, The Crusaders, and general duty with the crossover sub-culture in California. John Nitzinger (second

guitar) is a Texan, who once fronted his own band named Nitzinger, who released two albums on Capitol which did relatively nothing. His major claim to fame is his work with Mad Dogs and Englishmen. Palmer claims he's an all-round rock musician — writing, playing guitar, and singing. Erik Scott, the bassist, is one of those musicians who's been around with lots of semi-famous people in California, notably Flo and Eddie. Todd Cochran pilots the keyboards. His experience ranges from Stanley Clarke and Jeff Beck to Mike Shrieve in Automatic Man. Out of all the applications, Palmer wound up with these guys. Their references are impeccable, just like his. All of them are used to working in the studio and on stage, and as Americans they probably know just what the great American, big-hearted rock and roll public will consume in droves.

With PM, Carl Palmer is trying to escape the ponderousness of ELP's brand of rock. For a start, he's damned sure that there are going to be plenty of vocals with this band. In fact, every

"P.M. is a song oriented band...."

band member sings except for Palmer, who even when playing sounds remarkably restrained and controlled while supplying a considerably accomplished backbeat. Vocals are something ELP never used to any great extent: "This time I wanted to have as big a vocal sound as I once had musically with ELP. The music isn't overloaded with harmonies. I think we've used them choicely. PM is a song oriented band — obviously so, with that many singers."

What is apparent from listening to the PM album is that Palmer has studied closely what's going down at present on Stateside FM radio — notably such contenders as Heart, Boston, Styx, Starship — and decided that here is the area in which he wants PM to perform. If everything goes according to plan, I'd say that within a year and a half PM will be receiving heavy American FM airplay, they will be playing sell-out gigs at all the major US auditoriums.

Carl Palmer is not a stupid man. He has financed the group from his own pocket, as is the tradition in America. He has paid recording costs, musicians' wages, rehearsal room fees, etc. He wants a return on his considerable investment. He is not about to experiment

with some kind of new wave *avant garde* type music. He wants results. He'll get them.

Palmer claims that he isn't an egotist, that's why the group isn't named the Carl Palmer Band. Listening to the album, his claim is borne out. He plays the perfect drummer's role. No more, no less. There are no drum solos. Palmer lays down a coherent, effective 4/4 percussive foundation for the rest of the band to build upon. His ability to play has never been in question. The drum sound is rich and full — how does he get it?

"I've developed a sound of my own. But with the type of songs I'm playing with PM I like to have the drum sound compatible with the numbers. If it's a heavy piece of music I like to sound a bit boomy, and if it's lighter music I like the sound to be steadier — with more control. I don't wear blinkers as far as sound is concerned. I don't say: 'this is my sound, get it on the desk immediately', and then hope that that sound will go with everything. You can't treat it that way. With ELP I went for the one drum sound all the time, but I think that when you're carrying songs you want to enhance them, and that's a more delicate procedure."

On stage Palmer has been using mostly Sennheiser microphones for a long time, coupled with single headed toms for more clarity and projection. Using two heads creates booming. The Sennheisers may change soon, however, as Carl is re-evaluating what he should use with PM. What changes most are the overhead stereo mikes, of which he usually uses two.

"I use a separate mike for each drum, and each mike is compatible to that drum — naturally enough. I find that a cheaper mike on toms is better because they're less sensitive and less likely to pick up spillage. The really sensitive mike you save for the snare, because that's the one you play more than any other."

The snare is miked from the top, and all the toms from underneath. The bass drum, which is double headed, is miked from the front, usually. Sometimes it's miked from both back and front so that the percussiveness of the strike can be mixed with the quality of the projected sound.

In the studio with PM Palmer used a Shoeps stereo mike for overhead, set up in a figure of eight above the kit. This is a very expensive mike, and in this case belonged to the studio. The make of microphone in use varies all the time, according to Carl, except for his bass mike, which is a big old square thing, looking something like an item from Radio City archives, and for which Carl has forgotten the name: "but I know it when I see it."

For damping, Palmer finds that gaffer

CARL PALMER

ON THE FM. TRAIL



by Steve
Brennan

day I went past the music shop and saw a drum set and told my father to buy me a drum, which he did. That drum stayed in the corner of the living room for months until my father said he was going to sell it because it wasn't being used. Being a very selfish child I said no, I want to keep it. So that day he put on record and said 'can you play this?' Out of sheer belligerence I said 'yeah I can play that', even though I'd never had a drum lesson in my life. And I played it. That was the attitude, see. And that is basically the attitude of a lot of new musicians."

At 15 he left school. It was a Friday. On Sunday he left home. The following week Palmer did an audition for Chris Farlowe, and the day after that he was in Farlowe's band. By now he had a Rodgers kit. But still the urge for tuition remained, and this took him to James Blades at The Royal Academy, and he was a pupil with this teacher for 18 months learning tuned percussion.

"I do not have a natural ability," admits Palmer. "But I do have the patience to learn which is the important thing. I studied tympani with Gilbert Webster at Guildhall."

Reading is important to a drummer, according to Carl. He considers that anybody who really loves their instrument wants to know everything about it — and naturally that includes learning to read for it. One of Palmer's favorite ways of passing the time away is to play Bartok's pieces for snare drum: "when my enthusiasm drops I find I can take out some music and it picks me up again."

For exercise, the PM drummer uses the 26 rudiments, which are just like scales. He admits that he's old fashioned as far as practice is concerned, and doesn't go in for idle tapping. However, he still practices for only about 45 minutes a day. All he's interested in is keeping the independence strong, and the ability to flow from one hand to the other.

"I try to do each rudiment for about five minutes — as fast as I can. After a week of that it's like greased lightning."

Like I said before — there's no doubting Palmer's talent. From Farlowe's band he later wound up in Arthur Brown's Crazy World, and later played with Atomic Rooster before splitting to join ELP. He's played with Buddy Rich's big band, and has recorded a concerto for tuned percussion with the London Philharmonic Orchestra, as yet unreleased. He can read music, and can play a variety of musical styles. Remember "Tank" on ELP's first album? That must've been one of the first uses of phased drums ever. The man can be creative.

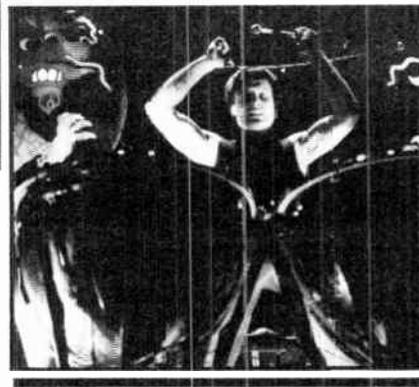
So why is this talented guy out to make a killing on the Yank market. Could it *just* be the money? ■

tape is quite enough for his needs: "I stick just a bit of tape onto the snare to take out some of the metallic ring. It depends with the toms. Atmospheric conditions can change in the studio, and sometimes they can ring a bit more than normal. It's down to the situation. There's no golden rule. The bass drum? I always record it open — completely open, no damping at all. So then it's just the boom, and the I can compress it at the desk. If it's really necessary I've got internal dampers that I can use, but it sounds very dull. In this case I boost it later. But I try to keep the bass drum open if I can."

Palmer has recently abandoned his Gretsch endorsement in favor of Premier: "I like to endorse British companies". This switch over from Gretsch to the Leicester-based drum company has been a slow development. Almost an evolution.

"One of the reasons for going to Premier was that they make a die cast hoop, unlike the hoops you get on a lot of kits, which are pressed. When it's a stronger piece of metal you get more solid rim shots. It's a much better sound and the head seats on the drum much better."

Palmer considers Premier to be a very modern company, and he admires the way they listen to, and act upon,



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criticism. He also knows that if he needed a drumkit in Germany in a certain colour at a certain studio, he knows that he'll get it at the right time and in perfect playing condition.

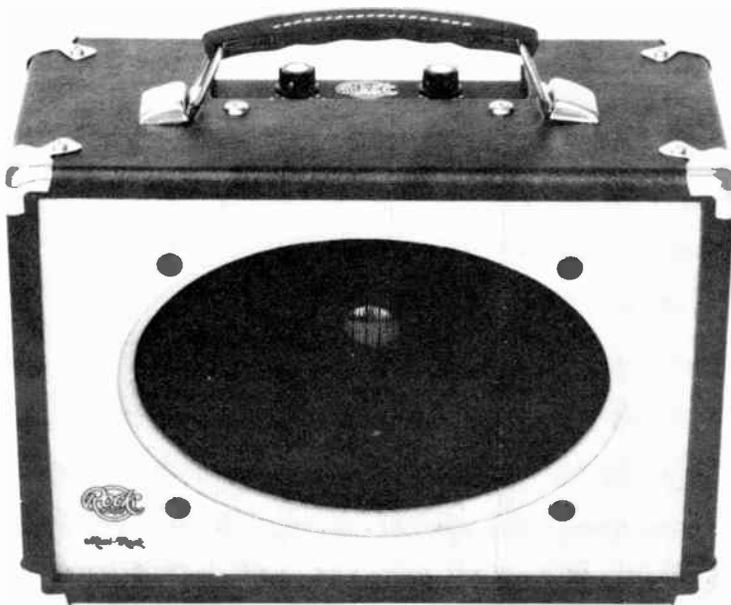
It's been a five year progression into the Premier fold: "They'll give me anything I want. They've tooled up to make me a metal shelled kit, and I know that the cost is into five figures. But they know that once I get out on the road with this kit that they'll be able to put it into the shops and make their money back."

Palmer began playing when he was 11 years old. He claims that the attitude that motivated a lot of punk musicians motivated him too: "At first my father gave me a violin — no good. Then one

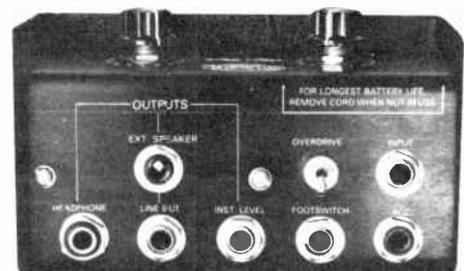
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There was a time when any guitarist who wanted to alter or "personalize" his or her instrument was faced with several unpleasant options. Running all over the countryside looking for the particular replacement parts required for the job, trying to mix and match these parts with the original instrument, and a host of other annoying sidetraps were the norm for anyone who wanted an instrument that was just a bit *different*.

Five years ago, a company named Schecter Guitar Research was created to fill

this particular vacuum in the burgeoning electric guitar industry. Founded by Daniel Schecter, a skilled LA-based repairman who specialized in Fender instrument repairs and custom work, the company initially offered one replacement pickup but very quickly evolved into a multi-faceted operation that virtually pioneered the custom replacement business. Custom replacement parts for all of the popular electric guitars were no longer impossible to find; Schecter saw to it — through the extraordinary variety of parts of-

fered and an innovative marketing approach that made these readily accessible — that they became "off-the-shelf" items. Now the local club guitarist who wanted more than just a stock factory guitar had the ability to customize an instrument both in terms of sound and appearance — either as a mint edition of a class Fifties instrument or a more radical "one-of-a-kind" hybrid.

And although replacement pickups were the first order of business, Schecter quickly developed wood stock for

SCHECTER- shaping

replacement parts and bodies that represented the largest in-house selection of exotic woods with over 30 different kinds available to the consumer.

A company who got its start providing "pure replacement parts", Schecter now offers a pot-pourri of replacement hardware that can be retrofitted to any instrument made by Fender, Gibson or Rickenbacker, no matter what the year. With over 400 pieces available in three different basic colors (chrome, brass (clear epoxy finish) and black chrome) the guitarist can truly color-coordinate his or her instrument to the most finite degree. Pickguards come in eight different colors — chrome, brass, gold- or black-anodized aluminum, white or black enamel, white and black plastic, cream and tortoiseshell.

New innovations in Schecter's replacement parts include the Kross-Lok Tunamatic bridge with locking

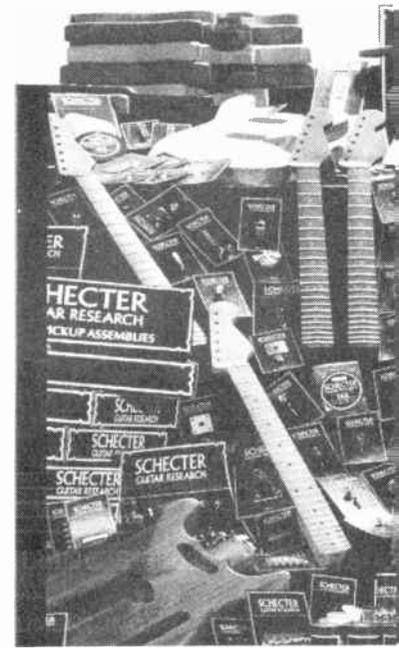
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your dreams

screws to insure perfect intonation and right-angle adjustment (Allen wrench). This bridge is available as the "Nashville" to fit newer Les Paul guitars and the "Original" for older Les Pauls.

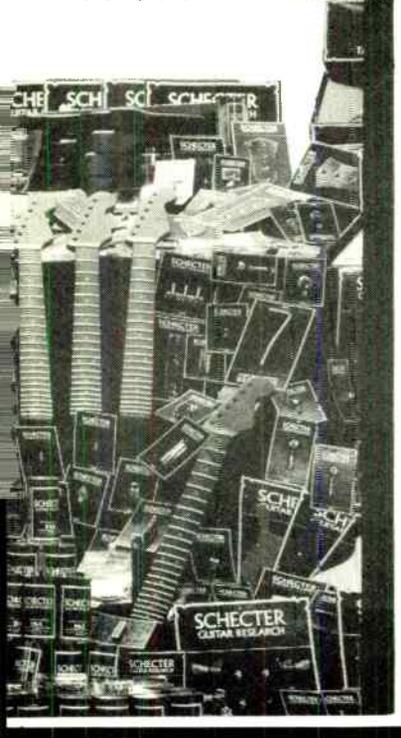
Taking off from one of Leo Fender's earliest ideas, the pickup assembly as one self contained unit, Schecter has taken this concept to the most sophisticated levels. Their assemblies are attached to the metal pickguards for better shielding and feature brass grounding plates for continuous grounding. In addition, the units are double sealed in wax and wrapped in copper tape to prevent further interference. With their "Tapped" pickup assemblies, three mini-switches and position slide switch, the guitarist can now get up to 21 different sound combinations, enabling the guitarist to achieve every conceivable tonal coloration and still only use one instrument. This is facilitated by another Schecter innovation, the "Switch Pot" with a switch

built into it so the player can pull up on the pot to get a single-coil sound or push down on it for a "hot" humbucking sound. Their new "Z-Plus" assembly can be installed into any humbucking pickup well without alterations and will open the potential of any instrument to include at least 18 different sounds. And this not just for effect. As recording and music get more sophisticated in general, it is quickly apparent that the modern guitarist needs more and more tonal variety to fulfill the demands of the music.

Lately, Schecter has come full circle and is actually manufacturing a limited series of top-of-the-line "Schecter Guitars" for selected dealers. These *hand-made* instruments use the best parts, hardware, necks and bodies and feature hand-rubbed finishes. These guitars are intended for those who want a one-of-a-kind instrument (no two are alike) without worrying about the price.

To implement this custom project, Schecter plans to establish a Custom Instrument Shop within their existing

operation some time next year. To help deal with an already impressive demand for these custom instruments, selected luthiers around the country will be licensed as "Factory Authorized Custom Centers" (another industry first) and with two already going up in Lexington, Kentucky and Minneapolis, Minn., the future for this idea looks very good. From the basic pickup all the way through to the completed custom instrument of your choice, Schecter provides the wherewithal to shape the instrument of your dreams.



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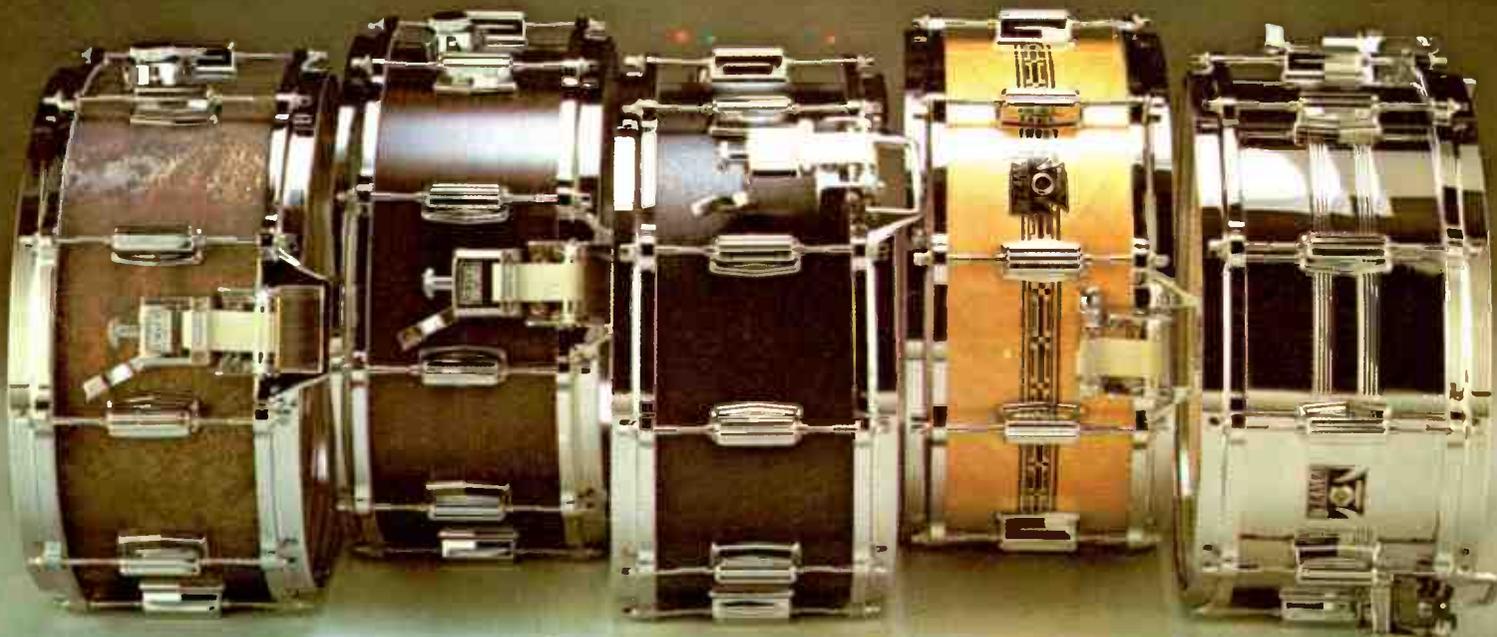
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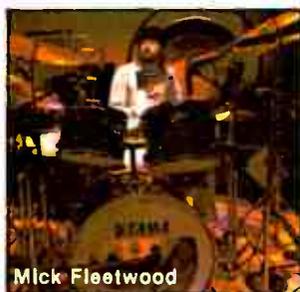
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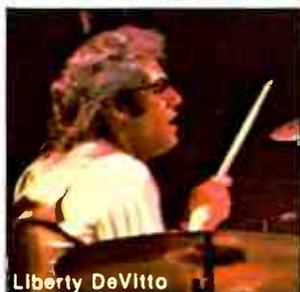
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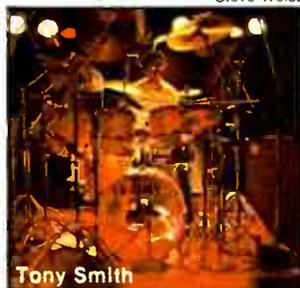


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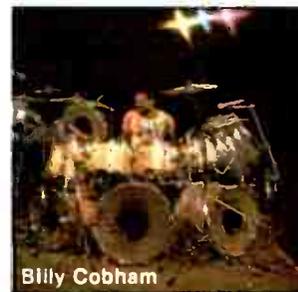
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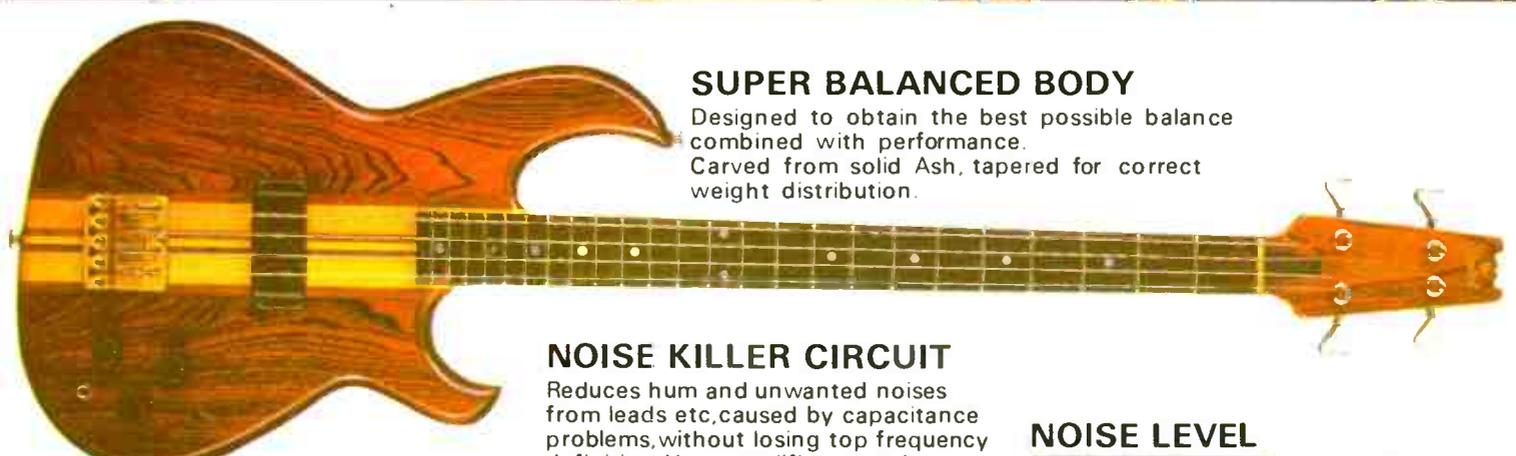
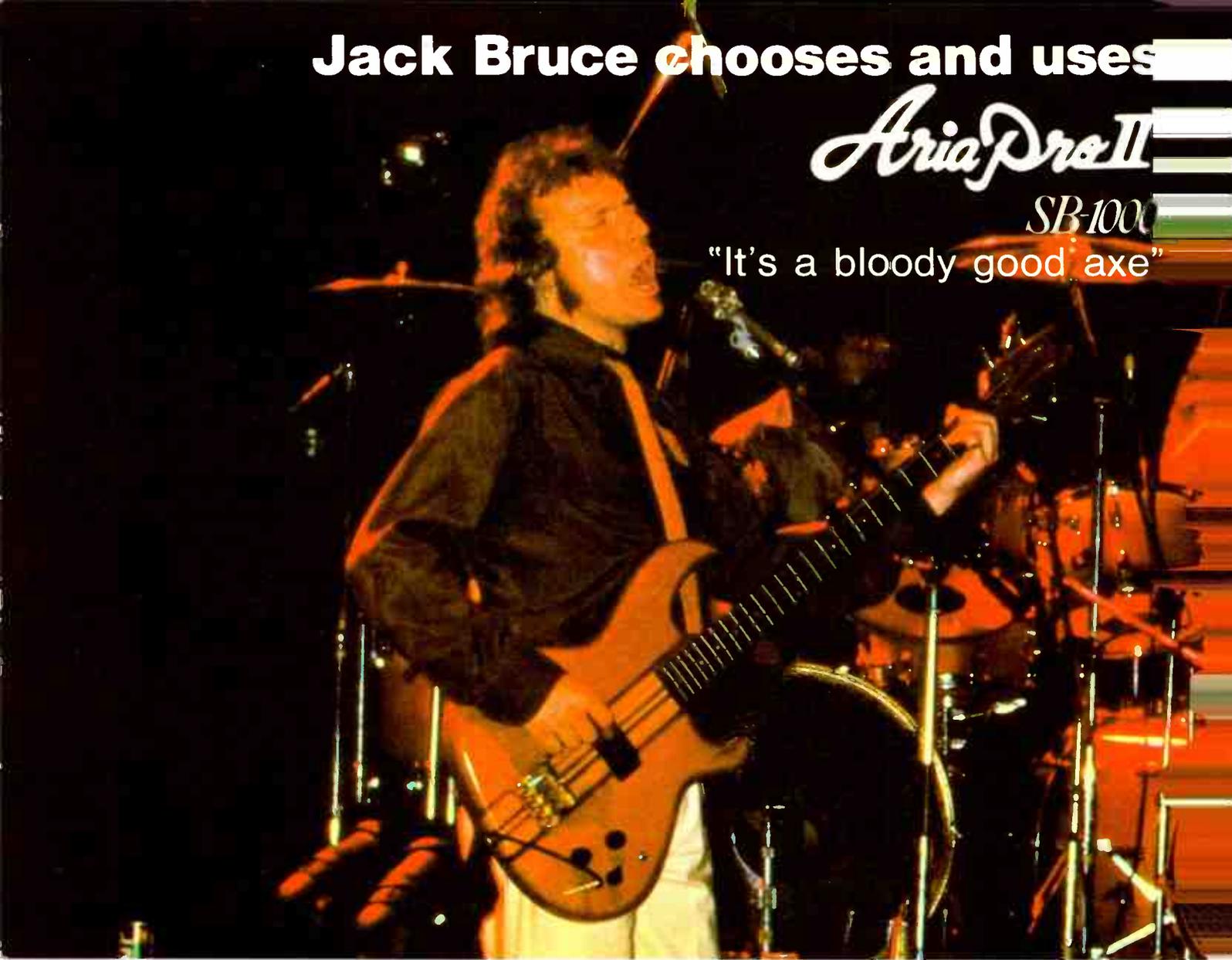
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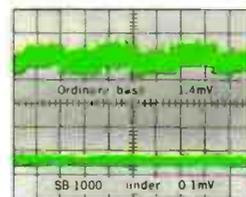
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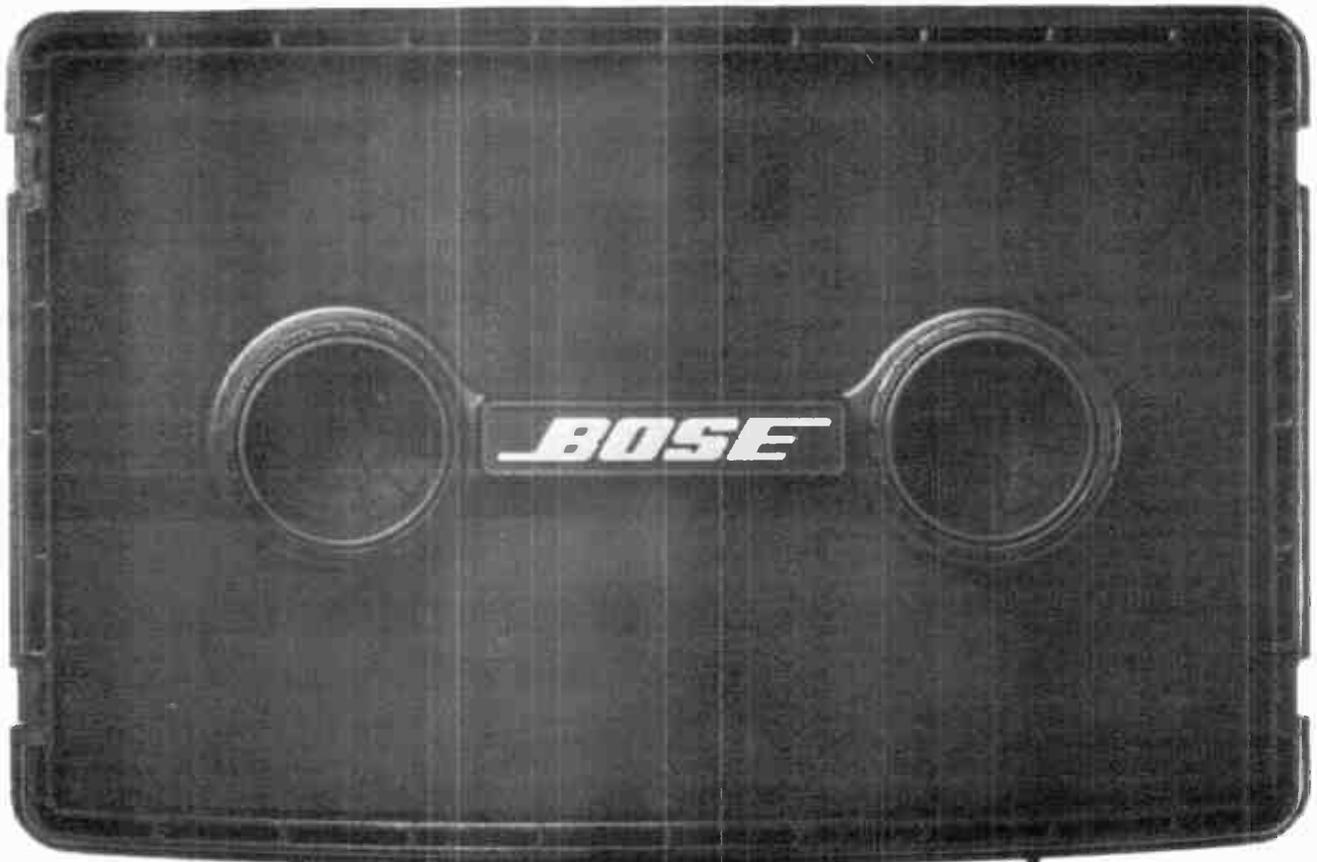
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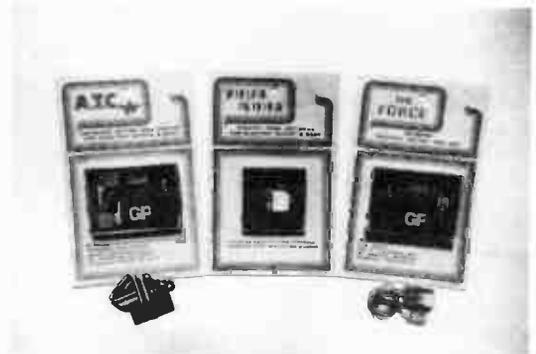
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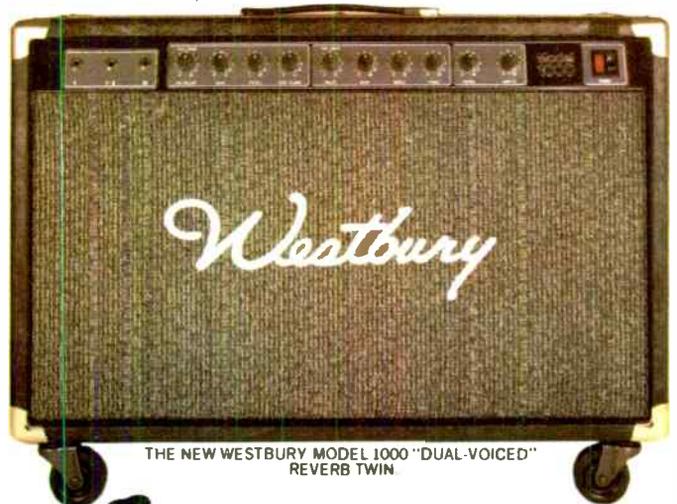
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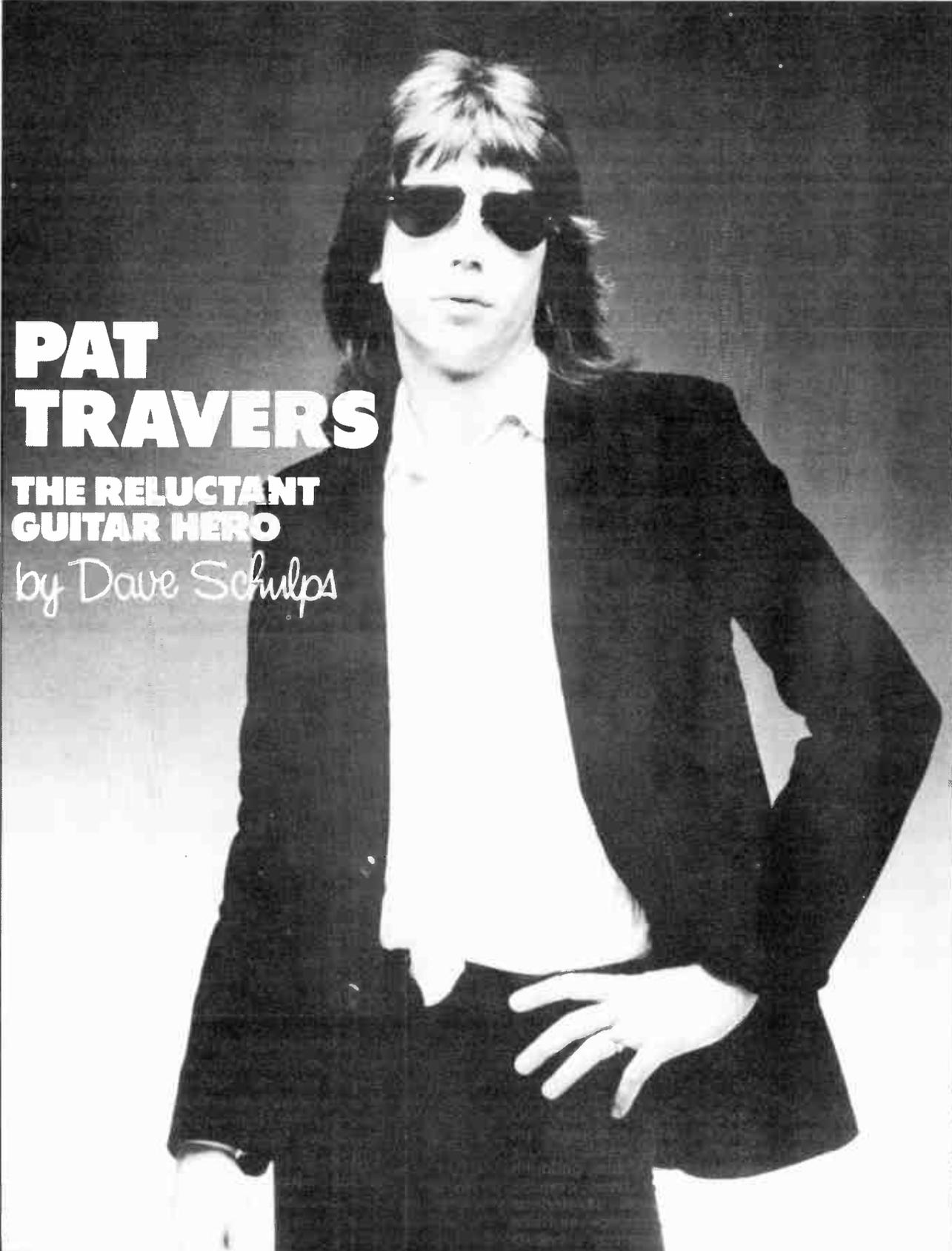


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A black and white portrait of Pat Travers. He is wearing a dark suit jacket over a light-colored, open-collared shirt. He has long, dark hair with bangs and is wearing dark sunglasses. He is standing with his left hand on his hip and his right hand slightly away from his body. The background is a plain, light color.

PAT TRAVERS

**THE RELUCTANT
GUITAR HERO**

by Dave Schulps

Pic: Marc Vaughn

"Let's face it," Pat Travers states adamantly, "a solo is a solo. If you're not a player you probably can't tell the difference between my playing and Pat Thrall's anyway... or Ted Nugent's for that matter." Travers is explaining why he chose not to accept the role many people had seemingly chosen for him, that of the next guitar hero. Instead, on his latest album, *Crash and Burn*, Travers has downplayed his place as guitarist (he appears in that capacity on only half the LP's eight cuts, leaving the work on the remaining four in the very capable hands of Pat Thrall) to concentrate on what he considers to be more challenging areas at the moment: his newly-emphasized keyboard playing, his vocals, and the arrangements and (co-) production of the album.

Although *Crash and Burn* has its share of blistering hot guitar work, certainly enough to keep Travers's old fans faithful (check out "Snortin' Whiskey" and "Born Under a Bad Sign" for starts), the most striking thing about it is its diversity. With rock & roll mingling with jazzier-feeling numbers like the title track and the keyboard-dominated instrumental "The Main Event," a couple of soulful tunes and a cover version of Bob Marley's "Is This Love?," all bases seem to be covered. Travers insists, however, that the album maintains an "underlying theme running through the whole record which makes it sound like it was recorded, written and done all at the same time.

"This is the third album we've done with this line-up (which includes bassist Mars Cowling and former Black Oak Arkansas drum-whiz Tommy Aldridge, as well as Travers and Pat Thrall) and we've now had two years to jell and develop our style. That's probably the turning point for this band; we've developed our own style, our own identity, which I feel will get more extreme as we go along." Asked for a nutshell definition of the Pat Travers Band's style he says: "Sophisticated rock & roll, I suppose." Then adds: "It's definitely not heavy metal."

He is a little surprised when I agree with the last statement. "I've been accused of that and I'm glad you said it because about four writers today have said, 'You should be doing very well now with this heavy metal resurgence,' and I said, 'You asshole, you haven't listened to the fuckin' album, have you?' There's nothing on there that sounds like Black Sabbath, that's for sure."

In fact, the diversity evident on *Crash*

and *Burn* seems to be a reaction to exactly that kind of comparison, as well as evidence of Travers's disgust at what he calls the "fastest gun in the west syndrome," which he described as, "Oh shit, Eddie Van Halen's doing this thing, I've got to be able to do it too..."

"I don't care about that sort of thing," he says. "I do what I do. I play melodic or I play fast, I just do what I feel. A lot of people seem to think I'm great and I'm flattered, but I really don't work on it that hard. The guitar is such a fragile, restricting instrument and there are so many good guitar players in the world right now that we just don't need another one. Guitar has become so blasé. It's like: guitar solo — eight bars, and it could be anyone slotted in there, so what's the point."

This feeling actually led Travers to put down the guitar entirely for a two-month period last year. He has since made his peace with the instrument, so to speak, but during those two months he became more involved in playing the keyboards which figure prominently on the new album, and which he has recently begun integrating into his live show for the first time.

About that two month period Travers now says, "I had just gotten thoroughly bored with the guitar and antagonistic towards the 'guitar hero' thing and the Ted Nugent comparisons. I don't think they were valid. They were the product of narrow-minded journalists and short-sighted projections on the part of the record company. I felt a resentment toward the wide thing and the fact that there was really nothing else to say on it. And, even if there was, I wasn't going to sit down and practice for eight hours a day to find out *what* it was.

"I was beginning to fancy myself a keyboard player anyway," he continued. "I think it's a much stronger instrument; you can make a lot more noise."

He admits to a good deal of nervousness when it actually came down to incorporating the keyboards into his live act. "I've been playing guitar on stage for so long that it's second nature. With keyboards, not only is it like all eyes are upon me, but I'm restricted, tied down to the instrument so I can't move around. On guitar I could cover up a duff passage by moving around and faking people out by throwing the guitar up in the air or doing a spin. With keyboards it takes a little more articulation. You have to be more sensitive with it. It's a new challenge, that's all."

Having played less than 20 shows us-

ing keyboards at the time of our conversation, Travers says he's still green enough that "some nights I'm great, some nights I'm shitty. But," he adds, "I've got to start somewhere." The experiment has had its hazardous moments, too. "Somebody threw a beer can at me one night, and yelled 'Play guitar!' I told him to fuck-off and if he didn't like it he could leave. I've spent ten, 11, 12 years playing guitar and now I've been playing keyboards on stage for five weeks, so *give me a break*."

One break for Travers is the presence of another quality guitarist like Pat Thrall. The San Franciscan, who was with Automatic Man before joining the Travers Band, not only gives Travers the freedom to indulge his keyboard fantasies, but provides an excellent contrast to Travers's guitar playing style. "He's probably one of the better guitarists in the world right now," says Travers of his compatriot. "Whether he plays a solo or I play it doesn't really matter. We're not in competition with each other. My ego isn't that big that I feel I have to play all the solos. Stylistically, he's completely different from me. The guy plays 40 times louder than I do, he's got his whammo bar on his Stratocaster and he's into different things. He considers himself a student of the guitar. He's really dedicated to it, whereas I don't take it that seriously and never have. I couldn't sit there for five hours and practice the guitar; it's just a big yawn. The guitar is just something that I do because it's fun and nothing else. I don't take it any more seriously than that."

Obviously, it wasn't always that simple. As a young guitarist in Canada, Travers played with a number of bar and club bands and says he was "capable of playing like Clapton or Hendrix" when he took a gig as lead guitarist behind the legendary Canadian rock & roller Ronnie Hawkins (for whom the Hawks, later to become the Band, first played). Although he unenthusiastically describes Hawkins's repertoire as, "some rockabilly, some country & western, some Allman Brothers — nothing of any consequence," he does credit Hawkins with supplying some of the motivation for founding out his education in rock & roll guitar playing.

"He gave me these old singles and he said, 'I want you to learn these solos, and not only learn the way they're played but copy the sound.' I thought to myself, 'this sounds like shit,' but he

Continued on page 39



L. to R. Peter Cowling, Pat Travers, Pat Thrall and Tommy Aldridge

Continued from page 37

said, 'If you do that you'll be one of the best guitarists in the world.' Of course, I didn't believe it at first, but I did it because I respected the guy. As it turns out, he may have been right to a certain degree. You've got to know where it's coming from. Rock & roll started out in the mid Fifties and it still keeps coming back. Linda Ronstadt's still doing Chuck Berry tunes. Though I could play like contemporary guitarists when I joined him, he made me play Carl Perkins. I hated it at the time, but I'm thankful for it now because it gave me a certain sense of rhythm and taught me where it all came from, the roots."

After leaving Hawkins, Travers moved to England, decided he could sing well enough to front a band, and put together the first three-piece edition of the Pat Travers Band in 1976 with bassist Cowling and drummer Nicko McBrain.

After a short time on the London club circuit, Travers was signed to Polydor and recorded his first album of stripped down rock & roll. Then came punk, and as media attention in Britain seemed to focus totally on that side of the scene, a decline in Travers's fortunes — at least over there. In America he began picking up huge local followings in Florida, Texas and parts of California, so rather than stay where he wasn't appreciated, Travers moved his home base to Miami.

On "Life in London" from *Putting It Straight*, Travers's third and last album with his trio, he bade farewell to England and stated his reasons for leaving, which he now recalls: "I got fed up with the rotten weather, fed up with stupid punks running around and with indifferent press coverage. The weather was much nicer in Miami and we had more fans here. It seemed like the ob-



Pic courtesy of Polydor

What guitars do you own and what do you use on stage?

About four years ago, while I was in Sheffield, England, I picked up a Gibson Melody Maker double-cutaway and I've been using the same guitar ever since. It's the cheapest guitar ever built by Gibson and, to my mind, one of the best, at least the ones I have are. I own three of them but I still just use the main one. Originally, it came with just one tiny pickup, but I've added two Gibson humbucking pickups. The sucker (guitar) stays in tune and bashes around; I've thrown it up in the air and dropped it on the floor and it works great. I'm really happy with it. I paid about \$300 for the first one, \$300 for the second and I just bought one for \$200. That should show you where I'm at as far as guitars are concerned. If someone comes up and offers me a '57 Les Paul for \$1,600 I just tell 'em to shove it up their ass.

Do you use all three guitars on stage?

No, just the first one. I don't break strings because I use Dean Markley strings and I change them every night. I haven't broken a string on stage in about two years.

What about keyboards?

I have two ARP Cdyseys, the new ones with the rubber pads for going sharp and flat for LFO modulation. I also have a Farfisa organ that I bought from Pete Solley, who used to

play in Procol Harum, about three years ago. I just run it straight through my pedal board and through my Marshalls and Leslie and it sounds just like a B3.

Guitar effects?

I use a Crybaby wah-wah pedal, an MXR "Blue Box" which just growls, and MXR "Phase 100", a couple of DA Flangers and two Echoplexes — one set for long repeat and one for fast repeat.

Amps?

A 50-watt Marshall with one cabinet and a 100-watt Marshall with one cabinet and the Schafer-Vega Diversity Wireless System, which I've been using for two years now.

Are the Marshall new ones or old ones?

Mostly new, a couple of them are brand new. They're interchangeable; I've never found any difference. I own about ten or 12 of them and they're all the same — well, almost the same. I run them real low, though. I run the 100 watt at about 1½ or 2 and my 50-watt at about 3½. That's because I get a lot of extra output from the transmitter, the receiver. I can get about a 20dB boost out of that. I don't run it that high, but it saves running the amps really loud.

Do you keep the amp levels the same in any size hall you play?

Oh yeah.

Continued from page 39

Pat Travers

vious move; why beat your head against the wall when you're not getting any response?

With the addition of Thrall expanding the group's capabilities, the floodgates were soon opened for the kind of diversity from the band which eventually manifested itself on *Crash and Burn*. "I don't find myself to be limited in what I

listen to or what I like to play," says Travers. "When I was playing bars and clubs I played all kinds of music from Top 40 to heavy metal to country & western to rockabilly to old rock & roll. I enjoy all forms of music and nobody's gonna restrict me. It doesn't matter what preconceived notions people have of you. We obviously had to strike some sort of compromise because our most successful album to date was a live rock & roll LP."

Of that record, which produced Travers's first near-hit single, "Boom Boom, Out Go the Lights," Travers comments, "That was where we were at the time mainly because we were the opening act on a three band bill and the best way to leave an impression was to pulverize the audience. But that wasn't necessarily where everybody's tastes lay. We've started to get into some reggae and other band influences; what everybody was listening to started to creep into the music."

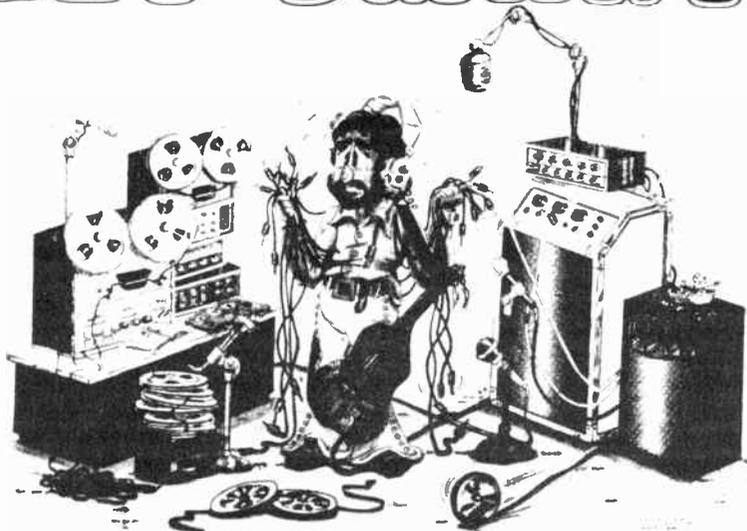
— And what does Travers listen to?

"I wish I had the bag that I carry my cassettes in with me, I always forget when anyone asks me that. Let see... Joe Jackson, The Police, Alan Parsons, Donny Hathaway, Stevie Wonder..." He names the last two as people he'd like to be able to sing like. He confesses that singing has been a bit of a struggle for him so far, but that he's beginning to get somewhat good at it. "You can only learn how to do it properly by making mistakes. Hopefully, people will forgive your mistakes or overlook them, or you can fool them." He chuckles. "Some people think I'm a good vocalist," he states, perhaps a bit defensively, "I got nominated for a Canadian Juno Award for Best Male Vocalist, so there you go."

Perhaps one of Travers's best vocal performances to date occurs on "Is This Love?", the Bob Marley song which appears on *Crash and Burn* and seems to be taking off as a single. The idea for doing that song, as Pat tells it, came about because he had a Bob Marley cassette on in his car on the way to the studio each day. "I'm the kind of guy who'll play the same tape for two weeks straight. Anyway, I got to thinking it would be a good idea for the band to experiment with different kinds of rhythms and music. I was never really serious about putting the song on the record, but I thought it would be good to try it, just to broaden our horizons. It was also a challenge not to just cover a Bob Marley song, but to actually get down and figure it out, and try to do it the way they all do it and cop the attitude. Not only that, it was an excuse to smoke a lot of dope, because you can't play reggae without smoking a lot. So we recorded it and it sounded good, and anything that sounds good to me will go on a record."

Concludes Travers: "I'm not obligated to anyone but myself and my band."

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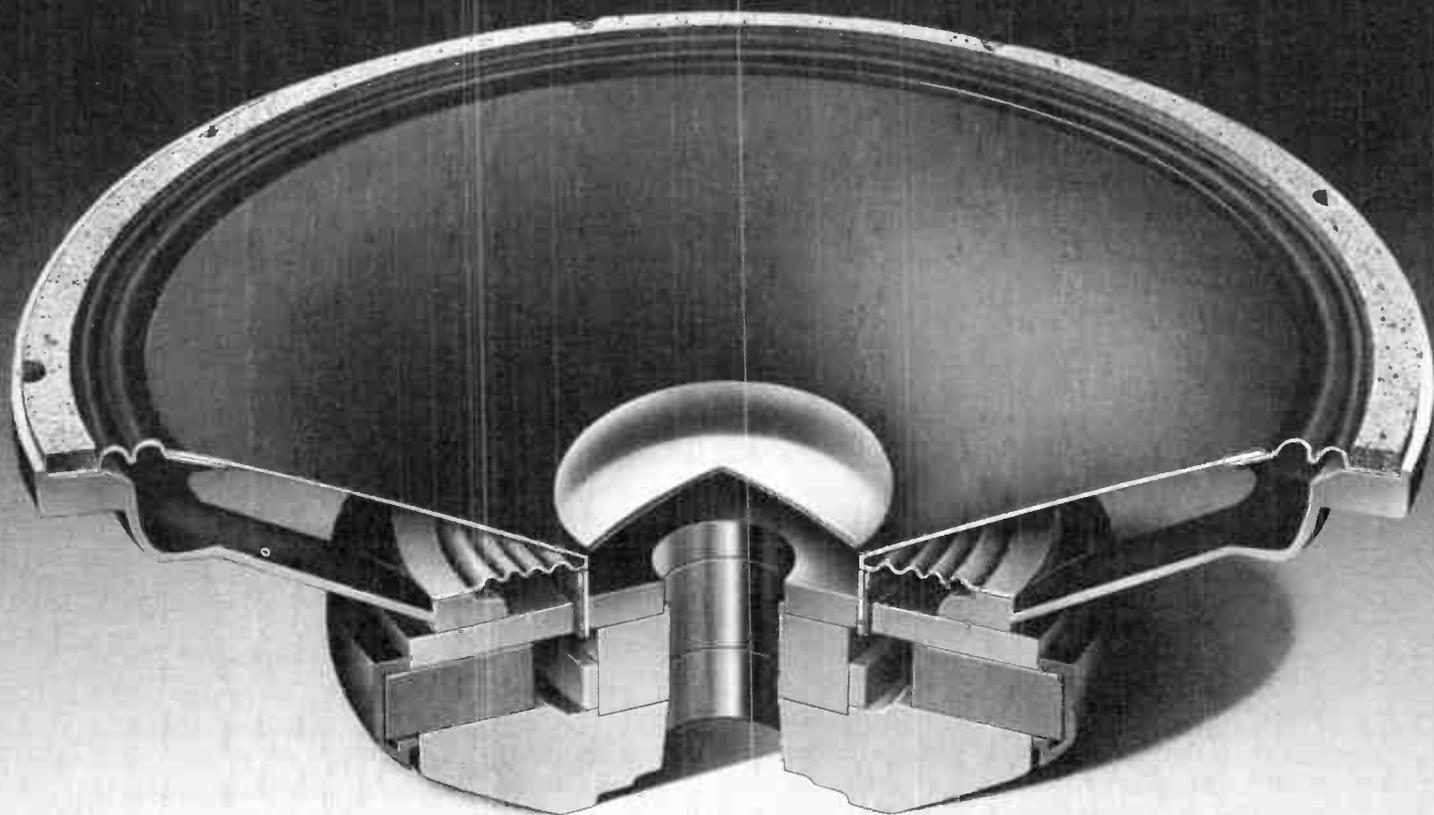
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To fusion fans he is best known for his work with John McLaughlin. On the rock side he has recorded with Jeff Beck and Roy Buchanan and at the disco, people hit the floor for songs like "I Shoulda Loved Ya" and "I Don't Want Nobody Else." Drumming for a range of artists from Tommy Bolin to Weather Report, flexibility seems to be the key to Narada Michael Walden.

"Absolutely," he responds, "flexibility is *all* important. Record companies are so skeptical nowadays. Billy Cobham has been dropped, so have Tony Williams and John McLaughlin. These are people who have made milestones in music and they don't even have a recording contract. If it wasn't for God's blessing on me to be flexible, I wouldn't be around. So I'm saying people who can be diversified: *use your talent!* That's why I use the different elements that I was raised with."

Walden grew up just outside of Kalamazoo, Michigan, where "music was everywhere." From AM pop to jazz drumming greats like Max Roach and Art Blakey, Michael listened and enjoyed it all. He includes The Who, Bob Seger, The Amboy Dukes, The Temptations and The Miracles as early influences. Boxes, pots and pans were his earliest drums so, at the age of six when he started asking for drum lessons, his parents were supportive.

Considering himself a "natural" player, he compares his ability to that of an athlete. "it's like a sprinter who can run incredibly fast.

Drum lessons provided discipline and the rudiments, but playing with records opened up his ears and sparked his imagination. "Records are a great teacher," he says. "You can listen to everybody and anybody and learn. When you listen, visualize yourself doing whatever the guy on the record is doing. Be able to play whatever you're hearing. If you're not sure, put it on a cassette and listen to it over and over until you can play it. Through being able to emulate someone else, you yourself develop. You won't do it the exact way they did, but by knowing how, you can open yourself up more." Walden's recommended listening includes "anything with Steve Gadd on it."

Leaving home at 15, Michael played a mixture of pop hits and funk in local bands. After three semesters at Western Michigan University, he enrolled in the Deacon Williams Soul Revival Troupe and took to the road. Walden recalls, "On the last day of my exams, this band came to my dorm in a big school bus and said 'Would you like to join us on the road?' I said, 'Outta sight!' and packed my bags and drums. We played Sly Stone tunes and all kinds of R&B, funk and pop music. We blasted six sets a night, every night. During this time the main influence I had was a guy named



NARADA WALDEN

"I don't think dance music has to be dumb"

Sandy McGehee, who played drums for a band called Cold Blood. He was fantastic." Of course, there was also Billy Cobham and his pioneering band Dreams.

The "Soul Revival" fell apart in California, and Walden had to work as a shipping clerk, with no musical outlet. Luckily a cousin in Pasadena gave him a place to live and woodshed. And it was during this period that the Mahavishnu Orchestra released their classic first album, *Inner Mounting Flame*. Walden lived with and studied it. Alice Coltrane's *Universal Consciousness* also had a spiritual impact on the 19-year-old drummer. He started meditating, offering gratitude to God and practicing up to ten hours a day.

"This is when I started developing my double-bass drum technique. I would take a pattern like right/left on the bands and then right/left on the bass drum, and work it up to a very fast speed. Billy Cobham was a really big influence because I liked that *power* aspect. I fell in love with the things he was doing with the Mahavishnu Orchestra."

The call to join a progressive fusion band eventually placed Walden in Miami with The New McGuire Sisters. "I was playing very progressive, very loud, very rockin' music that got me super strong. We'd play every night in this big warehouse with the amps blasting on full. There was a strong sense of spontaneity and not necessarily just playing a song. Without much of a demand for their music, The McGuires moved to New Canaan, Conn., where they converted a barn into a recording studio. Sixteen-year-old Detroit bassist, Ralphie Armstrong, was among the musicians who came in to record demos

Meeting John McLaughlin after a Mahavishnu Orchestra concert in Danbury proved to be both a musical and spiritual turning point for Walden. He became a disciple of McLaughlin's guru Sri Chinmoy who gave him the name *Narada*, meaning "he who brings light, delight and compassion from heaven to earth and takes back to heaven from earth all of her sufferings." Narada stopped all drug consumption, started meditating daily and wrote a lot of music. He also became close to McLaughlin.

When the Sri Chinmoy-inspired band, "Jatra", didn't work out, Walden had his dream come true when McLaughlin asked him to replace Billy Cobham in the second version of the Mahavishnu Orchestra. Narada picks up the story of his first recording session, "In January of '74, I got together with Mahavishnu and the two of us started rehearsing. I needed a new drum kit so I went out and bought a white Gretsch set that I learned to play while recording *Apocalypse*. For this album, which featured the London

Philharmonic, George Martin (the producer) had the Mahavishnu Orchestra in one room and the symphony in another. We were communicating via cable TV. It was difficult for us to get them to lock in with the band, so they would record their tracks and the I would overdub on top of them. There are spots on that record where you can hear the tempo fluctuate because I had to match what they did."

Though he is currently endorsing Rogers, the white Gretsch set has been on virtually all of Narada's recordings. The set includes a 6½" chrome snare; 12", 13", 14" mounted toms; 16" and 18" floor toms and two 24" bass drums. His cymbals, all Zildjian, include an 18" and 30" crash on the right and a 20" crash and 16" splash on the left with a 24" medium ride in the middle. New Beat high-hat cymbals and a Gretsch "Bicycle Chain" foot pedal finish off the kit. His Rogers set is the same except the mounted toms are 10", 12", 13" and 15".

Narada uses his own custom sticks made by the Professional Percussion Center in New York. It's a heavy stick which he describes as a little bigger than a 5B. His heads are made by Remo. "If I'm recording I like to use White-Coated Ambassador heads. For live playing, to take the punishment on the tom toms, I use Pin Stripes, and on the snare I use a White Coated Ambassador."

After recording *Apocalypse*, the Mahavishnu Orchestra toured and Walden's drumming matured. "That was when I really had a chance to grow and get tight, playing with Mahavishnu. When I went to make *Visions (of the Emerald Beyond)*, I felt like a tiger. I was in my prime playing-wise. *Visions* was a great album for me. I might have been over-playing a little, a little wild, but I enjoyed it very much." Five years later, Narada still points to it as some of the best playing he's done on record.

After the scaled-down Orchestra recorded *Inner Worlds* in France, Walden went to England to record Jeff Beck's *Wired*. On that album he comments, "Jeff is a very free spirit. He gave me a lot of room to do what I wanted and it was a very happy time for both of us. We were both groovin' on making music."

When the Orchestra disbanded, Walden was invited to join Weather Report, but turned them down to join forces with rock guitarist Tommy Bolin. He recorded "Marching Powder" on Bolin's *Teaser* album and toured with the band. "If I'd have joined Weather Report," he explained, "I would have been playing in front of the same jazz progressive audience that I had just finished playing for with Mahavishnu. I wanted to get out and experience a different kind of audience. I decided to go more with the rock thing."

Walden's Weather Report experience extended to recording the title track and "Cannonball" for their *Black Market* LP. The Bolin connection proved to be short-lived and Narada went on to record an Allan Holdsworth solo album for CTI that was all done in first takes and took only four hours to record!

Deciding it was time to embark on his own career, Walden put together a demo with David Sancious, Ray Gomez and Will Lee. It was turned down by all the major labels until it reached Atlantic. Studio veteran Tommy Dowd produced *Garden of Love Light*, featuring fusion and more conventional vocal songs with performances by guests like Jeff Beck and Carlos Santana. Drum-wise, it also featured Narada using "Roto-Toms" for the first time.

Those who enjoyed his fusion work have cried "sell out" upon hearing his latest releases, *Awakening* and *The Dance of Life*, but Narada's more commercial direction is more an economic off-shoot than an abandonment of his musical past. "I don't draw lines like that," he told me when asked if his latest work was as musically important to him. "I'm playing for people and it's very important that I'm able to make music that can really *reach* people. I'm more pleased when I see them get up and get off.

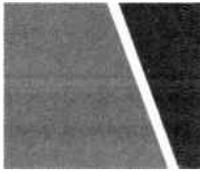
"When *Awakening* came out, Atlantic forced me to have a producer, which I didn't want to do. I was told outright that if I didn't have a hit single I was going to be dropped. That's when I made a conscious effort to get something happening in the commercial world, yet still keep my sincerity.

"For Atlantic and my career with them, it's important that I get *saleable* records, things that can be played on the radio — which helps me to be recognized as an artist. It's also important to me to have room if I want to do a classical LP, a progressive album or perhaps just piano and vocal. I'd like someday to have two different recording contracts, one for freedom and one for commercial efforts.

"I don't put boundaries on music. I'm just keeping my soul and my heart open, doing all kinds of things because I *love* it. Whatever I'm doing, my sincerity is there. Playing with Mahavishnu gave me a lot of wisdom to take R&B and funk to a new plateau. I don't think dance music has to be dumb. I don't think commercial music has to be dumb. Look at Steely Dan, Earth Wind & Fire or Stevie Wonder. I think I'm one of the people who knows music and who can take commercial music to new heights, and I like the challenge."

John Stix

Writers update: CTI recently approached Walden to do an album with Stanley Clarke, George Duke and McLaughlin. ■



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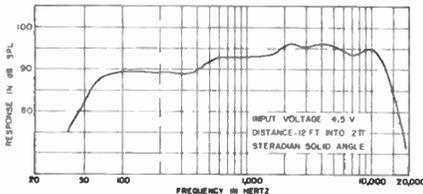
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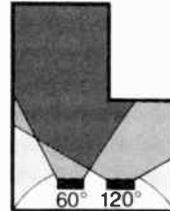


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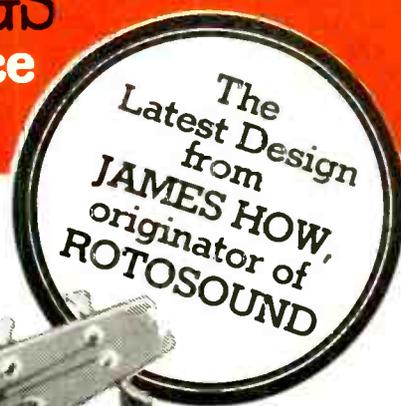
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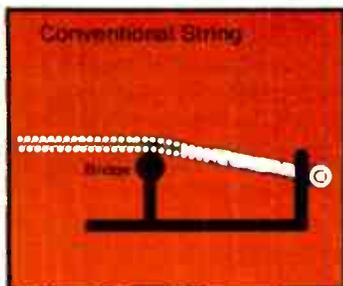
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Gibson Les Paul 'Active Artist' \$1,299

The Les Paul Artist is one of a series of three guitars currently available from Gibson with so-called "active" electronics. Many instruments are available, from various countries, which claim the feature of active electronics; there is some possibility of confusion, because not all makers mean the same thing by this. In the case of this "active" Les Paul model, "active" means that it has bass and treble controls which can boost and cut the ends of the sound spectrum, and also a built-in compressor/expander unit. This can be set to emphasize the explosive beginning of a note, or to sustain the tail end of a note. Although this would seem to be an impossible contradiction, I have found that if you operate both compressor and expander switches, the circuit appears to expand the beginning of the note, compress the middle, and sustain the tail-end, all at the same time. Compression and expansion ought to cancel out, but in practice they appear not to. The effect of adding the "expansion" switch when the compressor is already switched in, is not very obvious, but it usefully masks some of the side-effects of a relatively simple compressor system. A certain technique is necessary to get the best out of this compressor. The most useful ground rule seems to be that if you intend to play a sustained solo on the top strings, do just that, and leave the bass strings entirely alone until the end of the solo. If you alternate high single strings with chunky chords at just the right speed you can make the gain bounce up and down like a demented swell pedal. The simple solution is don't do it. Play either solid rhythm or single string solos, or if you want to mix them, turn off the compressor. After a bit of practice, it is possible to play against the attack and recovery time of the



compressor control circuit, in much the same way as one can play against the cycling time of a phaser — or even a tremolo unit if you are into that sort of thing. It is a technique, like any other, and it has to be learned. While you are learning, you will find the device much more forgiving if you keep the expander switched in at the same time as the compressor.

Using the expander alone does not seem to present any real problems. It gives an emphasis to the beginning of a note or chord, reminiscent of the off-beat up-stroke style of the Ska/Rock Steady/Reggae tradition which has found a place in modern city music. The expander also seems to give some increase in overall brightness of the sound. This can be removed if you don't want it, by turning the treble tone control down, about half a division. If you want *more* brightness and bite in the sound, with or without the other effects, turn on the "Bright Mode" switch and you will have lots more "Bright" with very little extra noise and hiss. This is basically a treble-boost circuit, but treble-boost devices have a reputation for high hiss levels, and most of them deserve it. As Gibson seem to have found a quiet one, they are probably right to

call it something slightly different.

As far as I can tell, the pickups are not "super-overwound-hyperflux specials" but the basic, standard Gibson humbucker, you all know and love. While playing the guitar over a couple of days, I became aware that something about the sound did not fit with what I expected to hear from a Les Paul Gibson. Now there is no reason why one guitar must sound like another. However, I was curious about why this guitar should sound so subtly but clearly different from other recently-made Les Paul models. It has all the appropriate mechanical features for a good Les Paul, and apparently, standard pickups. Why should it sound different?

After some experiments, I think I can offer a partial answer. The standard Gibson humbucker is usually heard, known and loved, while connected to several meters of guitar lead, an amplifier input stage, and assorted volume and tone controls at both ends. To put it as simply as possible, this makes the guitar sound slightly different, and in a way which cannot exactly be compensated for by the guitar tone controls. All the components normally connected to

the pickup (called the pickup "load") can be approximated by a small pick(s).

This guitar contains two rather complex circuit boards, which are better left undisturbed, but there is access directly to the pickups across the center solder tags at opposite ends of the pickup selector switch, at the back. Representative values of capacitor and resistor, 800pF and 330 kohms, connected across these tags, removed a slight wiry edge from the sound and shifted the "voicing" of the guitar to something which I felt more comfortable with. A resistor of 470k with the capacitor gives a slightly brighter sound than usual for a Les Paul model, but still to my ears, preferable to the standard sound of this instrument. I settled on this, as a compromise between what the designer intended and what my ears could come to terms with, in a reasonable time.

I hope the designers of the Artist are not too much upset by this retrograde step, but I cannot disappear into the woods with the Artist and a battery amp for three months. If I had three months' free time (what a lovely thought), I would prefer to spend it improving my playing.

This is a new instrument: it

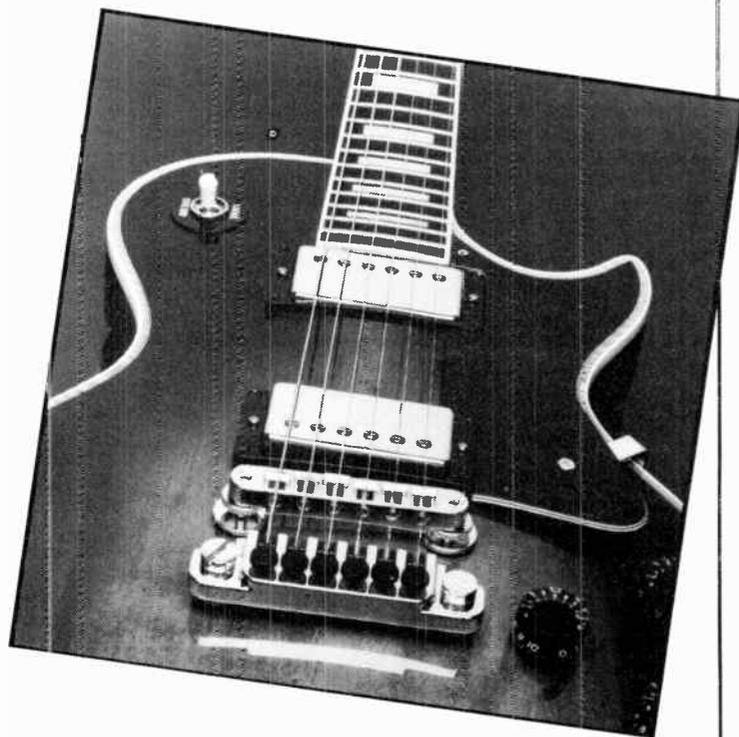
does some things differently, and it will do some other things which a standard guitar won't. I think most people will need a little time to understand it properly, and get the best from it. At the moment, I find it easier to deal with the expander, compressor, bright mode, and active treble and bass controls, while at least the basic sound of the instrument is something which I already know and understand — hence the pickup loading components across the back of the switch.

If you like the sound of the Artist as it is, don't think that any modification to any guitar is bound to be an improvement. Usually it is not, and sometimes the result sounds worse than before. If you share my traditionalist reservations about the basic sound, the suggested modification is not permanent, and can be removed at any later time. If your solder joints look grey and lumpy and you tend to melt the plastic off the ends of wires, then let a good repair man do

the job; it should not cost much.

The other unusual feature on this guitar is the fine-tuning tailpiece. You really have to try this to appreciate how good it is. As the principle has been in use on bowed string instruments for many years, I am surprised that it has not appeared on an electric guitar before now. One very early sample of this tailpiece, which I tried about a year ago, suffered from stiff adjustment screws, rather defeating the idea of a fine adjuster. However, all those which I have tried recently have worked smoothly and efficiently. This is a simple mechanical device, with no batteries, no integrated circuits and not even a flashing LED to its name. However, I believe it represents a basic improvement in electric guitar design.

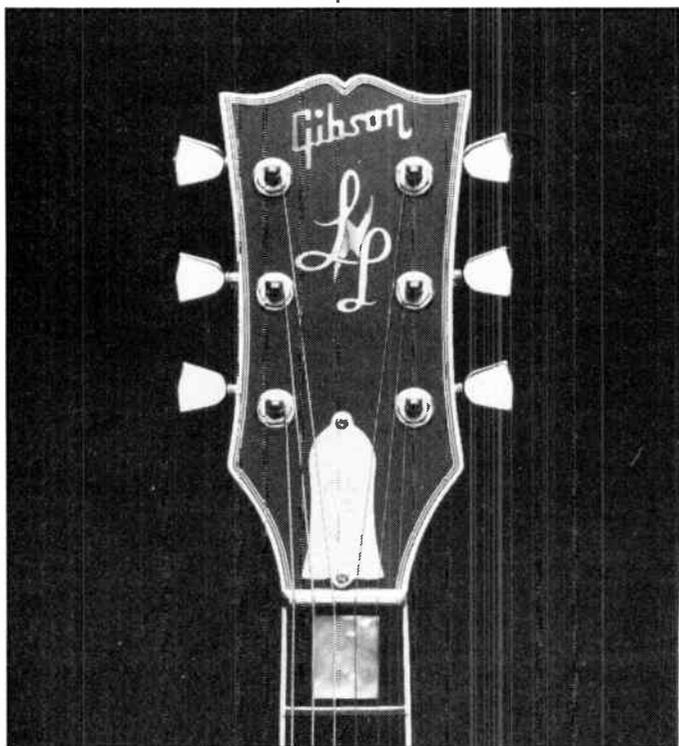
The original Gibson Tuna-matic bridge, with adjustable string saddles, was a similar milestone in electric guitar design: it is difficult today, to imagine a modern electric



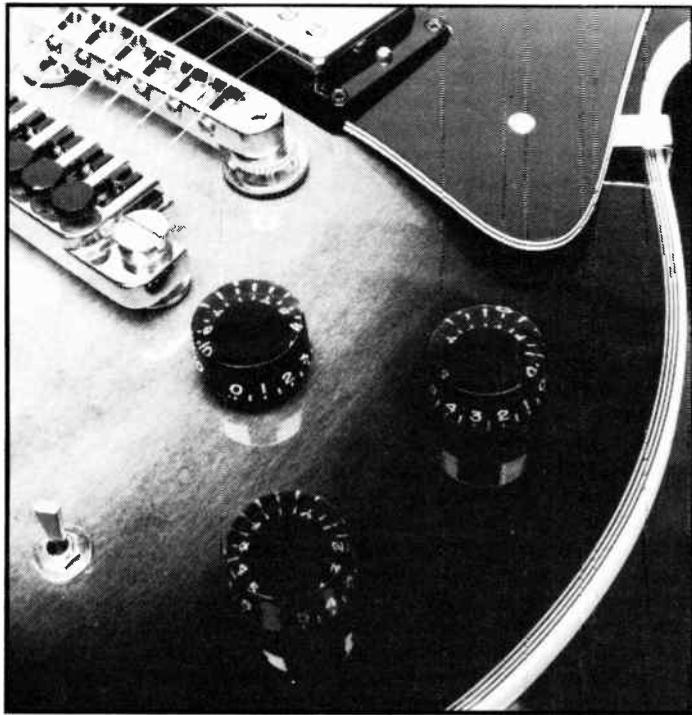
guitar of this type without some sort of intonation adjustment built into the bridge. I wonder how many other guitars will now sprout fine tuning adjusters. The construction and materials of this guitar are basically similar to those used in the Gibson Artist, reviewed earlier, and not very different from any other Les Paul model. The body is mahogany, with a carved maple front in the usual Les Paul contoured shape. On this guitar, there is a bevelled cutaway at the back of the waist, on the bass side, which some people find more comfortable than a completely flat back. Also the neck on this model is made from maple, not mahogany, and is shaped a little flatter than usual at the

back. This is continued into a rather square-edged heel where the neck joins the body. I am happy with the feel of the neck, but I would find playing on the highest frets more comfortable if the *heel* could be rounded over a bit more.

The fingerboard is good quality ebony, nicely finished with bound edges and attractive figured pearl block inlays. The frets are the usual Gibson wide type — neatly fitted and smoothly finished off. All fittings are gold-plate, including the machine heads, on which some of the buttons unfortunately feel a bit loose. This is due to play between the buttons and their flattened spindles, and can not be taken up by the torque adjustment



Guitarcheck



screw.

Conclusion

Alright, let us accept that things have come round in enough of a circle that it is possible to be a traditionalist about electric guitars. That in itself is ironic. I am quite happy about the expander, compressor *and* the extended tone controls, but I am used to hearing pickups with all the "problems" of lead capacitance and amp loading, and I think I prefer them that way for the present. If you wish, the Artist can be adapted to give the usual sort of basic Les Paul sound, by a small modification which is simple, cheap, and easily removed, later on.

The neck tends to be "square" at the back, rather than round. I like this, but I think the matching "square" heel could be improved. I like the fine tuning tailpiece, but I am not too impressed with the machine heads on this particular sample, considering its price. The lacquer and edge bindings are finished to a high

standard. Personally, I would prefer a slightly warmer brown colour to the wood, as is sometimes produced by applying a red/brown base stain between dark grain filler and clear or lightly tinted lacquer.

The Artist is quite a heavy guitar; this is probably necessary for it to sound like a proper Les Paul. Even without the compressor, it has pleasing sustain properties, and does not appear to cause unwanted whistling feedback when played at high levels. Although this is presumably some sort of psycho-acoustic effect, I was more pleased with the instruments natural, uncompressed sustain when the pickup loading R/C network was connected across the switch tags. Finally, the Gibson Protector case in which the guitar was delivered is strong, and must have the most comfortable and well thought-out handle in the business. The case clasps are equally good, but almost any clasp can be damaged by really rough handling. As they are

not-a standard type, it may not be easy to find replacements in a hurry. I am sure Norlin have some spare clasps tucked away somewhere. I don't think it would do any harm to have a few of them in stock with Gibson dealers around the country, along with other guitar spares. I find it much easier to obtain most spare parts now than it was a few years ago, but it would be utopian to assume that *all* dealers consider a comprehensive spares stock to be of vital importance.

The more cautious of our readers may prefer to order a spare clasp in advance and indicate tactfully that they would prefer to buy the spare clasp, the case (and perhaps the guitar inside it), all at the same time.

The Les Paul Artist is one of three "active" Gibson guitars. The other two are the RD Artist '79 and the ES Artist Active. Personally, I like the Les Paul model better than the RD model, although I am sure many players would disagree and I look forward to the opportunity of reviewing the ES Artist in the not-too-distant future.

Finally, this seems to be another of those guitars which lay down and sleep when the battery gives out. I am not too happy about that idea. I would prefer to see some form of bypass switch, even if it provides volume control only. Gibson have more confidence in musicians' memories than I have.

Stephen Delft

Instrument: Gibson Les Paul Artist
Serial No: 73529656
Scale length: 625mm
String spacing at bridge: 51mm
String spacing at nut: 35mm
Fingerboard width at nut: 42mm
Depth of neck at fret 1: 21mm
Depth of neck at fret 12: 25 1/2mm
Depth of neck at fret 15: 46mm
Action as supplied: 1.2mm
Treble: 1.9mm Bass
Lowest recommended action under our standard conditions: As supplied.
Frets on fingerboard: 22
Body joints at fret: 18 on treble side
Heel starts at/around frets: 12-13
Typical body depth at edge: 50mm

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 - 3 Keyboard player 4 Drummer
 - 5 Brass/woodwind player
 - 6 Singer 7 Sound engineer

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 - D 30-40 E 41+

- Are you
- 1 Amateur 2 Semi-professional
 - 3 Professional

- Is your technical knowledge
- A Non-existent B Fair C Good
 - D Excellent

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- 1 Never 2 2 or 3 times a year
 - 3 2 or 3 times a month
 - 4 More often

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- X Music store Y Newsstand
 - Z Subscription

- How much do you spend on musical instruments each year
- A \$200-\$500 B \$500-\$1000
 - C \$1000-\$3000

- How much did you spend on your stereo system?
- 1 \$200-\$500
 - 2 \$600-\$1,000
 - 3 \$2,000-\$3,000 4 \$3,500 +

- Do you have
- 1 cassette deck 2 reel-to-reel
 - 3 both

- How many albums do you buy each month?
- 1 less than 5 2 5-10
 - 3 10-15 4 15-25

- How much did you spend on your home recording equipment?
- 1 less than \$200 2 \$200-\$400
 - 3 \$500-\$1,000 4 \$1,500 +

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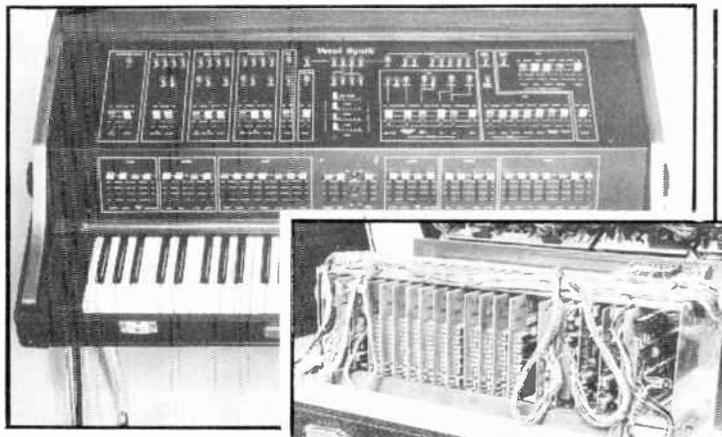
This machine has nothing to do with vocoders or Mellotrons — it really is a unique instrument that attempts to reproduce the effect of a large choir singing in four-part harmony. Its price reflects the amount of new design technology and circuitry it contains, for this is not just a singing keyboard. It has a comprehensive three-oscillator monophonic synthesizer that includes solo and polyphonic presets. And to complete the line-up comes a string machine that converts to "church" organ, plus electric piano and harpsichord. A split keyboard allows different blends of these instrumental/vocal groups and a built-in mixer gives separate panning of each section in stereo.

Quite some instrument at first glance, this one — and like several multi-layer preset machines, gets "better" to play as you learn to use it. Some unusual features too, which might tempt you one way or the other into buying the Vocal Synth.

Construction

The instrument is housed in a large sturdy case finished in standard Logan fashion with black vinyl covering and plastic corner protectors. One carrying handle is provided, although the cabinet really needs two people to lift it without pulling your back out. The case is wider than most, measuring 40½" long, 21½" high and 13" wide.

A chrome stand comes in a smart black leatherette case and screws together easily to support the instrument. Once the large retaining knobs are fastened at each end of the stand to the cabinet it is possible to tilt the instrument backward or forward for best playing position. This feature is useful, for the control panel is set at two angles and tilting the cabinet forward slightly enables the top controls to be seen more clearly. With the



The main circuitry

cabinet level the keyboard stands 30" off the floor.

All the connections are grouped on the rear panel of the cabinet, with a detachable mains lead, fuse, illuminated AC power switch and standard jack sockets for left and right "stereo" outputs and a straight mono mix output. A separate foot pedal also plugs in here for controlling overall volume and piano sustain.

Lifting the complete front keyboard and control panel reveals the main circuitry in one "computer" bus-board set up plus a very big power supply. Underneath the keyboard are reliable single contacts for producing the note-pitches and over the control panel area is the mass of wiring and components for the synth section and control panel switching. The main "computer" pack has no less than 11 filter boards holding over 36 ICs on each plus another seven boards with a lot more chips for producing piano, string, organ tone and sound shaping. This daunting component count might lead you to suspect that some instability would arise in continued use. I can only say that I have been using the instrument for over a month with no trouble except for some distortion on a couple of presets due to incorrect setting up and some initial tuning drift which surprisingly cured

itself after a few hours use.

The control panel consists of an upper section lying nearly horizontal and a vertical sloping lower section. The single keyboard manual is split into two parts — the lower section ranges over two octaves (F to E) and has its own slider controls for piano and harpsichord, strings or organ, and SATB voices. The right hand section of the keyboard covers three octaves, having an additional octave that goes below the left hand section. This seems most unusual at first, for two-hand organ style playing has to be done on this top part of the keyboard in order to get that lower octave. Accompanying middle and high range chords can be added on the LH section slider presets to add choral and instrumental sounds against the upper section. The right hand part of the keyboard has the same sounds as the left, but uses its own set of controls so that different textures can be obtained by using alternate ends.

I must admit this control panel was not what I expected — having imagined that the vast array of controls was for making glorious choral sounds, I found that all the upper section sliders and pushbuttons were in fact for a mono/poly synth that works on the upper half of the

keyboard.

The basic choral sound is preset and is selected from a mixer section located in the middle of the upper panel between the synth controls. There are pushbuttons for choosing piano, strings, voices or synth, separately or together. Strings can be converted to a rich church organ sound at the touch of another button and three different vowel sounds can be selected for the voices. Four sliders give left-to-right output panning of these sections and a main volume slider is also provided, plus a couple of holes for screwdriver adjustment of output impedance and overall pitch. All the sliders are coloured bright red, yellow or blue with chrome and red pushbuttons. The panel itself is of black coated metal with clear white labelling.

Above the keyboard are three thin metallic strips that give pitchbend and vibrato delay control by touching the upper/middle or middle/lower strips with a finger. They are close enough to be done by either hand during playing. The "pitched" effect is the most useful, giving an instant drop of up to a tone (using the depth control), finishing with a gradual rise back to the original note taking up to four seconds (set by the time-bend slider). The vibrato delay works on the synth section only.

Piano section

The left and right piano section each contain four sliders for mixing 16' 8" piano, honky-tonk and harpsichord. The piano sound is a little woolly, with the characteristic piano sound envelope making it more like an electric than a traditional acoustic piano tone. Mixing the two pitches gives a good solo or arpeggio sound. Honky-tonk is the usual "piano with upper harmonics added", and harpsichord has the correct dry sound envelope but is not bright enough for my lik-

ing. Piano sustain is controllable from the panel or the foot pedal by tilting the foot against a side lever.

String section

A choice of violin or viola to blend together, with a rich phasing effect built in. Two further sliders control attack and sustain (or "release") times. Since control times are becoming more critical when choosing string machines, I will mention that attack simply takes the edge off and sustain gives up to four seconds decay after release of the note.

It's an acceptable string orchestra sound with quite a lot of high tone present on violin. When played on the right hand keyboard section, the viola makes a usable cello sound in the lower octave. Pressing a control button marked "organ", removes most of the phasing to give an impressive church organ effect that will add depth to any kind of music played on this instrument.

Voices

Well, this is the one you've been waiting for — I hope! It's not what you expect — that's for sure. This section gives a fascinating new sound that will make a choral backing reminiscent of Rick Wakeman's *Journey to the Centre of the Earth*. It is at its most convincing when used sparingly and with frequent changes of Soprano, Alto, Tenor and Bass combinations. I like to change the vowel sounds as I play — there are A, O, and U sounds available. "A" is by far the best — you can even make the "Hallelujah" from Handel's Messiah by jiggling the buttons!

The bass voice has to be set quite low and works on the lowest note played. The other voices work on all notes. Bass can also have portamento from the synth section. Using the attack, accent and sustain controls gives some very in-

teresting sound envelopes — just like emphasizing a word when singing and its long release gives its own kind of sustained reverberation effect that is very good. The voice section also benefits from pitch-bend, producing rising voices that slide up to a sudden accent. The unusual sound of the voices has been obtained by a lot of clever filtering in the circuitry and certainly provides a unique sound for the keyboard player to use.

Mono and poly synth

The top three octaves of the keyboard make use of all those controls across the top panel to bring in mono and poly synth sounds. The synth sections can either function in preset or free mode, with mono working on the top note played.

There are two polyphonic preset buttons selecting 16' or 8' brass. The 16' preset produced some distortion due to overloading the next stage, but was easily corrected internally. It does, however, make a point that progressively adding sections together can produce overload in the final output mixing stages, so levels need to be kept off maximum. These brass sounds are very good, with a characteristic oo-wah filtered tone, playing on up to seven notes at once (as do all sections on both halves of the keyboard, except mono synth). Monophonic presets are Guitar, Clarinet, Horn, Oboe and Violin which enable some pleasant contrast of solo melody against the piano, string and voice sections. You can press more than one button at once for some rather peculiar combinations and the LFO controls can operate on the presets.

In Free mode (at the press of a button), a versatile three-oscillator mono synth is available for creating your own solo sounds. The Poly switches over too, but just gives

16' and 8' pulse pitches with on/off organ touch, which is fed into the VCF and the VCA along with the three mono oscillators and a noise generator.

It would take me too long to explain all the permutations of sound obtainable from the mono synth controls so I will point out the most important features. The oscillators are neatly grouped, with the "Master Oscillator" selecting 32', 16', 8' or 4' pitch that can be sawtooth or squarewave. Oscillator 1 also has the same pitches and a tuning adjustment over more than an octave. Oscillator 2 is the same as Oscillator 1 but with 16', 8', 4' or 2' pitch choice. All three have control of the "duty cycle" (or pulsewidth) of the squarewave output. A "sync" button locks osc 1 and 2 onto the pitch of the master oscillator enabling chords to be preset and quickly changed to unison. The noise generator gives a good white or pink signal and portamento can be set for the mono synth (and bass voices). The VCF is a low-pass type with ADSR controls and "emphasis" (or resonance) taking it into oscillation if needed. The VCA also has ADSR sliders and "overall amount" and volume controls. Triggers can be single or multiple and a keyboard follower can be brought in to open the filter for balanced harmonics over the three octave key span.

The LFO section operates on the pitch of poly, mono and presets to give vibrato which can be delayed automatically or by using the keyboard strip. Oscillators 1 and 2 can be modulated by a squarewave, as well as a trianglewave, for obtaining rapid pitch jumps. Finally wah-wah and tremolo effects can be obtained by switching the LFO to the VCF and VCA. LFO speed can be over 100 cycles per second for buzzing ring modulator kind of

effects.

Summary

The instrument is well made internally, although the smoothness of the sliders varied on the panel. Despite the rather heavy weight of the cabinet, the stand was safe and rigid in use.

The sound of the Vocal Synth is, in a word, powerful and will provide a basic orchestral and choral backing for a group, with a good solo synth included as well. The mono synth alone is quite special because of its ability to make three-note chords in parallel from one note. The instrument can be played entirely on its own for the solo keyboard player, although I like to use a pedal board as well. It would be useful if the lower keyboard could be switched to give the instrument its full five-octave note range. The stereo facility is useful, not just for panning but for sending say, to the left for echo treatment and right for straight.

When this instrument first came out at Frankfurt last year, there were a lot of inquisitive onlookers including Rick Wakeman, Pink Floyd and Manfred Mann. Some terrific blends of sound can be obtained but settings of controls have to be learnt first. Sound output naturally has some hiss with all those ICs but the high signal output level overcomes this. I've heard a few instruments with better pianos or better strings but when considered as one machine there is a lot going for this one!

Mike Beecher

Mike Beecher is a musician and keyboard consultant. He composes and performs his own electronic music using multi-keyboards, in a style based on his wide experience of progressive jazz and classical music.

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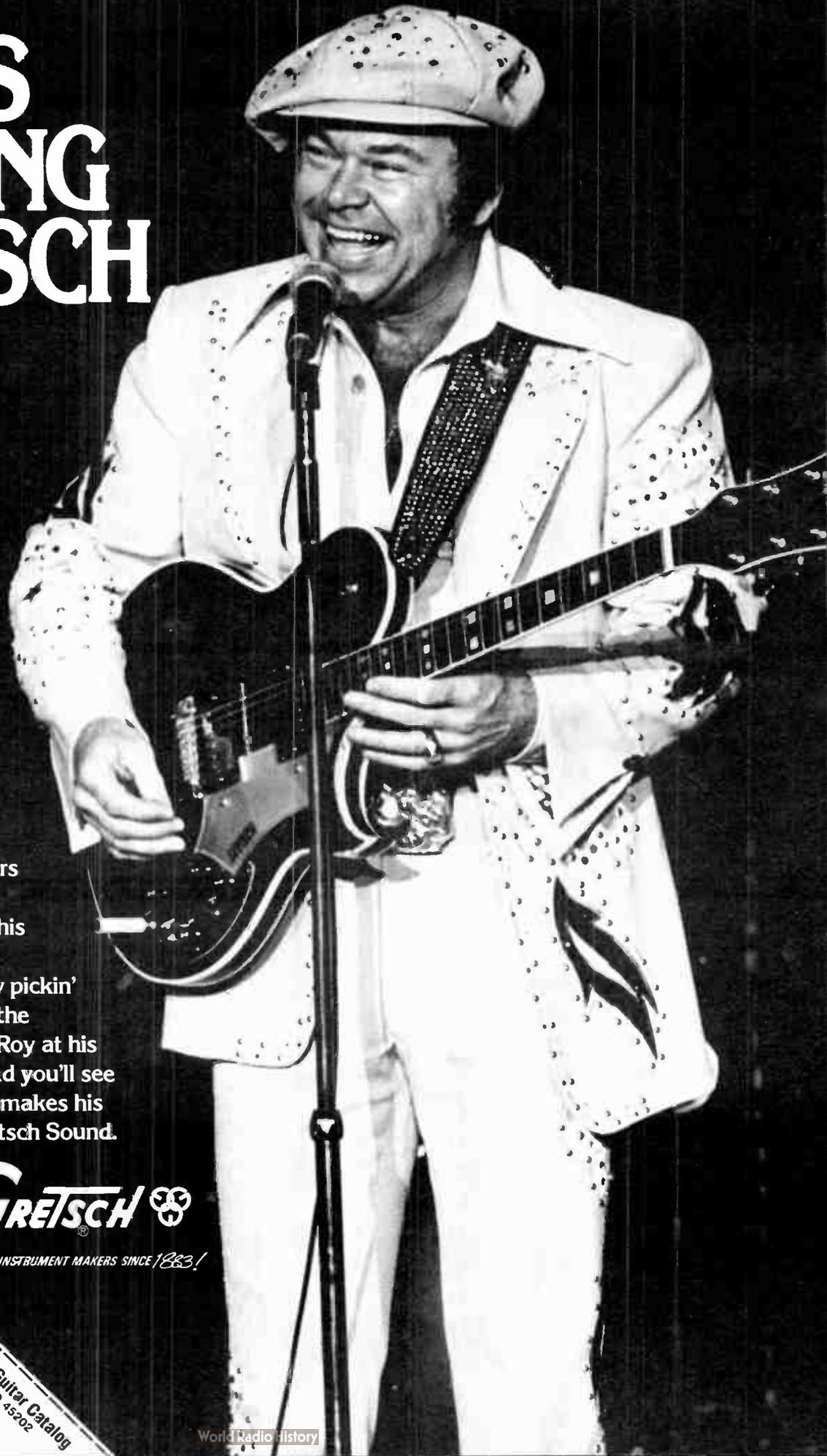
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Soundcheck

WESTBURY 1005M \$430

"Due to severe deadline pressures and complicated international logistics, several inaccuracies cropped up in Dave Mann's review of the Westbury Model 1005M amplifier which ran in our May issue. The amplifier in question, a compact bass amplifier, was unintentionally tested as a guitar amplifier and the fact that this unit was intended for the moderately-priced market was not brought out. Specifications as listed were incorrect. Because of this, we are running the reviews again with all of the factual errors corrected so that you may make a more objective judgement about this amplifier."

The Westbury series of Amps were designed without several non-essential frills and is intended to be a good value for this price range.

Westbury is a name that is fairly new to me so I was rather intrigued when the opportunity arose to test a couple of their amps. There are two models on test — both combination amp/speaker units and both with 100 watts output.

The first unit is the Westbury model 1005M single channel 1x12 combo. (This is the smaller brother of the 1000 2x12 combo.) Considering that this combo delivers in the region of 100 watts it is very compact, in fact it is approximately 18 inches square and 10 inches deep.

Being so small and with such a hefty output, the cabinet has to be rather carefully constructed. The single 12 inch speaker is front mounted into a completely sealed box constructed from 3/4-inch chipboard. The amplifier chassis sits on a shelf in the top section of the box which is open both front and rear — to the front for the controls and to the back for the heat sink. The cabinet itself is finished off with a tough

coarse grained black vinyl and corners are protected.

A very sturdy carrying handle is provided in the top panel center — very necessary as you will appreciate, the combo itself is no lightweight. The speaker is protected by a rather Fenderish fret (very neat in silver and black) which is stretched across a sub-framework held in place with Velcro strips. Finally, four nylon non-slip feet are provided instead of the usual castors.

Next, on to the amplifier chassis. This is quite a compact unit measuring only three inches high — but more than enough to allow good access to the single row of front panel controls. This front panel is also tilted very slightly and as the top of the cabinet is cut away sharply, the access to and visibility of the controls is exceptional while still giving very good protection for these same controls. The back panel of this chassis is pretty well covered with two large ribbed heat sinks. At first sight these may appear to be a little overgenerous. However, the heat sinking is recessed well into the back compartment of the cabinet and so is probably necessary.

"The 1005M's output stage is protected both by internal and external fusing. During 'steady-state short' of speaker terminals, the external fuse will disable the amp. If the user should 'over-fuse' the unit, the internal fuse will disable the amplifier."

The chassis front panel is rather neat and blends in tastefully with the rest of the amp, being finished in black with grey boxes outlined in white splitting up control functions. The knobs are in black and white markings.

From the left there are two inputs one high and one low sensitivity. Then a batch of five rotary controls. These are (again from the left) volume, bass, middle, treble, presence.

The volume control has a pull-out switch for extra high frequency boost. Finally, far right is a mains on/off rocker/neon switch. A captive mains lead is also provided from the back panel.

The 1005M is quite versatile as a compact bass amplifier offering an ample variety of tonal variations at an extremely reasonable price. Two inputs are provided and the controls are effectively laid out and to the point. Starting from left to right, the volume control can be pulled out for extra highs, giving the bass tones more definition and crispness, if that is to your taste. The bass, middle and treble controls all work well in terms of contouring the particular bass sound — I found the middle control to have the most pleasing effect, but that's personal taste. The presence control all the way over to the right, is also a helpful tool for further "defining" the bass sound you get. Overall, the sound of the 1005M is warm and full with the flexibility to get that one crystalline, trebly sound favored by many young players nowadays.

There were many favorable comments about the basic sound of the amp especially as it kept up in output level very well with several other 100 and 150 watt units. The 12 inch speaker seems to be fairly efficient and in a well-balanced infinite baffle enclosure gives a very nice bottom and — this probably accounts for the warm sound the amp achieves. Unfortunately, the one major problem is the weight of the unit. A lot of thick heavy chipboard and heavy speaker makes the amp just a little uncomfortably heavy for its size.

A complete circuit diagram was provided with the unit, and I must admit to being very surprised at the simplicity of the electronics. Both pre-amp and power amp stages seem to use the bare minimum of

devices and components — however, it does work very well so it would appear some thought has gone into it.

According to the manufacturer, the output devices used in their 100-watt series are rated at 15 amps "continuous current" and this rating is applied to their vceo rating which translates to even more of a conservative "overload" ability. This method was chosen to ensure there would be no noticeable "clicks", thumps or compressing effects usually noted in amps using standard "short-circuit proofing" methods (diode limiting, current sensing, switching type etc).

I think generally all who used this amp appreciated its looks and liked the easy accessibility of controls (incidentally also easy to read) even though it did not provide extras such as reverb or sustain. However, one thing that was remarked on was that it appeared to be very well put together and built to last.

J.-C. Costa

Power Output

102 Watts RMS at 2 per cent THD

Power consumption:
106 watts.

Tone Controls

Bass 40Hz range — 28dB
Mid 900Hz range — 21.8dB
Treble 10kHz range —
23.2dB
Presence 3kHz range —
18dB
Pull HI switch 10kHz —
18.3dB

Input Sensitivity

Input sensitivity at 2kHz:
Input 1 (4mV) Input 2
(8mV)
Input Impedance: High
(1000 ohms to 1 meg ohm)

WESTBURY 1000 \$575

This new amp from Westbury is the stable mate of the 1005M combo reviewed in this magazine. It is very similar in appearance to the 1005M, being covered in black coarse-grained leathercloth and finished off with chrome corner caps with a rather nice control panel color scheme of grey, white and black. This combo differs from the 1005M in that it has 2 x 12" speakers instead of one heavy duty one, and a rather useful two-channel pre-amp, which I will explain more about later.

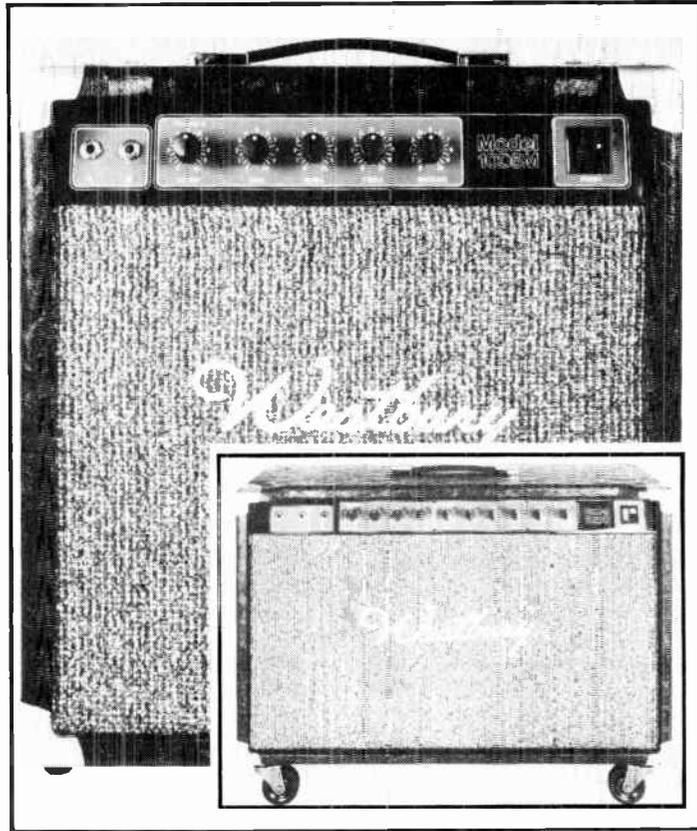
The cabinet is constructed from 3/4 inch chipboard throughout and is of the open-back type of design. The chassis holding all the electronics is mounted inside the top of the cabinet with the front panel and controls poking through the front. A Hammond-type reverb spring is mounted inside the bottom of the unit and the two 12-inch speakers are fixed in from the rear of the cabinet. As with the smaller 1005M, the speakers are protected by a rather smart speaker fret (very similar to Fender-type fret) stretched across a framework held in place by Velcro strips.

The combo is not especially large at 19" high, 28" wide and 10" deep, but is not that light, being constructed of chipboard. It is not surprising therefore to find a hefty carrying handle mounted on the top with a set of four heavy duty castors for moving the thing around.

The electronics section of this amplifier is quite interesting as it incorporates footswitch operation of channel selection between the two input channels.

Three inputs are provided, channel one 1/P, channel two 1/P, and a special mix input where the channel selection footswitch is used. Channel 1 has pre-amp volume and output volume (labelled as pre and post volume) in order to allow controlled distortion as with

The Westbury 1005M and (inset) the 1000



other master volume amps, with simple equalization comprising straight bass and treble controls. The pre-volume also has a pull out hi-boost switch.

Channel two is designed as a "clean" channel and as such only has one volume control. However, in addition to bass and treble controls, a middle control is also provided. Finally, master volume and master reverb controls are provided, with a neon mains on-off rocker switch.

A two-way footswitch is provided for switching reverb on and off and also for changing channels.

A guitar plugged into the mix input is fed straight through to both channel one and channel two. Plugging the footswitch into the back panel allows either channel one or channel two to be fed through to the power amp, depending on the setting of the footswitch. This allows, for in-

stance, a distorted sound to be set up on channel one and a clean sound on channel two with changeover between one and two effected by operating the footswitch.

In practice this is a very useful facility on stage, provided that a little time is spent mastering the various level controls in order to balance up channels.

A cursory listening check using a '59 Les Paul reveals that the Westbury 1000 is a versatile amp with a warm mid-range overall sound and a certain amount of clarity at all levels and settings. The implicit EQ set-up of channel one allows the player to get a smooth even sustain with rich overtones. My only minor complaint is that it's hard to get a lot of "break-up" distortion, even with the prevolume at 10, but that is a question of personal taste. Suffice to say that the Westbury distorts

cleanly, an option which is becoming more and more popular.

Channel two, optimal for Fender-style guitars, gives you that crisp, snappy sound that is an obvious prerequisite for country and certain new wave players, the three tone controls on this channel help expand on that basic sound without cluttering it up. The reverb unit is solid and efficient, if a little "crashy" at more forceful volume levels.

**Dave Mann and
J.-C. Costa**

Dave Mann gained an honors degree in Electronic Engineering at Southampton University in 1972. Since then he has been working in Television and Sound Studios with more recent involvement in the design of guitar amplifiers. He is also a member of a regular playing band.

Basscheck

RICKENBACKER 4001 \$750

The emergence of the Rickenbacker range of electric guitars in the early Sixties, through the popularity of the bands using them, (such as The Beatles, The Byrds and The Who) provided the first real competition to the dominance of Fender and Gibson since the waning influence of Gretsch and Guild. The bass, especially, seemed to offer the first real alternative in terms of sound and appearance to the established leaders, especially the almost standard Fender Precision.

From its inception as a new instrument the bass was still only around 10 years old, and a light hangover still existed from its initial concept of trying to duplicate the sound of an acoustic bass from a much smaller fretted electric instrument. The powerful middle and treble obtainable from the pickups and circuitry of a Rickenbacker allowed innovative and progressive bass players such as John Entwistle to be more audibly conspicuous than ever before. Later, he got together with guitar string manufacturer James Howe to produce the Rotosound roundwound string, one of the biggest single leaps forward in the progress of the bass guitar as an accepted leading voice giving added clarity and cutting projection to any make of bass guitar. But before this, the Rickenbacker bass, along with the more "Duane Eddy" sounding "Dan Electro Longhorn bass" stood out as the main alternative to the booming "Wardrobe" sound most bassists opted for. That grinding howl is as distinctive today as it was then, an outstanding plus in today's rapidly expanding technology. Thanks largely to Chris Squire the Rick has, I feel, become the standard alternative to the Fender Precision or Jazz bass, in the middle price range of the market. They were the first, I



Circle 886

believe, to offer a stereo, split pickup bass, and when this way through two separate amplifier sources, is at its most audibly distinctive.

As I've stressed many times before, personal taste, and opinion, is extremely wide ranging on the subject of bass guitar sound and appearance, and I must admit to a purely personal, lukewarm attraction to the instrument, on both counts from my first encounter to the present day. At the same time, I afford it a more than healthy detached respect, in that many top bassists consider it ideal.

An in-depth review would be pointless, as I'm sure all bassists, even the youngest novices, will know the established instrument pretty well, but perhaps a run down of its plus or minus points will be of some use.

This 33½" new example seems shorter and better balanced than the earliest models, and the slim, almost parallel neck is easily playable everywhere except at the lowest 1st position. Here, at the back of the neck immediately under the first fret position, and annoying lump,

or heel, of the head joint gets in the way of the thumb of the left hand. This feature, as well as the overall black polyester (?) covering of the head and back of the neck, as well as the body, considerably cheapens the look as well as the feel of the instrument. It gives me the impression of a cheap copy, of this pedigree guitar. The white plastic scratchplate and head nameplate, heighten this cheap effect, which is a shame, because the light sunburst finish on earlier models

seemed to give the instrument much more class.

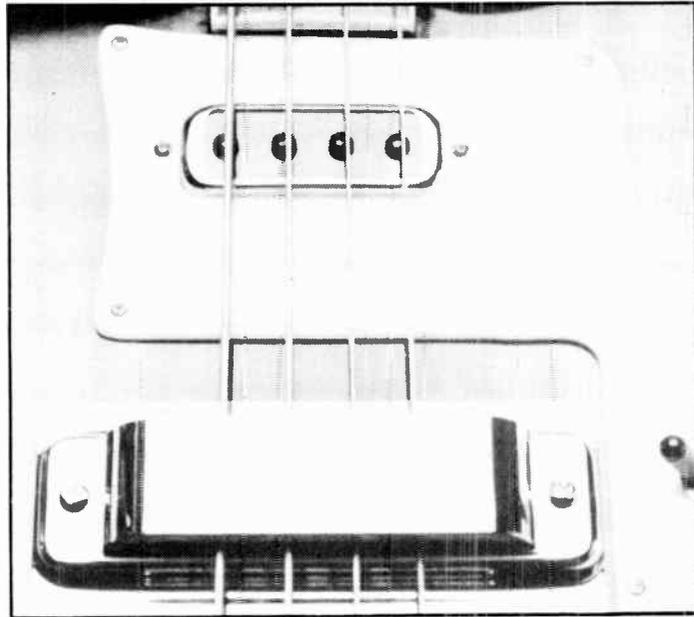
Triangular mother of pearl fret inlays and predominantly chromed hardware, visually indicate the real quality offered, but in the light of the advancing standards of the better copy makes I feel Rickenbacker, and some of the other original leading manufacturers for that matter, should concentrate a little more, on staying ahead of the pretenders in both the appearance and finish of their products.

All the features of the one-piece bridge and tailpiece arrangement are functionally acceptable apart from the string dampening mechanism (on this example at any rate). Two downward, chrome head, finger adjustable screws raise or lower a piece of black rubber located under the strings, just in front of the bridge. The only trouble was that I couldn't physically adjust the screw nearest the bottom E sufficiently to raise the rubber enough, to make contact with the bottom two strings.

Another slightly off putting feature is the plastic, chrome covered back pickup guard which is by no means easy to detach if required.

Initially, I thought it was a development of the





"Horseshoe" over the top of the strings pickup of earlier Rick basses, as it seemed to be height adjustable. Closer scrutiny reveals that it is simply a guard, directly connected, on spring mountings to the base of the back pickup, and the height adjustment is obviously intended for the under string pickup, and in turn raises or lowers the guard by the same amount. To detach it, you have to completely remove the pickup assembly, an unnecessarily fiddly job in my opinion. Its location in relation to the right hand playing position causes more of an obstacle than an aid to a great many bassists I feel. Especially pick players, who need to dampen as well as pluck strings with the right hand. The failure of the rubber dampening arrangement on this particular bass tends to highlight the relevance of my last comment even more.

The pickups, and conventional passive tone control circuitry with one volume, one tone pot for each pickup, and three toggle switches, seem as effective as ever, and two output jack sockets marked "Ricko-sound" or "stereo", and

"standard", effectively provide those alternatives.

The 20 fret neck has an internal truss rod, with adjustment behind the nameplate, on the head, and the fingerboard is coated with rather a thick covering of clear varnish, another cheapening trait I feel.

One of the best features of the bizarre body shape is the extreme bottom cutaway, allowing unimpeded access to the top 20th fret. Rear body, rounded edge contouring made the instrument comfortable to hold and play, but overall I must admit to a slightly disappointed feeling about this particular bass. The first Rickenbacker stereo bass I encountered was brought over to Britain by Tommy Roe's backing group "The Roemen", later to become "The Sir Douglas Quintet" in 1965. I was a member of the opening band on the tour, and their bass player played a beautiful red sunburst model, with ornate black-white piping designs surrounding the body, and what seemed to be an extremely long but playable neck. It was the first time I'd heard that honky, middley growl at first hand, and he used it to great

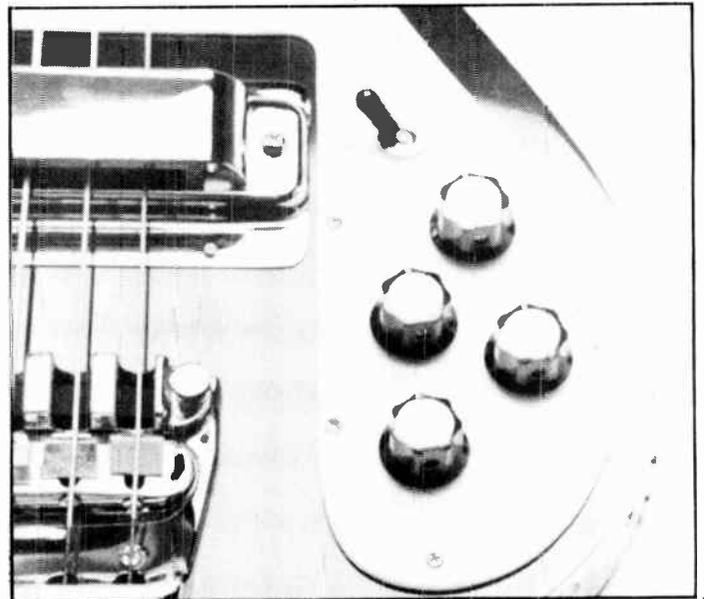
effect on their opening instrumental version of the old surfing classic "Wipeout". The two bar, semi quaver gliss that comes at the end of each main melodic statement really stood out and even though I knew then that it wasn't my personal ideal choice that bass certainly seemed something special.

Today, the modern Rick bass still retains a certain distinctive magic, the most recent example of its individuality being heard on The Jam's "Going Underground". That hollow, haunting, biting but "ballys" sound quality is there

still. But as an overall product I think it has lost much of its charisma — for me at any rate. Like Mr Leo Fender, Mr Adolf Rickenbacker, who died 1976, would possibly not be completely satisfied with the most recent examples from the production line.

For all that, a Rick is still a Rick, and despite the aforementioned personal criticisms, is probably as valid as ever in the rapidly enlarging spectrum of bass guitar choice.

Jim Rodford





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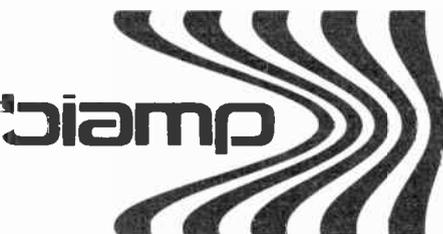
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Master Outputs Left and Right	YES balanced and unbalanced	NONE
Echo Returns	4 Each to include pan, assign to subs, or direct to left and right main.	NONE must use an input channel
Solo on Monitor and Echo busses	YES	NO
Input channel overload lights	YES 2 LED's - 20 and + 6	NO
Channel Patching	YES	NO
Mix Busses	3 - one pre. and post, one switchable pre or post	2 - both prefader post EQ.
Line Input	YES	NO
Signal to Noise Ratio	Better than 80dB	61dB
Total Harmonic Distortion (Line Input)	Below .02% 20 - 20Khz	Below .25% 20 - 20Khz
Frequency Response	± 1cB 12 Hz to 30 KHz	± 4dB 20 Hz to 20 KHz

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Headphone cue or solo	YES	YES
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+ 48 volt phantom power	YES	YES
Switchable Metering	YES	YES
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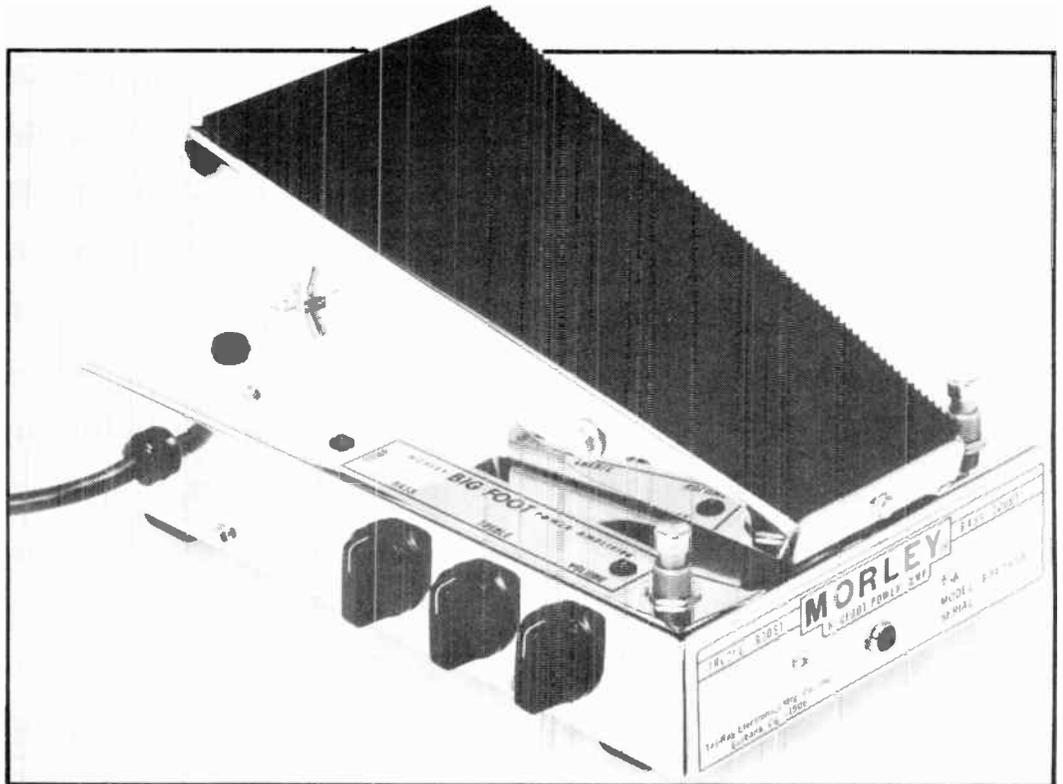
MORLEY Bigfoot Power Amplifier \$299.95

Several years ago, when I was writing for another publication named *Gig* magazine, I dubbed the Morley series of pedals the "Rolls Royce" of volume/effects pedals because of their excellent standards in craftsmanship, the flexibility built into each unit and the sheer feeling of mass and quality that permeates each one. Judging from some of their recent products, most notably the Bigfoot power amplifier pedal, the phrase still applies.

Like all Morley pedals, The Bigfoot is a solid, substantial unit with the controls laid out in a streamlined, logical fashion. But it's the operative concept here that's really interesting. The Bigfoot is actually a power amp *within* a pedal configuration — it can be used as a single amplifier directly into a speaker (4-16 ohm), as a master volume control function for remote amplifiers, or simply as an excellent volume pedal in the traditional sense.

The controls are fairly direct and easy to suss out. Footswitches on either side of the "heel" of the pedal control the treble and bass "boost" functions. A "silent circuit" AC on/off switch is located at the "toe" of the pedal while three control knobs located on the left side of the unit further control the bass, treble and volume functions. Other extra features include a photoelectric volume pedal control (much *smoother* than the standard mechanical travel, this should start a new trend!), short circuit protection and an overload indicator lamp — these last two features can provide valuable added protection during a live performance situation.

With 25 watts RMS sinewave continuous (or 50 watts square wave), the Bigfoot has more than enough "crank" power for most play-



ing situations. Testing this unit through an Electro-Voice 8 ohm speaker (the Morley folks recommend Electro-Voice or Eminence speakers, preferably in the 4-12 ohm range, but you can use most any speaker depending on the particular tonal coloration you want to get), I found the distortion modes to ultra-flexible and somehow different sounding than standard distortion devices or amplifier master volume functions. The tonal coloration seemed darkened and much more all-encompassing or "total" (that's the only way to describe it) than *any* fuzz box I've ever heard. The photoelectric function is smooth and quiet and the on/off function is virtually noise-free.

As I said before, the general distortion parameters range from a tube type sound through soft distortion and on into hard fuzz — although there's nothing fuzzy about the sound. With a clean or clear

sound, the volume pedal can give you that distinctive "swell" sound that makes Larry Carlton so recognizable on record, as well as establishing the overall volume levels throughout the set or the session. I didn't get a chance to use the Bigfoot unit in a recording studio situation, but a good friend who is a leading NYC session player told me that the recording response was "smooth, even and quiet."

And all of this weighs in at eight pounds! A meaningful factor considering the weight of most power amplifiers on the market today. Although I was somewhat hard-pressed (due largely to time considerations) to examine every single aspect of this unit, the basic idea being the Bigfoot is innovative and just may open up a whole new realm of possibilities for the pedal unit as a basic triggering device.

J-C Costa

Sound Lasers

Sound Lasers are a breakthrough in acoustic transducer technology, as far advanced over conventional loudspeaker systems as lasers are over lightbulbs. The secret is the resonant air column at the heart of each Sound Lasers design. It controls every aspect of the sound, as no horn or cone ever could.

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Are Sound Lasers designed through mathematical analysis, or laboratory tests, or computer simulations? All of these, of course, but none of them has the last word on a new Sound Lasers design. We make the final decision by listening... and so should you!

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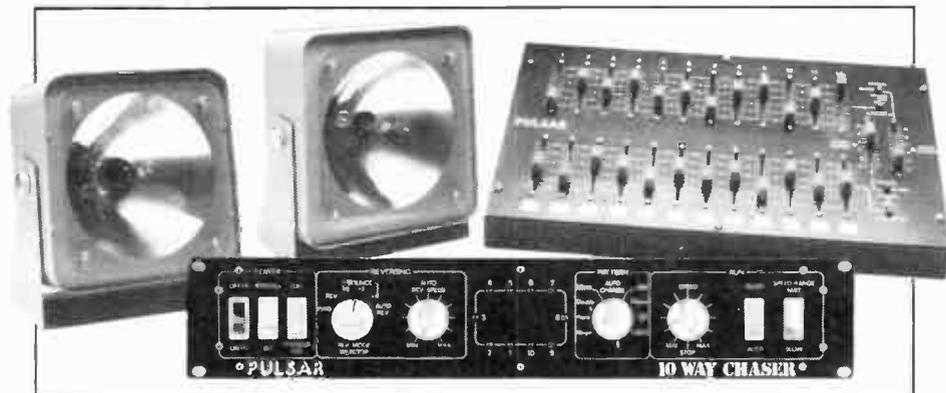
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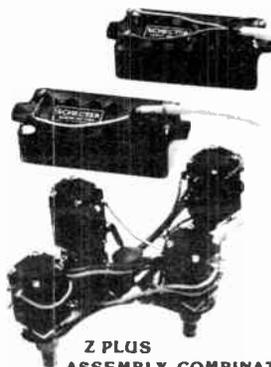
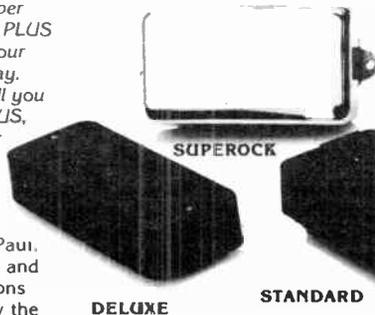
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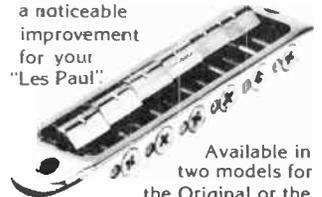
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Drumcheck

ROGERS Garibaldi X-P8 \$2044

The history of the Rogers drum company is not particularly complicated. They are now owned by CBS and the drums are built near Los Angeles. Up until the late Sixties they were privately owned and located first in Cleveland and afterwards in Dayton, Ohio.

As soon as I saw the Garibaldi set from Rogers I was anxious to try it for myself — mainly for the new XP8 shells but also because it's sizes are exactly the ones which I generally use; of course, the actual physical positioning of the drums within the set is completely different. Furthermore as you can see from the accompanying picture David Garibaldi has a completely unique way of positioning (and mounting) his four cymbals.

This set allows him to reach all the sounds of his kit without excessive movement. To accomplish this tom tom-wise, he has a double row all mounted on one tripod-based floor-stand with a Memriloc holder, which has the usual triple facility to take the regular holder arms and one of Rogers' new mini dual adaptors. Which, incidentally are designed to take eight and 10-inch diameter mounted drums, but which *can* be persuaded to accommodate a 10 and 12. More of this handy device in the accessories section.

The floor-mounted drums are easy to play and very convenient to hit — I found rolling around the four of them from smallest to the largest a bit difficult, but I suppose given time it would come together easily. For normal tom playing though, with fills from the snare drum it was fine. (The only real problems I could see was that the more acute mounting angle of the smallest toms resulted in their heads becoming pitted). The four drums seemed agreeably stable on their stand and didn't



"bounce" unduly. The set-up picture in the Rogers' catalog seems to cheat a little because to play with the toms and ride cymbal in that exact position would necessitate very long arms and legs!

The main department from the "good old" Rogers shells is their lack of glue rings and any Zolotone internal finish. Traditionally, drums could be made with much tinier shells if they had the strengthening hoops (glue rings) "screamed" into each end. This helped to keep them round and, of course, strengthens them. (Rogers shells were made with five-ply cross-laminated maple shells and five-ply maple glue rings).

The new shells are formed from eight plies of maple, also cross-laminated, i.e. each individual piece of wood with its grain running at right angles to

its neighbor. Because there's an even number of plies it's necessary to make the centre pair run the same way. This resulted in the inside and outside finish layers matching with their grains running *around* the shells. The bearing edges are chamfered quite sharply to give a more precise head setting, which is three plies in from the outside edge. The lamination joints are staggered around the circumference of the shell to avoid any weak points and these are at right angles to the shell edge (not like most of the newer manufacturers) at an angle to it. The interiors of the new shells are laquered very lightly — just enough to seal the wood.

The sound of the XP8 shells seems to me to be a little deeper than the new ones, but

I was only able to do my A-B test on a Power-Tone fitted set with Remo rough-coated Ambassador heads. The XP8 sets all have CS-type heads from Remo with a white spot with a black line pin-stripe around it. The sympathetic bottom head on all the wooden drums is a see-through Ambassador. Rogers claim the new shells give more volume which could be the case, because obviously, the less protrusions in a shell, the clearer the sound; so by taking away the glue rings, they might have added a little extra power.

Tom toms

Garibaldi's outfit comes with a five double-headed toms: 8×8, 8×10, 8×12, 9×13, and 16×16 floor standing. The eight-inch drum has four "beaver-tail" nut boxes per

head, the ten has six — as do the other mounted drums — and the floor tom has 16 in total. All drums have Rogers square-headed tension screws and triple-flange counterhoops. None of the toms are fitted with internal dampers anymore, and in my catalog don't have super X external dampers on them. These toms all have Rogers' clear sound which I have always been partial to — they do have strength and penetration but also a great deal of warmth.

Bass drum

The Garibaldi set has a 14 x 22 inch bass drum with an XP8 shell and maple counterhoops sprayed black and inlaid with chromed, reed-ed plastic. The 16 has 10 beaver-tail nut boxes per hand, pressed steel claws and timpani type cold hand built 'T' handled tension rods which don't appear to have changed over the years in which I have always lived. I immediately tried the drum single headed and found it produced a good 'thump' within just the 2" wire felt strip damper provided. Of course, packed with a pillow or a blanket the drum sounded ideal for recording or miked-up stage work. With both heads on though, its got a nice round tone providing you fit one of the strip dampers to the front head too. The drum has a tube extending on the way down its diameter in the centre of the shell. This takes the cymbal arm down tube of the Garibaldi set, and is very convenient to push padding behind to overdampen the drum for heavy-duty playing. I've mentioned this before the Rogers company maintain that their felt strip damper should be fitted not as normal across dead centre of the drum but to one side, about four inches from the hoop. This way the buzz often associated with central dampers is eliminated — try it and see if it works for you.

Recently, I've been using Rogers cast hoop spacers on single-headed bass drum. These allows the player to replace his hoop and hardware and so and several pounds less to the drum to give even more weight to its sound. (I find that even a head with a very large hole in the front tends to effect the sound adversely) so, the bass drum, like the tom toms has a very clear sound.

As far as I can gather from the XP8 catalog the bass drums are only available in diameters of 20, 22 and 24. This is three less than were originally available. I've always been particularly partial to the 18-inch Rogers bass drum.

Snare Drum

Like every bit in the catalog (except for Headliner Four) this set has a Dynasonic snare drum. All the sets pictured have five inch deep shells but a 6½ shell is available. This Dynasonic has a metal shell with 10 double-ended cast out-boxes and for those of you unfamiliar with it in detail its history. It was introduced in 1962 and uses a specially designed and unique cast aluminum frame built completely around its snare which keeps it taut at all times even when the snare is not in the "on" position (so not touching the head). The result of this innovation is, of course, an "un-choked" snare drum sound with clear definition and next to no distortion. The brass shell is strengthened with five thin beads in the center and two deep from distorting out of shape. It has Rogers triple-flange hoops and a substantial, internal-batter-head operating damper which has just had its control knob up-dated (it looks slightly larger with a dimpled top and is also to be found with a milled edge on the snare strainer). The strainer, is Rogers version of the adjustable sideways cam-locking unit favored by

several of the other manufacturers — but cast.

As I mentioned last time I reviewed Rogers, the Dynasonic doesn't have a snare bed indentation in its bottom flange to accommodate its snare frame. It's because of this that the drum does not convert quite so readily to ordinary cord attached type snares. Because in my experience drummers either like or hate the Dynasonic, lots of guys have fallen "out of love" with the floating snare frame and endeavored to make it into a "Super ten" changing the unit to the unsophisticated 20-strand snappy snares. These Rogers snares are not stretched but manufactured to seven coils per inch and not soldered but glued to their butt plates. (The heat used in soldering is said to weaken the coil and make them less resistant.) The idea behind the Dynasonic is that nothing other than the snare wires touch the bottom head — not the cords or the snare butt plates which tend to deaden the response. Three years ago Rogers changed the bottom rim a little to enable complete uninterrupted key turns at the four snare-guarc positions.

I personally like the Dynasonic and have had one for quite some time I know though that it's not everybody's "cup of tea". It's a crisp powerful drum but a little more brittle than a Ludwig.

This outfit as usual features Memriloc which Rogers have been using for the past five years or so. It's a system for adjusting height, angle and position on the drum set. Instead of the Swivo-matic fixtures we have much more substantial cast aluminum ones.

Accessories

The hi hat is an updated version of Rogers' Supreme model. This one has a two-piece cast aluminum foot plate

and saddle with two replaceable joining straps to its adjustable spring, nylon-sleeved center-pull mechanism. This model naturally enough has Memriloc height adjustment, and in this case, the bottom cymbal support is made 1" diameter, chrome satin-finished steel. (This satin chrome finish is applied to all tubes in the areas where locking and adjustment are needed and gives added holding power.) This top tube had an extra larger and agreeable locking angle and on adjustable nylon bottom cymbal-seating unit which contributes greatly to the overall stability of the hi-hat.

The Supreme hi-hat stand at its normal maximum wouldn't extend high enough for me, for comfortable play (with a multi tom tom set-up). But on leafing through an old catalogue I notice Rogers offer a 7" extension rod which would be the answer to that particular problem. The pedal's action is as smooth as silk and effortless.

The Supreme bass drum pedal is, in concept, the same as the old Swivomatic but like the hi hat is almost completely made from cast aluminum. It also has a two-piece footplate and a new more positive way of damping itself to the hoop. It's a cam-activated clamp which tightens with an "L"-shaped bar.

The beater is a double-sided egg-shaped affair futuristic and aerodynamic in shape, and made of synthetic material lighter than wood. A small piece of felt is stuck to the narrow end of the egg and the shaft is 5/16" in diameter and so less prone to bending and whipping than normal. The sound from the "black jack" beater is amazing it really does give pinpoint definition to the sound of any brass drum. I've been using now for a year or two (but with a thinner 1/8" shaft) which I was very surprised to break on a TV program

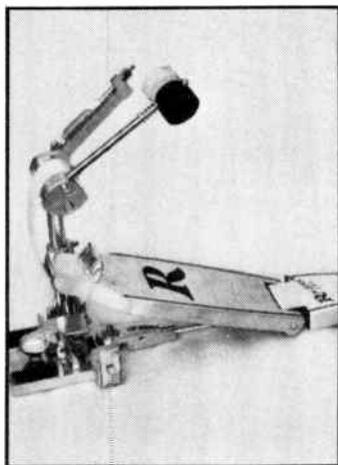
Drumcheck

recently.

The Rogers company have placed strengthening "blobs" around the pedals base where the beater axes height adjustment is. The Memriloc cymbal stand also doubles as the base of the floor standing triple (on double) tom tom steel. As I said earlier, the single tripod base has four drums mounted on it — the largest two are suspended via Rogers' normal bass drum mounted block which is lightly adjustable. The holder I'll reiterate is adjustable "L"-shaped arm which in Rogers case is more from 1" gauge tubular steel which is non-slip, satin-chromed. The fitting between tom tom and holder block is moveable on a vertical axis, like its German predecessors on a time toothed, spring-loaded axis, like its German predecessors on a time toothed, spring-loaded ratchet which is itself secured by a bass drum tensioner-type using bolt. The cast ratchet arm has grooves cast into it to facilitate a more safe and positive vertical tom tom position.

The standard cast tom holder has a facility to hold up three mounted drums because of its three ratchet arm receiving holes bored into it. These holes are ingeniously engraved around their circumference with numbers like a clock. This is to (quote) "Duplicate the exact horizontal axis setting each time." It's known as Memri-Dial.

To set the holder up for the four tom toms in the Garibaldi style we replace the top arm on the ratchet with a "Mini-Dual" tom holder. This is a cast unit designed to fit on the top pair of a cymbal holder which has two unadjustable "Y" arms sticking from it. Because it's working on a ratchet, the angle of the drums is moveable *but together*. The drums fit to the twin arms in the normal Memriloc way and as I said



before, work well. They are of course, quite adjustable in their positions on the arms although I presume most players would position them until they *almost* touched.

The Memriloc bass drum spurs are constructed from Rogers' normal one inch diameter tube which can be used with or without a rubber tip. These tubes have semi-circular diametric sections cut out of them at their end, which means the edges so, formed work like double spurs, which definitely stop the drum from creeping. The spurs do work well but I'm not knocked out by their appearance. Their Memriloc holder block which is fixed to the shell is exactly the one used for retaining all the other tubes on the set.

I saw the Rogers flat base snaredrum stand last time and commented on it then, but for new readers I'll run through it one more time. The stand is unlike anything they've done before. It's not an adjustable basket-type but instead has two fixed holding arms and one diametrically moveable one. The arms no longer have rubber tips but right angled aluminum brackets which locate into the recess of the triple flange hoop on the snare side. The are coated in non-

stick Teflon as are the two faces of the playing angle adjustment plates. For safety reasons the moveable retaining arm doesn't adjust too far, because it's possible to squash your drum out of tune if excessive adjusting force is used.

To accommodate different size drums Rogers have thoughtfully provided several alternative holes to locate the moveable right-angled brackets. The playing angle adjustment is adjustable on a splined ratchet tilter. The stand has a flatish tripod base but a more substantial one is available (although not as standard).

The cymbal stands on the set are unusual. To the extreme right is a double set-up which is mount on a double tom tom stand where two ratchet arms actually locate as for the double tom toms. These "L"-shaped arms have one ratchet immediately above the holder block and another about eight inches or so above that, to send the top horizontal tube out sideways. Each "L" arm has one of Rogers' accessory clamps fixed to it and this accepts the top tilter-section part of an ordinary cymbal stand. (Rogers designate this top part of cymbal tilter rod assembly). This then is our double cymbal set-up. The Garibaldi set also has a tom tom ratchet-type arm fitted to the center of the bass drum via a Memriloc block. This ratchet arm is set at right angles but can be, course, at every angle — to this is fixed another accessory clamp and the same sort of cymbal tilter-rod assembly. This is Rogers new style shell mount cymbal arm.

The other sort of cymbal stand is set in the left hand side and is one of Rogers boom arm stands. (I must say I don't see why it should be necessary but there it is so I'll describe it for you). It has the normal

tripod-type base with Memriloc at first, second and third stages. At the top of this normal cymbal stand is the ratchet which normally holds the tilter. However, with the boom stand the half of the ratchet sandwich actually rivetted to the top tube has a clamp which a bass drum tensioner-type thumbscrew. This tube locates our old friend, the cymbal tilter-rod assembly. This one, however, has a Memriloc-type pipe clip fixed to it which located in the other half (the main part) of the unit — which is fitted to a tube with a large cast counterweight shape like a bar of soap fixed directly to it. Anyway, the Rogers boom stand is stable enough without being over the top in weight in span.

Conclusion

The Garibaldi 1910 set I saw was plastic finished in Blue Mist 194 which is one of only a dozen *very professional*-looking finishes. All of them are highly acceptable and the wooden finishes like "Natural Maple" and "Californian Wine" are my favorites. I've said before and I don't mind saying again that the Memriloc system makes Rogers drum ideal to stand up to the rigors of heavy American touring. I've always found Rogers' drums stimulating to play and these latest XP8 drums are no exception.

In my last review of Rogers I mentioned that several new things were in the pipeline but found it very difficult to tell you about them without getting everybody at the factory mad at me. I mentioned different sizes and lengths etc. and, of course, I hinted at these eight-ply shells without the glue rings. Now all these things have come to pass and I suggest you do yourselves a favor and like David Garibaldi check Rogers out.

Bob Henrit

MORLEY



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Horn Flares

Having devoted the recent *Speakercheck* series to compression drive units, it is a logical progression to take a look at the various types of horn flares that are available, with which the compression drivers would normally be used.

This month we shall concern ourselves with the smaller type of horn intended for use with compression drive units with the standard 1.362" x 18tpi throat entry, and next month we shall be looking at the larger types of horn as used in concert stacks, etc.

The selection of the right horn for a given application is a very critical aspect of the design of any sound system. In fact, along with choosing the correct crossover frequency, it probably ranks as one of the main decisions that will either make or break the system. Even so, it is surprising to find how little reliable information on the performance characteristics of each horn is given in the manufacturers' literature. This is particularly so in the case of the polar response or dispersion characteristic, where it is not uncommon to find figures which are not qualified in terms of how many dB down, or at what frequency, they apply, and which would seem to have little in common with the measured performance of the horn under test. In short, they can be totally misleading.

Another problem would seem to be that manufacturers are generally reluctant to recommend a crossover frequency, preferring instead to quote the horn cut-off frequency. Unfortunately, this is sometimes taken as the crossover frequency in the absence of any other information, and as our results show, this could have disastrous consequences in terms of blown diaphragms due to the fact that the horn no longer loads

the drive unit below its cut-off frequency, and also in terms of system response: One manufacturer actually quotes a recommended crossover frequency that is below the horn cut-off anyway!

While the tests we have applied are by no means exhaustive, it is obvious that we have stumbled into an area where there is a need for tightening up on specifications and for providing the necessary information to the user, so that the product can be used to its best possible advantage.

All horns have shortcomings of some sort, and it is suggested that these should be made known in literature as an aid to system designers, rather than be covered up in obscure specifications. In fact, we have reviewed some very nice horns in this month's tests and there is no need for this ambiguity. I begin to wonder if some manufacturers have even measured the actual performance of their own products in certain instances, such as the differences between what little information is given and the actual performances measured.

After a great deal of consideration and conferring, it was decided to employ a common drive unit for all tests. The selection of the drive unit to be used was based on three main factors.

- (1) The unit needed to have the 1.362" x 18tpi screw thread entry, as this can be adapted by means of standard components to match practically any other throat entry arrangement. Under no circumstances should a reverse taper be employed, and this therefore ruled out the one-inch or two-inch flange mounting drivers, as these could not

reasonably be reduced to fit the smaller horns.

- (2) The unit needed to have a usefully wide frequency response — preferably with a certain amount of peakiness so that any tendency for a horn to "ring" would be exacerbated.
- (3) A unit with a clean impedance plot on which electrical resonances show up clearly, in order that horn cut-off frequencies can be accurately located and other resonances identified.

A careful inspection of the characteristics of the various compression drive units reviewed in the last issues revealed that the Vitavox GP-1 could have been tailor-made for our purpose, and Vitavox were also able to supply all the adaptors we would need to couple this to any of the horn flares submitted for review.

The tests we conducted are as set out below.

Frequency response

In order to obtain some idea of the way in which the horn responds, we have plotted the usual sine wave response curve at an input power of 1 watt to the GP-1 drive unit. Although the actual response measured is mainly that of the drive unit rather than of the horn, we can, by comparison with the known frequency response characteristics of the drive unit, identify any areas where the horn's response is at variance with that of the drive unit. On this occasion, we have not published the response curve because, on its own, it would be meaningless. Instead, we have interpreted the result in terms of whether or not it generally agrees with the drive unit characteristics, and if there is any deviation, we point out the details.

Sensitivity

Although the actual acoustic gain of the horn flare could be measured in quantifiable terms, the process is too involved and time-consuming to be used here. Instead, we have simply given the average level measured on the 1 watt sine wave plot used for frequency response purposes in the usual way. Although this again, has more to do with the characteristics of the drive unit than of the horn, it does show the difference between the various horns that we are interested in.

For example, if a level of 102dB is given for horn X, while horn Y comes up with 105dB, then we can immediately see that horn Y is 3dB more sensitive than horn X. The figure given must not be taken to imply that the level stated will apply with other drive units — it could very well be much better or much worse, depending upon the sensitivity of the particular drive unit used in your system. The figures are included for comparison purposes only and must be regarded as such.

Horn cut-off

This is the point in the frequency scale below which the horn ceases to offer an acoustic load to the diaphragm of the compressor drive unit. Under no circumstances must any appreciable level of signal be fed to the drive unit below this frequency or serious damage to the drive unit diaphragm will be certain. This does not mean that the unit can be crossed over at the cut-off frequency. As crossing over is a gradual process, there will still be considerably energy present for a whole octave and more below the crossover frequency.

As a rule of thumb, the minimum crossover point

should be at least double the horn cut-off frequency. This will not only avoid damage, but will also remove the harshness always present in a horn near its natural cut-off point. We have measured the cut-off frequency from the frequency response curve and looked for confirmation in the form of an electrical resonance on the impedance curve. If we are happy that the exact cut-off point has been established we categorically state its frequency. If there is doubt in the matter — for example, if a corresponding resonance cannot be found to support the suspected point — then we state that the matter is not clearly defined, and suggest a likely figure.

Polar response

This, of course, is the all-important radiation

characteristic, dispersion pattern, etc. Call it what you will, it remains one of the most important factors in deciding which horn will be used where, and over what part of the frequency spectrum. Because of its importance, we have measured the dispersion in both vertical and horizontal planes at four frequencies, each one octave apart, and it is these "polar plots" as they are called which we shall publish in respect of horn tests.

As it is mainly the forward propagation which is of interest, we have taken the front 180° section of each plot and printed these with the vertical plot above the horizontal plot in each case. The curves show contours of equal sound pressure level at each of the four frequencies. In addition to this, we have tabulated the included angles at each frequency where sound pressure level

has fallen by -6dB relative to its original level on the central forward axis of the horn.

Recommended crossover frequency

This information is included in the presentation as it is fundamental to the proper operation of a given horn and is all too often not included at all in the manufacturer's literature. The figure is derived from both sets of polar response curves, and also from the frequency response characteristic and horn cut-off point. Crossing over below the frequency recommended will result in infringement of any or all of the following criteria: (1) crossover will be too close to the horn cut off frequency, resulting in unloading of the drive unit diaphragm and subsequent damage; (2) crossover will be at a part

of the frequency response curve where the horn has deviated from the drive unit response due to ringing or resonance; (3) crossover will be at a part of the polar response characteristic where little or no control over horizontal and/or vertical dispersion is available. We have taken great care to ensure that all these factors are taken into account, and recommended a crossover frequency that will allow the performance capabilities of each horn to be used to best advantage.

The results of these tests are set out in the following pages, and having dealt with each sample in some detail, I do not intend to elaborate further. Readers will be able to decide for themselves which product will be best suited to their individual needs.

Ken Dibble

Grovespower TRF/570-NS

Overall dimensions: 570mm x 177mm x 300mm depth

Parameter	Manufacturer's Rating	Test Result
Frequency response	Not stated	Essentially as drive unit to 800Hz
Sensitivity	Not stated	102dB averaged between 800Hz and 5kHz
Cut-off frequency	600Hz	600Hz
Polar response	100°H x 50°V unqualified	96°H x 150°V @ 1kHz, 120°H x 84°V @ 2kHz, 85°H x 60°V @ 4kHz, 49°H x 46°H x 46°HV @ 8kHz, included angle at -6dB points.
Recommended c/o	Not stated	1.2kHz min. 12dB/oct. 2kHz if vertical control is important

This horn is the fore-runner of the many low-prices, molded and/or fibreglassed flat radial type horns now available on the market. It is molded in one piece from polyurethane foam and a machine turned, threaded steel ferrule is molded into the neck to accommodate any compression drive unit having the 1.362 x 18tpi standard throat coupling.

A similar horn, model TRF/570-1 is available for mounting to compression drive units employing the JBL 1" three-bolt entry, and a third type, model TRF/570-2, for the JBL 2" four-

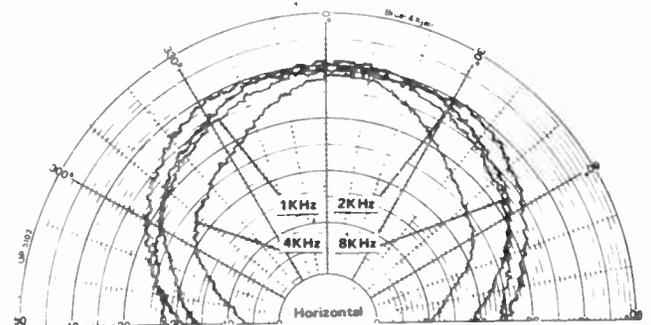
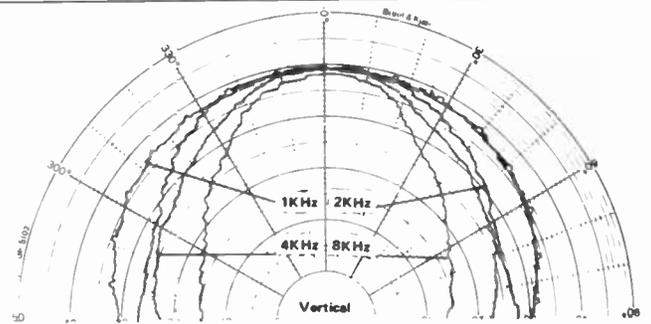
bolt entry. It would seem that all three types have very similar characteristics, and we have therefore reviewed the most popular version. All three are intended to be mounted by means of a front flange into a cut-out at the top of a loudspeaker enclosure or into a separate housing, although I would be loathe to mount one of the very large, heavy JBL units — such as the 2440 — on such a horn without additional rear support.

Acoustically, the polyurethane foam from which the horn is mold-

ed is substantially dead and this probably accounts for its freedom from any serious ringing characteristics — the main exception being a small peak in response at 3kHz which coincides with a secondary resonance. Otherwise, its frequency response plot virtually followed that of the drive unit down to 800Hz where, after some deviation, it fell away rapidly below the horn's cut-off frequency of 600Hz. The polar response characteristic, although

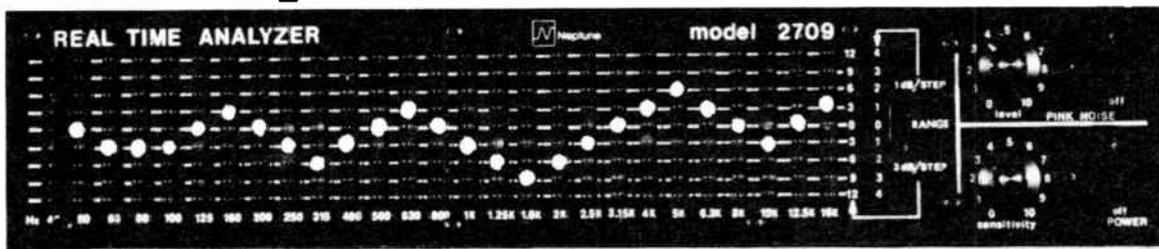
not unusual for this type of horn, exhibited a marked lack of control in the vertical plane at frequencies below about 2kHz, and in any event bears little or no relationship to the somewhat ambiguous figures given by the manufacturer in this respect. Even so, above both vertical and horizontal planes. Sensitivity is about average for a small horn.

The product is nicely presented in a matt black finish and is excellent value.

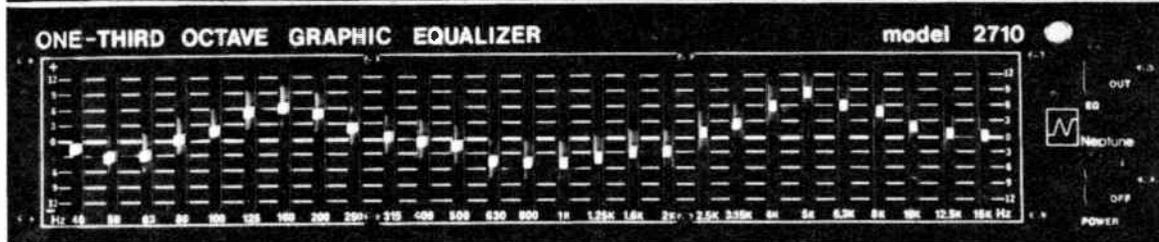


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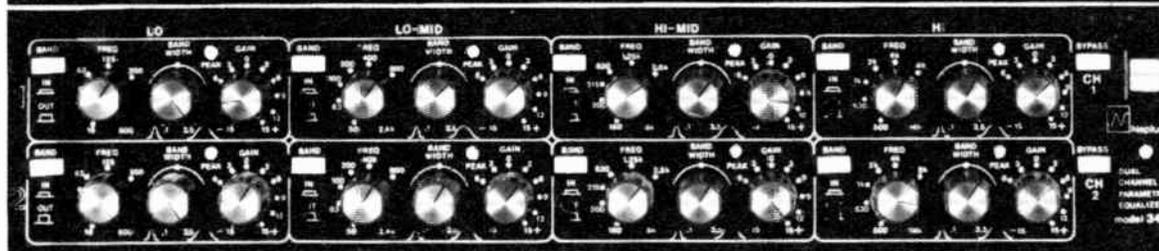
.... And some are more equal than others



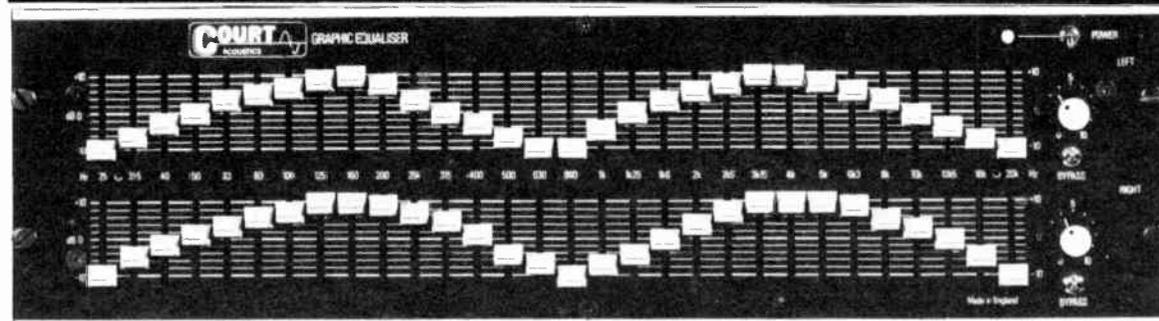
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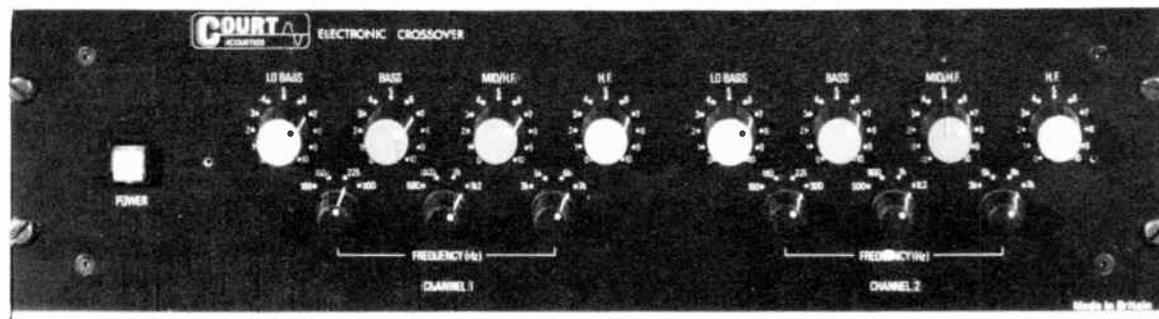
2710



342



GE60



EC2, 3, 4

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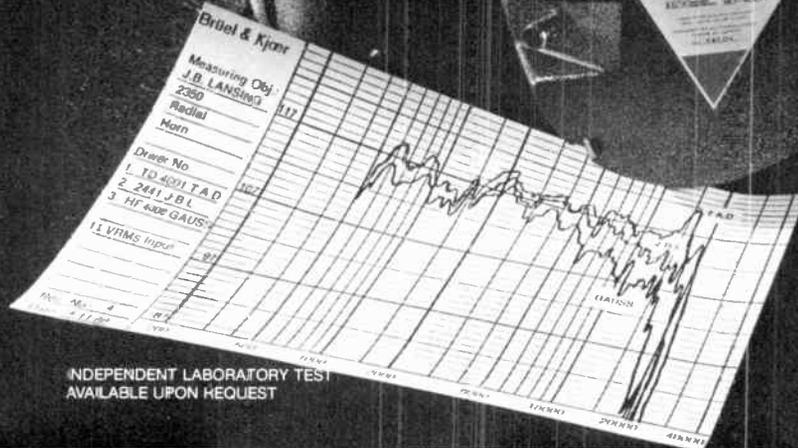
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Vitavox 550/311C

Overall dimensions 387mm x 130mm x 330mm depth

Parameter	Manufacturer's Rating	Test Result
Frequency response	Not stated	Essentially as drive unit to 800Hz
Sensitivity	Not stated	104dB averaged between 800Hz and 5kHz
Cut-off frequency	550Hz	580Hz
Polar response	20° per cell unqualified	88°H x 122°V@ 1kHz, 72°H x 120°V@ 2kHz, 66°H x 50°V @ 4kHz, 68°H x 34°V@ 8kHz, included angle at -6dB points

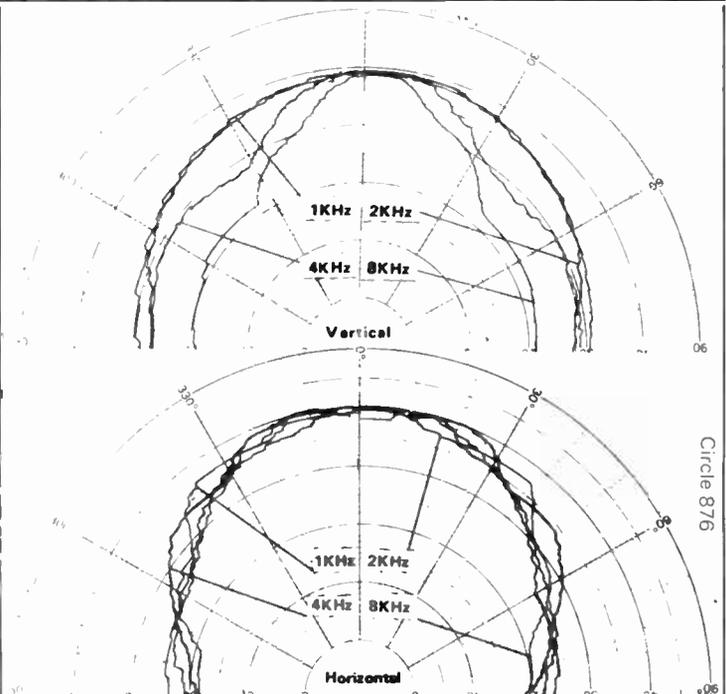
Recommended 1kHz@12dB/oct. c/o

Above 1kHz@ 12dB oct. 3.5kHz if vertical control is important.

This is a superbly made miniature version of a genuine multicell horn. It consists of three separate square-section exponential horn flares combined into a common shell.

The horn is certainly free of ringing and self resonance down to 2kHz and deviates only slightly below this — although the Grovopower TRF/570-NS is almost as good in this respect. As the results table shows, the horizontal control is exceptionally good, but so was the ASS420,

which has a similar set of figures. In the vertical plane however, there is just no comparison between the two, as the Vitavox three-cell maintains excellent control in this plane as well, while most other horns reviewed are all over the place at the all important mid band — the notable exception being the RCF4823, which, if anything offers better control in the respect. However, while the 4823 relies on coloration for its higher sensitivity figures, the three-cell does not, and is certainly



the most sensitive of all the horns tested. What then can we make of all this by way of a summary?

Put simply, the multicell seems to combine all the better points of all the horns included in this review and suffers few, if any, of the disadvantages associated with the more usual designs. Therefore, we must agree that it works. But these benefits obtained must be weighed

against the very high price — almost five times the average price of the other horns reviewed. By careful selection of crossover frequency, maybe the application of some acoustic dampening here and there, and by careful selection of the right horn for the job, an almost equal performance can be obtained using less sophisticated products.

Circle 876

SpeakerCheck

ASS is a British company without a formal US distributor, however, by circling the reader en-

quiry number on the reader enquiry form information about the product(s) will be mailed direct.

ASS TRF/570-S

Overall dimensions: 570mm x 177mm x 300mm depth

Parameter Manufacturer's Rating

Frequency response
Sensitivity

Not stated

Cut-off frequency

600Hz

Polar response

100°H x 50°V unqualified

Recommended c/o

Not stated

Test Result

Essentially as drive unit to 800Hz
102dB averaged between 800Hz and 5kHz
600Hz
106°H x 194°V @ 1kHz, 104°H x 81°V @ 2kHz, 88°H x 62°V @ 4kHz, 64°H x 42°V @ 8kHz
Above 1.5kHz @ -12dB/oct.

Except that it is layered up in Fiberglass instead of being molded in polyurethane foam, the ASS TRF/570-S is almost identical to the Grovopower horn model TRF/570-NS reviewed elsewhere in this issue, while the TRF/420-S is a scaled down replica. Both horns are nicely made, and have a substantial stiffening member down the top and bottom sections of the flare, which serves both to improve mechanical rigidity and to dampen resonances. A threaded steel sleeve is molded into the throat entry to reinforce the coupling with the drive unit, but this is not shouldered as in the Grovopower version. This results in the threaded boss of the drive unit coupling being screwed against a Fiberglass shoulder when the unit is tightened, therefore putting stress on the Fiberglass to metal bond. Whether this is a weak point or not remains to be seen, but the Grovopower method certainly seems to be a better solution from an engineering standpoint.

From a performance aspect,

both horns give a good account of themselves provided that the limitations are observed. Again, there is little vertical control below about 2kHz in the case of the 507, or below 3/4 kHz with the 420, but above these critical frequencies, the horns behave very well indeed, and exhibit good vertical and horizontal control. Both horns deviate slightly from the drive unit frequency response: the 570 has a dip in response of about 5dB at 1.2kHz, while the 420 has its dip at 1.6kHz. These peculiarities do not seem to be related to any resonant condition and must therefore go unexplained for the time being. In any event, best overall results in terms of frequency and polar response will be obtained with crossover points above these frequencies, and therefore these slight deviations will be of little real concern.

While the 420 would seem to have the market to itself, the 570 has a lot of competition — the Grovopower equivalent reviewed here costs less for a virtually identical product.

ASS TRF/420-S

Overall dimensions: 420mm x 127mm x 200mm depth

Parameter Manufacturer's Rating

Frequency response
Sensitivity

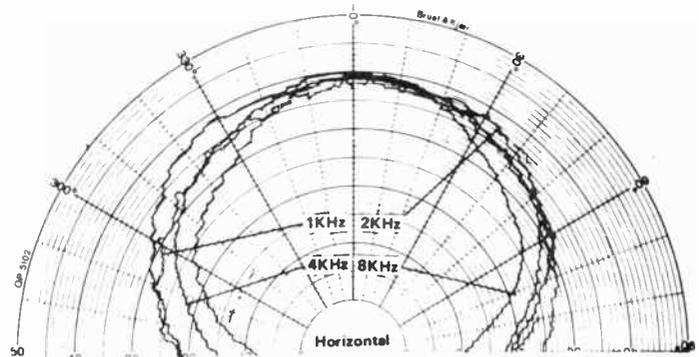
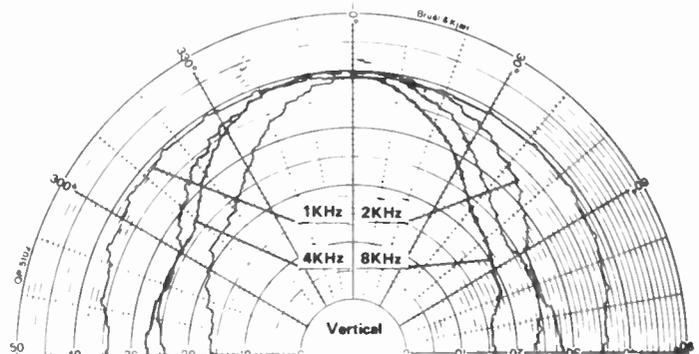
Cut-off frequency

84° H @ 1kHz
x160°V @ 2kHz
88°H x 234°V
@ 4 kHz, 88°H 84°V
@ 8kHz 64°H 45°V

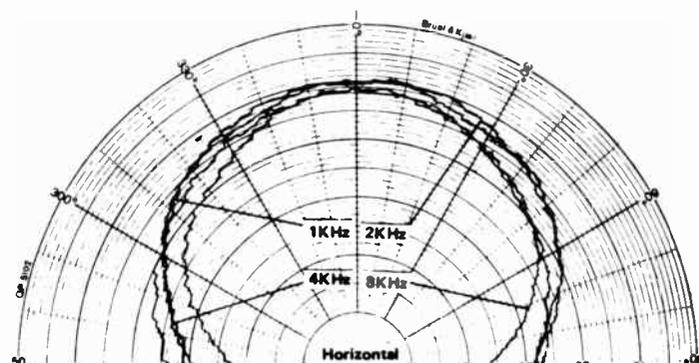
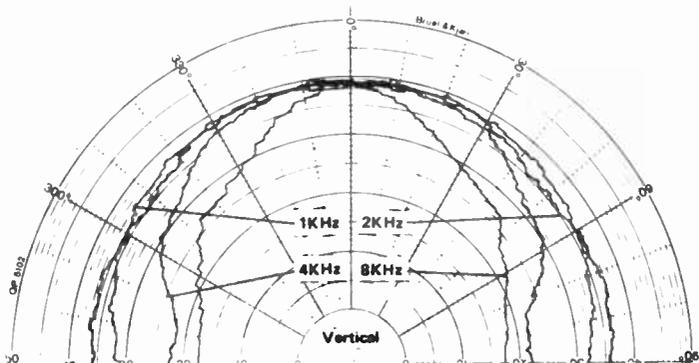
Recommended c/o

Test Result

Essentially as drive unit to 1kHz
101dB averaged between 2kHz and 6kHz
800Hz
84°H x 160°V @ 1kHz, 88°H x 234°V @ 2kHz, 88°H x 84°V @ 4kHz, 64°H x 45°V @ 8kHz, included angle at -6dB points 3.5kHz @ -12dB/oct.

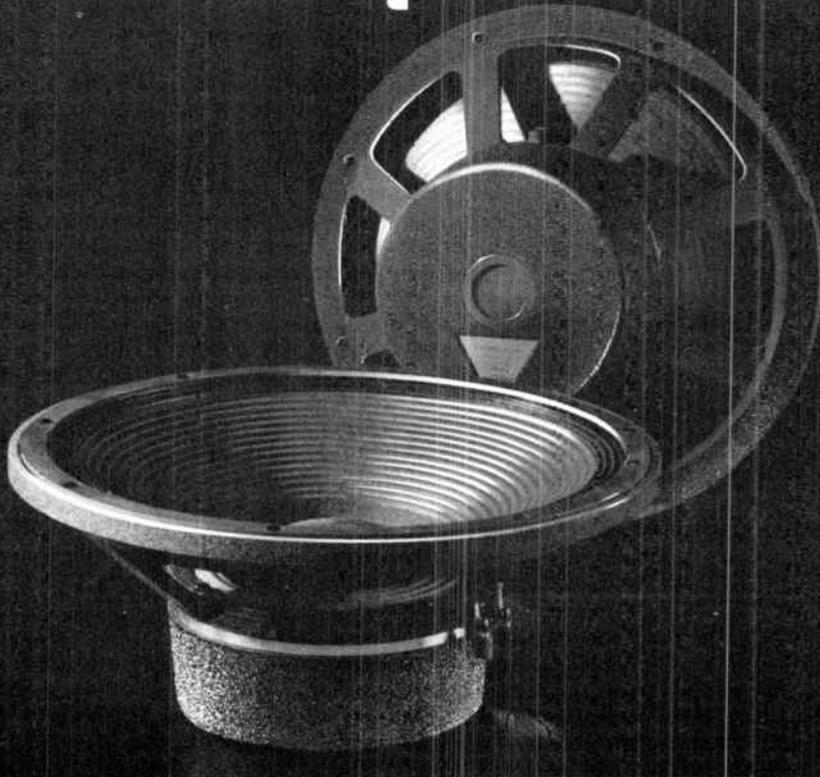


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RCF 4823

Overall dimensions: 460mm x 248mm x 350mm depth

Parameter **Manufacturer's Rating**
Frequency response Not stated

Sensitivity Not stated

Cut-off frequency Not stated

Polar response 90°H x 40°V unqualified

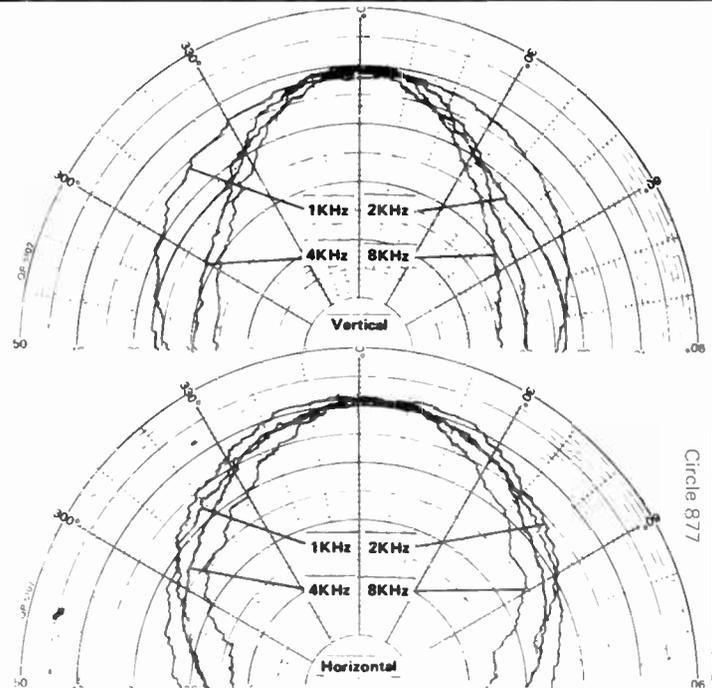
Recommended c/o 400Hz

Test Result
Drive unit response modified by ringing 104dB averaged between 800Hz and 5kHz. Not clearly defined, but probably 500Hz 78°H x 110°V @ 1kHz, 86°H x 54°V @ 2kHz, 66°H x 46°V @ 4kHz, 50°H @ 40°V @ 8kHz, including angle at -6dB points. Above 1kHz @ 12dB/oct. —

This is a nicely made cast alloy "sectoral" type. Such a horn should not be confused with multicell types, as these are quite a different animal altogether and are usually very much more expensive.

The directional control exhibited by this horn is surprisingly good. Although horizontal dispersion is not as wide as that of its competitors the control provided by the horn is far more uniform. The same applies in the vertical plane, and even at 1kHz, the almost omnidirectional lobe evident on the

molded/fiberglassed flat radial horns is considerably suppressed. Also, while manufacturers persist in ambiguity in respect of dispersion or polar response figures I suppose that this comes as near as can reasonably be expected to the "90°H x 40°V" figure given. Unfortunately, however, there is considerable evidence of ringing resulting in the horn exhibiting a frequency response of its own rather than reflecting that of the compression drive unit. This is particularly apparent at 3kHz — which



Circle 877

coincides with a secondary resonance at which point a peak of some 4.5dB is produced — and below about 1.5kHz the unit deviates noticeably. This is a shame as these characteristics spoil what would otherwise be a very useful horn. It would be an interesting exercise to coat the exterior surfaces of the 4823 with bitumen or Acuplast to see

whether these problems can be overcome by acoustic damping.

The manufacturer's recommended crossover frequency, of course, is utter nonsense, and should be totally disregarded as it is below the natural cut off frequency. For best results, it should not be crossed over below 2kHz but you would get away with 1kHz or 1.5kHz at a pinch.

77



This amp isn't getting a lot of attention...it doesn't need it.

The Crown PSA-2 is the most reliable high-power professional power amplifier you can buy at any price. One reviewer described it as "indestructible," since the PSA-2 accepts seemingly impossible loads, and unlike many other amp designs, will continue to produce useable output power.

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Crown engineers devised a simple test to show how the PSA-2 operates. Two flat metal bars are wired into the output circuit of one channel of the amp, with a music signal input. The other input is connected to a 1½ volt battery, requiring the PSA-2 to deal also with a DC signal. A heavy round steel bar is laid across the speaker leads. The amp *continues* to produce useable power, and the metal bar becomes a transducer, producing small sounds from the output signal!

ON-BOARD COMPUTING

The PSA-2 uses its built-in computer logic and unique sensing systems to determine the limits of the safe operating area of the output transistors. The PSA-2 does not just thermal out or shut down as other designs tend to do under strange loads. It computes the level of output power at which it can continue to operate, and then orders itself to do that.

Under normal load conditions, this on-board computing makes it possible for the PSA-2 to use its output transistors more efficiently than any other protection system. There are no arbitrary cut-off

points, but a continuous computing of the conditions of the output devices, and an adjustment of output to the maximum comfortable level for the amp.

NEW CONVENIENCE

Versions of the PSA-2 are now available with a choice of front and rear panel configurations. Users can select a model with on/off LED indicators for overload, signal and standby; or they can select the version equipped with the Crown "Dynamic Range Indicator," an LED array that displays peak/hold and instantaneous output for both channels. For the rear panel, a balanced input module (including variable gain and switchable hi/low Butterworth filters) is available, or unbalanced input only.

FIELD TESTED

The Crown PSA-2 amp has already proven its ability to require very little attention after it's been set up in the field. The PSA-2 has provided trouble-free power for several major touring setups, and it is now installed in a number of top-flight recording studios and auditoriums.*

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A bonus for users of the PSA-2 is its excellent sound quality. The amp proves that sonic quality, ruggedness and reliability *can* be combined in one amp.

If you haven't already considered the PSA-2 for the systems you are currently designing, write to Crown today. We'll send you a fully descriptive brochure and reprints of several reviews. They're worth your full attention.

*Names on request.



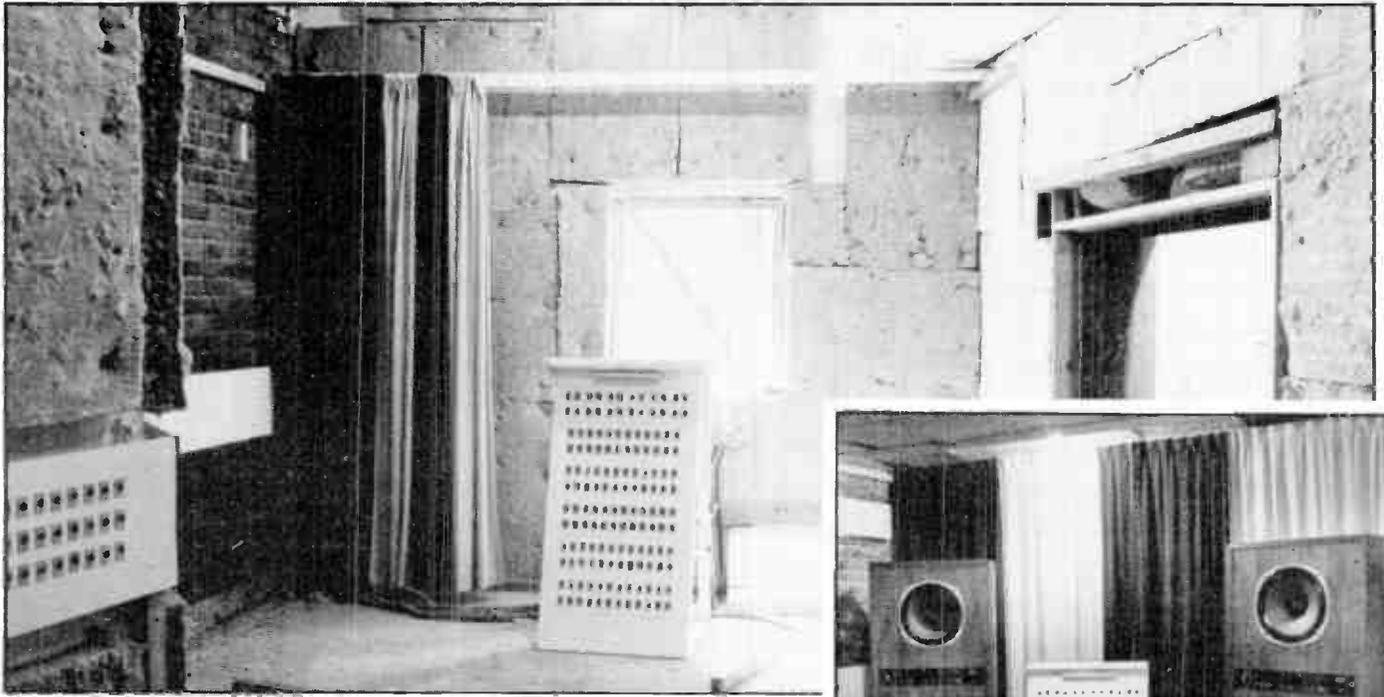
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Test-Bed Studio Update

As the studio neared completion we took the opportunity to take photographs of the "works". The "active" ingredient acoustically speaking is "hidden" in the fabric of the wall structures so we show here the rockwool panels used for the acoustic treatment *without* the covering fabric.
Keith Spencer-Allen



Control Room — view from door showing patch bays.



Through Control Room window from studio area.

RECORDING SYNTHESISERS

Part 2: MONO AND STEREO SIGNALS

Last month I outlined the way in which a multi-track recording can be built up layer-by-layer, using two mono tape recorders. The same approach can be used whether recording synthesizers, other electronic instruments or acoustic instruments. As most people experimenting with multi-tracking for the first time will be using mono or stereo recorders rather than a four-track machine, this month I am going to describe, without going into too much detail, exactly where on the tape the various sorts of mono and stereo recorders actually record their signals. Then I will introduce a particularly useful kind of stereo reel-to-reel recorder which can be used alone to produce multi-track recordings.

Tape heads

Figure 1 shows the order in which the tape heads are positioned in a tape recorder. The tape first meets the *erase head* where previously recorded sounds are removed; it then moves to the *record head* where new sounds are recorded (when the tape recorder is set to "record"); and finally the tape reaches the *playback head* which picks-up previously recorded sounds. (N.B. Separate record and playback heads are now standard in good quality reel-to-reel recorders, and some three-head cassette recorders are also available. Cheaper reel-to-reel machines and most cassette recorders have only two heads, one for erasing, the other being used for both recording and playback).

Tape speeds

The tape is pulled across the heads by a rotating "capstan" (see Fig. 1), being held against the capstan by a "pinch roller". The tape speed is always some multiple of inches per second (i.p.s.) e.g. $1\frac{1}{8}$, $3\frac{1}{2}$ ($= 2 \times 1\frac{1}{8}$), $7\frac{1}{2}$ ($= 4 \times 1\frac{1}{8}$ etc.) or 15 i.p.s. Cassette recorders use the lowest speed; reel-to-reel recorders generally use the higher speeds, with 15 i.p.s. confined to semi-professionals and studio machines.

Fig. 3 Three different track formats produced by stereo recorders: (a) half-tracks stereo (reel-to-reel only); (b) quarter-track stereo (reel-to-reel); (c) quarter-track stereo (cassette).

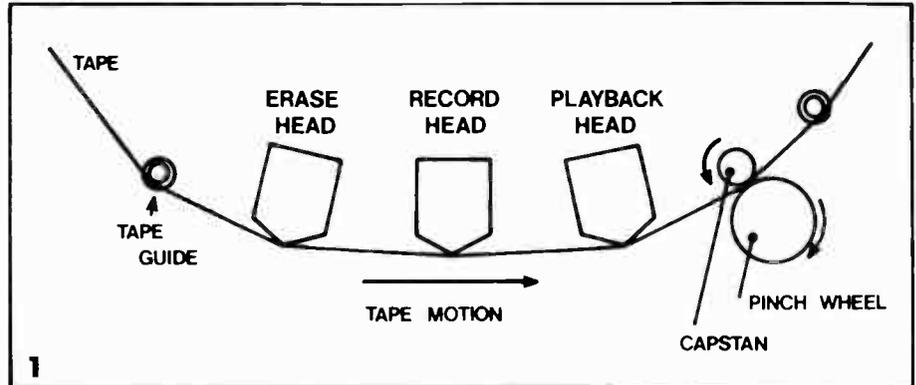
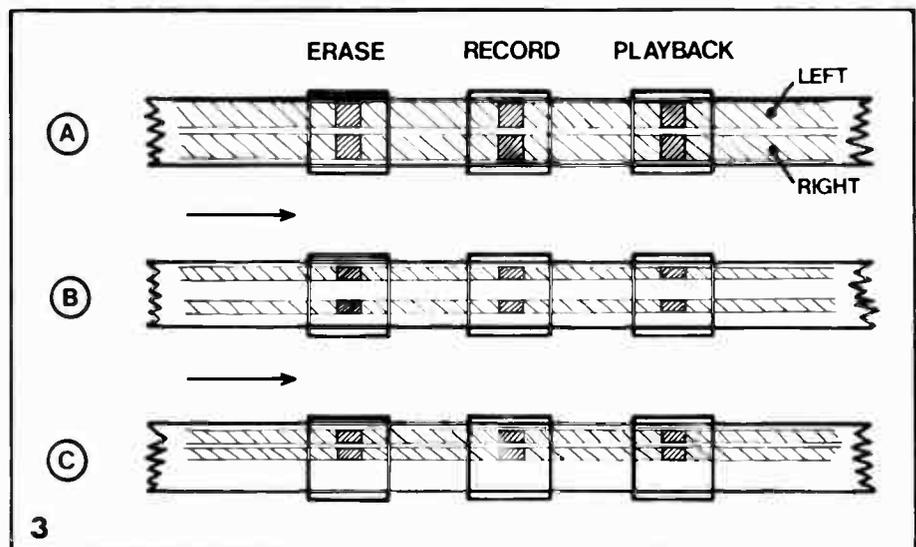
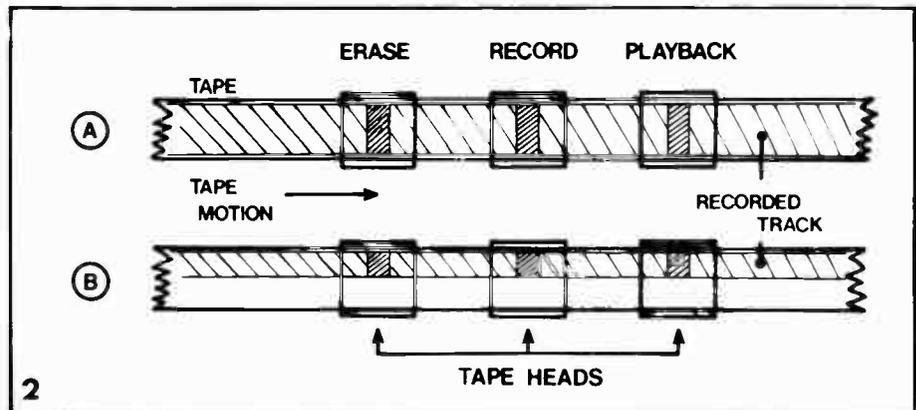


Fig. 1 Layout of erase, record and playback heads in a tape recorder. (In some recorders, one head serves for both recording and playback.)

Fig. 2 Two different track formats produced by mono recorders: (a) full-track mono (reel-to-reel only); (b) half-track mono (reel-to-reel and cassette).



Delays

Although for conventional usage the physical separation of the record and playback heads is advantageous from the point of view of sound quality, in some situations the time delay between the tape moving from the record to the playback head is a nuisance, particularly when multi-tracking on one recorder (see Fig. 1). This delay is *not* negligible, amounting to about 1/5 second at 7½ i.p.s., but although it causes a few problems, the delay can be put to good use in producing echo effects as I will be explaining in a later article.

Mono recorders

Figure 2 shows the two different track formats produced by mono recorders. At the top (Fig. 2a) a *full-track* recording is illustrated; the magnetization of the tape produced by the record head covers the full width of the tape and the entire tape is recorded in one direction only. This format was used on early reel-to-reel machines and is now more or less obsolete.

Figure 2b illustrates the *half-track mono* format, which is produced by mono reel-to-reel and cassette recorders. The recorded track covers just less than half the tape width, the active part of the record head being off-set towards the edge of the tape farthest from the plate on which the heads are mounted. Because the head is offset, the tape reels can be interchanged or the cassette turned over to record on the other half of the tape.

Stereo recorders

Figure 3a shows a front view of the tape heads in a *half-track stereo* recorder. This track format is founded only on reel-to-reel machines. The heads are designed so that sounds can be recorded on the upper and lower halves of the tape (without turning the tape over).

Figure 3b shows the heads of a stereo reel-to-reel *quarter-track* recorder; the tracks are narrower, the two tracks of a stereo recording together filling only half the total width of the tape. The tape reels can therefore be turned over and another stereo recording produced in the remaining spaces.

Figure 3c shows the three heads of a high-quality stereo *cassette* recorder, again producing a quarter-track format, but differing from the reel-to-reel quarter-track format in that the L and R tracks are adjacent (an enormous ad-

vantage enabling stereo recordings to be played on mono cassette recorders — see Fig. 2b).

Independent recording on L and R tracks

Irrespective of the track format, it is important to differentiate between two kinds of stereo recorder: those with which it is only possible to record on both left and right tracks *at the same time*; and those with which recordings can also be made independently on either track *without changing the contents of the other*. The first kind, which includes some stereo reel-to-reel and all stereo cassette recorders is the simpler; it is a straight-forward stereo recorder which cannot be used *alone* to produce multi-track recordings. The second kind (always a reel-to-reel machine) is much more versatile; provided it has three heads, it can be used to produce multi-track recordings *without involving another tape recorder* by means of the "sound-on-sound" technique described below.

Sound-on-sound

Figure 4 shows how a multi-track recording is produced using the sound-on-sound approach. The first step is to record one instrumental part on, say the left track, automatically erasing what was there before. In the second step, a recording is made on the right track, the signal recorded being a mixture of the left track obtained from the playback head. The player would of course need to monitor the left track through headphones. (N.B. The mixer and track selection may be built-in features of the recorder.) The third step involves recording a mixture of the third instrumental part and the contents of the right track, while monitoring the later (which contains the first two instrumental parts). Steps 2 and 3 are then repeated until all the parts have been recorded.

At each step the recording is physically displaced along the tape by the distance between the record and playback heads (see Fig. 1), so it is *essential* to transfer the previous parts when a new one (even the last) is added, and the end-product is necessarily a mono recording.

Minimizing noise

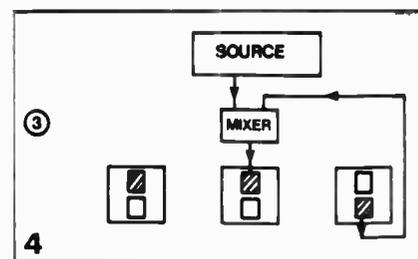
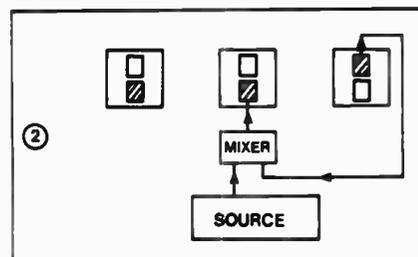
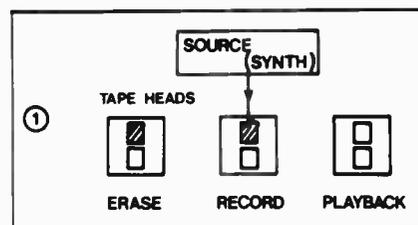
Every time a transfer from one track to another (or one tape or another) is

made, more noise is introduced into the recording. So from a noise point of view, it is better to start by recording those instrumental parts which *in the end* will be quietest (always recording at the highest possible level), adding the parts in order of their relative loudness in the final recording. Then as the relative volumes of the "new" and "old" parts are adjusted in the mixer at each transfer, the noise contribution from the "old" parts is minimised.

Next month I will be describing how the need to copy the existing parts when a new one is added is removed in four-track recorders by using a simple technique called "synchronisation".

Tony Horsman

Fig. 4 How to produce a multi-track recording with just one stereo recorder using the "sound-on-sound" technique. The recorder must be capable of playing back from one track while at the same time recording on another.



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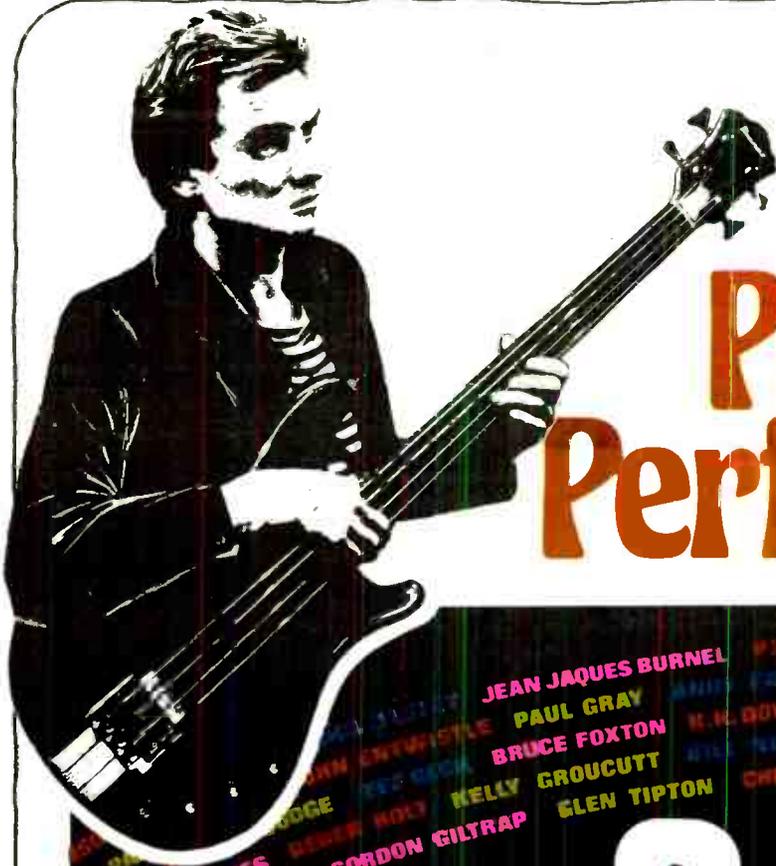
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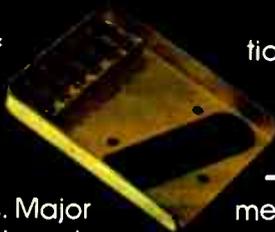
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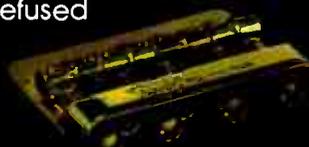


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MESA/BOOGIE Model Mark II



The name MESA/Boogie is well known to many guitarists and many have heavy dreams how to manage to get one because they are hard to get. Of course there are shops where you can order but in Germany it is sometimes another question if you really will get it.

Well I myself have got one after I had waited a half year from Applied Acoustics Bochum, and here that is an acceptable waiting time.

The amp is a Mark II, a further development of the Boogie Amp. The price including hardwood cabinet, flight case, shipping, duty and all other available options supercedes 5000 DM and that's really a lot for a musician. I have spent all my money on this amp but on the other hand I'm proud and happy to own it because this amp is fantastic and hard to describe in words. During my tests I have never before used the word "perfect" but now I am sure to know what it means.

This MESA/Boogie is an absolutely perfect lead amplifier and there's nothing else like it on the world's market. And this is not exaggerated. The Mark I which I played for a while, already had me convinced but the Mark II is even better. If this amp wasn't so heavy I would always have it with me.

Like the Mark I, the Mark II Boogie

is an all tube type amplifier but with additional controls. This gives you more tone especially with the use of the overdrive channel.

My Boogie is a 60/100 watt version within a solid hardwood cabinet and with a 12" Altec loudspeaker. I prefer the 12" speaker to the 15" because it's not so boomy. But with the amp running in 100 watt position you need an additional speaker. The Altec is a good speaker but I don't think that it is capable of handling 100 watts of Boogie power which is indeed more than 100 watts of Marshall power. The available Boogie extension speaker cabinets are slightly smaller and perfectly matched to the combo cabinet. Under aesthetic aspects also, the hardwood Boogie supercedes all other amps. New too is the fan inside the 100 watt models which cools the tubes.

The Boogie's inside is done carefully by hand. Many electronic components are specially designed and unusual for musical instrument amplifiers and are of outstanding quality and carefully selected.

One more option is the 5-Band Graphic Equalizer which is good to further alter the tone. There are so many possibilities to vary the sound that you have to take some time to find the ones best for you. Again

and again I am surprised by new tone settings. You can even get a good clear sound for playing an acoustic guitar through it, indeed you really get many, many sounds—for instance the old Fender sound which you can't get with the new Fender amps.

It's surprising to see some new amps sounding much better than the new Fender itself and all date back in some way to the old Leo Fender amps. By the way, the development of the MESA/Boogie company and their product is a very interesting story too, which I will tell you about in one of our next issues. I hope you will enjoy it.

But back to the Boogie amp. If 100 watts Boogie power is not enough, you can use the Slave Out to plug in additional power amps or to plug directly into P.A.

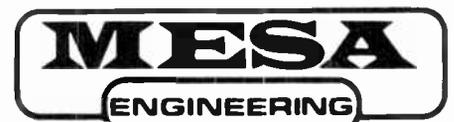
The Boogie is still handmade in the USA as it has always been and is not built on license in England or Japan as the story goes. There are still delivery times of several months and black market prices for getting it early, yet handmade perfection and individualism are rare and worth the price.

During the last Frankfurt Spring Music Fair I was anxious to look for alternatives to the Boogie amps and indeed there were several manufacturers showing very similar looking products but the sound and quality were terrible compared to the Boogie, so you'd better forget it.

To describe the Boogie's sound is difficult for me and for those of you who don't know, the most impressive thing is to listen to musicians using the Boogie such as Joe Walsh, Carlos Santana and Frank Zappa for instance. And all of them have a different but typical sound . . . and what else can I say?

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The Producers

DAVE JORDAN

Mick is a 17-year-old skinhead. He works as a van driver by day and at night dons pork pie hat and Ben Sherman shirt and trundles down to the local Palais. His favorite bands are the Specials and Selecter, and he scorns any band whose members are older than 30. Bands such as the Rolling Stones, who he regards as "boring old fossils who ought to be stored in a museum."

Joe is Mick's 30-year-old brother-in-law. He works as a computer operator and slumps in front of the telly most evenings. But some weekends he goes out to parties, where he likes to get stoned and pull out old favorites from the record rack like the Stones *High Tide and Green Grass*, which are "great for dancing."

Mick and Joe have lots of arguments about music when they see each other. Mick usually accuses his brother-in-law of being stuck in a time warp, and Joe dismisses Two Tone music as being a passing fad.

In fact both are incredibly short-sighted. If they could remove the plugs from their ears that cut out all music that isn't fashionable for their respective generations to like, then they might realise that there isn't such a gulf between bands like the Stones and the Specials.

Take the Stones last album, *Some Girls*, for example — a record which returns a group of semi-retired tax exiles back to the rawness and excitement of their earlier work. And the Specials' first album — a ragged but unusually successful transference of live "good-time" energy to vinyl.

And note that despite the superficial difference in the bands' styles, both are deeply rooted in ethnic black music, rhythm and blues and ska respectively.

But there is a third connec-



The Producers

Photograph: Neville Stevens

tion which suggests that the "live" sound of both records is not entirely accidental. For behind the controls in each case was engineer, Dave Jordan, a man who believes strongly in a "rough" approach to recording and has successfully put it into practice. He was the main engineer on the Specials' debut album and assisted Chris Kimsey on *Some Girls*.

"I think the two styles of music, although they are dif-

ferent, are best suited to that sort of approach," Dave told me when I met him in the "boardroom" of Two Tone's London office — a stark white room dominated by a wooden table top hanging from the ceiling, a room that is indicative of the Two Tone "back to the basics" approach. "The best way to record is for the bands to just play spontaneously, rough and ready, that's the only way to put the music across the way it should

be put across. You still can't capture the total feel once you put something down on the tape, but I think the best way to approach it is as a performance rather than a backing track with overdubs, a less clinical and more mono approach, straight down onto the tape with all the mistakes as well. It doesn't matter — as long as it feels right."

Dave became involved with the Stones when he worked as tape operator with Keith Howard, who was supposed to be engineering the album *Love You Live*. The night before the session was due to start Howard died and Dave took over. Keith Richards liked what he heard and invited Dave to New York to mix the album, then the Stones asked him to engineer *Some Girls* at EMI's Pathé Marconi 24-track studio in Paris.

It soon becomes obvious, from the number of times the name crops up, that Richards is one of Dave's seminal influences.

"I had an idea of how I thought the Stones should sound, which was how they sounded on their first five albums. At that time Richards had much more influence than he has now, for some reason, and his ideas were great. He put me on the right track, in that there's so much technology around nowadays, there are so many tracks available, but his idea was to forget all that. He reckoned that having so many tracks just delays your options, you're just putting off decisions. You start doing overdubs and you've got six tracks for the lead guitar solo, three tracks for the lead vocal, and you just make it more difficult for the mixing.

"There were a couple of tracks where he went into the studio with Charlie Watts and put three mikes up scattered

RECORDING WORLD

around the studio and did it more or less the way it used to be done in the garage stage. Then he overdubbed the bass and the vocals and that would be it. The end result was that when I listened back I preferred that kind of sound much more than the refined clinical sound."

With the advent of digital recording, the trend is for ever increasing technical sophistication in studios. Not so for Dave, who went into paroxysms of delight over the Paris studio's vintage mixing desk, a real old crock by the sound of it.

"They've got this really old EMI desk in the studio where we laid down the back tracks, it must have been from about the late Sixties. It was quite primitive. It was all valve amplifiers, each channel had so much fizz on it, it sounded great. That was one of the best things about the studio. I wasn't too happy when we moved into the other room to mix."

The spontaneous feel of the album produced by the "Glimmer Twins", Richards and Jagger, owes much to the way the songs were written. The band would go into the studio whenever they felt like it, not caring about how much money they spent, and turn the tape machine on from the minute they started playing until they finished, maybe some eight hours later.

"Somebody might have some lyrics or a riff that they hadn't put anything to yet and they'd mess around for a few hours and eventually they would get out of it a really good rhythm track.

"It was more or less composed in the studio. And once they'd got a good rhythm track, they'd go on late and finish a full set of lyrics instead of just repeating one verse over and over."



The Specials ▲

▼ Jagger.. under the influence?

The whole "rough" approach to recording was, Dave thinks, partly a response to the punk movement, whose shock waves reverberated far beyond the new bands that exploded onto the scene in 1976, reaching even "dinosaurs" like the Stones.

"Jagger was definitely influenced by punk. He was worried about it so he wanted to try and experiment with it to see what it was all about, to see if he still had it. Because they were the same when they started off in the Sixties, they had the same sort of approach. The punk bands went in and recorded on two and four track and recorded albums in about a week, and that attitude has opened a lot of people's minds, so that it is easier for a band like the Specials to come to prominence with a raw blend of music now that might not have been acceptable in 1975."

Dave's association with the Specials started when he went to work at TW studios in Fulham, again a 24-track. He was interested in their music, having seen the band live, and having listened to bluebeat and ska when he was a 17-year-old mod — the first time around. The band were interested in getting Dave to work on their

mixing desk on the road, and happened to ring up TW just by chance. When Elvis Costello, the album's producer, found out Dave was working there he said it was too much of a coincidence and booked into the studio for a month. The record was recorded in only three weeks and mixed in eight days.

"TW was one of those places held together with string, but the end result was right," said Dave. "The Specials came in, and instead of laying down a rhythm track and then overdubbing, Costello agreed to the band going in and laying down everything at the same time, and it worked.

"The only overdubs were the horns and a couple of vocal things that didn't go down quite as well as they should have done. The only problem with putting down vocals live was the problem of leakage, with it being a small studio, but you can hardly notice it.

"But nobody was bothered. That's the good thing about it, getting away from being too single minded about the way the album should be recorded. If it's out then leave it, mistakes or not, which is a great thing. That's another thing I learned from Keith. He

Pics: London Features International

played me all these Chess outtakes of Chuck Berry sessions recorded with about three mikes, and they were great. They never got the chance to be released because they were a bit rougher than normal, but the feel on them is amazing."

The equipment used at TW was a 3M 24-track and an MCI Series 12 desk, which Dave says has "really good EQ — a lot of bottom end and a lot of top".

Since Dave went into the recording business, because he "always felt that things could be done better if they were done my way", it would be logical to assume that the next step for him would be to go into producing — which is exactly what he is doing. He co-produced the Specials' single "Too Much Too Young" with the band's keyboards player and Two Tone mastermind Jerry Dammers, and will be co-producing their next album. He has also been invited out to Jamaica to engineer and co-produce an album by Rico Rodriguez, the veteran ska trombonist who has played with the Specials, which will be released on Two Tone.

He also keeps himself busy going out on the road with the Specials as their man at the mixing desk. In February Dave joined the band's successful American tour, and he feels optimistic about their chances of breaking there.

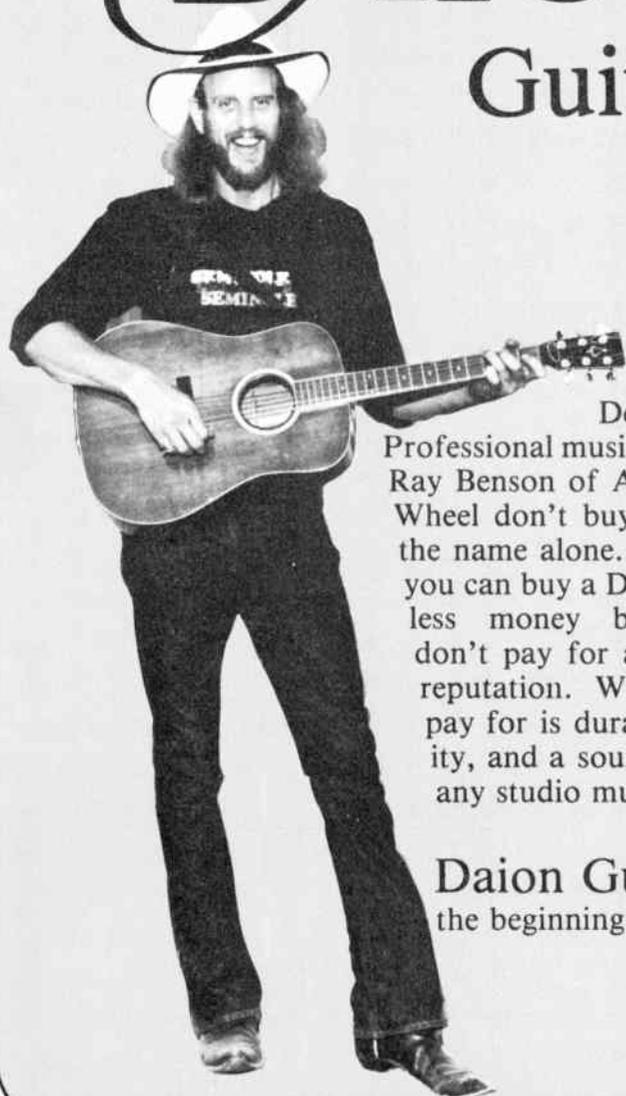
"It's a young audience, a first time round concert going audience, it's not the people who've been going to see the Eagles for the last five years — it's their younger brothers and sisters. So there're fresh, they're not conditioned. They don't have to be broken like a lot of the music buying public do in America."

Dave sees the future of the Specials' music as being

Continued on page 88

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DAVE JORDAN

Continued from page 87

assured, since all the members have differing musical influences which they bring to bear on the music. One possibility is the first ever rock & roll toasting — a type of music created by certain Jamaican DJ's.

"The DJ goes along to a dance with his own sound system, which might be big bass bins and loads of high tweeters, and he's got a little tape recorder and desk and echo unit. He'll put a rhythm track without any vocals on the turntable, put the mike into the amp with some echo on and start singing just whatever comes into his head.

"One of the singers in the Specials is very influenced by that. He can make up words as he goes along and they rhyme and make sense. It doesn't have to be over a reggae rhythm, it could be over a rock & roll rhythm, which would be very interesting."

It's hardly surprising that Dave's favorite producer is Lee Perry: "Occasionally he does dub albums where he goes over the top with echo and effects. He takes an instrument after it's been recorded and changes it, and the sounds he comes up with are amazing. He's the best producer in the world as far as I'm concerned.

"And an engineer that he admires is Nigel Gray, who has worked with the Police at Surrey Sound Studio. "The band are credited with production, and I'm sure they do have a big say in the way it's produced, but the engineer also deserves a lot of credit because he gets a brilliant sound."

But whatever he thinks of other people, something tells me that it won't be long before the name Dave Jordan starts cropping up in interviews with musicians, engineers and producers. And with the number of bland-out production jobs still being churned out these days, that can be no bad thing. ■

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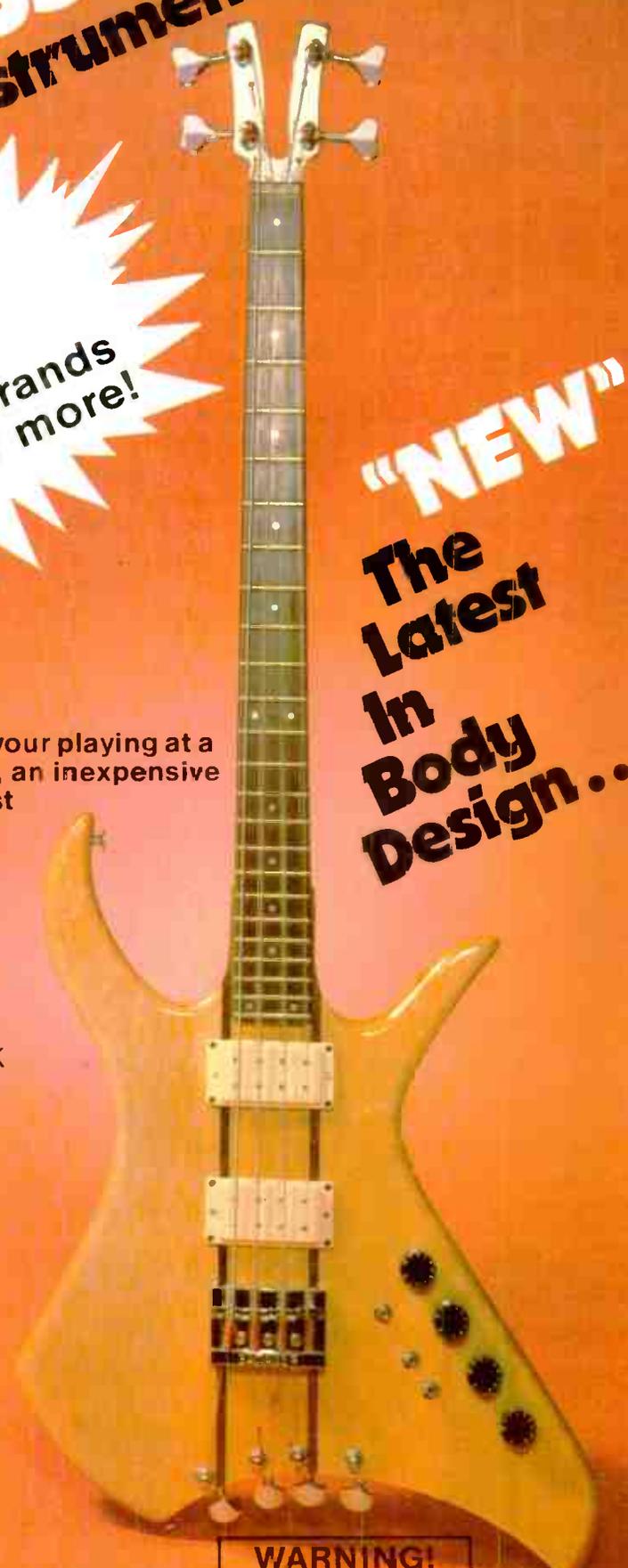
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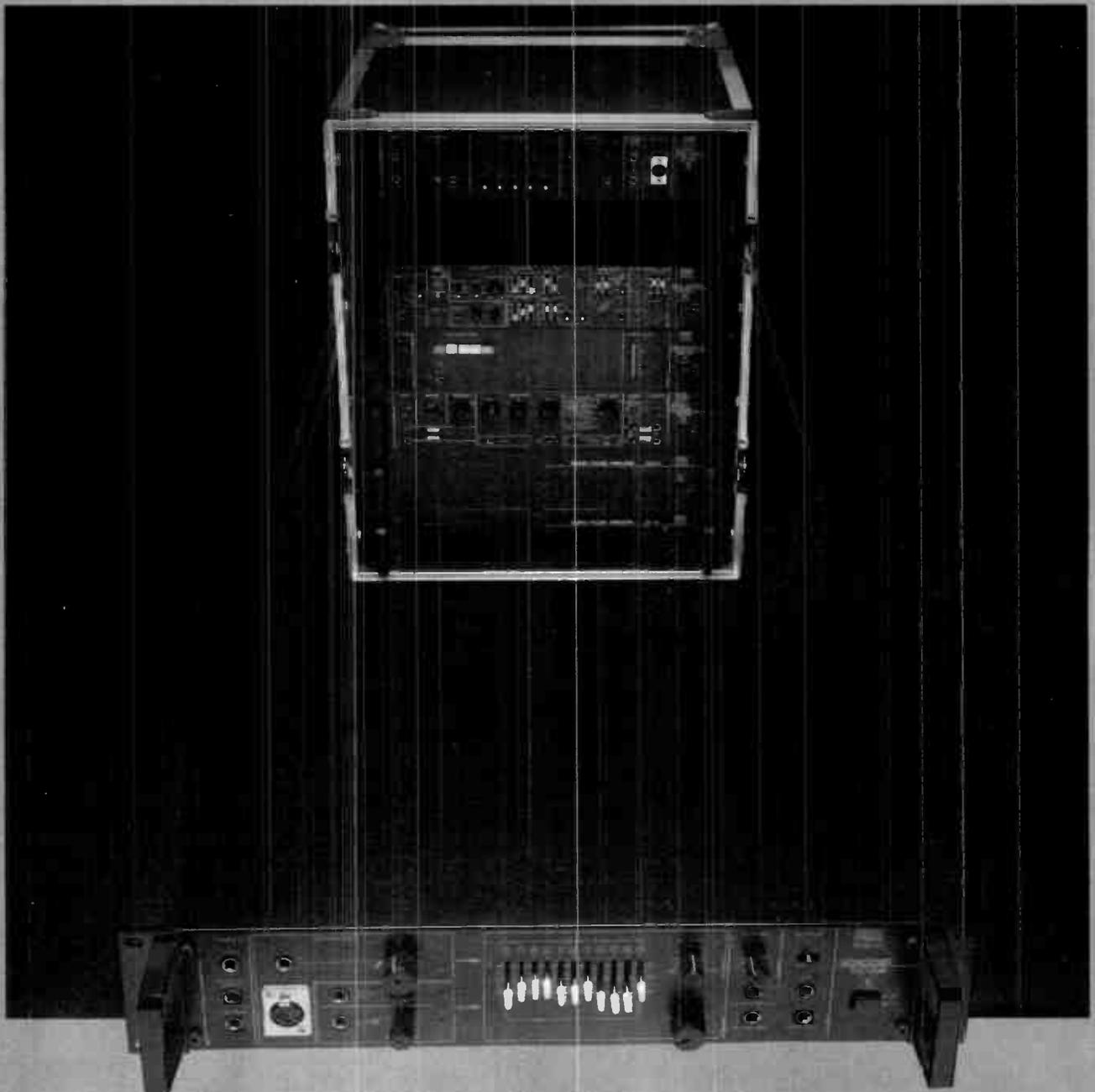
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ON TEST: DeltaLab DL-4 Time Line

The DL-4 is a digital delay line aimed at the crossover market between lower priced studio equipment and high quality PA and stage equipment. This is certainly a growing area as the number of small studios continues to expand and mass production of what was considered high technology a few years ago, brings the price low enough to warrant consideration for stage use.

The unit is designed on a 19 inch format and occupies only 1 3/4 inches of rack space. The front panel contains all the operational controls while all the in and output sockets are situated on the rear panel. The finish on the front panel is dark blue with the differing controls boxed in light blue areas by functions and all the legends are silk screened in white.

Starting on the left side of the panel, we have two columns of LEDs labelled Peak and Slew Headroom. The LEDs are marked 40dB (green), 20dB (green), 20dB (yellow) and 0dB (red) and are intended to indicate the headroom available before peak and slew limiting occurs. When the 0dB LED illuminates, there is still 6dB of level in hand. This is followed by the input level control.

The next box is titled Program and contains three toggle switches. The first is Repeat and switching it on mutes the input to the delay line and causes the signal passing through the delay at that moment to be repeated indefinitely until the switch is released. The direct signal however still passes through the unit as normal. This control can be remoted on a foot switch and really it is the only way to use this effect when actually playing. Also this is only effective on the longer delay times — shorter delays just create an unpleasant sound or a tone unrelated to the input.

The Delay switch selects

between manual control of the delay time or the auto function where the delay is controlled by the selected VCO rate. This is followed by a three position switch to select the required Scale or multiplication for the selected delay.

The next box is the actual selection of the delay time. Holding the Select switch to the left decreases the delay while to the right, increases it. The selected delay time is shown on one of 10 LEDs marked with the delay in m.

The Regeneration box offers facilities to vary the amount of output of the delay line returned to the input to create a reverb sound or on longer delays, a multiple repeat echo. The maximum setting available is very close to oscillation. The character of this feedback may be altered by applying the high and low filters or the Phase reverse switch to the feedback. With this switch it is possible to create positive and negative flanging with feedback.

The last box contains the Time Base Modulator. The first control is the Delay Factor which varies the clock frequency and so can be used to adjust the delay time selected by shortening it down to .25 of its value. The Width control is next, varying the VCO sweep with the Speed control varying the rate of sweep. The last control in this

section is the Shape control which changes the control waveform from triangular to square wave passing through sine at its mid point.

The only remaining front panel controls are a switch to reverse the phase of the delayed signal before mixing it with the direct, a mix control to vary the amount of direct signal to processed and a pair of LEDs to state whether the unit is in active or bypass modes.

The rear panel contains two inputs (one of which has a 20dB gain boost switch), an output with level control, a pair of send and return sockets for coupling up another DL-4, in and out access to the VCO, and footswitch sockets for repeat, delay and bypass functions. All these are jack sockets.

Remaining on the rear is a five pin Switchcraft XLR type socket for the addition of an external memory.

Access to the insides is easy and requires only the removal of six screws to remove the complete top panel. Internal construction is neat and robust. I liked the use of a silicon compound to secure any long wires and so prevent direct strain on soldered joints.

In use, I found this a simple-to-use design and I am sure that even a 'non-technical' musician would quickly get the feel of it. I found the

Headroom LEDs very useful and a good warning but I never really experienced any overload trouble once I sorted out the relative levels on either side of the unit.

All the expected sounds from a digital delay unit are here as well as a few others. The filters in the feedback chain and the two positions of phase reversing all add versatility and interesting effects.

When in the auto mode, if the VCO shape control is turned towards square wave and a medium speed selected, the resultant sound created by the staccato switching between delays is very effective with some styles of music.

It is possible to plug a guitar straight into the rear of this unit and with the high sensitivity input, there is ample gain for even a low output instrument.

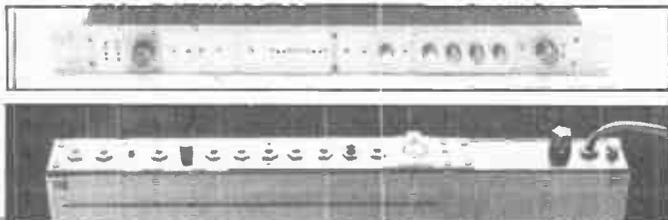
Some settings were slightly noisier than the low general noise level, such as turning the delay factor control towards maximum increased the level of hiss but still it was within acceptable values.

One item I would like to see, not just on this item but on any similar effects unit, is the provision of a separate effect only output for use with a mixing console where it is easier to mix the dry and effect actually on the console safe from wandering fingers on the effect unit.

Summary

A good quality practical unit quite at home in the studio and on stage where it could replace quite a lot of those noisy battery operated effects and improve quality no end. Its reasonable price means that a couple of DL-4s are still a reasonable proposition for the studio to replace tape delays without tying up their more sophisticated and expensive delay lines on simple applications.

Keith Spencer Allen



Circle 894

On The Record

San Francisco

Herbie Hancock is in at the Automatt where he's recording a follow-up to *Monster*, which was also recorded at the famed studios. The Tubes are adding their little bit of craziness to recording, sharing the facilities with Santana. . . Over at Wally Heider's Sammy Hagar is finishing up his latest. . . Bear West Studios is busy with Tye, John Wilde and David Haskell, all working on demo projects. . . With its new digital system Different Fur is hosting Stoneground along with Michael Cotton and Praire Prince. Also booking time at the studios has been German synthesizer wizard Michael Hoenig as well as new wavers Crime. . . In Sausalito the Record Plant has Frankie Beverly and Maze in the studios while Mike Chapman is working with Michael Desbarres for the producer's own label Dreamland Records. Tower of Power is using their rehearsal facilities for their upcoming LP. . . Idris Muhammed is finishing up his latest effort at the Fantasy Records Studios. . . Over at Sonoma Sound Recorders Elvin Bishop is working on a country-oriented project with Roger "Jellyroll" Troy producing, singing and playing bass.

Nashville

As of May 1, 1980, the Jack Clement Recording Studio is now known as the Sound Emporium, hopefully correcting a great deal of confusion concerning the studio's name since its ownership changed five years ago. The former name of the busy two-studio, 24-track facility originated with its 1969 opening by legendary writer/producer/happy maker Jack Clement. When it was bought by also-legendary producer Larry Butler and financial consultant Al Mifflin in 1975, the new owners decided to retain the goodwill of the Clement name for a while longer. So now it has been changed to Sound Emporium with no ownership, management or staff changes, and obviously no change in the busy schedule — Bobby Goldsboro has just an album for Warner/Curb with Larry Butler producing and Billy Sherrill engineering, and Jerry Reed has produced himself on some songs for the *Smokey II* soundtrack. . . At Richey House, Frontline Records president



Tubes



Charlie Underwood and producer Jack Gilmer have been finishing product on newcomer Bob Duncan and veteran Jack Greene; other projects at the

studio include new Epic act Nightstreets and a Hank Cochran album with a harmony singer who sounds like Willie Nelson for the best reason you could imagine. . . The current string quartet-plus keyboards configuration of what is now called the Buddy Spicher Band ("until we can come up with a better name") has cut three sides at Young'un Sound with more to come. The material was written by the piano player, Allan Greenberg, and producer/leader Spicher promises that the term "string quartet" may be misleading to some because the music and the attitudes of the players are fresh and energetic — "It's not just a lot of beautiful music flowing all over the place," he explains. Also at Young'un have been Nelson Larkin working on Freddie Hart mixes and Tony Brown and Ken Harding producing a Shirley Caesar album for Word. . . New Englander Big Al Downing has been down South to Woodland Sound for a session, along with a typical list of acts that scale huge ranges of the musical gamut, such as Joe Stampley, Freddie Hart, Johnny Wright, Carroll Baker, Margo Smith, Barbara Mandrell and Jerry Reed on various points of the country scale and the Swanee Quintet, the Savannah Community Choir, the Brothers, Salem Travellers and Supreme Angels on the gospel scale, along with Roger Bowling performing the theme for an upcoming film called *The Exterminator*. . . A similar balance between country and gospel has prevailed as usual at Wax Works, what with Tommy Overstreet, Joe Sun, and the Cates and Terri Hart as well as PTL Club First Lady Tammy Faye Bakker. In addition, studio owner Gary Paxton has recorded a NAPA/Regal Ride shock absorber promotional record called "The Race Driver Song" that is showing likelihood of earning a million sales through NAPA stores alone!

New York

NYC — The onset of the summer months has caused a bit of a cutback in New York area recording, but Electric Lady (whose designer, John Storyk, is profiled in the June/July issues of IMRW/USA) continued to hold up its share of the load. Apparently, random

Continued page 97

On The Record

Continued from page 92

Rolling Stones are still dropping in and out of the studio in an attempt to get the next LP mixed. The Clash stopped in to put down some tracks while passing through on a National tour (w/producer Bill Price). Other tenants in recent weeks include guitarist Earl Klugh, Peppy Castro (formerly of the Blues Magoos and Barnaby Bye), Ray Gomez (ex-Stanley Clarke guitarist, Lenny White etc.), has wrapped his "rock & roll" solo album — which features an incandescent re-think of the Lovin Spoonful's "Summer In The City" appropriately enough — for Columbia Records. Also in: Philip D'Arrow with producer Michael Fondelli.

At Chelsea Sound: The 80s finishing up their CBS album with producer Peter Ker. Joey & The Pets working on an LP for Atlantic with Blondie's Jimmy Destri at the console. Michael Kamen (NY. Rock & Roll quartet if you care to remember back that far) producing a reggae LP with Jamal for Atlantic.



Chic

Speaking of Atlantic, their recording facilities are currently being used by the mega-popular Chic. At New York's Sigma Sound, Teddy Pendergrass is recording his new Phila. International LP with producers Ashford & Simpson and engineer Michael Hutchinson. Also in: Roy Ayers, Patti Brooks, Jackie Moore and Secret Service.

Los Angeles

Out in Elay, where the agents roam, business has been brisk at the Record Plant where Eddie Money is putting

together his latest for CBS. Michael Murphy, Chicago and Barry Mann are also in for LP work... At A&M Recording Herb Alpert is rising again for a new LP while Joni Mitchell is putting together her latest for Elektra. Ray Coniff, the Carpenters and Julio Iglesias are also in the studios... Neil Young is ruling as solo artist in Gold Star Recor-

ding... Rick Nelson is back in the studios at Westlake Audio where George Duke is producing a new Taste of Honey LP. Angel City and Frannie Golde are also booking time... The Doobie Brothers are back for a minute-by-minute session at Sunset Sound where Terry Desarrio, the Dirt Band and Moon Martin are cutting tracks.

CHORUS

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by doubling up the VCO's for richer sound. The keyboard has 44 keys.

The CS-40M can store and recall, at the push of a button, up to 20 sounds that you've created, even after the power is shut off. Interface with a tape recorder requires just two patch cords.

CS-20M. Up to 8 voices can be stored and recalled in this model. The CS-20M has two VCO's, an LFO, a noise generator, a mixer (for the VCO's and the noise), a 3-way VCF and a VCA. It is a monophonic instrument with a 37-note keyboard.

Both models have keyboard trigger in/out jacks and control voltage in/out jacks for convenient use with a sequencer. Rear panel jacks are provided for ON-OFF foot switching of Sustain and Portamento/Glissando effects, and for foot-pedal control of the filter and volume.

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CS-5	37	1	1	1	1	N/A
CS-15	37	2	2	2	1	N/A
CS-20M	37	2	1	2	1	8
CS-40M	44	4	2	2	2	20



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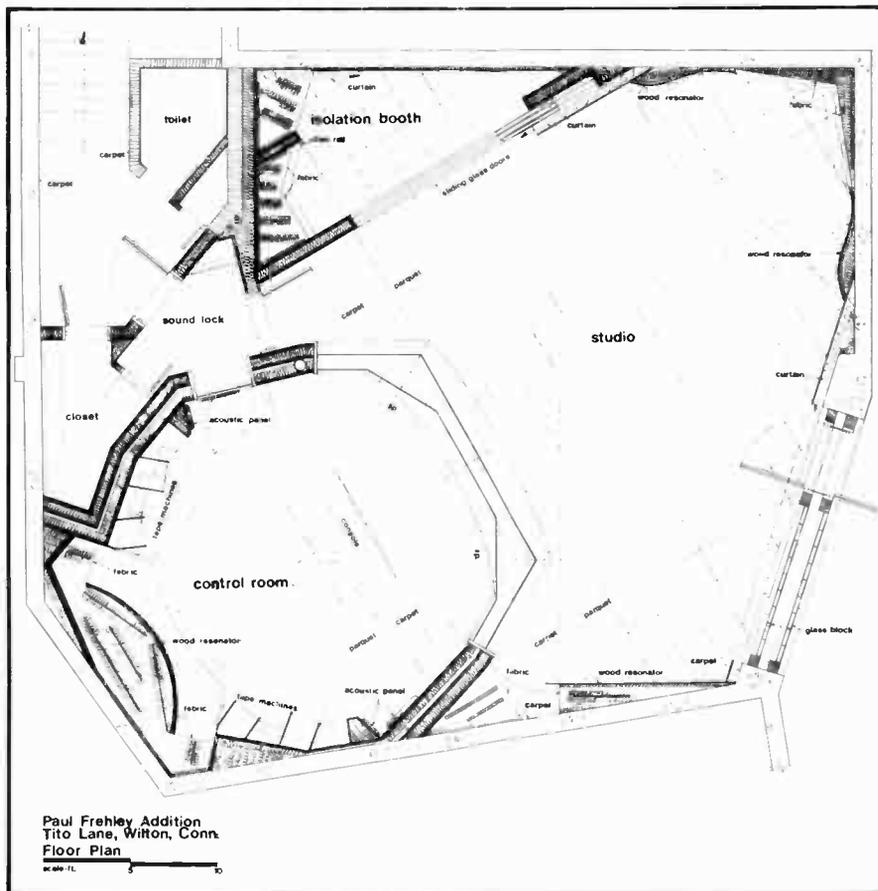
For more information on the full line, write: Yamaha, Box 6600, Buena Park, CA 90622. (In Canada, write: 135 Milner Ave., Scarb., Ont. M1S 3R1.) Or better yet, visit your Yamaha dealer for a demonstration of the synthesizers that take both your creative desires and your budget considerations seriously.

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John Storyk-Studio Designer Part II



In the first part of our discussion, Storyk and I covered many general areas of studio architecture, design and construction. This second part which concludes the Storyk profile delves into more specific areas such as the symbiosis of design and technology, digital recording and its implications *vis-à-vis* studio design and the future of recording studios as embodied by sleek and compact audio/video studios that are already on the drawing boards.

J-C Costa

IMRW: While we're on the subject of recent studio technological innovations in both analog and digital recording, is your input ever required to match the facilities to a specific piece of equipment — as in designing a room around a Neve console as opposed to an MCI console,

or vice-versa?

Storyk: Yes, a little bit. We consciously don't sell equipment but we have to be constantly aware of virtually everything that's coming out. In fact, for a *non* Double-E person, I know a remarkably large amount about that kind of stuff now. Not so much from the standpoint of knowing how to hook it all up — although that *does* affect some things, whether we want to "trough" the room or conduit a room. Or, if someone wants to put in a faceted board as opposed to a big long Harrison "mirror"-type board, that may affect what I do on the ceiling. Some of the boards reflect light in a different way, so we may use a different fixture. It's one of the first questions we ask. Other things like: Do you need two 24's and two 3/4" decks and four two-track decks? That is a high equipment

complement and if you want that, I'd like to know about it before we lay out the room. As opposed to other studios where they don't want to see *any* tape machines. The record Plant in LA for a while only wanted to see the 24-track in the room, they had all of the other stuff in another room, it was kind of "magical". Actually it's all moving back that way because pretty soon there won't be any equipment in the room, 'cause there won't be that kind of equipment *per se*, it'll all be digital.

IMRW: Which conveniently leads into my next question, will digital have an impact on studio design in the future?

Storyk: It's giant. An article in itself. Yes, it effects a *lot*. It effects our way of thinking about the layout of the room, the troughing and the movement of

Continued over

John Storyk- Studio Designer

wires in the room. It effects the way we think about multi-studio complexes; we have already done a theoretical studio (Studio California) that could be built in LA — this is on our own not for a client. And although we're not saying this is necessarily the "studio-of-the-future", we wanted to see what would happen when we put two control rooms back to

back on a common machine room. No more tape machines, hard-disc drive and digitally-addressed consoles. And things like can an analog room become a digital room? Can we get into it? How many doors do we need? Although this is a good two to three years away, I'm lookin' at it already. And any audio studio designer who thinks he's real

smart should spend his time looking at Video studios, which is what we've been doing. In fact, we're doing three video studios — we're finishing up Todd Rundgren's studio in Bearsville (New York), we're doing Boston's largest post-production center, Syntel (*sic*), we're working on National's giant project over on the west side — they're moving all of their operation, over 50,000 square feet. So we're looking at a lot of video equipment too. For two reasons: they're ahead (video) of us technically speaking, and they're "getting married" in the Eighties. By 1983 studios will have new names like The California Audio/Video studio.

I think studios are going to get smaller. They'll have less equipment in them. They'll have *no* equipment in them eventually, just whatever you need to digitally address the storage medium. If you ever been into a CMX room in a video house — it's pretty small, but next door there's a pile of equipment like NASA. The basic common denominator of all of the control rooms is that you're carrying *everything* in the control room. And it's really kind of silly to do that.

IMRW: To wrap things up, I was curious as to whether or not you think that studio architecture will actually be taught as a separate discipline? In a way, you're pioneering in a field that never existed *per se*. Will there be enough demand to create a need for this?

Storyk: Probably not, no. But General Acoustics is taught and that's simply a cross between physics and architecture. Studio architecture *per se*, for recording studios, is really not taught. There is text on it which gets worked into courses. There are "hands-on" audio schools which are dabbling in it, some of them have even been smart enough to ask me to lecture on the topic (laughter). But there's not enough text on it because it's moving too fast, changing too quickly. It's the same situation as something specialized like Hospital Architecture. There have been lectures and seminars on the subject. Actually, the number of people who've done a hundred or more real studios, really done them, is thin. Five, six or eight people, a real small number of people. I'm just getting to the point where I'm beginning to feel comfortable doing lectures and interviews. ■

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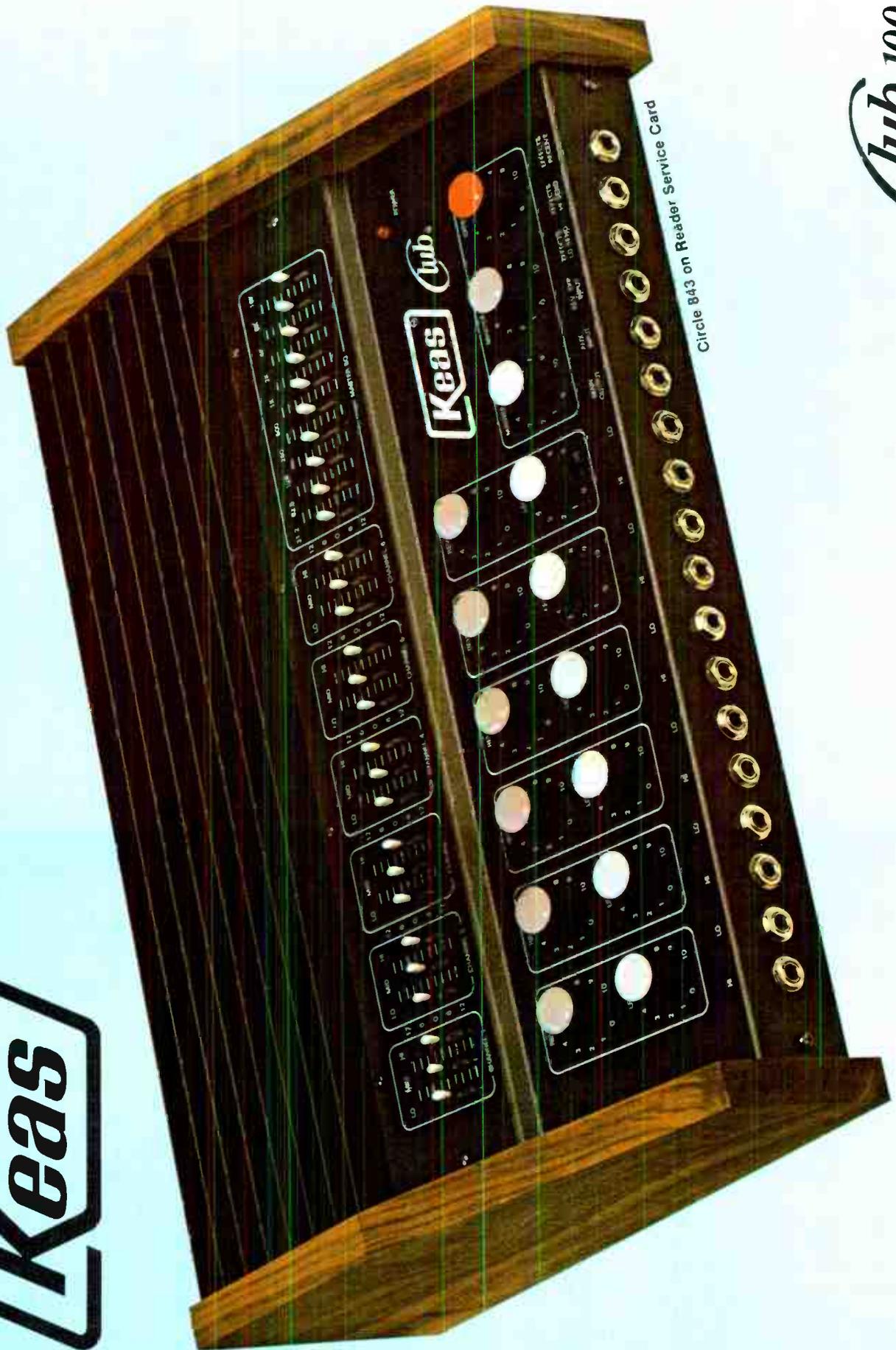
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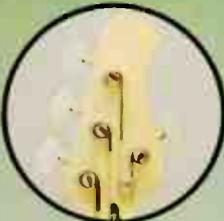
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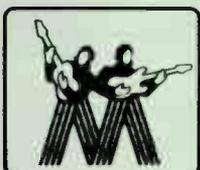
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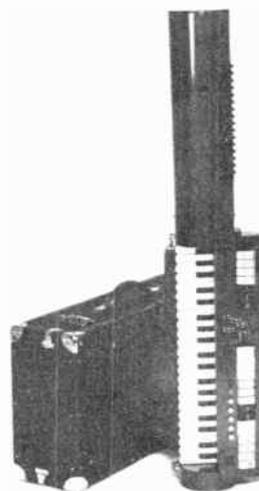
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ON TEST

STUDER B67

The basis of the transport used in the B67 was originally used in the Revox A700 but a closer examination reveals that as the deck developed through the A67 to the B67, many changes have taken place. The tape path and shape of the headblock are still similar but the materials used have been extensively professionalized. The electronics however are a completely separate development.

There are a wide variety of permutations available to suit many different recording and broadcasting requirements. The model under review was a 7½/15/30 ips stereo machine in a pedestal mounted console with a VU penthouse. The transport and electronics can be quite compactly mounted in some formats but in this style they are quite sizeable for a stereo machine. The width is 27½ inches, 23¾ inches deep with a height of 43½ inches to the top of the penthouse and 32½ inches to the deck.

The Transport

The deck is able to accept reels of up to 10½ inch diameter and has a DIN centre spindle but is supplied with a pair of NAB adaptors.

The tape path is symmetrical about the headlock. Leaving the supply reel, the tape first passes over a sprung tape tension sensor and then a rotating roller before entering the headblock. On the other side of the headblock is an idler roller with a rubberized strip in contact with the tape to minimize slip. This acts as the tape motion sensor, having a toothed wheel under the desk reflecting an infra-red source which is then detected by sensors and the information passed to the transport logic. Before the take-up reel, the tape passed over the second tape tension sensor.



Access to the deck is easy and requires only a few screws. The headlock can be removed by three screws.

The headlock contains three heads all well screened with the play head having a manually-operated head shield. There is a manually-operated tape lifter as well as the automatic that can be used to lift the tape from the erase and record heads. In addition, there is a knife edge that can be used for cutting tape while it is still laced up. It would be impossible to do this accidentally as the level is behind the headblock and requires a very positive action. Mounted on top of the headblock is an editing block should you prefer to use it.

The deck controls are straight forward and include all the normal functions with a few extras.

"MOT. Off" turns off the take-up motor for editing and disables the fast wind modes. The "Repeat" button puts the machine into rewind while your finger depresses the button but when released puts the machine into play. This is very useful when editing or analysing a section of tape.

The "Auto" button has two possible operations. It can be pressed in play or record and when the tape reaches a transparent leader, it will be wound back to the start and stop. The other operation is the same except having re-wound it will go into the previous mode — play or record and keep the "Auto" function going. The choice of operation is programmed internally by a jumper on the tape transport control board.

"Fader Start" puts the machine into the stop mode and it requires an external signal to start the deck. This is often used in broadcasting applications where the machine is

required to start playing as a fader is raised — cued by the internal switch in the fader.

Remaining is the "Pause" button which holds the play/record mode while it is depressed as it does not latch.

The tape counter shows tape running time in hours, minutes and seconds. What is actually displayed can also be controlled internally but our version was able to show a minus value up to 59 min 59 sec if rewind beyond the zero point which I found useful. The counter was pretty accurate and stopped immediately the tape tension was removed even if the tape motion sensor roller was still spinning after fast wind.

The transport functioned very well and I have no complaints at all. The rewind time on 2,400 feet of tape I found to be well below Studer's figure of 120 seconds for 2,300 feet, but maybe a little less speed would be beneficial as the wind on the tape (Ampex 456) is a little rougher than we have come to expect from modern machines with matt backed tapes.

The Electronics

The penthouse is dominated by a pair of VU meters with 3½ inch scales with peak reading LEDs. The meters may be internally switched to read +4dBm/ +8dBm. Below each meter is a stereo headphone jack socket.

The controls for the left and right channels are on either side of the meters and consist of two concentric knobs for record and reproduce level with the inner knob being selected by pushing the "Uncall" switch and so making short term alterations to record and play levels possible. There are fish-eye switches for input/reproduce selection and for safe/ready status.



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The right side of the penthouse contains a five by three-inch elliptical speaker with a pin select and to select channel 1, 2, 1+2 input to the speaker. There is ample volume from this speaker for editing and other machine local operations but I found it very easy to leave it on and not realize that I could still hear it while sitting in front of the studio monitors and so color

what I was hearing. A case for strict operational discipline.

Both the panels in the penthouse are hinged and can be swung down to inspect the electronics etc. which are all on PCBs with connectors enabling easy removal.

The channel amplifiers and transport electronics are situated under the front of the deck but access involves unscrewing two hinged panels. All the amplifiers are on separate cards offering the

usual wide range of Studer alignment adjustment.

The supplied manual is excellent with clear diagrams for maintenance and operating instructions.

Summary

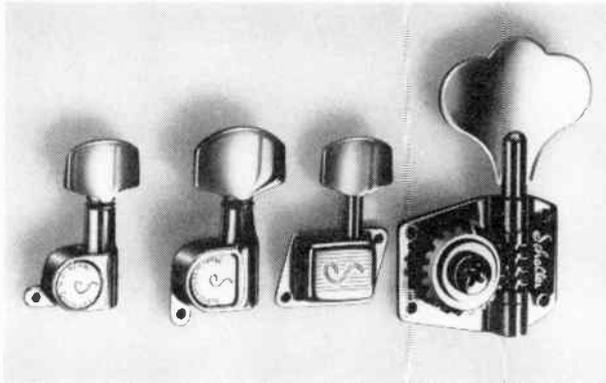
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ON TEST: Shure SM 17



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Currently on test I have a selection of Shure microphones intended primarily for studio use. One of these mikes, however, is quite different from the others in that it is extremely small and has been designed for use with acoustic stringed instruments by mounting on them, although it does have other uses. It is known as the SM17.

The SM17 is certainly small — 3.75cm long including the cable strain relief and 1.5cm in diameter, or in other words about half the size of an XLR plug. It is supplied with about three meters of lightweight two core screened cable which is terminated at the open end by a switchcraft male XLR connector with a special strain relief to grip the narrow cable. At the other end the cable is mounted directly into the microphone and is not detachable except for replacement. Due to its small diameter (about 2mm) the cable is rather prone to tangle particularly when new as it is supplied tightly coiled in a plastic wallet, but this can be lived with.

The microphone disassembles by unscrewing the grill and applying gentle pressure on the cable to push the diaphragm assembly up above the body shell. This exposes a well designed cable grip which effectively relieves all strain on the

diaphragm assembly. The casing is made from aluminum and is finished in a grey enamel finish. It appears to be fairly robust despite its weight — again only about half that of an XLR plug.



Mounting on Plugs

The kit supplied with the SM17 includes two fixing mechanisms for mounting the mike onto musical instruments. To mount it on violin, viola or cello, there is an expansion mount which fits into one of the string holes on the tailpieces. It is then tightened gently till the rubber bushing expanding to hold the mounting firmly in place. Three sizes of bushings are included to ensure an exact fit. The shock mount then slips over the arm on the expansion mount and the microphone slips into this. It can then be swivelled into the exact position required.

To mount it on a guitar or a similar instrument a clip is provided that looks something like a tie clip and the shock mount slips over the non-sprung arm. This clip then goes round the sound hole with the microphone in the shock mount being either on top of the sound board or actually inside the guitar.

Both these mountings are easy to remove from the instrument and as every surface that comes in contact with the instrument is rubber sleeved, no mark or damage is done to the instrument finish. The clip on the shock mount, however, slightly marks the microphone finish every time it is clipped in. If the mike is going to be removed frequently from the mount, then perhaps a thin layer of felt or similar inside the clip would be a good idea to prevent this occurring. Lastly two adhesive cable clips are supplied to secure the cable across the body of the instrument.

Preliminary Test

I always like to test a microphone initially with own voice, not for any narcissistic reasons, but because it is the sound I am most familiar with so one can immediately recognise any changes supplied by a microphone when using a known monitoring system.

My initial response was that the SM17 has a gentle bass roll-off starting at a fairly high bass frequency and also a high treble peak. Not an unpleasant sound at all and my findings tally with the frequency response curve supplied by Shure for the SM17.

I found the SM17 to be only average in its susceptibility to "pops" but resistant to other voice troubles. The polar response is fairly good omnidirectional and is consistent in frequency response after a slight treble and bass loss on moving off the front axis.

The microphone is resistant to some handling noises such as knocks but rubbing a finger

along the casing caused a great deal of noise. I was surprised that even very vigorous movement of the cable caused no noise at all. The cable may be thin but it is obviously of high quality.



Clip attachment

Musical Use

I first clipped the mike onto a guitar above the sound board and recorded the output. On play back I was really quite surprised. The reasons for the frequency response I found previously were explained. The sound was very close to the original acoustic sound — rather like one would achieve with a good studio mike if it could be put that close to the guitar without getting in the way. The SM17's bass roll-off eliminated all boom normally found in miking this close, while the treble peak gave a bright edge to the sound — perhaps a little too much for my taste but easy to remove with a little EQ.

Mechanical noise from the guitar did not bother the mike and knocking the guitar body just produced the acoustic sound via the microphone.

With the microphone being closest to the top E string, there was a slight emphasis to the treble strings although only slight and it made chords sound very "tight".

Placing the SM17 inside the sound hole altered the sound giving a round bassier sound with slightly more emphasis to the bass strings. The final sound from this position depends a lot on the instrument used but I think it would sound good when used, say, for finger picking accompaniment to a solo voice where a warmth and fullness without boom is required. *Cont'd 110*

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ON TEST: Shure SM 17

Plugging the mike into an amplifier gave good results but of course we are limited in volume before feedback sets in. The room I was testing in was small, so feedback set in before too much volume was realised but in a larger room I have every reason to believe that it would be perfectly good for stage work. Placing the mike inside the body, however, renders it very liable to feedback.

Aside from the guitar, I tried it on a variety of other instruments and I got results of varying degrees of success but I know that at certain times I may need a sound like that. The microphone's small size seems to suggest unusual applications. I managed to record a hand bell being shaken "town crier" style by clipping the mike onto the bell and so achieving a very close sound. This would not be possible with a stationary mike. Other ideas I would like to try include miking drums with lots of SM17s — say two on each tom tom might give an interesting sound. How about an entire orchestra individually miked up with SM17s? Not very purist I agree, but I'd love to hear the results. The only instrument I found that did not work too well was a harmonica played blues style with the mike held inside cupped hands while playing. The sound pressure here caused the mike to overload, but it was about the only case I found.

Conclusion

I think this is a very useful mike and full of possibilities for experimenting. Its small size means that it can be visually "lost" on an instrument and not get in the way of the player. The sound quality on most applications is very good. On stage it may lose out to contact pickups over feedback but if an acoustic sound is required this mike has many things going for it.

Keith Spencer-Allen

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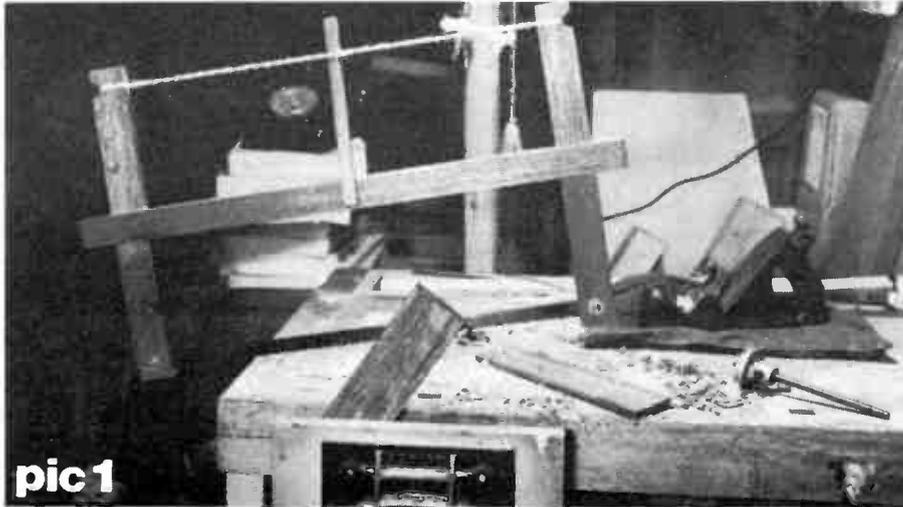
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Building-a-Solid Guitar

by Stephen Delft

Pt17 HEAD FACINGS



pic 1

I did not go into much detail about making and fitting a wooden head facing, so here are some pictures which should help to explain the process. If you have completed this part successfully, don't worry. If you have not, read the next few paragraphs.

Although it is preferable to fit the head facing before the fingerboard, I usually find myself left with this job still to do at about this stage. I usually make the head facing from a scrap of the same wood which I used for the fingerboard. If you are lucky, there will also be enough for a heel cap at the body end of the neck. The scrap of wood needs to be just more than half the width of the head at its widest point.

You need enough extra to allow for planing the centre joint between the two halves of the facing. You do not need machines to cut a small piece of very hard wood into thin slices. I find the job

quicker by hand. **Photo 1** shows a piece of Madagascar rosewood held in the bench vise, a marking gauge, a finely set plane and a frame saw. This is not a 'bow saw' as found in the better tool shops, although it works on exactly the same principle.

You can use a sharp carpenters' rip-saw, but the frame saw only requires about one third of the effort for the same cutting speed. My saw was made from pieces of an old desk, a bit of cabbage box, assorted screws and washers and a piece of string. It has had five years' use and it is just beginning to show signs of wear.

The blade is a piece of half-used Startrite metal cutting bandsaw blade. It is a 'skip tooth' blade with 3 or 4 points to the inch. This blade is thicker and stiffer than most bandsaw blades, and is necessary if you intend to cut in a straight line. One blade should last you

for ever, as my saw still has the *original* part-used blade and it is still very sharp. This sort of saw requires some practice before it will work for you, and on soft-woods has a habit of jumping out of the cut and slicing your hand. Carpenters' saws are more suitable here. However, if you ever have to deal with a block of hard Rosewood or Lignum, or if you have to cut any hard or resinous wood along the grain, you need this sort of frame saw. It has been in use at least since the Middle Ages, and is so efficient that no one has really been able to improve on the design in that time.

In theory, it cuts on the 'pull' stroke; however, I find mine slower but more accurate if I turn it round to cut on the push stroke like most saws. The saw in the photograph is arranged in this way, and the user would be on the left of the picture. These saws require very little downwards pressure while cutting. If you apply too much, they bite into the wood inaccurately, and eventually become stuck. Large pieces of very hard wood need about as much down-pressure as an ordinary saw when cutting hardboard (Masonite).

Plane one face and all edges of the scrap of wood for the facing, mark a pair of lines around the edges, indicating a slice about 4mm thick *plus* a space between the lines just more than the width of a saw cut. Start the saw carefully across one corner between the pair of lines. Saw down until the saw hits the other corner as shown in photo 1. Turn the wood round and continue the cut at the same angle from the other side.

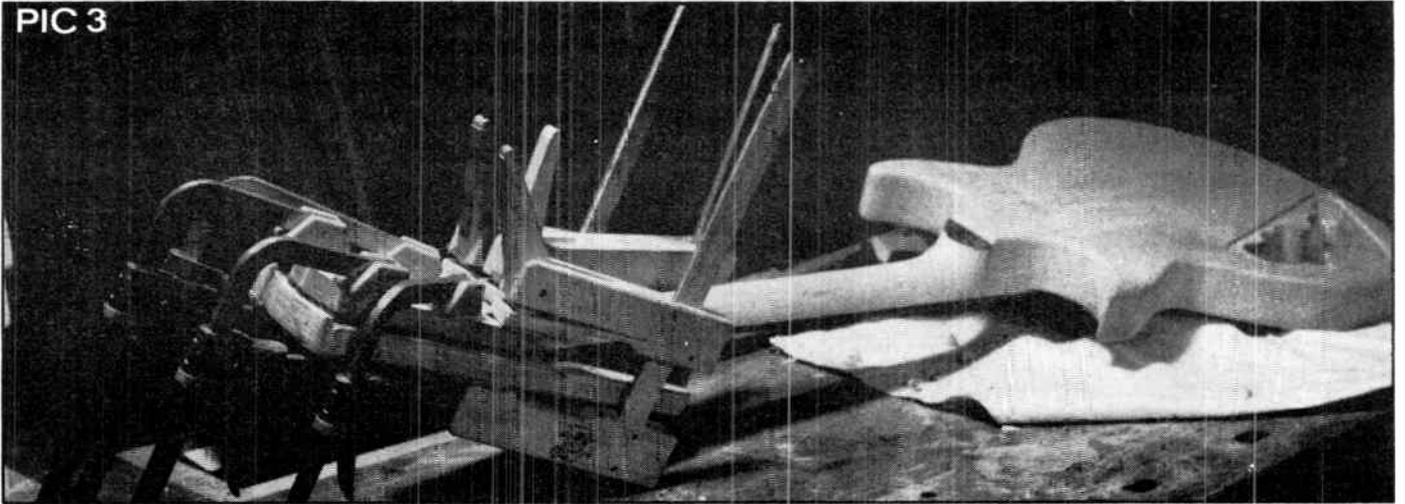
When the *far* side of the saw reaches the level of your original cut, turn the wood round again. Repeat until the bench gets in the way of the saw and then turn the wood top to bottom. Cut in the same way from the other end of the piece, to meet in the middle. This cutting at an angle, from alternate sides, reduces the risk of the far end of the saw going off course. Even so, I would suggest you look frequently at the back of the cut. If it is going wrong, turn the wood round immediately and gently pull the cut back into line. You will only need 2mm of the 4mm thick slice eventually, so it is no disaster if you just go over the line.

When the slice is cut off, plane its newly sawn face, and also the new face of the remaining piece of wood. Remark, and cut off another slice. If the slices are not long enough to make a head facing *and* a heel cap, take a third, thinner slice, just enough for the heel. Plane the back of the second (and third) slice(s). You will need to plane both



pic 2

PIC 3



slices so that they are the same thickness, between 3 and 4mm. Arrange the two pieces edge to edge so the grain produces a pleasing symmetrical pattern. Plane the joining edges so that they fit, and so that no light comes through the joint when held up against a window.

Glue the two halves of the facing on a piece of paper on a flat bit of bench and table. **Photo 2** shows a suitable clamping arrangement, though you may get away with a 'rubbed' joint and a brick on top. Leave about 12 hours. Scrape off the paper and surplus glue, and plane the facing down to between 2 and 2.5mm. Line it up centrally on the head and against the end of the fingerboard and draw round the outside of the head and the inside of the machine-head holes.

Carefully saw round the outline with a fine fretsaw blade or a medium piercing saw blade as described for cutting out the template for the head. Leave about 1mm margin. Saw out the machine head holes in the facing about 2mm undersize. I usually cut out the hole for the truss rod adjuster as well, but it requires careful support and a fine saw blade to avoid cracking the facing. A perfectly good alternative is to draw the position of the opening needed for the adjuster in pencil and then drill the largest round hole possible within this area. Use a 'Lip and Spur' machine bit or a Forstner bit. A large size of Engineers' drill or Carpenters' spiral-nose bit would probably split the facing into pieces. The adjustment hole can be marked, but left uncut, until the facing is glued on. This is the safest way: you may take some chips out of your cutting tools on the concealed end of the truss rod when cutting it out later, but this only means that you would have to re-sharpen a knife and a chisel once or twice, which is no great disadvantage.

You can glue the facing on with almost any woodworking adhesive. I prefer hide glue but unless you are doing the job in the summer, you will need one

of the prepared varieties which remains liquid when only moderately warm. Do not underestimate the force with which the facing and the head will curl away from each other when wet. Wetting the other side of the facing causes cracks later.

The solution is a thick rigid clamping block against the facing, with a sheet of paper for easy release later, and lots of clamps around the edges. See **Photo 3**. With fewer clamps than this, I usually find that some corner or edge of the facing has pulled away from the head, leaving a gap or a thick glue-line. Leave for 12 hours. Remove clamps and block and paper and leave for another 12 hours in a dry, comfortably warm room. After this, the facing can be trimmed to fit the head, and the various holes enlarged to their proper size. Use chisel/knife gouge for the truss rod hole.

For the machine head holes, use a small coarse round file, from the front, until the facing holes are nearly to size, and then finish off with a 13/32 inch Taper Pin Reamer from the back, if you have one. Otherwise use sandpaper round a dowel, again working from the front. If you find soft or wet glue around the holes or edges, leave the head a little longer to dry before continuing.

At some stage, you can if you wish, make a little cap for the heel where the neck joins the body. You can see this in **photo 3**. About 1.5 to 2m is about right and you may need to cut a corresponding amount off the heel with a sharp chisel. It looks nice if the heel cap slopes down slightly from the body to the back of the neck. This heel cap will try to warp when glued, like the head facing. The best cure is an accurate joint and a clamping block with a slightly hollow surface so it only presses on the outside 3 or 4mm around the edge of the cap.

To prevent the cap sliding off, the clamp will need to be a slight angle to it so as to pull the cap against the end of the guitar body. You will need a packing block underneath to protect the frets

anyway, so put some grooves in it to fit over the frets, and cut the other side at slightly more of an angle than the heel cap. Then the clamp can sit securely at just the right angle to hold the heel cap in place. Don't use more glue than you have to under the heel cap. In particular, try to keep glue away from the end grain where the body curves down to meet the back of the neck. Erd grain wood stains easily, and it will not be easy to sand this bit clean later.

Heads with a 'facing' of black paint

Many commercial guitars are done this way. If you have chosen to make the head thicker, and to paint the front black, *don't paint it yet*. The black paint will soak into the edges of the head making a ragged edge, and may be impossible to remove. Get at least two sealing coats of clear on the whole guitar first, as described later on. Then mask everything but the front of the head with masking tape and a big plastic bag, and give the head three thin coats of Black Cellulose from a spray can. Do not use black enamel which is also available in spray cans. Leave 2 hours between coats of black. Leave 2 weeks after the third coat before applying more clear International polyurethane, then spray several very thin coats at first. Polyurethane on top of cellulose requires that the cellulose coat is thin, and fully dried hard. (If you are spraying clear cellulose onto the black then 2 days will be enough drying time for the black paint.) If you have to apply the clear polyurethane by brush, leave the black for at least 2 weeks, then quickly apply one unthinned coat of clear to the front of the head with as little over-brushing as possible, and leave it alone until next day. Repeat twice. After this you can "flat" it lightly to remove lumps and continue finishing the whole guitar. Whichever way you do it, don't flat or

Continued page 115

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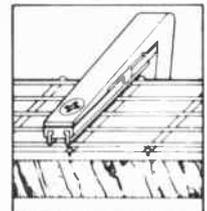
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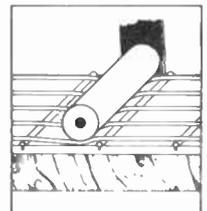
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Building a Solid Guitar

Continued from page 113

sandpaper the black paint. Don't put fingerprints on it, put the clear lacquer directly on top.

Natural finish head

If you find all this troublesome, and you have chosen the thicker head, without a wooden facing, you don't have to paint it black — or any other color. It will look nice left natural like the rest of the head and neck, and you will save yourself a lot of trouble. The guitar shown on page 52 of the May issue is finished this way.

Head with fancy wooden facings

Once again, no problems. Wipe any free color out of the wood with solvent on a clean rag, as described for the edges of the fingerboard, and then treat the head exactly as the rest of the guitar. You can only face the head this way if you originally made this decision while cutting out the thickness of the head. If you put a thick facing on a head intended for paint or for no facing at all, the total thickness will be too great for most machine heads. If you use a very thin wood veneer facing, it is likely to pull the face of the head hollow as the glue dries. You really have to abide by your original decision about the head, but you can see what a rosewood facing on the head looks like in photo 4. This does match the fingerboard, which is covered with masking tape at the moment.

Finishing the guitar

You will need somewhere with good even lighting where the guitar can be lacquered, and where it can hang undisturbed to dry between coats. As you will see from photo 4, I have found a small whitewashed room adjacent to my workshop in which I hang up guitars to dry. For reasons which should be quite apparent, it is about the least suitable place to leave a sticky guitar. However, it is the only part of my workshop which can be kept free from sawdust. It also has good ventilation, separate from the rest of the shop. A clean spare room or garage would be a better choice. Try not to leave sweaty fingerprints on the guitar at any stage during finishing. If necessary, wear thin white cotton gloves. These are sometimes used in factories for handling goods which are later to be painted.

Brush finishing

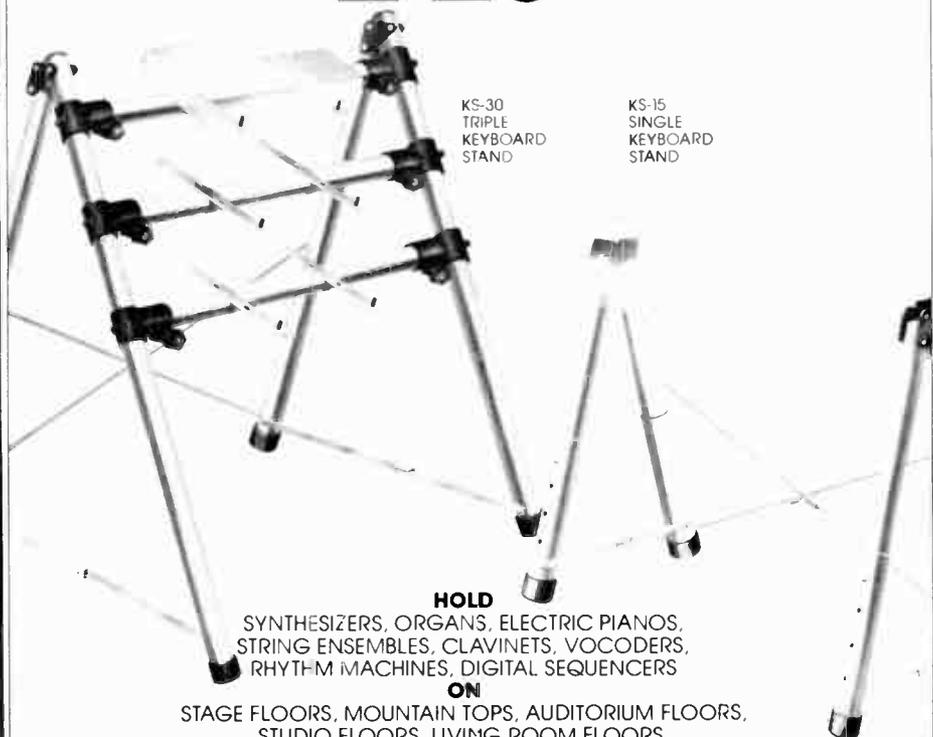
Get a very good brush. A Hamiltons

'Namelvar' or 'Albion' if they still make these. If you like a slightly softer brush, *Rekab* make a flat brush used as a filling-in brush by signwriters. It is made from a sort of ox-hair. Useful sizes are 1 1/2 and 1 3/4 inch. Squirrel hair brushes are usually too soft for polyurethanes, even when well thinned. Flat with 400 wet and dry paper and White Spirit between coats. Flat very thoroughly with paper and a cork block every 3 or 4 coats. You will probably need 8 to 10 thin coats. Leave

2 weeks to dry. Flat with 600 paper, and White Spirit, wipe clean and leave 2 days. Burnish with 'T-Cut' and an exhausting amount of very hard rubbing. T-Cut is a UK product for restoring auto paint finishes. It is probably similar to US Mirrorglass polish. A useful hint is to use a cloth moistened with White Spirit for applying the T-Cut. It is easier to rub, and it doesn't dry out on the cloth so quickly. Use a dry cloth to polish off.

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re-coating, wipe the guitar all over with a 'tack rag'. The subsequent coat will be less lumpy.

Spray finishing

Correct thinning for the particular gun and air pressure in use is the secret. The rest you can learn from one of several books on the subject in your Public Library. Remember if you spray International Polyurethane, that there are max.

and min. re-coat times, and that each coat will take longer to be touch-dry than in the case of Cellulose lacquers. It will also eventually 'sink' less than Cellulose.

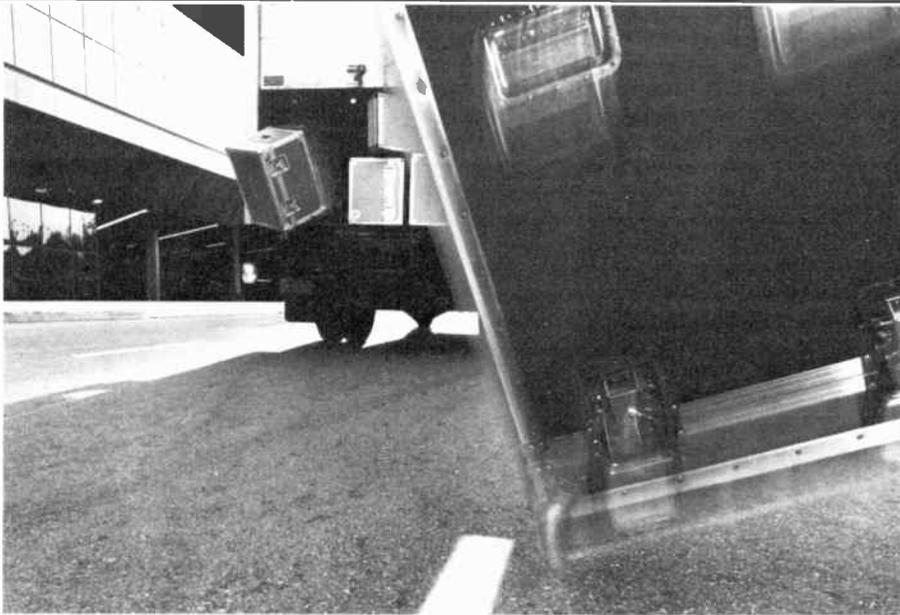
Base Coats and/or Grainfillers

Use what the lacquer maker recommends, and follow the directions exactly. They are all different. Even within

one company's products, some base coats/fillers may not be compatible with some lacquers. The only exception I would make concerns 'paste' grain fillers. Some makers recommend wiping off with a coarse cloth and then spraying over when dry. I find this gives a very muddy appearance to the wood. I prefer to sand the filler off the surface when it is dry, leaving it only in the pores of the wood.

You don't have to use a grain filler, particularly with sycamore and maple, but on porous woods such as mahogany it will save you many times its cost in time and lacquer saved. Filler should match maple and sycamore, but may be a shade darker and colder than mahogany and walnut. Some fillers won't set on some rosewood. Hill Son and Wallace's 'Thixo' filler will set on practically any wood. Sherwin Williams paste filler is often recommended in USA. Also try Star Chemical, Constantine, and Behler for lacquers and thinners.

Stephen Delft



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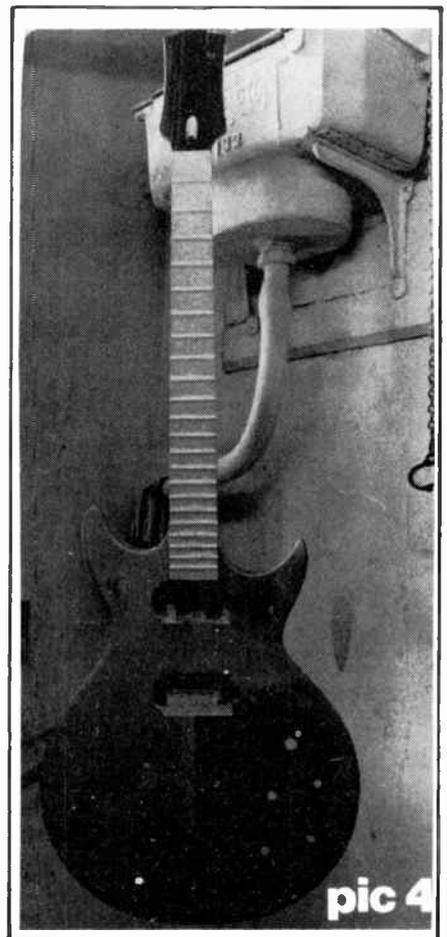


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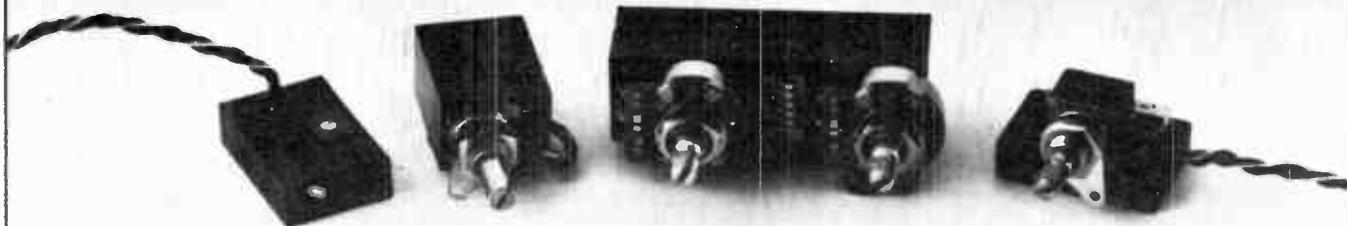
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pic 4

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World Radio History

CRAIG CHAQUICO AND THE NEW STARSHIP

by Scott Kutina



Craig Chaquico (pronounced Cha-key-so) picked up his first guitar at the age of ten, learning some simple rock & roll songs after first experimenting with an accordion for a while. As he got older, he and his friends would head down to San Francisco on weekends, to the Fillmore and Avalon Ballrooms, where he was first exposed to the psychedelic rock & roll music of Jorma Kaukonen, John Cippolina, Eric Clapton and other virtuoso guitarists that were to be the cornerstone of his playing style.

A high-speed, head-on automobile collision at the age of 14 nearly ended his career. But a combination of determination and guts overcame two broken wrists, and two years later he made his recording debut on *Sunfighter* specifically on the track entitled *Earth-mover*; a song written by his English teacher Jack Traylor, who also happened to be a friend of Paul Kantner's.

A year later Chaquico was back in the studio again, this time with the group Steel Wind, fronted by Jack Traylor. He was also sitting in on sessions for Paul Kantner and Grace Slick's album, *Baron Von Tollbooth and the Chrome Nun*. The sessions were originally slated for Jerry Garcia, who was reputedly quoted as saying after hearing Craig play, "Let the kid play them." Craig next appeared on Grace's solo album, *Manhole* later that same year.

It was about this time that Paul and Grace decided to put a touring band together, and since Jorma was busy with Hot Tuna, Craig became the natural choice to fill the lead guitar slot.

When Jefferson Starship became a concrete reality instead of being just a pick-up band, Craig had no problem at all making it as lead guitarist, although he had to turn down an art scholarship to college. Today — six years, four platinum and two gold albums later, he is gaining more and more recognition beyond the "Heavy Metal Whiz Kid" reputation that he has garnered over the past six years. And although he's not what one might call an "eclectic" guitarist, Craig's name keeps cropping up on more and more reader's and critic's polls every year.

Chaquico attributes a lot of his musical growth to the new cohesiveness that the Starship has been exhibiting since the addition of vocalist Mickey Thomas, formerly with Elvin Bishop's Band, and perhaps the quintessential rock drummer, Aynsley "The Hawk" Dunbar, ace drummer with everyone from John Mayall to Frank Zappa.

Dunbar, along with his long time friend and Starship bassist, Pete Sears, make up what Craig likes to call, "Your basic English rhythm section." He continues, "It's exciting, as a guitarist and

as a soloist, to play over that kind of foundation. It's much more inspiring because you can really feel it."

Craig also claims these new additions have given the band a much more unified sense of direction. The band's sound, as exemplified on its latest album, *Freedom at Point Zero*, is a harder, razor-sharp harkening back to the halcyon days of the original Jefferson Airplane, as opposed to the more recent, ballad-oriented Starship.



Jefferson Starship

A list of the guitars and basses stolen from the Starship after the disastrous concert at Lorelei in West Germany. If a reader has any information as to their whereabouts, the Starship may be contacted at 2400 Fulton Street, San Francisco, CA 94118. I'm sure that the information will be most liberally rewarded.

Make	Model	Serial Number	Remarks
Guild	F-50	AD 336	
Guild	F-412	OB 116	
Gibson	Les Paul	92180	'59 Cherry Sunburst
Gibson	Les Paul	131263	
Gibson	Les Paul	78767	Black Custom
Gibson	Les Paul	78793	'57 Goldtop
Gibson	Les Paul	814506	
Gibson	Firebird III	215292	'63 Sunburst
Gibson	L-65	184894	
Gibson	SG	632153	
Gibson	Les Paul	3	'76 The Les Paul — White '57
Fender	Stratocaster	17391	
Fender	Stratocaster	371961	
Fender	Stratocaster	371595	
Rickenbacker	Twelve String	HO656	
Rickenbacker	Twelve String	GL4854	
Fender	Precision Bass	77	
Fender	Precision Bass	715	
Fender	Precision Bass	589867	
Ibanez	Double neck		
Gibson	L-5S		'76 Cherry Sunburst Custom bass
D. Irwin	Bass		

An important tool that Chaquico has developed in this growth as a musician and guitarist, is his home eight-track studio. From a chair situated in the middle of a room in his house, located on the side of Mt Tamalpais in Martin County, California, he can record an "idea", and complete with drum, keyboard and bass tracks, mix it down, and make a number of dubs on cassettes — all within an hour's time span.

Craig believes that his studio saves him and the band a lot of time and money, "because by the time you get into the studio, you know about 90 percent of what you want to have happening. It also makes it a lot easier to show up at a rehearsal with a cassette of basic ideas. Then everyone can say, 'Oh, I see what he wants.' Then, the rest of the band can come up with their own ideas and interpretations of their parts."

His studio equipment consists of a TEAC 80-8 eight-track recorder, a Biamp 12-channel mixer, a DBX unit, a tri-amp power system for the different units, a Nakamichi cassette recorder, two cassette recorders for dubs, a graphic equalizer, a crossover circuit, a patch board, a Roland Guitar Synthesizer, a CAT keyboard synthesizer, an IDP Space Echo, an Ibanez Digital Delay Unit, a Roland Compu-Rhythm and a small drum kit.

Another influence on Chaquico's maturation as a guitarist and musician has been the Starship's latest producer, Ron Nevison. Nevison, who used to mix the Jefferson Airplane's sound, is today a veteran hard rock producer with three Bad Company albums, a couple of Led Zeppelin LPs, The Who, Dave Mason, UFO and the Babys all to his credit, and Craig sees him as a perfect match for the Starship's and his evolving, "Hard Rocking" style.

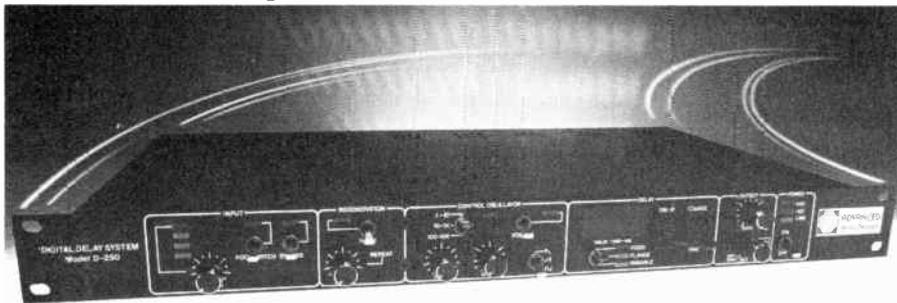
Craig recounts, "During the recording of *Freedom at Point Zero*, Ron was constantly moving back and forth from the control room to the studio while I was playing, and adjusting the tone controls on my (Mesa) Boogies until he came up with a sound that he liked.

"Ron was a lot more familiar with the tonal capabilities of the Boogie than I was, and he was able to come up with a sound that was a whole lot better than what I'd been able to come up with before. On our earlier albums I'd been entirely responsible for the tone of my guitar, whereas on *this* album, I have to give at least 25 per cent of the credit, to Ron. As a matter of fact, Ron was able to capture the Starship sound on tape the way we've always wanted to record it."

The Mesa/Boogie amplifier has been the backbone of Craig's amplification system since his original system of old

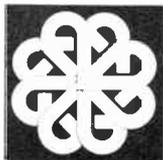
Continued on page 120

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CRAIG CHAQUICO

Continued from page 119

Fender tweed Bassman bottoms and Gallien-Kruger power heads was totally destroyed during a riot at the Lorelei Amphitheatre in West Germany, during the Starship's 1977 European tour. He now uses two of the older 60/100 watt 12" Boogie models without the graphic equalizer, equipped with one 12" Altec speaker per cabinet.

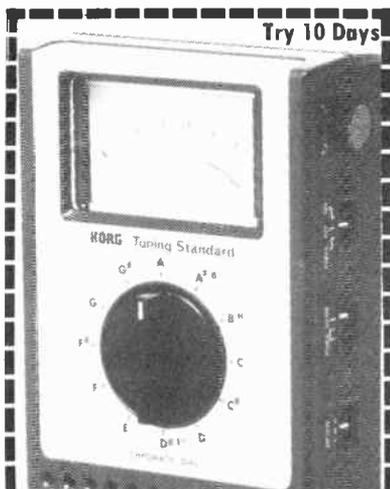
He uses both amps in the studio and on stage, though for live work he will augment these with an additional stack of Marshall cabinets for increased volume, as well as monitor cabinets on either side of the stage. He also has the entire system miked through the PA system for added control and balance.

His system is unique in the fact that he has one Boogie's controls set for rhythm tones (which is constantly in use) while the second Boogie's controls are set for lead tones, which he switches on and off by way of a modified De Armond Volume Control pedal. The pedal, which was modified for him by Good Karma Electronics of Mill Valley, CA, has two outputs (one for each of the amplifiers) and when the lead amp is activated a red LED lights up, indicating that the lead amp is on, as well as the rhythm amplifier.

The rest of his effects have also been modified by adding LED mode indicators and by wiring them to a board for external power. His effects board was also built by Good Karma and consists of an FET booster, a Cry Baby Wah-Wah, an MXR Dyna-Comp, an MXR Flanger, an MXR Phase 90 and a volume pedal. After his guitar signal is run through this series, it is then sent to a splitter box which in turn sends the signal out to his amplifiers and his monitoring system.

Chaquico's guitar collection at one time consisted of a '57 Goldtop Les Paul, a '59 Cherry Sunburst Les Paul, an Ibanez double neck, a '63 Sunburst Firebird III and as a couple of vintage Stratocasters, but all of these were stolen after the debacle at Lorelei, along with a few other guitars that belonged to other members of the band. (See insert box.)

Today, his collection consists of another '57 Gold top Les Paul (his main axe), '72 Goldtop Les Paul, a Yamaha SG-2000 and a '57 Sunburst Stratocaster, one of the few guitars from his original collection he didn't take to Germany. He also owns a left-handed



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World Radio History

Stratocaster that he strings *upside down*, similar to the way that Jimi Hendrix would string his right-handed Strats. He also has a Fender Precision Bass that uses in his home studio, and two B.C. Rich "Bich" 10-string guitars strung with six strings. He strings all of his guitars with Ernie Ball strings that run (high to low) .010, .013, .017, .030, .042, and .056.

Craig's basic picking style is flat-picking, with an occasional use of a finger or two for color or emphasis. His style and attack have become very deliberate, he picks and chooses his notes with care. Craig attributes this to *accuracy*. "I've gotten a lot more accurate (laughter). I usually hit the string I'm aiming for these days."

On stage, he is the most visible member of the Starship crew. A fiery dynamo, he is constantly moving, jumping and pin-wheeling his arms, Townsend-like; or playing behind his head, with his teeth or with a mikestand, in emulation of Hendrix.

Chaquico has also been involved in the development of a device to help the active guitarist who keeps losing his strap, and who inadvertently might damage or even destroy a favorite or rare guitar. He and the Starship's guitar repairman, Jeff Grace, set out to develop an entirely new system to remedy this problem. This innovative but simple system is called "Rubbers", and is currently under a Patent Pending in Washington, DC.

"Rubbers" simply consists of two rubber washers that fit snugly over the strap of any guitar and onto the guitar's strap pegs, effectively holding them tightly in place. Craig says they are extremely affordable too, at only \$2.00 per set.

Off stage and outside of the studio, Craig spends most of his free time playing music with friends and other members of Starship. He also has more than an passing interest in skateboarding, making a cameo appearance in the movie, *Skateboard* a few years back.

Heavy touring commitments over the past year have kept Craig both on the road and on stage — places where you really get your chops down not been cutting classes. His future looks to be nothing but bright as he and the new Starship add light years to an already impressive musical history. ■



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Albums

John Abercrombie

Abercrombie Quartet (ECM)

It seems necessary considering the veritable flood of creative work that comes from ECM, that something be said about the similarities inherent in the company's catalogue.

There can be little doubt that ECM is an excellent label, but so many of its releases are similar in sound, feel, texture and composition. It seems only those with an incredibly strong sense for melody can rise above the "sameness" of ECM product. A little fresh blood in the family may break up the incestuous nature of the work.

It is this similarity which permeates every track on Abercrombie Quartet which immediately evokes this comment. Often when the compositions are extremely textural, the melody a mere trickle in the undercurrent of sound, any semblance of continuity seems to disappear and the common thread of the composition becomes lost.

These are not meant to be disparaging remarks against the ability of the musicians, but on the often self-indulgent nature of composers. In the opening track, "Blue Wolf", we are treated to the mood of what becomes the entire album; a highly emotive timbre expressed throughout a composition often punctuated by brilliant passages from each player (Abercrombie, guitars; Richard Beirach, piano; George Mraz, bass; Peter Donald, drums). Indeed, Abercrombie's single note runs leave little doubt as to his chops, but as a composer his pieces seem fractured and unwieldy. Beirach, however, displays a keen compositional sense. Credited with three of the six tracks, he manages to dabble in the esoteric without losing sight of the common link.

With the piano as the "brightest" instrument in the quartet and Abercrombie opting for a wafting, somewhat



Charlie Byrd

ethereal sound not dissimilar to that of Pat Metheny, the album is overshadowed by Beirach. Despite everything, *Abercrombie Quartet* still has its moments of brilliance as the musicians stretch out.

Bill Stephen

Recorded at Talen Studio, Oslo.

Produced by Manfred Eicher and engineered by Jan Erik Kongshaug.

Charlie Byrd

First Flight (Savoy)

Modern jazz guitarists could find much of interest in this album if they can lose the notion that the guitar is an instrument reserved for single-note playing and rhythm accompaniment. In *First Flight*, recorded some 23 years ago, Charlie Byrd definitively ex-

plores the use of acoustic guitar within the jazz mode by reaching for a more melodic and compositionally-oriented sound employing the characteristic Spanish flourishes of the classical guitar while incorporating various time signatures and idiosyncratic formulas common to jazz.

tunes displays the characteristic Byrd style of stating the melody and then embellishing it with the richness of chordal passages intensified by the deep resonance of the acoustic instrument. The timbre adds significance to each tune, but every composition still develops separately through skillful arranging and masterful execution.

"Little Girl Blue" reveals Byrd's dexterity with an incredibly difficult and gorgeous chord change — "My Heart Stood Still" moves through various tempos within a realm of acoustic elegance. "Interlude" closes the side; a pastoral duet (Tommy Newsom on flute) than enhances the total concept of Side 1.

Another Rodgers and Hart tune, "Spring is Here", opens the second side and although at times the execution seems labored, the intrinsic relationship between harmony and melody strongly supports the piece. On "A Foggy Day", the duet of Newsom and Byrd once again develops a keen sense of textures while mixing styles and tempos; Bobby Donaldson enters with a great hi-hat touch and Al Lucas produces a complimenting bass.

With what has evolved as a definitive sound/style throughout the album, Byrd enters "Spanish Guitar Blues" with a flourish, musically stating that he's got the chops for uptempo, single-note playing too. The fullness of the quartet breaks from the mood of the album by swinging into two uptempo numbers, "Chuck-A-Stuck", and "Homage to Charlie Christian."

On both of these tunes, we hear Byrd's electric guitar sound. Distinctive and full-bodied, he dazzles us with an array of rich, melodic runs punctuated with harmonics and vamping chordal breaks.

That this album is 23 years old says something about the progress of the guitar as an ins-

Albums

trument unto itself. Byrd explored its "total-ness" on this album, but a regression of style seems to have led to the narrower concept of today's players.

Bill Stephen

*Recorded in Hackensack
2/4/57
by Rudy Van Gelder.*

P.M.

1 Ariola (UK)

I approached this record like I might approach a Christmas present from an auntie — lots of gift wrapping and tinsel, but with the possibility of just a pair of plain Sears & Roebuck socks inside.

However, I was pleasantly surprised — to find not a pair of plain socks at all, but a pair of Day-Glo socks, very well made, and evidently from some kind of Santa Monica boutique.

PM is the new band from Carl Palmer, erstwhile drummer of mega-rockers ELP, the band that died to the lack of interest from its constituent parts.

Palmer has dipped heavily into his considerable personal fortune to finance this outfit, the members of which are all American boys save for the leader, and come from such diverse parts of the USA as California and Texas. What they collectively produce is a kind of mid-West rockaboogie, heavy on the vocal harmonies and certainly listenable. It's medium weight rhythm and melody, with plenty of synth flourishes in glorious stereo. Some of the ponderous nature of ELP's keyboards are apparent, meshing uneasily with the slick and polished music that backs it.

A brass section would've been better employed to fill out the sound, as the texture of all-electric music tends to become a mite tedious, like a straight

diet of MacDonald's hamburgers.

Half way through side one the ideas begin to run out, and arrangements of vocals and instruments begin to repeat, and this trend is further evident on side two. Lyrics tend to become crass and chauvinistic.

With the punchy brass, raunchy guitar, driving drums, and the whole package plus vocals sounding very Aphexed, listening to this music blindfold could remind the listener of Styx, or Boston, or Heart, or Starship — i.e. bland-out rock aimed at the dead heart of American FM consumerism.

What is apparent is that all the musicians have been hired, filling uneasily a role between session men and members of a real band. They play with a lack of conviction and soul that they might achieve by the third album if they get that far. The music is pretty in places, rocky in others, but comes over with the same impact as Charlie's Angels.

Perhaps what Mr Palmer needs to do is give all his money away and join a bar band for a few years to get his creative spark back — after all, anybody who once played with The Crazy World of Arthur Brown and Atomic Rooster *must* be able to come up with the goods if the right motivation is there.

Let's not be too harsh, however. This is definitely a step in the right direction for the likes of Mr. Palmer. It'd do a few other "tired" rock stars good to start gigging again with some fresh faces and some fresh songs. At least he's giving it a try. Perhaps when he's finished wooing the audiences of the Yankee Super Bowls he'll come up with some *meaningful* music.

Steve Brennan

Produced by P.M.

Recorded at

*Country Lane Studios,
Munich.*

*Engineered by John Timperley
and Steve Churchyard.*



Bob Fripp

Robert Fripp

God Save The Queen/Under Heavy Manners (EG/Polydor) It's high time Fripp owned up. His so-called innovations with "Frippertronics" are no more than a direct lift of what American minimalist Terry Riley was doing with tape delay in the late Sixties.

The album opens with familiar fare — layers of sustained guitar fed through a tape delay system. This sounded fresh and exciting when he recorded *No Pussyfooting* with Eno eight years ago. Now it has just become a Fripp cliché, although admittedly it does become a little more interesting when sudden dislocations occur, similar to the opening of Riley's "Poppy Nogood." Is this the drive to 1972?

The rest of side one continues in the same vein, with our small, intelligent, mobile unit wringing more mileage out of his intro to Peter Gabriel's "Games Without Frontiers."

Thankfully, Fripp has decided to say something new with his "Discotronics" on side two. "Under Heavy Manners" features the strained vocalizing of Talking Heads' David Byrne to a repetitive funky beat. It's like a disco version of the Bonzo's "The Intro and The Outro" — the listener keeps waiting for a song to appear, but it doesn't. Strangely mesmerizing.

The final long track "The Zero of the Signified", is the one that makes the album worthwhile. Again, driven along by a disco beat, it is underpinned by a constantly repeating fast guitar riff that subtly changes throughout the piece without a pause for breath. In this case Fripp has successfully emulated the hypnotic effect of Riley's music without resorting to direct copying.

Hear before you buy.

Lynden Barber

*Produced by Robert Fripp.
Engineered by Ed Sprigg at the
Hit Factory, New York.
Side One recorded live in
Berkeley, California.*

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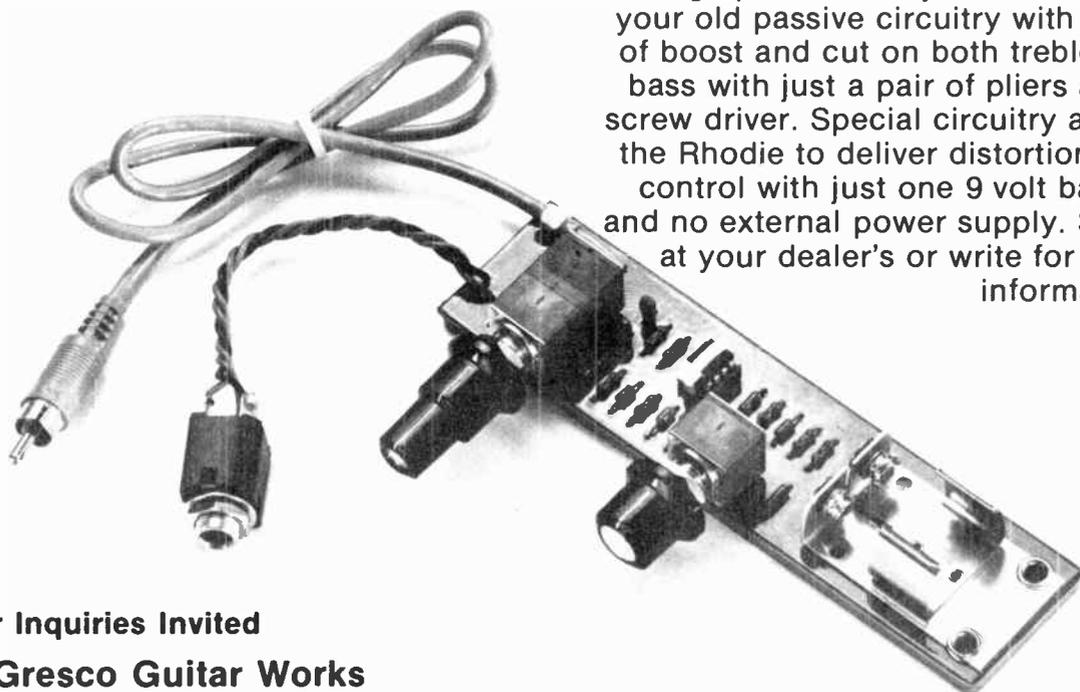
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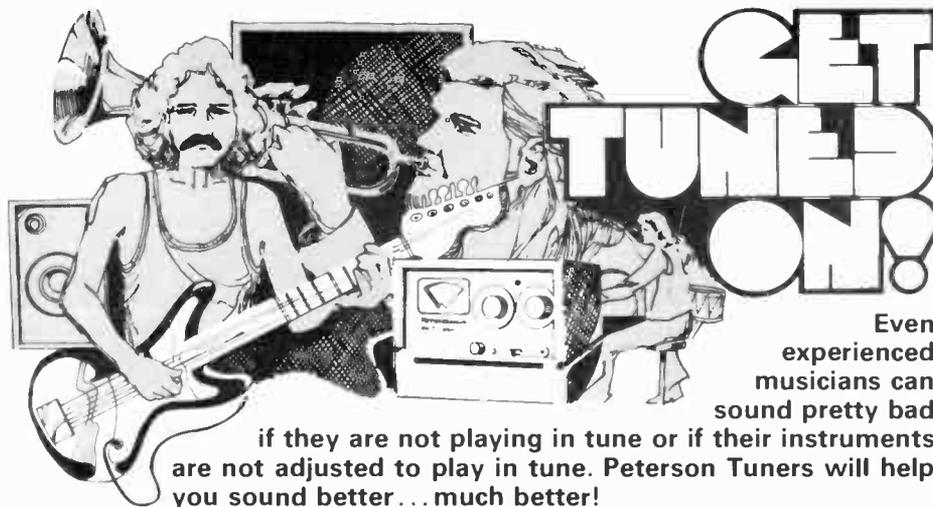
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On Sax:

Alan Holmes

Continued from page 15

technology which will tell you the truth about your tuning without fear or favor which is more than can be said for a guitarist who has spent too many years in front of a 200-watt stack.

I refer to the tuning meter of the type made by Korg or Pearl which enables you to set the note you wish to test and then measure the degree of sharpness or flatness on the meter. You will then discover, should you have access to a suitably tolerant music shop, that it is essential to average out the sharpness at the top of the range with the flatness at the bottom, so that the note to which you normally tune may then show up as "out" on the meter but the *average* pitch will be equally each side of zero at the top and bottom. It is, of course, necessary to warm the instrument up to a good playing temperature so that when you put your mark on the cork for the average pitch position it will be of use under actual playing conditions.

Having established a mark for average pitch (and this is how you should tune all saxes, preferably to at least four notes: in sax pitch, low F sharp, middle B second octave F sharp high B, high E) there are other factors to consider. Should one note appear to be more out of tune than the ones immediately adjacent then the cause could be the height of the pad above the hole not being consistent with the others. Should this note be middle D (and thus a fault common to the whole saxophone family), then usually it is the height of the *C pad* above the hole that is too close, or rarely, too open. A duff note can also be just poor quality or old design but sometimes can be improved by a change of reed. This is a fact well-known to oboe players that the reed can control the tuning of certain notes because of the way it is cut and if a change of reed does no good a change of brand might. It could also be due to the mouthpiece and in particular, the bore.

It is essential that the mouthpiece not only produces the right tone, and is able to range from high to low with a consistent resonance, but that it matches the instrument for the purposes of tuning. I took the easy way out and got a Selmer Mk6 soprano and a Selmer metal 'E' mouthpiece which is made specifically to suit it. Should you own an instrument whose bore does not suit Selmer mouthpieces then you should first try a standard Lawton soprano mouthpiece which Mr Lawton has spent a lot of time on experimenting, to refine the bore and produce ease of blowing. He makes high-precision mouthpieces by hand and if you have a particularly cifficult instrument, may modify the bore to suit it as a special order. Both of these mouthpieces are metal and I feel that as an oboist I really don't want the kind of tone that ebonite mouthpieces produce on soprano. A somewhat nasal effect and perhaps too much "edge" and you are stuck with that oriental tinge mentioned earlier. How do you know that the mouthpiece bore is wrong for the instrument? — By not being able to get the tuning within acceptable limits.

If a professional-quality saxophone were to be blown by a robot then certain notes would be sharp and others flat. This is due to the inevitable compromise of tuning that must take place in the manufacture of any wind instrument. Yamaha have set new standards in this respect by using computers to assist in the design and then, when the optimum has been

reached, mass producing to very high accuracy not possible by hand so that they are all alike. Selmers suffer more from being made by hand, which means that they are all slightly different and in extreme cases can have duff notes and a totally different tone to another of the same batch. Cheaper makes even more so, as standards of precision drop.

The truth is this: *Even the world's finest saxophone only sets up the possibility of being within acceptable tuning limits. It does not guarantee it. That is entirely up to the talent of the performer.*

Yes, there is still no substitute for talent, even though it is now fashionable to scorn technical skill and launch oneself upon an undiscerning public who often happily pay money to hear someone giving a very convincing impression of a cat with its tail caught in a door. I am happy to be able to report that a beginner on the sax will sound like one for at least a year or more and that the ability to tell whether a note is likely to be slightly sharp or flat before it is played is essential if a professional standard is to be reached.

It is a source of comfort to me, even though I admit to making more money when I couldn't play so well, that the cloth-eared and tone-deaf will not be able to bullshit their way through the violin, trumpet, trombone, French horn, oboe or soprano saxophone — which may resist their attempts to produce music with a most discordant protest which says more about them than can cash ever can.

You may well buy a Marshall stack, a shiny Fender/Gibson and within a week play your three power chords at full steam, sounding almost identical to a popular guitar hero, but even the most expensive soprano will not make music for a beginner. You have to master the alto or tenor first and then try the tricky little straight version.

Alan Holmes is a top session reedman who plays soprano, alto tenor and baritone saxes, and just about every wind instrument. He played on the Beatles' Sgt. Pepper album and for four years was a member of the Kinks. He now leads his own jazz-rock group, called Flyer.

On Synth:

Continued from page 23

because they are fingering it in an awkward manner. Scale and arpeggio practice in every key (major and minor) will gradually build up a facility for natural fingering and also develop harmonic sense plus a better change of being fluent in awkward keys without having to resort to detuning the instrument, (or vari-speeding the track!)

A word here for the often neglected and much abused pedals on the piano. Used properly the pedals can inject a lot of interest in a performance,

but pedalling cannot be learned from a text-book — it's more a case of being naturally sensitive.

In conclusion it must be said that if you are serious about your playing then you must work at it — all the great players do! One hour's concentrated work per day will very quickly show an improvement but the important thing is to admit to having areas in which you are not so hot, and work until they match the rest of your technique.

Mike Moran



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