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January 1979 50p

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Tom Scott • Peter Gabriel
Robin Williamson**

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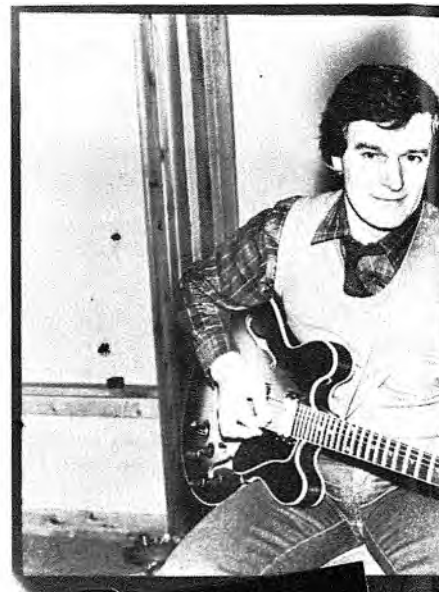
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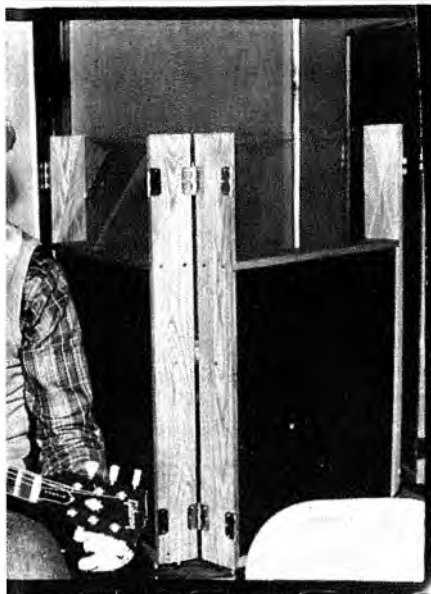
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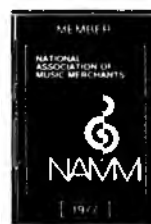
EDITORIAL

It has always been possible for bands and musicians to hire amplification and instruments when they needed them. But in recent years the hire business has exploded into a huge and vital part of the music scene. Now it's possible to hire not only an extra amp or two, or a larger PA for a special gig, but an entire sound system, a massive lighting rig, stage sets and scenery, back line amplification and instruments, transport to carry it all and skilled technicians to make it all work.

This month, IM takes a searching look at the hire business, the men who run it and the services they provide. In the course of our researches, we were delighted to find that the hire operators are not a gang of wide boys intent on making quick profits from musicians. On the contrary, the vast majority of the people we spoke to obviously have the musos' interests at heart. Many of them are ex-players themselves, or ex-roadies, and all of them reveal a deep and sympathetic understanding of what bands want.

You'll find our in-depth survey of the hire scene on page 20. Then, starting on page 208, there's an exhaustive list of hire companies, with details of the services they offer. If you've never contemplated improving your show with hired equipment and crew, maybe now's the time to think about it. You'll be surprised what they can do for you.

Also in IM this month: the usual galaxy of star interviews - from punk through progressive to Celtic folk music and back again; expert tests on a whole range of instruments and amplification; and all the other fascinating features which make IM *the* musician's magazine. Happy New Year!



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JANUARY 1979 (UK)
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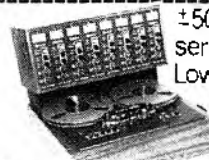
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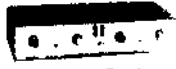


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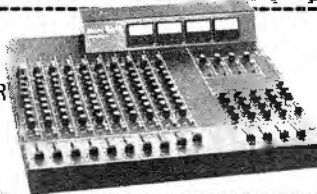


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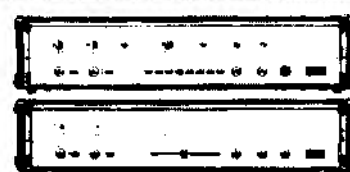


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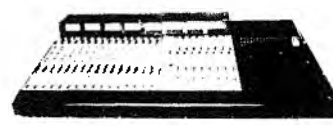
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Letters

Junior Choice

Dear Sir: It was with great interest that I read your article called "Guitar Forum" in this month's issue of IM. The points raised were the kind of things that many musicians would ask the experts if they only had the chance. That's the trouble. We never get the chance to meet the people who decide what is going to be made available to us, the musicians, and how much it's going to cost us.

My other point is that I agree wholeheartedly with Midge Ure when he brought up the question of single-pickup guitars. He's dead right when he said the SG Junior was a great guitar and he's dead right when he put the point over that there would be a demand for these instruments. I play a Telecaster in a rock band but I very rarely use the bass pickup. The tone control is good enough to take off a bit of top for when you want a mellower sound. Years ago, Fender used to make the Fender Esquire which was the same as a Tele but without the bass pickup. In many bands like mine, that really is all you need. If Gibson brought out the SG Junior and Fender reintroduced the Esquire, they would sell like hot cakes. They would be cheaper, obviously, and I for one would rush straight out and get one. How about it fellas?

Gordon Picton,
Ongar,
Essex.

We take your point about Juniors and the legendary Esquires and it would be nice to see them on the market again. However, they would undoubtedly cost a fair bit more than they did before they were discontinued. As for getting a chance to talk to the experts, companies like Norlin (Gibson), CBS Arbiter (Fender) and lots more regularly hold clinics around the country where it is possible to talk to the experts. They're usually good fun and well worth attending.

Country cousin

Dear Sir: I've just read your interview with Jean Jacques Burnel (December IM). I've been a professional musician for many years, and I must say it makes me bloody sick to read the self-important whinings of these "punks". Who the hell does Burnel think he is? "I think it's great that you can play in a band, get arrested and have a laugh at other people's expense," he says. Well I think it's totally sick. I've seen literally scores of "punk" groups in clubs all over the country, and not once have I come across one that can actually play. Musicians used to take a pride in developing their skills and artistry; now all we ever hear is two chords all night.

I play country and western and dance music with my band, and we make an honest living giving people what they

enjoy. Who wants to hear these cretins who can't even play in tune?

G. Henley,
Croydon, Surrey.

Blackout

Dear Sir: Thank you for Alan Holmes' great piece on Wilton Felder. I've admired the man's playing for many years, and it's very rare to find an in-depth interview with him. Unfortunately, though, in my copy, the introduction to the article was totally illegible, the white lettering fading into the background!

Still, thanks for a great magazine.

Derek Wiberly,
Wolverhampton.

Sorry about that. Printer's gremlins crept into the presses and spread too much ink on some pages of some copies. We'll try to ensure it doesn't happen again.

Old story

Dear Sir: I enjoyed reading your "Guitar Forum" feature in the December IM, especially the comments of Midge Ure and Stephen Delft. I'm no expert on the relative merits of old and new guitars, and I think that there's far too much of the "blind them with science" approach in the industry. I've played guitar for 14 years. I have a 1962 Les Paul Junior, which I'm very happy with. But I also have a Columbus SG copy which cost me about £50 and when I put it through a Roland chorus unit and crank up the sustain on my Music Man combo it sounds like a really top-flight instrument. The simple answer must be that it really is all a matter of opinion.

Eric Smees,
Billericay,
Essex.

We welcome your comments, criticisms and queries. Write to: Letters, International Musician, Grosvenor House, 141-143 Drury Lane, London WC2B 5TE. If you have a question you'd like answered by one of our consultants, write to the same address but mark the envelope "Stephen Delft", "Mark Sawicki", etc.

Hardware...

Dear Sir: I am interested in Stephen Delft's new series on pickups, especially construction of home built pickups. I hope you have sufficient response to the series to enable you to do this. After all, what better way to complete your do-it-yourself guitar than having the guitar fitted with custom-made pickups as well?

I am particularly interested in constructing a humbucking pickup which can also be used as a "dual-sound" for use in the middle position on a Strat. The only problem I have is knowing where to get all the hardware from, magnets, wire and the construction of a winding jig. I have even toyed with the idea of rewinding a cheap humbucker but, again, the problem has been obtaining the wire and knowing the exact number of turns and the pickup's impedance and which way round to wire the coils. The only other article I saw was in Practical Electronics in about 1970, but it didn't cover humbuckers or wiring in and out of phase, etc.

Philip Gibson,
Preston,
Lancashire.

Stephen Delft replies: The article on making pickups is still in preparation and, as you will appreciate, will take a lot of research. When it is published, I shall be including details on sources of material, magnets and wire.

... and software

Dear Sir: Your comic is pretty good, but all the same I'll blow 9p to express my disagreement with a point made in the November issue.

I refer to "Taking Care of Business Pt. 9" (p.127): the anonymous chap from the MCPS referred to "hardware" and "software" in reference to tape machines and blank cassettes. Since the term "software" originated in the computer industry I presume he draws an analogy. (Incidentally, some wags call computer people the "liveware".) He is, in my opinion, quite wrong. In this situation, the "software" would be the music, the song, etc - not any material on which it is stored. The software is the intangible

Continued on page 118.



Jean Jacques: sick?

CHASE MUSICIANS

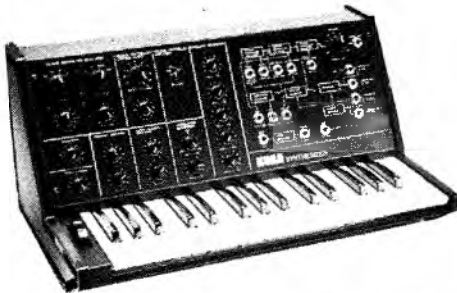


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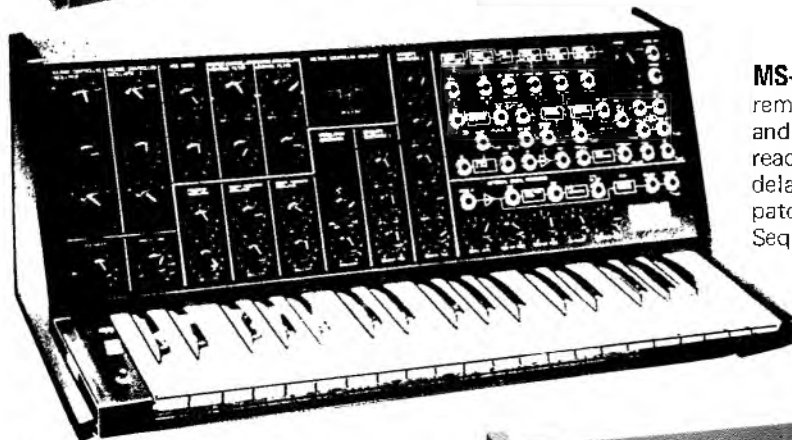
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... passage and grill at the back of the magnet structure. The unit is very nicely presented and has a nice, substantial feel to it. From a performance aspect there are more surprises. Whereas we have come to expect an almost linear impedance curve from this maker, here we find the normal, rising curve that is characteristic of most loudspeakers of this type. Conversely, RCF's strong point has never been low distortion, but in the case of the L12P/24, we find a figure right down at just 3% at full sine wave power, and this only increased to 5% on a re-test at 150w. There are however no surprises in the sensitivity figures. Somehow, RCF always manage to extract the last ounce of acoustic output from their loudspeakers, and the unit now under review is no exception, returning a figure of 101db, which is up among the very best achieved in this 'Speakercheck' series. This is without doubt, an excellent loudspeaker and is certain to come into its own once the market starts to search for alternatives when the Cobalt shortage really starts to take its toll of the Alnico type magnets, and prices rocket up. At this price, it is a good buy in any event, but seems to have been largely overlooked by the market.

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FREE 'N' EASY MUSIC

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The continuing saga...

It takes quite a time each month to get the old head together for our monthly saga. At the same time, the lovely Andrea of I.M. fame rings up twice daily to see how we are coming along, but it always seems a last minute rush (sorry Andrea).

So let's tell you all the happenings over the last few weeks. You will remember the famous Free 'n' Easy Banger racing team? — Well we were pleased to enter our souped up Austin 1100 in the recent Lombard R.A.C. Rally. After a great deal of preparation (we got the light to work) we had high hopes, if not actually winning at least achieving a high placing. Unfortunately the team disgraced themselves by getting lost on the way to the start and finally arriving 2 days after the end of the rally — at least they are in plenty of time for next year.

Our staff had been very busy lately and as in previous months certain items have been well to the full. Our last Maine P.A. amplifier has just gone out and so we are desperately waiting for the next delivery. The complete consignment of Aria guitars has now gone, and the last consignment of Yamahas Super Flighter guitars have proved good sellers. We have been pleased with the sales of Premier

drums lately and ARP Omnis are still as popular as ever.

Drum man Don Ellis who you will remember is in training for the next Olympics has now applied to the Guinness Book of Records for his recent attempt at the world underwater drumming record, his time of all day Friday and Saturday without the aid of breathing apparatus should well stand for some time (family request no flowers please!)

Ed fancy thumbs Poole has applied to join a local band with great potential called The Royal Family. We understand that he will not necessarily play an instrument, but will do his famous impersonation of a Corgi. (This has been known to clear halls — much in the same way as an attack of rabies).

Reg Fittipauldihuntlauda is in training for the Milk Roundsman of the Year when his duties with Free 'n' Easy on wheels permit. Unfortunately he now has to print his own driving licence as he keeps on getting them confiscated by the local magistrates. We understand that he used a Fittipauldihuntlauda licence which has a black market value of 2 doughnuts.

Roger has now got a part-time job with Rent a Crash (The Toyota smasher people). This is his little way of doing his bit for the G.B. Trade gap — he's a lovely falla Mr. Callaghan Sir. Of course the man that you all want to hear about is the one and only John Prieg. We understand that his ever growing fan club now includes the Shops' Cat. He has been improving his impersonations lately and we understand that a new one is about to be sprung on an unsuspecting public. This is his version of St. Pauls Cathedral. You must know that John is lead vocalist with Aylesbury based band known as CAPA CITY CROWD. They are very successful, especially in the local chemist shops.

Stuart has been very disappointed as he was eliminated in the Princes Risborough heats of the Miss World Competition — I suppose he'll never get to be on TV now, while Dennis has been complaining about the fact that John allows him into the Hemel Hempstead shop — he ends up having to buy a guitar just to get out again. Well, the old hand is beginning to ache and poor Andrea is complaining of writers' cramp, so see you all next year . . . ooh my brain hurts.





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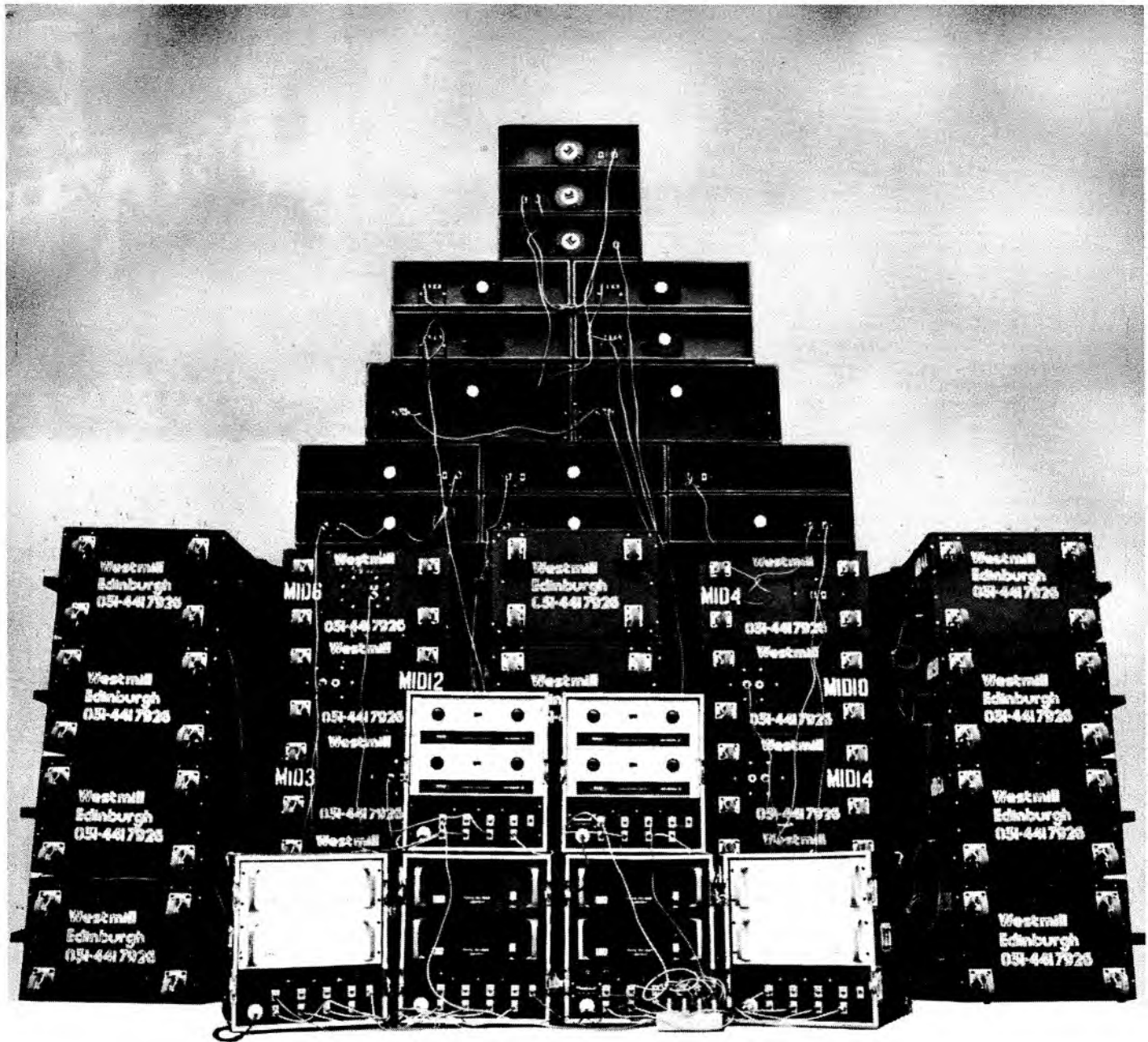
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IT'S ALL FOR HIRE

From a mike lead to a 20,000 watts PA

An IM report by SEAN HOGBEN
and EAMONN PERCIVAL

Who carries whom in the rock biz? For every flash act that continues to stretch the limits of aural and visual music experience, a clutch of back-up men and their humming equipment literally hold up the show.

The familiar names you often see stencilled on those monstrous black boxes belong mostly to a group of entrepreneurs as competitive and innovative as any song market dealers. Theirs is one of the fastest growing sections of the music industry. It has always been the crucial factor deciding whether or not a band prospers in the youth market — on the quality and impact of their live show.

For every new group or artist who hits the road, another sound reinforcement and lighting job appears. Gone are the days when a club gig sounded like a noisy party; now denim-clad squads of knob-twiddlers wield gigantic amounts of sound and light power, making star showers and collapsing mountains available for hire.

It's all for hire, from a mike cable to tour management or a massive 20,000 watt PA rig. The UK rock scene has always seen radical development and the technological leaps of sound reinforcement methods has given a hefty shove to a rare booming industry. During the last three years, there has been a huge increase in the number of groups forming and working all over Europe. A similar rise in the number of hire companies has followed. They are now so numerous and so varied that it's now possible to hire almost anything in the way of lights, instruments and equipment. With enough money, even a garage band can go on stage looking like ELO.

Charges vary greatly, depending on the amount and type of equipment being hired, the length of time for which it is required, whether it comes with a crew of operators and whether transport is included. There are many variables.

Everyone involved, tour managers, sound engineers, musicians and managers, have an option of "the state of the art". IM spoke to a huge roster of hire companies; a comprehensive list of them and their services appear on page 208.

The importance of hire companies to a rising band is undeniable. The Jam is such a group: their recent long UK tour owes much of its success to good sound and lighting. Their PA contractors, Muscle Music, help as much to boost this band's confidence as a rapturous reception. They provide an extremely loud and clear onstage monitoring system which the Jam won't perform without. The stark impact of white light comes courtesy of Zenith Lighting. Both firms do what is expected of every hire company — they take tons of gear around the country, turning bare halls into rock music arenas.

Muscle Music is fairly typical of PA hire companies. They have been providing sound reinforcement for four years and so are almost veterans in a business where many companies have been operating less than a year. Alan Wick and Mark Hardy control their sound hire and rehearsal studio business jointly. The PA rig they provided for the Jam tour is almost an industry standard. Most bass and mid-range bins are manufactured by Martin (some are Cerwin-Vega), while Gauss components dominate the upper mid and high frequency area.

Their 4000 series horns and Piezo tweeters are used by many companies. Muscle opt for RSD power amps with built-in three-way active crossover system. A bank of slave amps puts the Jam's foldback system at 5½Kw — only 500 watts less powerful than their 6Kw PA stacks!

Like many other companies, Muscle manufacture their own mixing boards, the inventions of their resident boffin Alex Alexandrou, and Alan Wick.

The Jam's lighting contractors, Zenith Lighting, have an impressive list of credits. They have lighting technicians and rigs on the road with some of the UK's best new acts. Elvis Costello, Robert Palmer, Peter Tosh and XTC as well as the Jam have all used their services — a range of nine 60Kw lighting rigs. On the Jam tour, John Sinden crawled cat-like along the lighting truss and doubled capably at the mixing board. He works permanently with the group.

Festival work has always been the most impressive setting for PA hire companies. Only at a festival can a company like Britannia Row, the Pink Floyd-owned hire firm, bring out their big rigs. Britannia Row provided 20Kw in sound reinforcement methods have given a hefty Music Festival at Wembley in November. For crew boss Steve Moss it seemed a routine job but the effect of Britannia Row's PA and Lairhurst lighting positively transformed the cavernous Empire Pool at Wembley. (Our cover photograph shows the rig being set up and tested.) Britannia Row provided the 60Kw PA for the giant Blackbushe Aerodrome concert featuring Dylan and Graham Parker. They also have an entire wing of their company providing lighting services. Studio effects of every sort are available through Britannia Row, too.

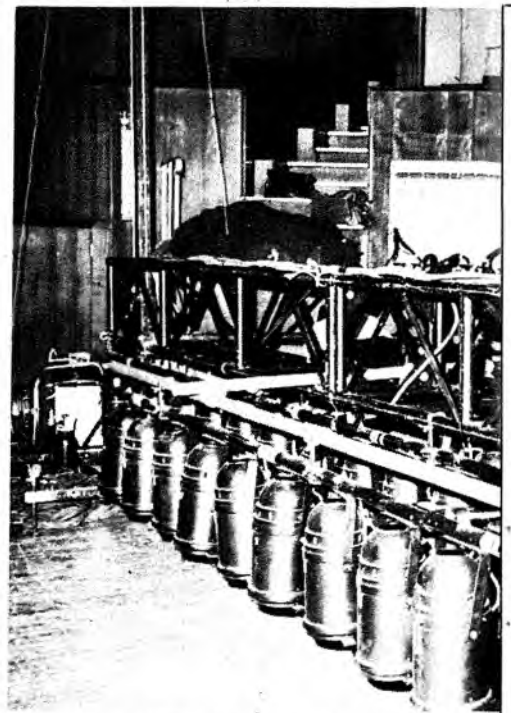
"If you want to know about the tool, ask the tradesman" — so the saying goes. Some of the people who liaise closely with sound and lighting hire firms had this to say about them. . .

Mike Tester is tour manager for Generation X and works closely with a hire company, Meridian. The band have just upgraded from a 3Kw rig to a large 5Kw system. "We like working with Meridian because their two guys always get a really good mix," says Mike. "One of them does the monitors and the other does the main desk. I've always found the hire companies to be very professionally-minded and most of them can supply whatever you need.

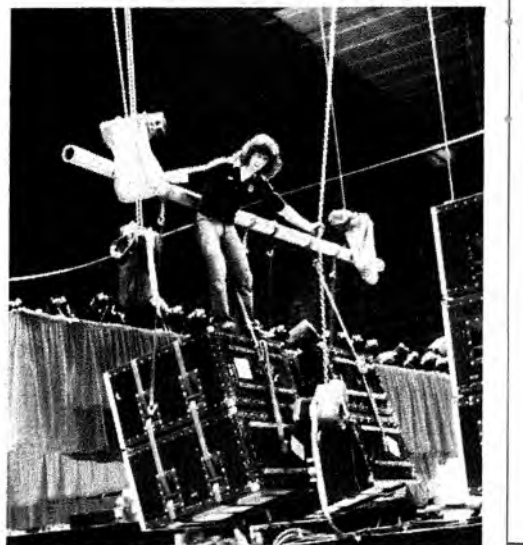
"The size of our system really depends on the venues we do. We're now playing larger places than before and have just started touring with a 5,000 watt set-up. It's the first time we've had that much power out front but we were using a very efficient 3,000 watt system before. We own our own lights and we have our own guy to control them for us. It's a 40Kw lighting rig which is about the same size as we've always used."

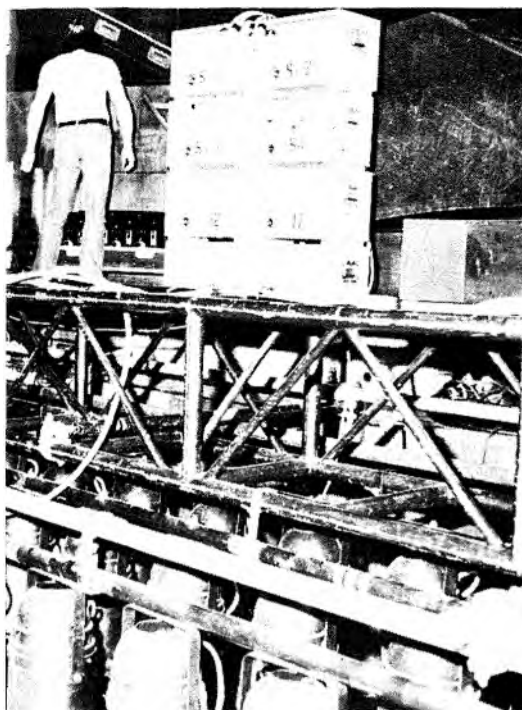
Paul Charles is the main behind Asgard Management and the Asgard Agency. He personally manages the Boyfriends and Radio Stars. As part of the Asgard Agency, he is responsible for co-ordinating tours and gigs by bands including Buzzcocks, Blondie, Penetration, J.J. Cale, Ry Cooder, Emmylou Harris and the British Lions.

"I use a lot of different companies — people like Europa, Malcolm Hill and Ground

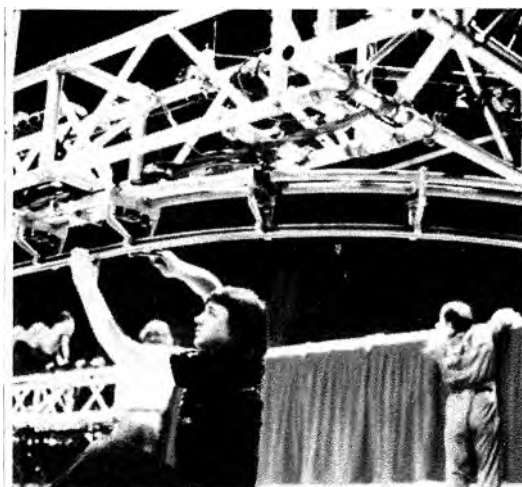
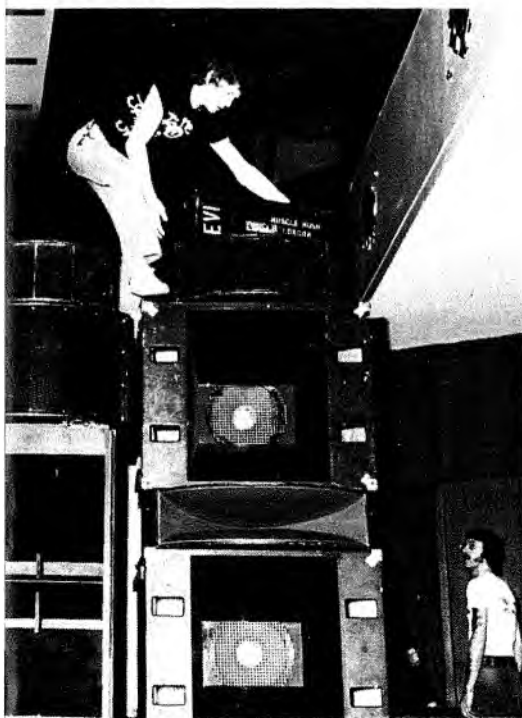


Above: 60Kw of lights illuminated the Jam's recent U
Below: The Jam's sound reinforcement was provided





K tour, courtesy of Zenith Lighting, by Muscle Music.



Left: Electrosound's "Turbo-cabs" were suspended above Rod Stewart on his tour. Above: The effect was completed by 150Kw of lights.

Control. What I usually do is leave it until the last minute before deciding on a company because, once the word gets around that you're in the market for a hire company, you get endless calls from companies wanting to give you quotes. I think service is more important than anything and I also think it's definitely preferable for a band to hire PA systems rather than buy their own. I always recommend that a band doesn't lash out thousands of pounds on a rig because, inevitably, it's money down the drain. The band should hopefully outgrow the system they buy.

"With the Boyfriends, I was really lucky and got a good rig for £75 a night. Obviously, good rigs for that kind of money are few and far between. I wouldn't normally use rigs that only cost between £50 and £75 a night so I was incredibly lucky. With Radio Stars, we usually work with Malcolm Hill because they've got a great engineer. It's best to work with a good, reputable hire company because they know what they're doing - it's their job. It's infinitely better than buying a system.

"The Boyfriends started out with a 200 watt PA and they were paying £10 a night for it. Now, in less than a year, they're using a 2,000 watt rig. The same happened with Radio Stars. When they started, they had some little Mickey Mouse system and now they've built up to a 5Kw rig. Against that, though, Buzzcocks actually pumped money into buying their own PA but they did it right by buying a rig that they can add to and therefore build up so it grows with the band. None of it becomes obsolete as it's a modular system. They've gone from 1,500 watts to a 5Kw rig.

"The other good thing about renting systems is that the company will service it and replace anything and it won't cost the customer, the band, a penny more. Plus the fact that when one band isn't using it, another band is, so it is constantly being updated. The only way in which it pays for a band to buy its own PA system is if you're talking about a club band that are likely to just stay on that one level."

For another viewpoint, we spoke to Boot, guitarist with a new band called Straight Eight. They have just released their debut single "Modern Times" on Eel Pie Records and have recently completed their first album with Pete Townshend as executive producer. The group have only been professional for four months and so Boot is, naturally, new to working with a large PA system.

"In our situation," he said, "it's definitely better to hire a PA rather than to buy one. We use Eel Pie for the larger gigs and when we do pubs or small clubs, we use two local guys who run a small hire company. Our normal system is 1,000 watts with 400 watts foldback. That's really just for the pubs and clubs that we do. Although the band's been together for about 18 months, we've only been working professionally for the last three or four months. The weird thing about using a large PA is that sometimes it sounds terrible to us on stage but will be good out front and that's difficult to get used to. You just have to trust whoever's mixing. More often than not, we don't get a proper soundcheck so it can be very difficult."

Motorhead are, to say the least, a loud band. It's not really surprising to learn that

Rish, their sound engineer, would like to see the band using a 20Kw PA system!

He says: "We don't work exclusively with one hire company - it's really a case of finding what you need and who's got it when you need it. We started off using a Swanson system which was about 2½Kw and great as regards reliability and durability. We later went on to get a rig from Muscle Music which was mostly Martin bins and JBL 4550s. We used that for a year or so.

"One of the best systems I've heard was the Count Bishops' rig. It's a mixture of JBL 4550s, 4560s, 2x15s, long throws and lots more. We hired it one night and it was great. We also used an RSD desk and I'm now thinking about getting one for the band. Ideally I'd like to own our own desk and just rent the PA. What I really go for is power and portability. We used a system one night that was a 10Kw rig but it took an articulated truck plus a three-tonner to carry it. That's the trouble with a lot of rigs - they're too bulky. European systems are just too big. Of all the rigs I've used, we got the best from Swanson for smaller gigs and Muscle Music for the larger ones. What I really would like to get is Cerwin-Vega system. That's the best I've ever heard. For me, it's the ultimate. A company called Texserv hire out Cerwin-Vega systems and ideally I'd like to get a 20Kw rig because it's not too bulky. We had a 5Kw rig in the Marquee and I think we could get a 10Kw in these easily. When we did Hammersmith, we used a 16Kw system and it wasn't loud enough. We should really have 20Kw."

RSD made their name designing and manufacturing Recording Studio Design mixers, power amps and crossover units as well as PA components made for the road. They now have a hire branch of the firm that deals in powerful PAs up to 20Kw. They use bins of their own design and construction, with a variety of Gauss, Electro-Voice and JBL components. Equipment such as a 30-channel quadrophonic mixing desk and 20-8 monitoring consoles are available. Rates are entirely negotiable but RSD can put a 4Kw rig at a band's disposal for £150 a night. Clients have included Hi Tension, Ultravox, the Clash, Eddie and the Hot Rods and the late lamented Sex Pistols.

One of the most spectacular rigs ever put together and hired out is the Electrosound rig put together for Rod Stewart's recent European and UK tour. Nine and a half tons of "turbo-cabinets" are suspended from the roof of bigger venues, leaving the stage bare of all PA gear apart from the musicians' back line amplifiers. There is 20Kw of PA power swinging above Rod's head, another 10Kw of foldback aimed carefully down on to the stage. Electrosound designed and built this rig especially for Stewart's tour, and it is complemented by a 150Kw light rig and an elaborate stage set designed by Electrosound's Simon Woodroffe. Thirty-three Amcron amps power the rig, a 32-channel Soundcraft desk mixes it and the signals go in through Beycr, Sennheiser, AKG, Electro-Voice and Shure microphones. When the tour ends, everything but Rod's personalised drapes will be used again. Electrosound hire to many of the world's biggest acts like Queen, Bruce Springsteen, 10cc, Bette Midler and Rose Royce.

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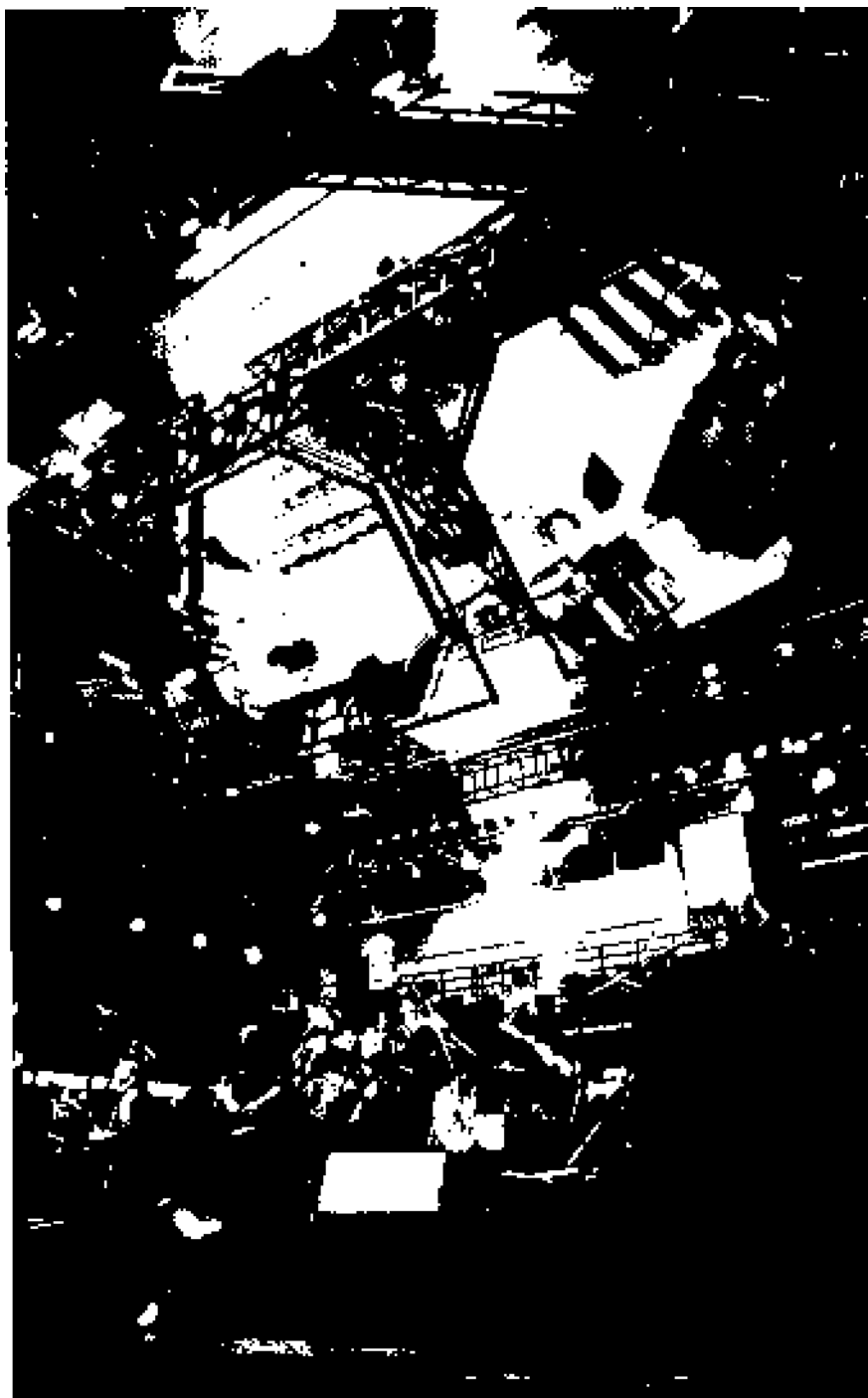
Though most hire companies work with many New Wave groups, some hire firms specialise in diversity. Telecomms of Portsmouth can supply a 5Kw PA rig, complete with sound engineers, for groups like Staa Marx, Nick Hugg and Joe Jackson, but also carry a Bose rig for low-power high clarity assignments like amplifying Bruce Forsyth or Mary O'Hara. They hire instruments and back line amplification as well. The PA Company is a London firm that specialises in "straight" acts. Though they have provided 2½Kw PA rigs for John Martyn, their 2-3Kw rigs are most often on the road with artists like Gene Pitney and Nana Mouskouri. Ralph Harrison from the PA Company says they have rehearsal studios available and will make club installations.

Two of the biggest hire companies are based in London. Julian's in North London do some unusual jobs, like providing Oscar Peterson with a Polymoog to play in his hotel room and the electric grand piano and synthesizer that the Three Degrees needed to spice up Prince Charles' 30th birthday party. Maurice Placquet in West London can provide an orchestra with brass, woodwind and stringed instruments. They have recently expanded their hire of acoustic pianos but cut out hiring big PAs. The BBC and Status Quo use their keyboard hire service.

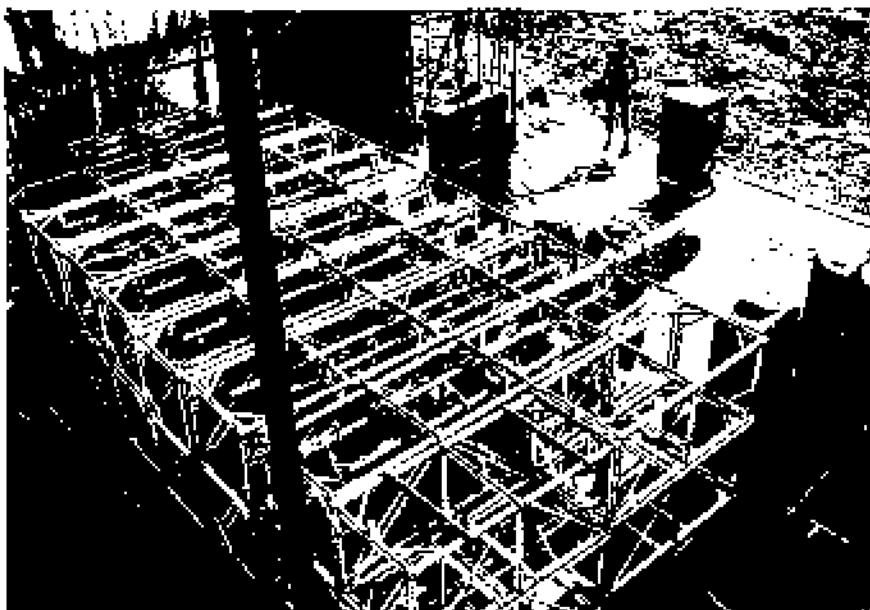
Always one of the most comprehensive hire services, ML Executives (directors: Roger Daltry, John Entwistle, Roger Searle) performed a major logistic feat by trucking a gigantic PA rig to Egypt for the Grateful Dead's fling in the shadow of the pyramids. ML have the cream of instruments and amplifiers to put at the disposal of rock groups, including such items as Alembic guitars and Boogie amps. They can put together any size PA, have three large rehearsal studios at the Shepperton complex and will lease out coaches, trucks and moving equipment specially designed for rock shows. ML have a wide range of clients, from Sailor to Devo.

Now that equipment used in presenting rock acts has become so specialised, the division between sound and light hire companies is stronger. Capital investment is large and companies like Lairhurst Ltd., who have a vast stock of equipment, are branching out into design and fabrication of stage sets and light rigs. Lairhurst constructed the spectacular mirrored stage set for Genesis and the Dead's pyramid set. They have made sets for Peter Gabriel, Roxy Music and Bryan Ferry. Wings use Lairhurst lights and they have designed personalised sets for Wishbone Ash, the Vibrators and the sadly defunct Be Bop Deluxe. Be Bop's use of Lairhurst-designed fluorescent-lit sets was a stunning innovation.

Though London may appear to be the headquarters of the UK tour generals, Sandy McRobbie finds he can run Lamplite, another of the UK's biggest lighting hire firms, from Aberdeen. He has a warehouse and keeps all his gear in London, preferring the telephone and the relaxed atmosphere of Aberdeen as his forum for business. Richard Dale has based his company, RDE, a stone's throw from Tower Bridge where 10 theatrical designers toil at producing new sets and light rigs for the likes of Dolly Parton, Steve Hackett, Blondie and Millie Jackson. Increasingly, lighting companies are



Above: Lairhurst designed and built this lighting rig and mirrors for Genesis.



After the Reading Festival, Bruce's lighting rig being dismantled

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offering staging services as part and parcel of their quotes. Richard's colleague Chris Adamson runs CA Tour Productions, a service that will take care of everything from hotel bookings to truck hire. They often share contracts.

Quite often, especially for a band who may not be earning the sort of money needed to run a huge light and sound rig, a handy package deal appears the best value. Whale Audio Visual of Maidenhead offer a 6½Kw rig with a 32Kw light rig, two operators and transport for £150. Separately, these services would be approaching that price anyway, and many hire firms who deal solely with lights or sound could not beat a combined quote. Whale Audio Visual throw in a follow spot with their two-Genie light rig and will put as much as 2½Kw of foldback on stage.

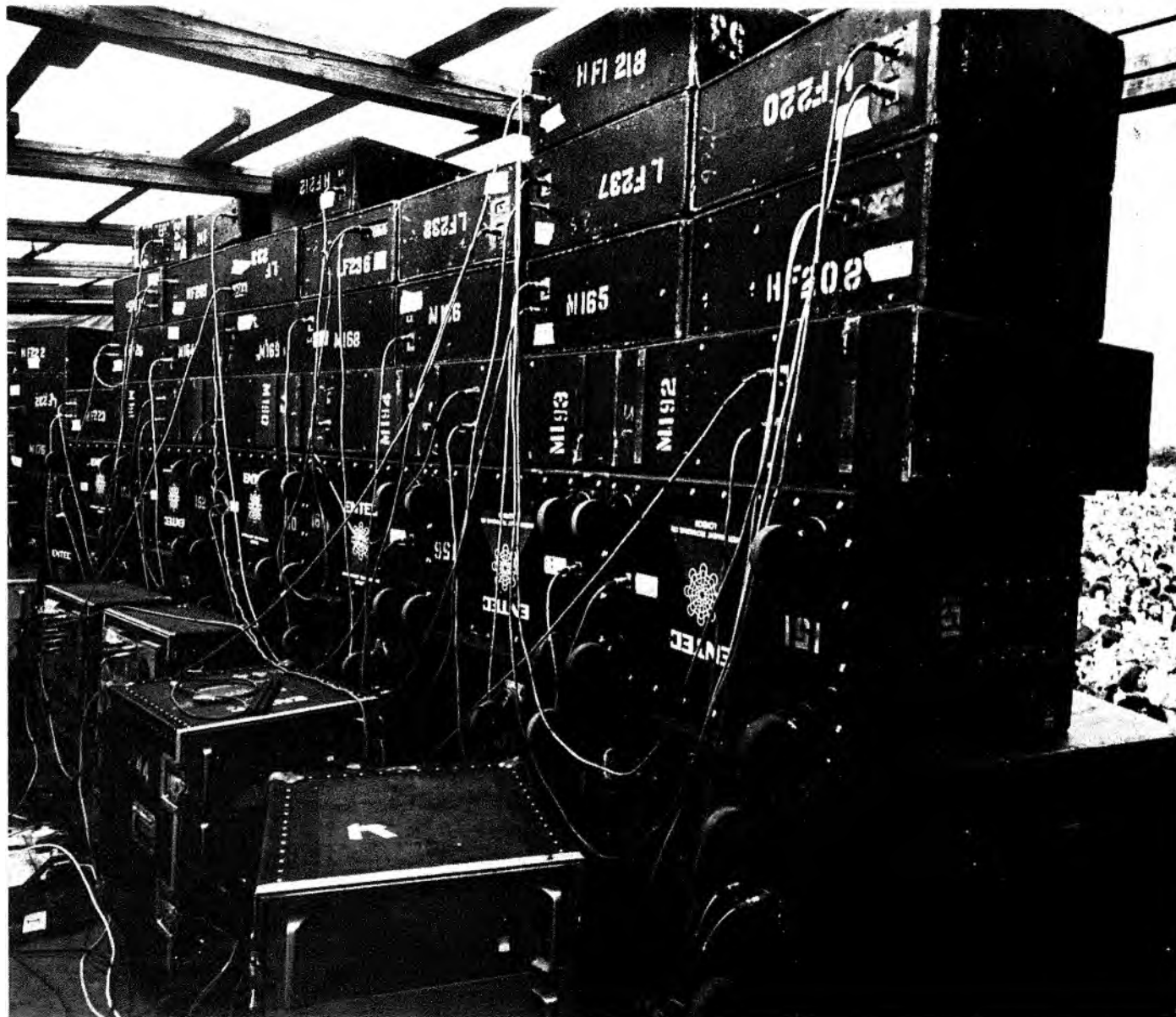
Entec are a big hire firm who warmed to the task of providing a 30Kw PA system for the

Reading Festival and outdoor fests in Belgium, Denmark and Germany. Entec do theatrical presentation, smoke, fog, strobes and flashes, all the way up to a 120Kw light rig. Entec plan to do business in the US in 1979. Uriah Heep, Patti Smith, the Clash, Lou Reed and Rory Gallagher have all sought out Entec's services.

Theatre Projects is a company who, rather than seek out the mass of work in rock and roll, prefer dealing with "straight" acts. Their lighting equipment is often hired by other hire firms because of the comprehensive range of gear they carry. Isaac Hayes, Shirley Bassey and Demis Roussos have all worked under Theatre Projects lights. They light many theatre productions but operate a sound hire as well. Sammy David Jnr, Andy Williams and Gary Burton have all used Theatre Projects

sound hire. An apt contrast to the established nature of Theatre Projects is Panther Sound Hire, in operation for only five months. Panther employ a Zoot-Horn rig with Gauss, ATC and Electro-Voice components. Paul Lillie of Panther offers anything from 200w to 5Kw in his modular PA rigs and a 12Kw light rig is also available. In five months Panther have worked with Merger, Squeeze, Chelsea, Black Slate and John Otway, among others.

As competition becomes stronger, the range of services that hire companies offer will expand, creating its own demand. More equipment on hire at a better price will benefit the players and bands in more ways than just matters of presentation. Punters get a better deal for their ticket price, and concerts, club and pub gigs will become more like musical events, not just another band on stage.



30Kw of PA sound at the Reading Festival, supplied by Entec.

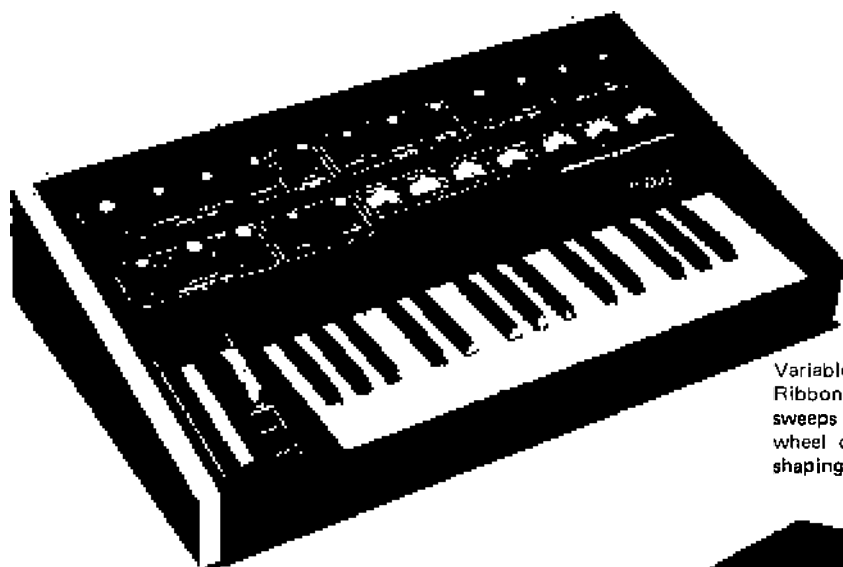
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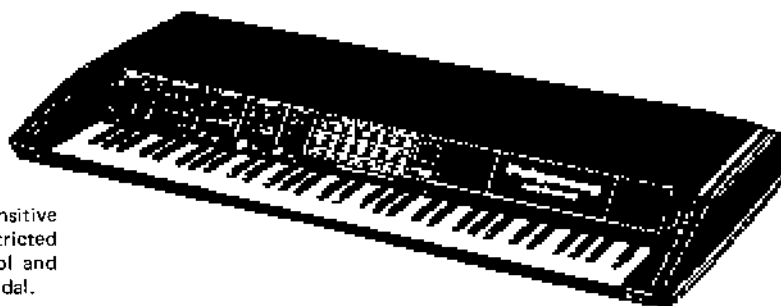
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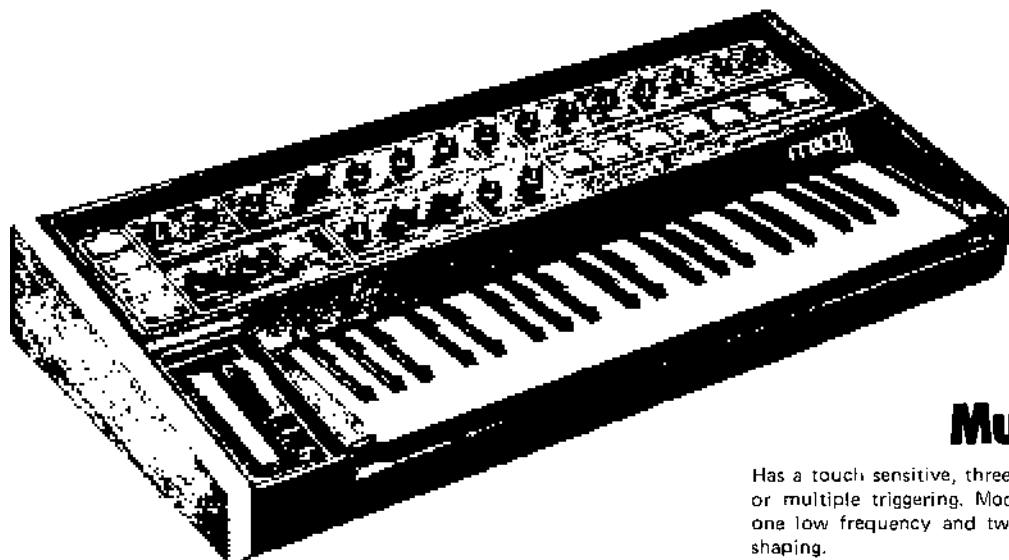
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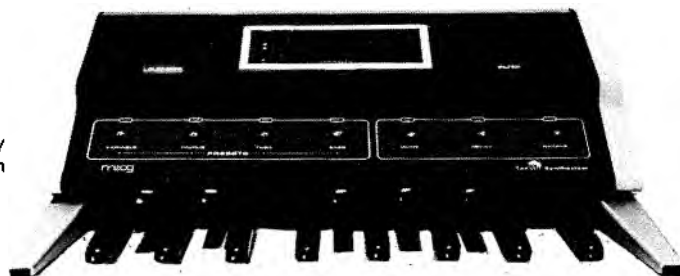


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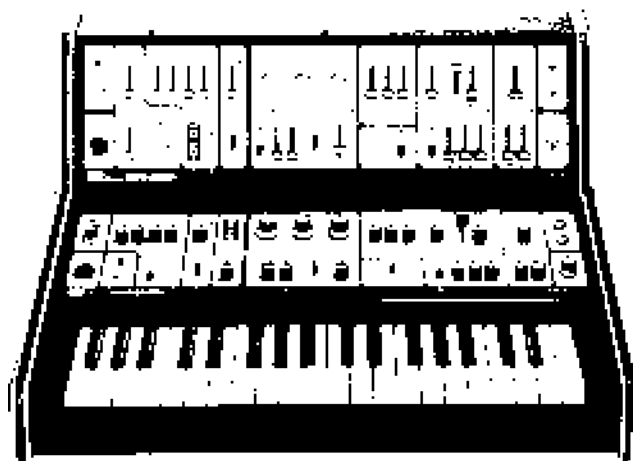
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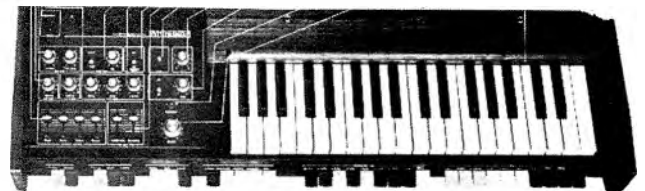
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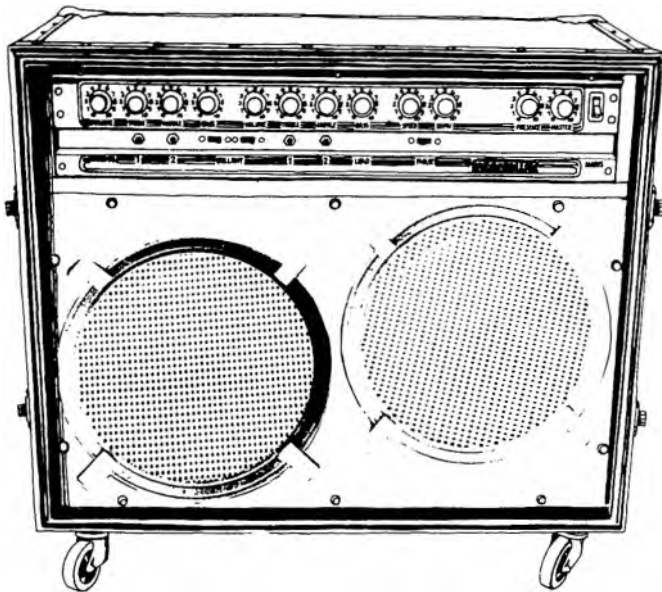
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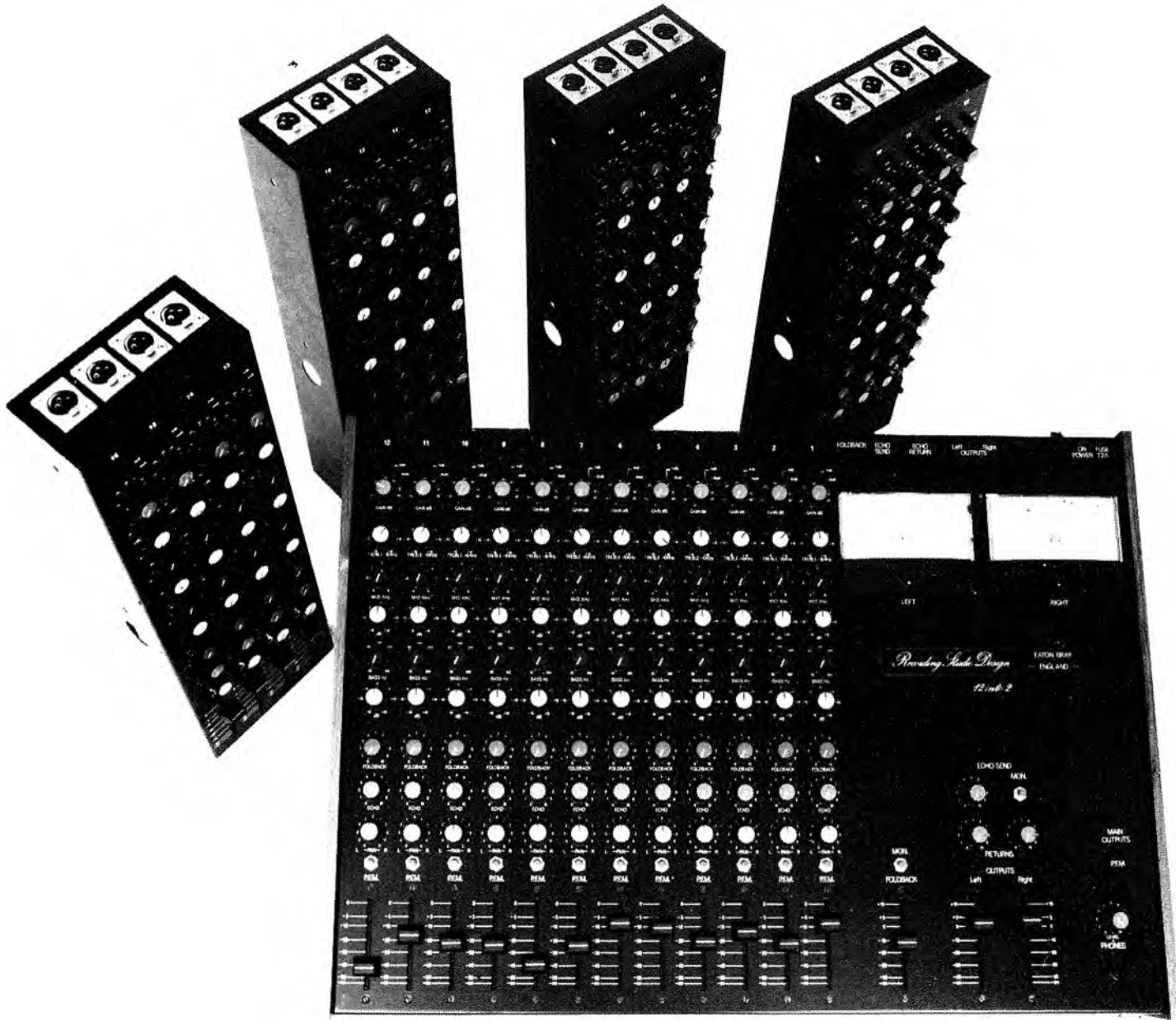
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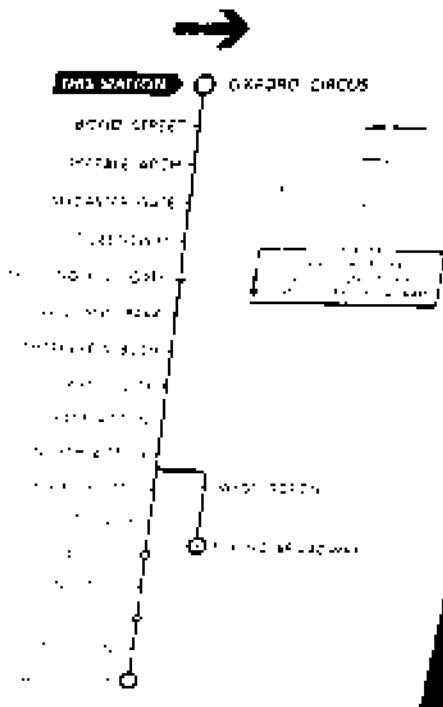
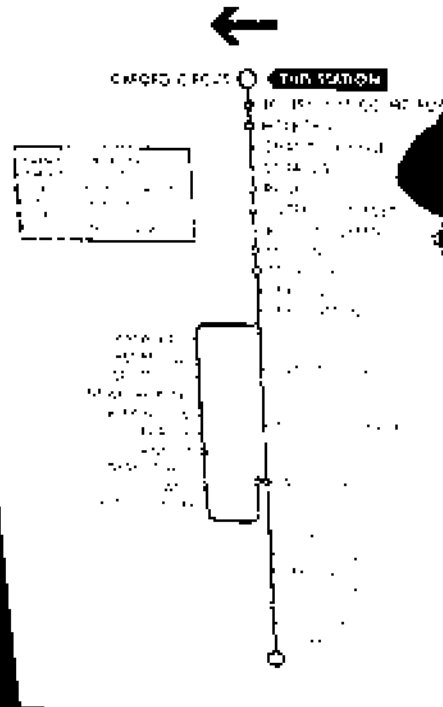
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PETER GABRIEL

past, present and future...

Two solo albums have confirmed Peter Gabriel as an important force in modern music. Intricate, varied and powerful, both records bear the stamp of an innovative artist who isn't afraid to rock and roll with the best of them.

Gabriel's careers with Genesis is well enough documented to need no further rehearsal here. His new music, needless to say, isn't looking back. Adam Sweeting spoke to a weary-sounding Peter Gabriel when he took a break from his American tour to visit his home in England, and he talked about his music, his background and his plans.

In "D.I.Y." on his second album Peter Gabriel sings:

When things get so big, I don't trust them at all, You want some control — you've got to keep it small.

Was that, I wondered, how he felt about Genesis when he left the band? "In part. It's not specifically about leaving Genesis, nor was 'Solsbury Hill' for that matter. 'D.I.Y.' is mainly a song about self-determination, I think when you have a lot of other people's lives tied up in your work, it tends to make you a little less adventurous."

Gabriel's decision to depart from Genesis was not taken lightly. At that time he was very much identified with the band. His singing and exotic changes of costume were the focal point of their stage act. Although he had some material written from his Genesis days which hadn't been used by the band, he says he didn't leave in order to find an outlet for musical frustrations.

"I had it in mind to leave for quite a while. I actually decided to go in November 1974, but it wasn't announced until the summer of '75 because the band didn't want to be written off at that point. They wanted to have a strong, solid identity.

"I didn't know at that time what I was going to do. I wanted to get out of the music business. I wasn't thinking in terms of a 'solo career' at that point. I thought I'd carry on writing, probably, but I wasn't at all sure about performing."

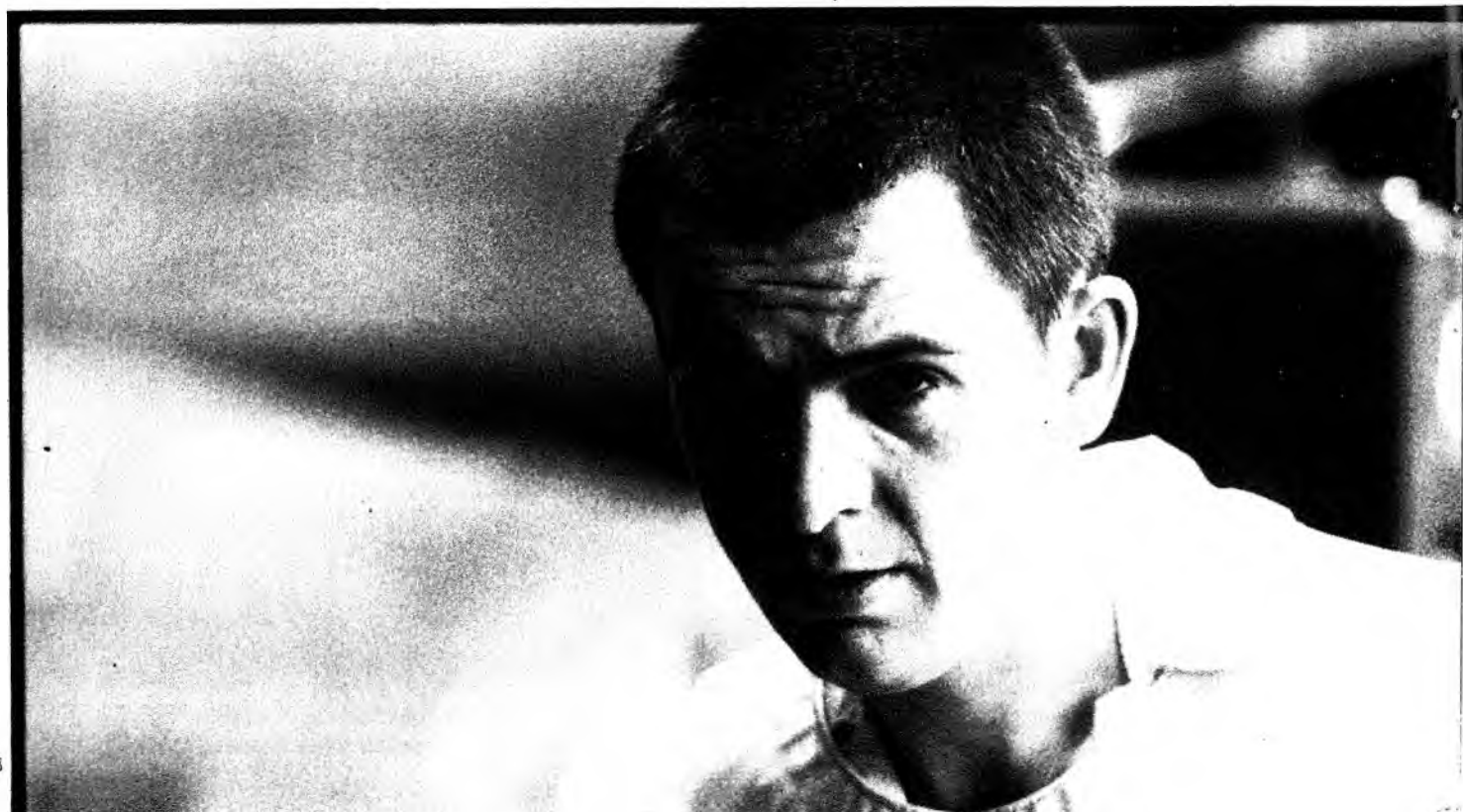
The first solo album on Charisma was produced, surprisingly to people familiar with Gabriel's former work, by Bob Ezrin, well known for producing Alice Cooper's albums as well as Lou Reed's Gothic horror outing, "Berlin". The combination proved to be a winner. The album was remarkable for its diversity, encompassing everything from slow blues to orchestrated grandiosity. Gabriel's

idiosyncratic writing on pieces such as "Moribund The Burgermeister" and "Excuse Me" was complemented by sympathetic arrangements, while Ezrin's experience with the heavier end of rock came to the fore on the blistering "Modern Love" and "Slowburn". Ezrin was given the job after careful consideration.

"I met a few producers and talked to quite a lot. I had this idea to try to illustrate a sort of English style of writing with an American rhythm feel, using American musicians, and I wanted a producer who could understand both ways of thinking. I didn't particularly get that feeling from Bob's track record, but when I met him and heard his suggestions and ideas, I felt that we were talking in the same area. The way he was seeing the songs seemed to be more appropriate and closer to the way I saw them than some of the other people I talked to, plus I knew what I was doing in terms of song-writing and singing, but not in terms of arranging or dealing with the psychology of session men. So I was looking for someone who had experience in those areas who could back up any weaknesses I had — though in fact the session men very soon became real people and like a band. They became very involved with the music, and hence wanted to go out on the road with it, which I was very pleased about."

Gabriel agrees that he was trying a bit of everything on the first record: "I was just exploring different areas really. A lot of things, too, that weren't in the Genesis area. I felt that it was a good thing for me to try to break away from the past."

The "Modern Love" track made it plain that Gabriel has a healthy sense of irony — always a prerequisite for survival in the music business. He describes "Modern Love" as "a humorous lyric about a romantic in a world of



machines." This idea was developed much more seriously on his second album, which was again a varied record but displayed a more unified sound, overall, than its predecessor.

Production this time was entrusted to Robert Fripp, with whom Gabriel shares an interest in experimenting with sound techniques. A track like "Exposure" was obviously exploratory, but the real success of the album was to combine electronics with a strong rhythmic approach. Gabriel agreed, though, that in places Fripp's production had left his voice buried in the mix - a minor disaster for an artist like Gabriel who takes a lot of trouble with his lyrics, and whose voice needs, if anything, to be mixed well forward. He agrees that objectivity is always hard to maintain when one is very closely involved with a project. But surely it's a producer's role to retain an objective approach?

"On the first record, I wasn't sure what I was doing with the arrangements. For the second, on the other hand, I had quite a lot of ideas, as did the band themselves, so it wasn't so necessary to get one of the old-style producers. What we needed was a musician to sit on the sidelines and tell us when things were hot, and also with Robert's particular interest in sound as a process, he'd be able to make interesting suggestions. He goes for a very immediate recording, and rather than spending a lot of time on the sound, he'll go for the first take.

"One thing we did on the album was to spend three days just making demos of the songs, which was a suggestion of Robert's, and by that time the engineer was fully acquainted with the instruments and could get good sounds. Simultaneously, we weren't running ourselves down doing multiple takes. So when we actually came to recording, the songs were instilled in our bodies as well as in

our minds, and we weren't thinking about the parts because we knew them so well.

"The actual recording was done in quite a short space of time. About half the tracks were done in Holland very quickly, and then some were done in New York afterwards which took a bit longer. I didn't like the New York studios so much."

One of Gabriel's preoccupations on the album is the oppressive effect on an increasingly technological world on struggling individuals. The vision this time is much darker than on "Modern Love". "On the Air", "D.I.Y." and "Animal Magic" are all concerned with people who are trying to assert some sort of identity in a society which hasn't any itself. "Animal Magic" deals with the dubious appeal of the military way of life:

*And I'm joining the professionals
I want to be a man . . .
Join the professionals and learn to fight.*

It's not only women who are forced into roles in a landscape which has no place for people, let alone sex:

*Saturday is shopping day -
I drive my car but there's no place to park it
no respect for superman in supermarket.*

The last lines are from "A Wonderful Day in a One-Way World", which is the

story of a man meeting Einstein in a supermarket, I was intrigued to discover what had inspired this tale of urban sturm und drang. Gabriel revealed all.

"Er. . . it was probably inspired by regular visits to the supermarket. One-way mirrors. . . Just the idea that's supposed to be represented by the inner illustration on the second album, which is in part a parody of a sort of scientific or psychological analysis of the situation of which the participant is unaware. Like a white rat in a laboratory. A lot of information is being coded and analysed in order to shove out more stuff for consumption."

How about "On the Air", then? A song about a furtive character who runs a one-man radio station, doesn't it take up where "Modern Love" left off, with its solitary figure surrounded by machinery?

"I don't think it's that so much. I mean, he probably is alienated, but not so much by machinery, just by the world that surrounds him."

Gabriel's writing makes imaginative use of fictional personae to recount the stories in his songs. Despite the fact that in his days with Genesis he used to use masks and costumes, he says he doesn't regard himself as an actor.

"Sometimes I like characterisations and I try to colour a story, to make it more real or a bit more personal than if it was just some casual third party. 'Home Sweet Home' was sort of triggered off by a newspaper article about a young wife jumping out of a window with her child, and I fictionalised a story around it. It was interesting that this particular story struck home a lot more forcibly than a lot of mass deaths and disasters."

Gabriel's complete break from Genesis is emphasised by the fact that he is now concentrating on a much more simple approach to live performances. He feels strongly that onstage effects can be taken to ridiculous extremes, and in many cases already have.

"I've consciously chosen to avoid masks, lasers and spaceships. In the last couple of years, I've been doing things very simply. Basically what happens is generated by the people on stage. I've always got a lot of ideas which tend, by the end of a tour, to work their way in. I've got some lighting things happening at the moment, which are a little strange and which I enjoy, but I don't want to go over the top. There are some multi-media things which I'd like to get involved with, but that will be a separate project.

"I think what's bad about the approach to equipment and presentation is that with a lot of groups it's just a matter of getting more sensations than the other acts around, the competitors, and so it becomes an arms race - a million dollar arms race at that, which I think is squandering money that could be used more imaginatively. The equipment itself is often interesting or exciting, but it's the way it's used that I think really shows whether it has a valid purpose or



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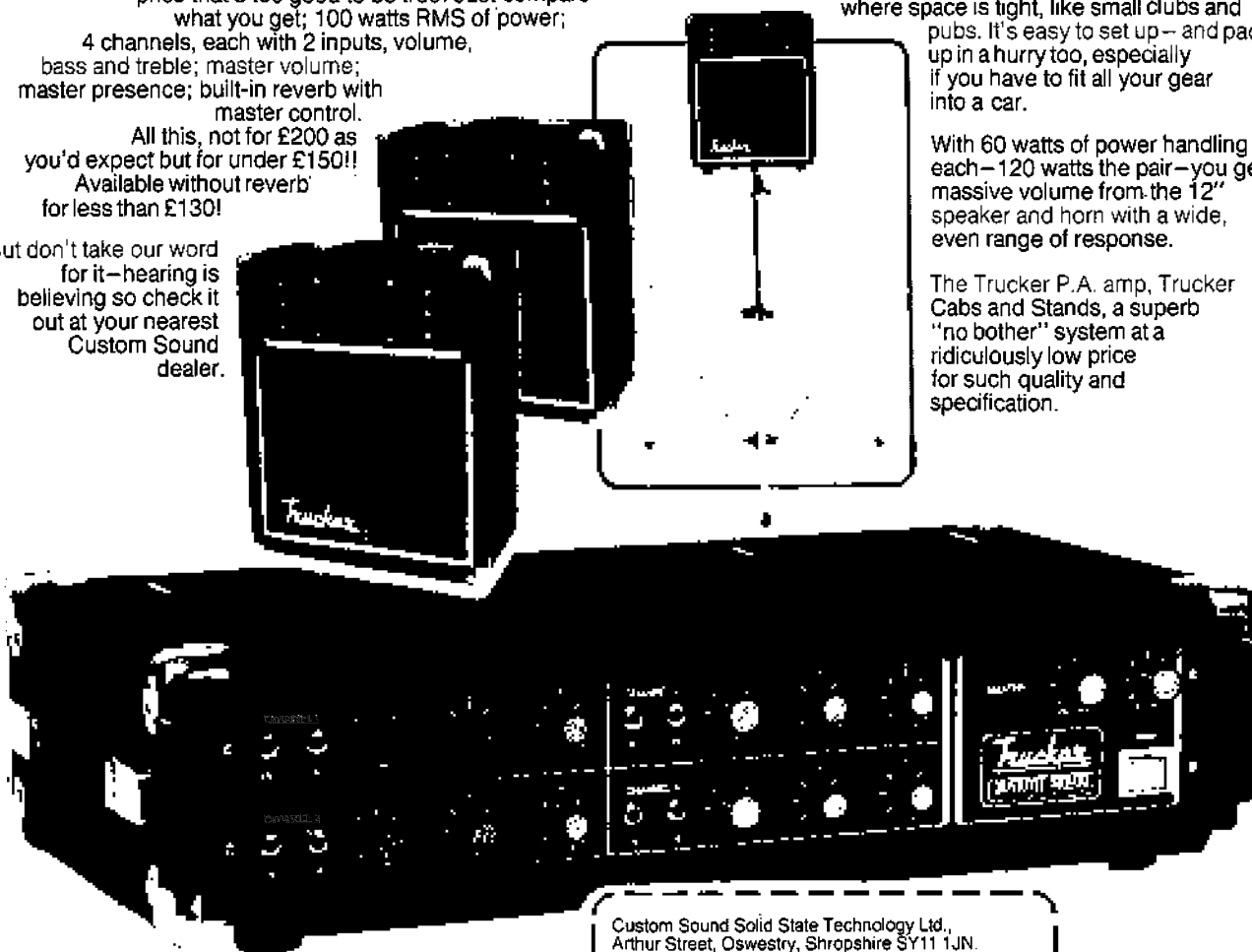
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whether it's just there for effect.

"I think a band like Kiss, say, who take visuals and explosives to an extreme, they enjoy what they do, they make a lot of money and the audience is very happy, so that's fine. But for all the major groups to start competing on that sort of level, and for some performers to be afraid of going out in front of an audience without the heavy artillery, is a sad state of affairs. So I think it's important to keep both ends burning."

Peter Gabriel's touring band includes most of the musicians from his second album, the line-up being Timmy Capello on sax and keyboards, Tony Levin on bass and Larry Fast on synthesizers. Drums and guitar are handled by Jerry Marotta and Sidney McGinnis respectively. Gabriel himself plays some additional keyboards.

"I'm not a great keyboard player, but I enjoy it a lot. The piano I use is a Yamaha, and I have a Roland chorus pedal. At the moment it goes through Crown amps, a Yamaha mixer and Randall speakers, which is a set-up I'm happy with. On a couple of things I use an organ and a string synthesizer, too."

Another item of equipment which has impressed him is the Moog synthesizer amplifier, which has built-in graphics and parametrics. Also, when Jan Hammer supported Gabriel at a gig, he used some noise reduction equipment which Peter thinks could be a useful addition to his own equipment, since some of the keyboards are noisy on stage. Of equipment in general, he says, "I'm fascinated by anything that will enlarge the dictionary of sounds from which I can construct the music. The 'Frippelectronics' on 'Exposure', on the second album, aren't very complicated. It's just two tape recorders strung together with tape loops, an American avant-garde technique from the Sixties which Eno introduced to Robert Fripp. Robert uses it in a special way, and gets a unique sound out of it."

Gabriel's albums, combining as they do electronics and strong rhythms with an unusual narrative style, are reminiscent at times of John Cale and David Bowie. Gabriel, though not familiar with Cale's output, certainly agrees about Bowie.

"Bowie I like. I respect his courage to change his style and explore things. I'm not sure how interested he is in music at the moment, but he's very good at picking up on what obscure people are doing and bringing them into a sort of palatable mainstream form."

Among the musicians featured on Gabriel's second album is Roy Bittan, the keyboard player from Bruce Springsteen's E Street Band who also played on Bowie's "Station To Station" album. Springsteen, it transpires, is also much admired by Gabriel. "Slowburn", on the latter's debut album, sounds as if it could have been influenced by the man from New Jersey.



"I'm a big Springsteen fan. I'm not sure if I'd seen him at the time I wrote 'Slowburn', I think I must have done. So he may have been an influence, but it wasn't on a conscious level. I think the chord sequences are more English progressions, more classically influenced progressions, than the ones Springsteen uses. His is mainly a sort of Fifties style of writing given a Seventies treatment."

Considering his interest in innovation, it comes as no surprise to learn that Peter Gabriel has taken a keen interest in the new wave, on both sides of the Atlantic. Of the American bands, he's been impressed by Television, Talking Heads and Shirts. English bands who interest him include the Jam, Magazine and XTC. Devo in particular have attracted his attention, as much, he says, on a visual level as a musical one. He even went so far as to track down all their films from Warner Brothers in America. "A lot of what they do has been done before," he says, "but no-one has ever put it all together and done it with so much conviction." The new wave, too, has been influential in starting a movement away from excessive stage presentation: "The new wave's been influential in that respect, though I think it's getting more sophisticated now. I think the new wave's been very important for a lot of reasons. It created a space which allowed a lot of new faces and writers to come through, which is always healthy. Additionally, it gave an identity to an age or generation. The identity of mine was sort of the Beatles and the Stones, the r'n'b bands, Small Faces, Kinks, Yardbirds, all those people, and that was a style. And I didn't get into Elvis, the Everly Brothers and Roy Orbison, which my elder cousins were very partial to. The next generation, punk or new wave or whatever, wanted to establish its own style."

The influences which Gabriel cites for his own generation were not, I venture, over-apparent in Genesis' music. Gabriel disagrees.

"One of Tony Banks's favourite songs was 'It's a Man's Man's World' by James Brown, and we used to do some Beatles

and Stones things in the early days, as well as some Yardbirds and John Mayall. So although maybe it's not there on a surface level, in terms of feel and style and singing and drumming and playing instruments I think there was an influence, although the actual chord sequences and the writing varied. There's a soul section on the track 'Looking For Someone' on the 'Trespass' album, it's got a very sort of bluesy feel. If you listen hard enough, too, there's a part of 'Stagnation', on the same album, where I do my best to sound like Nina Simone. So the influences were there, but there was also Procul Harum, King Crimson, Moody Blues and Fairport Convention, which were perhaps more easy to see in terms of things on the outside."

So Peter Gabriel is a musician with a clear sense of his musical past. More immediately, though, he is making plans for the future. The conversation turned to his projected multi-media work. "There's a man called Dr. Stuart Kranz, who's written a book called 'Science and Technology in the Arts'. There's a lot of people in there, it's almost like a dictionary of artists and scientists. I'm working with Stuart Kranz on a few ideas. There's a story which I might try to develop called 'Mozo', which may involve some of his ideas." (The eagle-eyed will recall that Mozo is the name of the protagonist in "On the Air.")

The Kranz project sounds very much like the kind of thing that would interest Brian Eno. Now that Gabriel has worked with Robert Fripp, himself in touch with Eno via David Bowie's last two albums, I wondered if he had considered working with the Esoteric One? The answer was no, since Gabriel has been out of touch with Eno for the last two years. Gabriel in fact brought Eno in to add some colourations on the Genesis album, "The Lamb Lies Down On Broadway", so a future collaboration could well be possible. Time will tell.

Further plans in the pipeline include doing some more production work, as well as making another album. Gabriel has already recorded one new song, called "I Don't Remember", but taking into account the work he wants to do with Dr. Kranz, he doesn't think he'll have another record released before September 1979.

When more than a year passed after the split from Genesis with little news of Gabriel's activities, there was some doubt as to whether he had a future as a solo artist. His albums and live work have now established him as a major attraction in his own right - not bad going for a man who at one time wanted to quit the music business altogether. Gabriel provides a succinct summary of his feelings on that subject: "I think the thing is to use the music business as much as it uses you."

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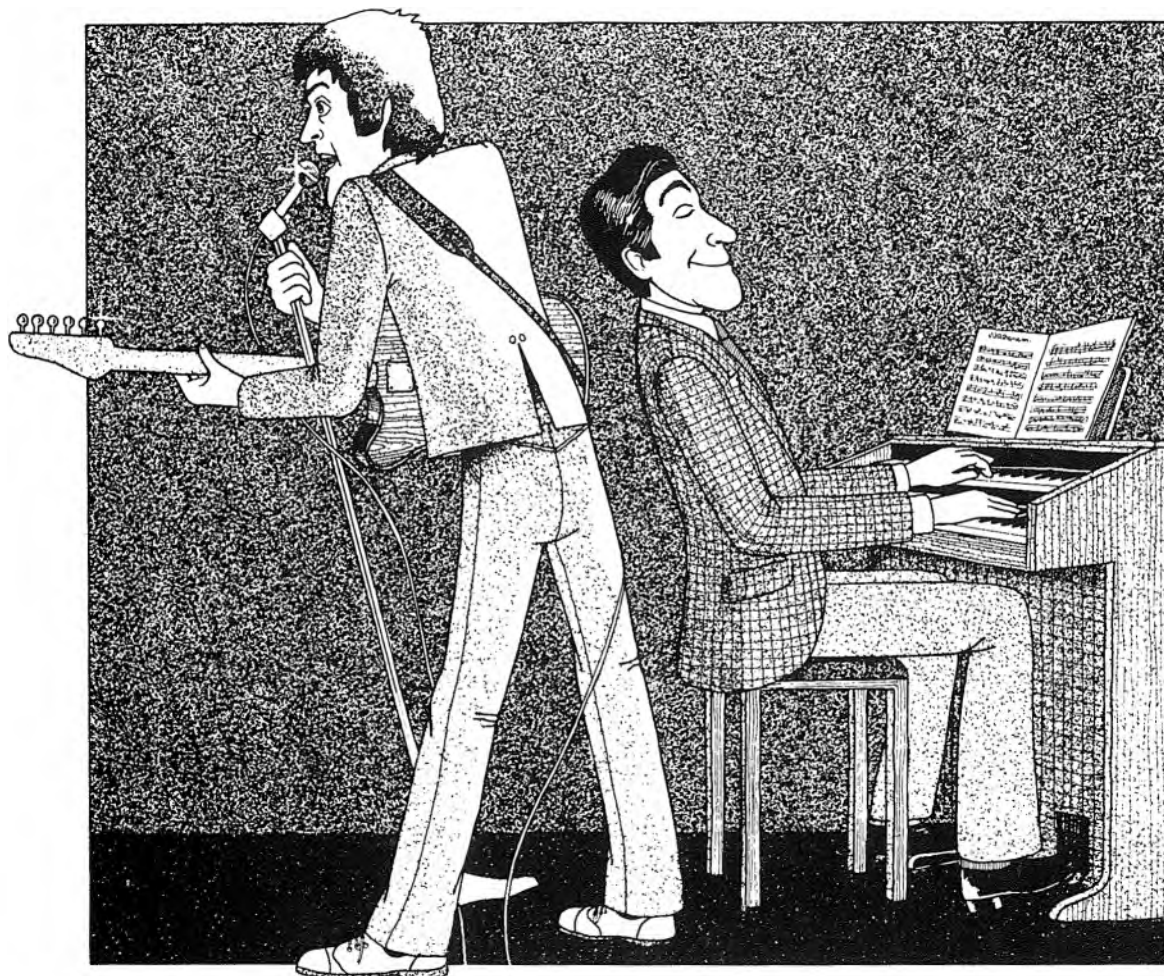
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CLASH:

David Lawrenson meets Topper and Mick, alias Headon and Jones

"We're musicians"

"I'm so surprised to be asked to do this sort of thing, because only lately have I realised that people think we properly play and stuff." So speaks Mick Jones, lead guitarist with the Clash.

He was genuinely surprised that a publication like *International Musician* and its readers would be interested in the way he plays his instrument. The fact is that he is a member of one of the most potent and exciting bands in the country.

To some people in the rock business, the term "musician" is reserved for players who have been around a long time, amassed a huge collection of instruments or who take endless long solos. Because all these criteria are largely absent from the New Wave, the implication is that it's a scene devoid of musicians.

Luckily this narrow outlook is not universal. If it was we would have had no Beatles, Stones or the Who. Rock music is primarily concerned with expressing feelings, emotions and excitement — qualities which the New Wave has in abundance.

Along with the Sex Pistols and the Damned, the Clash were one of the original punk bands formed in 1976. Now the sole surviving outfit from that trio, their music still contains much of the anger and aggression of those early days, although they possess a style and an awareness that sets them apart from many imitators.

With a minimum of TV and radio exposure, their singles have consistently made the lower reaches of the charts, while their first CBS album "The Clash", released in early 1977, went straight in at number 12 and has sold consistently ever since. It has taken them almost 18 months to come up with a follow-up, "Give 'Em Enough Rope", which saw them working with American producer Sandy Pearlman.

Mick Jones is 23. He started playing guitar at 16, having tried his hand at drums and bass. He blew a week's wages on a big blond F-hole Hofner acoustic which he used to mike up. "Then I got a Telecaster, a great old maple neck Tele, but I always wanted a Les Paul Junior.

"I thought they were the greatest guitars going because I'd heard both Steve Hunter and the other guitarist on the Lou Reed live album used them and I thought, 'This is what it's all about'. So I saved up for about six months and got one. It was really difficult to find, because there were none in the shops. Eventually I found one in the Vox shop in Shaftesbury Avenue. It was on a top shelf and really dusty. It was a cherry one and I paid about £190 for it. It has been broken about four times, so it has

more or less died but I've got a couple of others now.

"The guitar I'm using now is a 1952 Les Paul Standard, which got broken in Arnheim by the stage manager. It was on a guitar stand and he walked straight into it and the neck was off. I had a bit of respect for that guitar — it was older than I was! I got it fixed but it's not the same, it doesn't tune up and sustain goes. As a spare I use a Les Paul Junior. I've got a blue sparkly one and a red one. I think there are some guitars that do talk to you, you feel OK with them. If you feel good with them then they are great guitars."

Mick has very definite ideas on guitars and the way they should be treated and played. He is a firm believer in the quality instruments made by top manufacturers such as Gibson, dismissing many of the newer makes as merely "copies". "I didn't buy them when I had no money, so I'm not going to buy them now," he proclaims.

For amplification he uses a Boogie set-up. "I was using Ampeg for ages because the Stones used them, but now I've got a Boogie and it's really great, the best. I use one of those big ones with a graphic on it. If we are playing a really big hall I use a slave of a Marshall and a couple of 4 x 12s, otherwise it's just the Boogie and 4 x 12s. They're good amps except the speakers blow, but that's only because I turn it up to 10. I've got no self-control whatsoever.

"The only effect I use is an MXR phaser, it's an American one, the biggest they have. You can get about five different phases on it. We have Space Echo and that kind of stuff through the PA, and I used a wah-wah on one of the album tracks."

To many, the music of the Clash would seem crude and regressive, with guitarists such as Mick Jones definitely not qualifying as "musicians". Yet those same people would undoubtedly extol the expertise of the Stones or the Who — bands who definitely were not considered top quality musicians in their early days. It is impossible not to draw comparisons between the early Sixties and today's New Wave scene.

"It's probably just the same," says



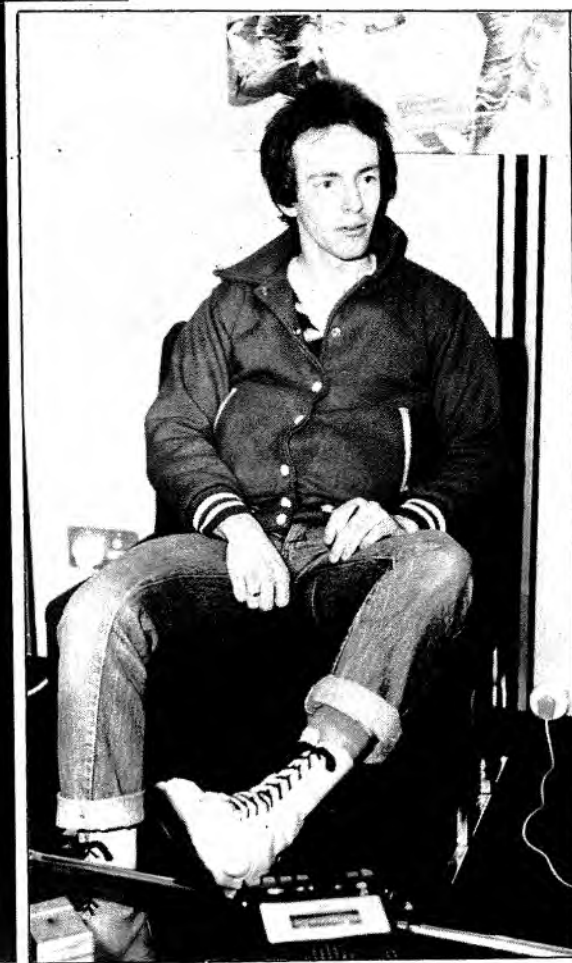


Mick, "but it is a pity that all those people forgot about it, and forgot it was said about them. The point about our music is the spirit of the thing. You have got to communicate the spirit of what you do. When you do that, you can't really spend a lot of time respecting traditional values of what music is all about.

"I think it's nothing to do with what guitar you use, it's how you do it. I think you can do it on a Woolworth's guitar, quite truthfully. The important thing is how. Guitars are there to be used, it's a tool, you shouldn't let it play you or be your boss. Some groups you see and you say, 'Oh, the guitarist needs a good sound, he's got a tinny sound and it doesn't quite fit the music.' But really, it's only a matter of once you've got the thing that fits the music, doing it with a bit of style.

"There's lots of guitarists I really like. I think Mick Ronson's great, Keith Richards don't do much and I think he's pretty good, Jeff Beck does a lot and does nothing at the same time. There's loads of them I really like and I've got nothing against these people. I've only got something against those who . . . well, the only spirit they communicate is just taking the audience's money and giving them nothing for it — the groups with their heads in the sand."

Mick admits that he is still learning and that the group are still practising and learning their craft. The biggest problem seems to be one of dynamics, in particular learning to turn down on stage so the vocals can be



heard. Mick writes most of the band's material along with fellow guitarist Joe Strummer. Their prolific output was one of the reasons for the delay of the album.

"We recorded it twice as demos before we actually cut down, then we recorded about 20 songs and ended up with only 10 on the album. Everything was concise and to the point, there is nothing on it that doesn't say something. Most groups are rushed into second albums almost before they've finished the first, they don't really have time to think about what they're writing, it becomes less creative and just another sales machine.

"We said we aren't going to rush, and told the record company that they would have to wait until we thought it was right. They could have had an album six months ago but it would have been dross in comparison to the first one. I think we have got a second album which is better than the first, and we're going to do a third which will be better than the second. That doesn't mean to say it will take a long time because now we're learning about producing and stuff we'll probably knock it off a bit quicker, but I'm very wary of quick decisions."

The one change in line-up between the albums has been their drummer, Nicky "Topper" Headon. On the first album they used Terry Chimes, but soon after installed Topper in the drum chair and his contribution to the band both on stage and in the studio has been considerable. He is a powerful drummer, whose brief career has seen him gaining experience in a wide variety of styles — the type of credentials which would satisfy even the staunchest music critic. Topper began his musical career in Dover, playing drums to alleviate the boredom of six months in hospital nursing a broken leg (an injury which ended his thoughts of becoming a footballer).

His father spotted an Ajax kit in the local paper and bought it. "The bloke who suggested it was a trumpet player in a local trad jazz band. For some reason they were always short of drummers in Dover. They needed a drummer so as soon as I could hold a tempo, I was gigging. He gave me all these Louis Armstrong and Gene Krupa records so that's what I learned first.

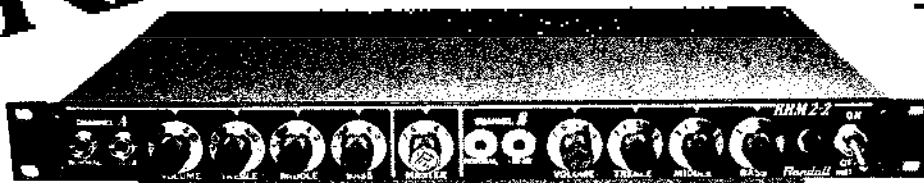
"I was gigging regularly, getting about £5 a gig, by the time I was 14. It was really good. The band were all about 50 and a couple of them used to be pros, they were pretty good. It taught me a lot about time keeping, just keeping it moving, keeping it swinging. When I started, just because I was straightforward — no fills or anything — they used to think it was great. Gradually I got better and they liked me less and less because I started being flash. The first lesson I learned was that other musicians appreciate a solid drummer not a flash drummer, so it influenced me a lot.

"I didn't really bother with drum tutors. I used to read the introductions and things like how to set up your kit and tune the drums. Paradiddles and triple paradiddles was as far as I got, but never really got into reading.

"The Ajax kit was really good, I used it ▶▶

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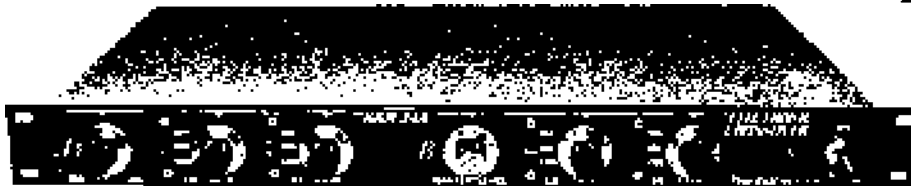
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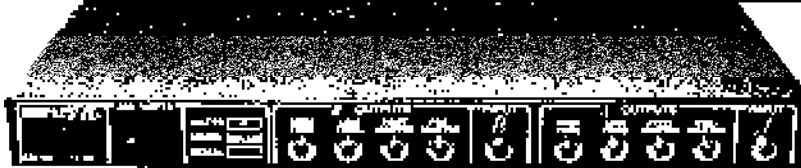
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for about three years until I eventually realised that it wasn't so hot. Still, when I sold it to a shop I got £40 for it. Then I worked on the ferries and saved up to get a Premier kit. Premier have become more expensive, but at that time it was the cheapest pro kit you could get and everyone had them out of London. You could go into any local music shop and get one and everyone stocked spares and fittings. That was one of the reasons I bought one.

"The one I bought was a silver finish kit - I'm really sold on silver finish kits. It was a good kit and a mate of mine is using it now with the Ian Gillan Band. It must be about six years old and it's still going strong."

Topper's next kit came when he joined the Clash. He had missed out on their first album and was just about to undertake an extensive tour, during which he would be "on probation". He insisted on a new kit for the tour, and only a few days before they hit the road, he chose a Pearl set which he still has.

The original kit consisted of a 24" bass drum, 13" x 9", 14" x 10", 16" and 18" toms. He got rid of the two small toms and brought in an extra floor tom, so he now has just three toms, the 14", 16" and 18". The cymbals are all Zildjians, 15" hi-hats, 21" rock rides, two 16" crashes and two 20" crashes. Topper uses crash cymbals as crash rides because ordinary crash rides are too thin and frequently crack.

"When I joined the Clash I noticed that the Premier didn't seem to have that volume or that kind of depth that I needed. You've got to close-mike them to get a really good sound. A lot of heavy drummers use them, like Kenny Jones and of course Keith Moon, but I couldn't get a heavy enough sound out of them.

"When I first got the Pearl I didn't like it. There were a lot of bits and pieces that I had to get together like metal rims on the bass drum. I didn't have time to mess about with them before the tour and on the tour, which was quite long, I couldn't get a good sound out of them. When I came back I changed to wood rims and that made all the difference.

"It's the little things like that that you only appreciate after a tour, so there's no

way I'll get another kit without having a good long time to try it. The only other drums I'd use would be Ludwig and Gretsch. Even then, with the Gretsch you have to change all the fittings because they're weak, but Ludwig are good. I use all Pearl fittings on my kit, with a Premier snare drum stand, Pearl hi-hat and all Trilok stands.

"The thing I like about the Pearl kit is that they're really loud drums and at the same time you can get that depth, there's no tinniness. I use the Pearl in the studio and it's great - the only time I'd get rid of it would be when it just doesn't stand up to touring any more. So far it has held up really well, it's a really strong kit."

The problems encountered by drummers are seemingly the same the world over, no matter what level you're playing at. Topper has his own drum roadie so many of these immediate problems are alleviated but he is still aware of them and remains convinced that it is an inevitable part of a drummer's life.

"I think you will always get the same problems from drummers. In order to retain a characteristic drum sound, what a drum sound is about, you've got to have individual tension rods, wooden shells, Fibreglass shells. You always have to have stuff that is likely to break to get that sound.

"I use five cymbals and although I've got them pretty well set up, they are always slightly out from where I had them the night before and it takes a couple of numbers to get it right. Also the cymbals tend to slip down due to the threads going or whatever and I was thinking of getting actual welded stands in the position I want them in. It would be like the five stands on a truss and a bar coming round the kit, so you could just plop the cymbals on and they would always be exact.

"Most of the developments in drums don't seem to have gone into actually making things stronger. I think the only company who are really trying to improve its drums are Premier. Every six months they seem to be coming out with stronger fittings and new ideas while everyone else seems to be spending their money on electronics and new skins. The number of

different types of skins you can get now is a joke, they're all the same in principle.

"I've tried Asba drums and they are lovely and loud but you just get that ring - it's like playing in a marble room. I don't like the look or the sound of see-through drums. When I'm behind a kit, I like to feel I'm behind something solid. Synthesized drums make a nice sound for 10 minutes but then become boring, people just get the same sound out of them, which is not what they are designed for.

"The main drag I find is that everything de-tunes during the gig so I've got to tune between numbers. The snare drum takes a real hammering and I have to crank up the tension rods between every number. The only problem with a snare is you can tune it a bit too tight and it starts popping. You won't actually hear it acoustically, but as long as it's coming through your monitor you can tell it's popping and de-tune it."

Before joining the Clash, Topper had his share of ups and downs but still managed to cram in quite a bit of drumming experience. By the time he was 17 he was playing in a band doing Miles Davis, Blood Sweat and Tears type material before joining his first fully fledged rock band. He realised that he would have to move to London if he really wanted to make it.

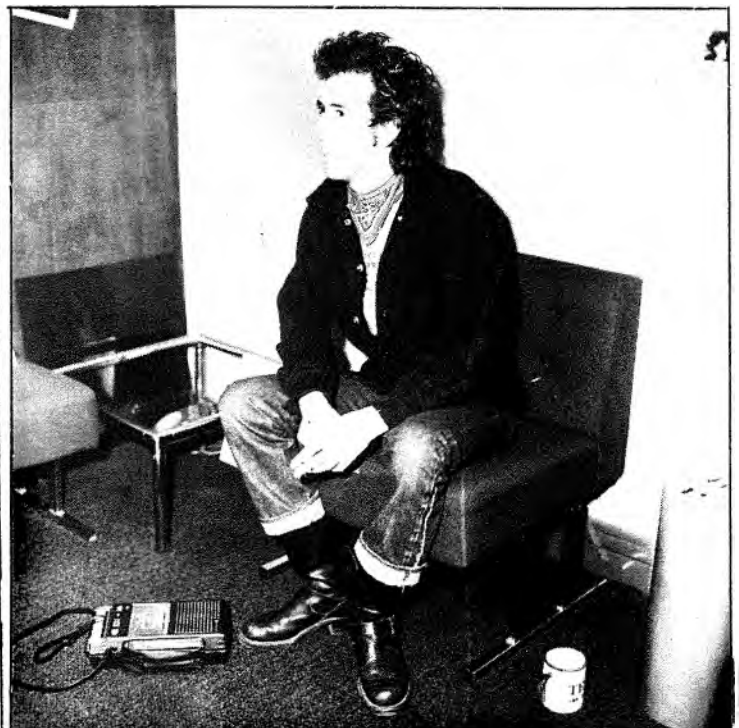
He did the usual round of answering ads and auditioning but found it soul-destroying. If people didn't know anyone you had played with, you were invariably immediately crossed off the list. Eventually he got a gig with a soul band from the States, which was more useful experience, before he encountered Mick Jones and joined the band.

Topper describes his style as "fast and heavy". He adds: "As long as you keep it like that and don't lag, you can fill in anything you want." His influences include Simon Kirke and Terry Williams who plays with Dave Edmunds.

Together Mick Jones and Topper Headon represent a new wave of musicians who owe little or nothing to the "progressive" era of the late Sixties and Seventies. Instead, they hark back to a simpler and more exciting era - which is closer, perhaps, to the true spirit of rock and roll.



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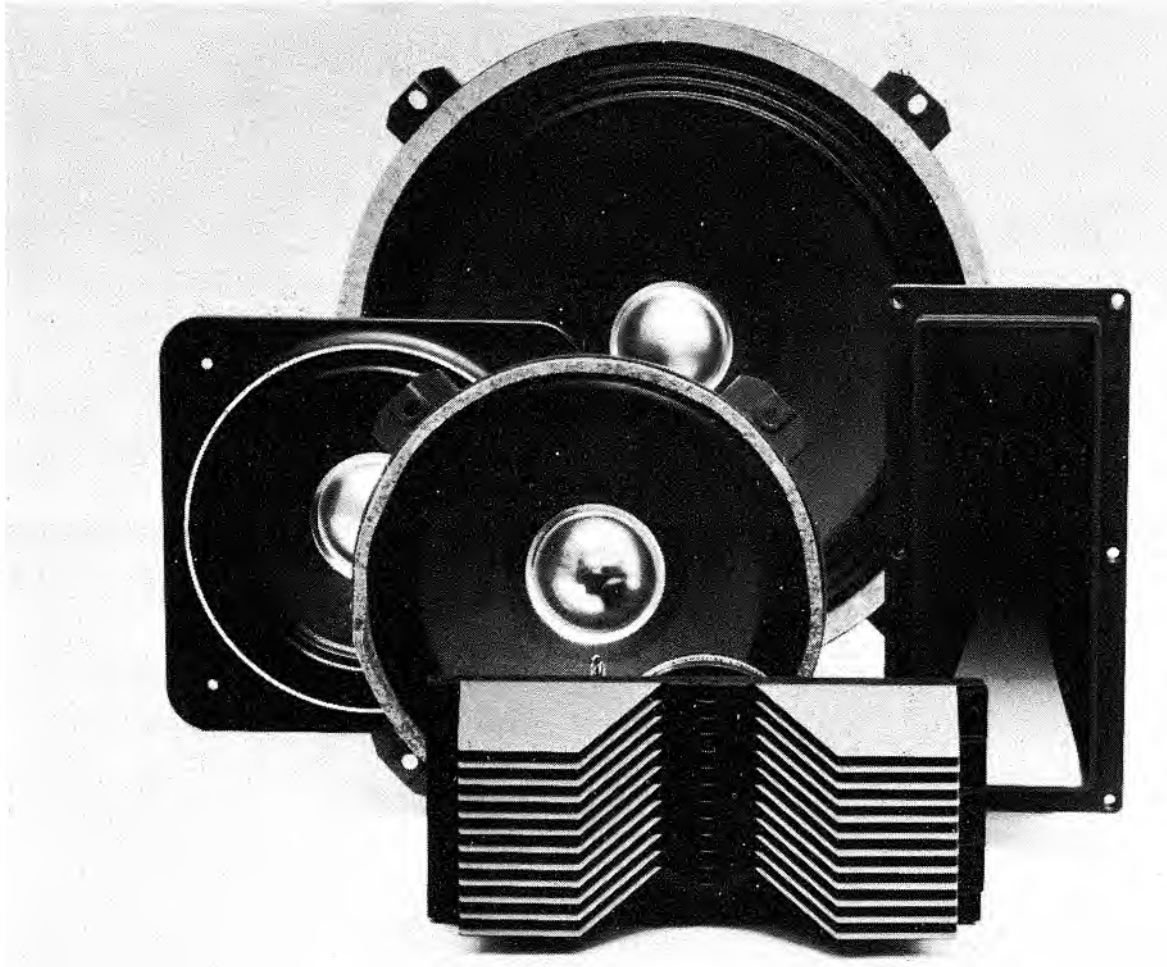
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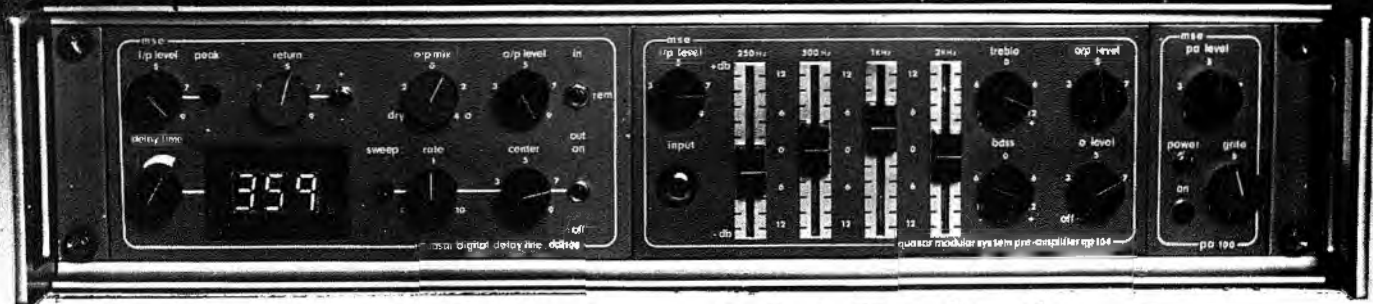
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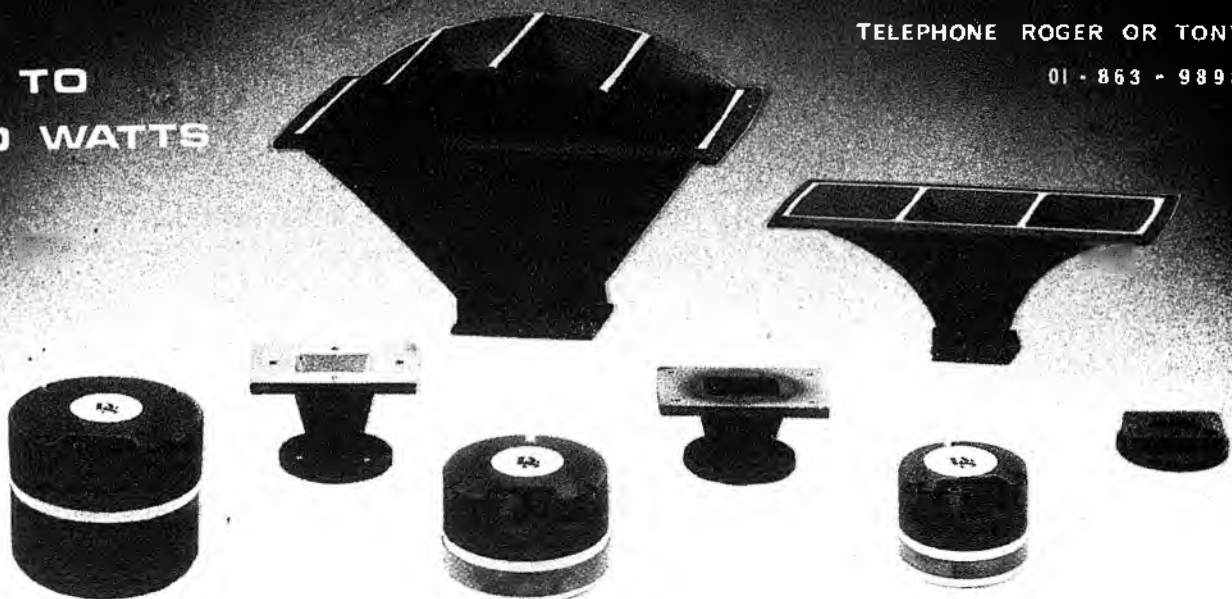
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Guitarcheck

Yamaha SF 500
£285.00 inc V.A.T
(inc case)



If you have been reading advertisements in music publications carefully, you may have come to the conclusion that the Yamaha SF series is related to the earlier and more expensive SG series. When I reviewed one of the Yamaha SG guitars some time ago, I was impressed by its sensible design and good workmanship. However, it was a relatively expensive guitar as that time, and subsequent currency fluctuations can not have done anything to help this. I think the SG series probably helped to establish that Yamaha can successfully make professional-quality electric guitars of advanced design. There remains a large demand for competently-made guitars of slightly less advanced design, which can be offered at a lower price. I think this may have been the idea behind the SF series of instruments.

The SF 500 sent for review is a well-made and useful guitar, which compares well with similarly-priced Japanese instruments from other suppliers. However, I find that my sample appears to sound and feel rather different from the Yamaha SG guitar which I reviewed previously. I would recommend that this SF should be considered as a quite separate instrument, rather than as a budget version of a Yamaha SG.

If my memory is correct, one of the major differences which is soon apparent is that the SF 500's neck is fastened on with four bolts. It was obvious on my sample because the neck was distinctly loose. It would slip both sideways and back and forth. After I had tightened the neck attachment bolts it was much better. There remains a noticeable amount of back and forth flexibility in the neck itself, which I don't much like, but this feature may be found on several other guitars with slim mahogany necks. In part, mahogany is not what it used to be. Also some of the so-called "vintage" solid guitars which have more rigid mahogany necks also have very thick necks. Such necks would be criticised on a new guitar by some players but are apparently acceptable on a famous old guitar. Where such thick old necks have (regrettably) been shaved thinner, they often become nearly as flexible as this Yamaha neck. Although it is not a good point on any guitar, I really don't see how it could be improved, except by making a thicker neck or by using a stiffer sort of wood or a more rigid sort of neck construction. Few people would like the thicker neck, and while it is easy to make a stiffer neck, it is also easy to change the quality of sustain (envelope shape) in the process.

For a fairly conventional guitar, and moreover one with a bolt-on neck, this SF 500 has what I find to be a very pleasing sort of sustain and it would be a pity to lose it. The neck flexibility makes the tuning of the strings vary a little during playing. This occurs in practically every guitar to varying degrees. It also varies in effect according to your choice of strings and the way you usually play. Rather than criticise a whole line of guitars on the basis of one sample, I would suggest that this is a useful point to check before buying any guitar. It shows worst with something like "super-slinky" string gauges, and it is not always apparent in noisy or distracting surroundings. It is also important that you check the actual

guitar you are going to buy, not just a representative sample.

The neck and fingerboard on this SF 500 are also slightly different between the bass and treble edges. When the treble side is adjusted to be nearly straight, the bass side has a small concave bow. This way round, it does not seem to present any problems, and the guitar plays well. (Beware of necks which are *convex* on the bass side when the treble side is adjusted almost straight.)

The machine heads are similar to the usual Japanese range of Grover/Schaller copies and are embossed with the Yamaha name. They are not as good as some I have tried, and there is some "dead" movement on the B and G machines. Also there is a tendency for the third string to stick or creak in the nut when adjusted for the first time after an interval of a few hours or more. Apart from this, which can be fixed with a little pencil graphite, the nut appears well-adjusted and the string heights above the first fret appear to be within the specification listed in the owner's handbook. It is unusual to find a published spec. for this measurement at all! Although there are differences of opinion about string height at the nut, Yamaha's suggested measurements for action at nut, and at the 12th fret, seem to be reasonable, playable and somewhere in the middle of the spread of opinions.

The intonation at the 12th fret on the review sample is a little sharp on all or most of the strings, but the Yamaha bridge is easily adjustable, and there is enough range of adjustment to bring any normal set of strings into tune. I find this a little surprising as all other adjustments are correct for average requirements.

The fingerboard is rosewood, and smoothly finished on the front and edges. At the moment it has a slightly sticky feel when bending strings, but I would expect this to improve with a little use, or with some suitable fingerboard dressing. There are small, neatly-fitted pearl dots in the face of the fingerboard and very small white dots in the edge. The frets are just high enough for easy string bending. Although they are not polished on the playing surfaces, I cannot find any string "scratch" when bending strings, so they are obviously quite smooth enough. Each fret has a narrow flat between $\frac{1}{2}$ and $\frac{1}{3}$ of its width: a reasonable compromise between intonation requirements and fret wear resistance. Some of the frets are slightly rough at the ends, which may be caused by slight movement of the fingerboard since the guitar was made. (It is very difficult to eliminate this effect entirely in a new guitar, and I sometimes find it necessary to go over instruments in stock with a fine Swiss file.)

While on the subject of neck and fingerboard, I should say something about the neck shape in addition to the measurements appearing at the end of this review. Preferred neck shape is a very personal thing, and I can only give my own opinion. To my tastes, the neck is generally well shaped but I find that it feels a bit hard on the hand around the fingerboard edges. It is a nicely-finished neck but it is not the sort of shape that I like. I don't think I could be fairer than that. I generally prefer necks which are either much shallower and elliptical, or thicker and very round like some of the old Les Paul necks. ▶▶

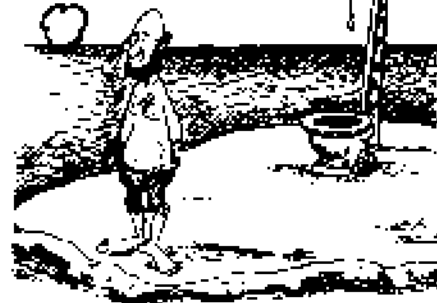
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The body shape will be apparent from the photographs. It may not be so easy to see the shaping around the edges. The front has a small bevel around the edge, including the cutaways, and there is also a much larger bevel cut away at the front, on the bass side and round most of the bottom end. This takes away the sharp edge from under your right arm. The back edges are slightly rounded over and there is also a section cut away behind the waist on the bass side edge. The relieved edges are similar to those on a Fender bass but more angular in appearance, and the result is roughly the same — the instrument is more comfortable to play than it would be with “square” edges.

It is just possible to find a joint line around the edge of the body, and the handbook suggests that the front and back of the body may be different woods. This may be so, but they are very well matched, the result looks good, and the guitar works well. It is not vital that a guitar should *all* be mahogany as long as the end result works well, and makes a nice instrument. Both neck and body have a hard high-gloss finish. The neck is light mahogany colour, and the body mildly “sunburst” on my sample, although other colours may be available.

The SF 500 has the same sort of adjustable bridge found on the Yamaha SG series. It is one of the most rigid adjustable bridges I have seen. On this sample it is also rather a stiff fit on its support screws, and does not easily move up and down. In the detail photo of this otherwise excellent bridge you can see that the adjustment nut has been lowered halfway down the screw and the bridge appears to be hanging on nothing. It is supporting the string down-pressure by its friction on the screw. It needs two minutes’ work on the bridges holes with a reamer, but I do think someone should have noticed it before. How many music shops keep a set of parallel reamers in their repair kit, I wonder?

The SF 500 has a fairly conventional electrical system with a solid-looking selector switch, two pickups and two lots of volume and tone controls. The tone controls work smoothly over a useful range, and the volume controls seem to be particularly good for “violining” effects. As the lower strings on this guitar have a very even sort of sustain, I should perhaps include “celloing” as well as “violining”. It may be of interest that the volume controls are marked “500k” and the tone controls “300kA”. (If this is the usual coding, it indicates 300k standard Log taper.) I also noticed that all four controls were stamped with the word “Noble”. Ah so!

I should also like to offer the idea that guitars which are particularly good for “violin” effects may include those which have very little sympathetic echoing between one string and another. There is less general background sound, and the operation of the volume control is less obvious. The SF 500 is also good in this respect (although “echoing” guitars can be very nice for other things).

The wiring inside is almost entirely screened, and it is perhaps not so important that the control cavity is only partially treated with screening paint. Even so, I think it would be worth another spoonful of paint to do the job completely. The voicing of the pickups is wider

and less “middy” than on some well-known instruments. The bass end appears full and the treble is clear, without sounding tinny, and without excessive string handling noise. The pickups seem to be fairly typical of some of the better and more recent Japanese units, and have the kind of start to each note that I would associate with some of the modern “replacement” pickups using fairly powerful ceramic magnets. If you intend to use several effects boxes, or to drive your amps into anything more than very mild distortion, this is unlikely to be of any importance as it will probably not be audible. I did notice that it is possible to change the brightness of the sound more than usual by changing the pick, or the pick angle to the string.

Although the field from the pickups seems to have considerable “pull” on any iron or steel near the pole screws, it does not seem to be enough to pull the bass strings out of tune with normal strings and clearances. This does occur with some types of pickup.

Conclusion

The Yamaha SF 500 is a good general-purpose modern guitar. It is versatile and has a fairly well-balanced tone spectrum. It is not outstandingly better than other similar guitars from other suppliers, but that is no fault. The competition between Japanese guitars is becoming fiercer, at least in the UK. It feels relatively heavy, and seems to be to balance slightly body-end heavy. On the other hand, it balances well enough on a strap, which is probably more important for this type of guitar. The neck is set at an angle well back from the body which I find an advantage. The bridge on this sample is rather a tight fit on its pillars and I think if Yamaha wish to use bolt-on necks, they should tighten the bolts more thoroughly.

The owner’s handbook is outstandingly good and provides sensible advice on adjustment and on air transport problems.

While taking photos, I discovered that at least one of the pickups is fitted with an extra connection underneath (arrowed in photograph). This appears to be a coil tap, and if anyone wishes to add this feature it should not present much difficulty to a repairman. The only requirements would seem to be a switch, a piece of screened wire and carefully placed hole.

Stephen Delft

Measurements on Yamaha SF 500

Ser. No. 2412

Scale length 628mm

String spacing at bridge 50mm

String spacing at nut 35mm

Fingerboard width at nut 43mm

Action as supplied 1.9mm treble/2.5mm bass

Lowest “standard conditions” action 1.6mm treble/2mm bass (at this revised action, with the strings supplied and with the present fret height, I find this sample particularly easy and pleasant to play.)

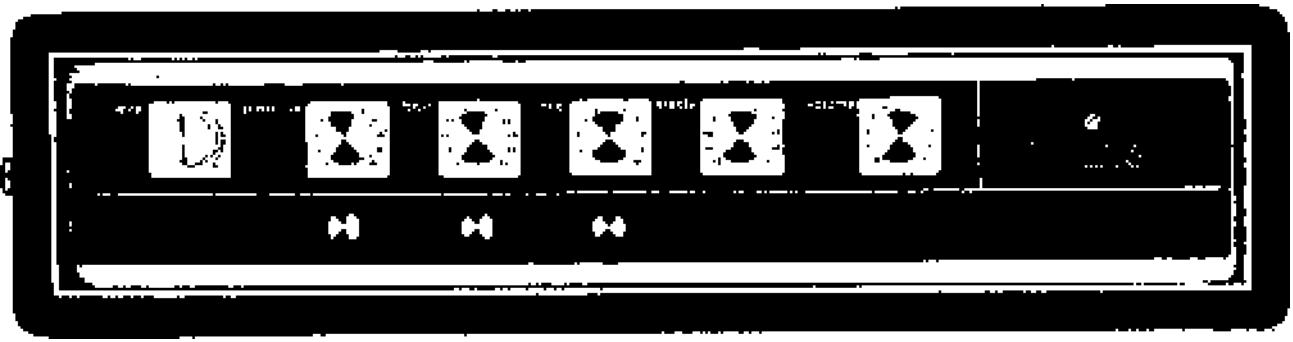
Depth of neck at 1st fret 21mm

Depth of neck at 12th fret 25mm

Depth of neck at 15th fret 26mm

Body starts at back level with 20th fret





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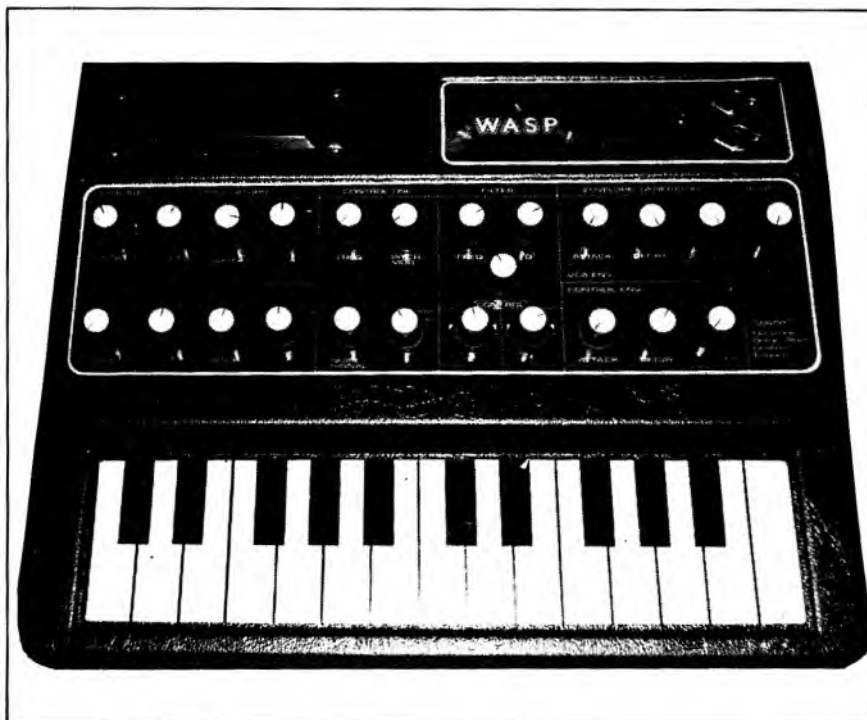
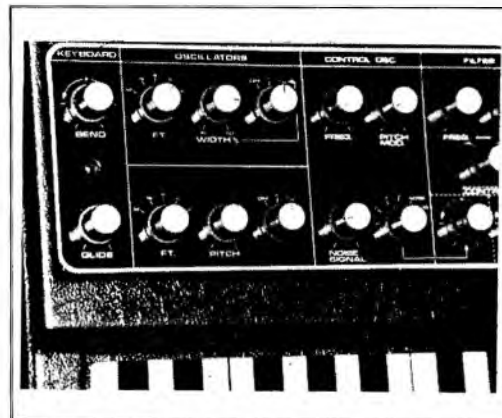
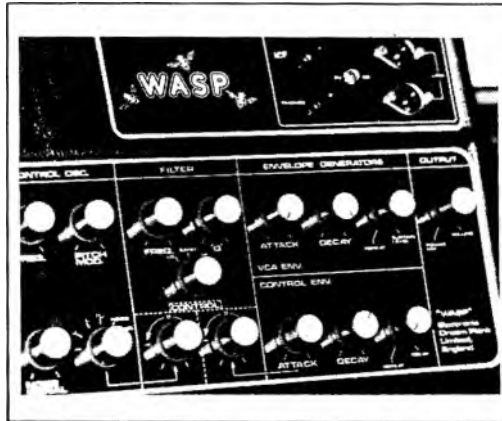
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Synthcheck

The Wasp £199 + VAT

Once upon a time, there was a little boy called Adrian Wagner, and he lived in a little cottage in Oxfordshire. One day, in between writing vast and complex albums of synthesizer music, he decided to invent a new

Robin Lumley is a record producer and keyboard player working mainly in London. His first major venture in the business was as keyboard man in Bowie's Spiders and he later formed a writing partnership with Jack Lancaster.

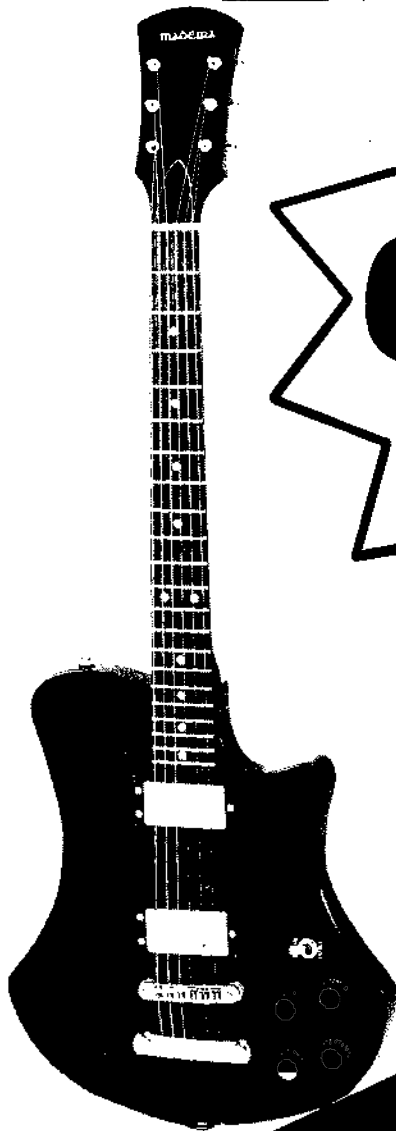


synthesizer, and after inventing it, he thought of a little company to manufacture it and sell it to all the boys and girls who liked playing synthesizers. He called the company The Electronic Dream Plant Ltd., and he called the synthesizer the Wasp. And here's where the fairy story ends, and the hardware begins because, dreamed up or not, the Wasp synth, designed and developed by Mr. Wagner, rock star of an Oxfordshire parish, represents a very important development in synthesizers indeed.

For a long time now, synthesizers have been synonymous with great outlay on the part of the purchaser if anything worthwhile was to be bought. Which, to the great detriment of the younger, less flush keyboard players, meant that the new keyboardists were never exposed to the art of the synthesizer until they had already been successful enough to afford one. But now, with the emergence of the Wasp, a really good and workable synthesizer *not* of the pre-set variety has arrived on the market at a price that almost anyone can manage, even if they have to save up for a wee while. The remarkable price of under £200 is revolutionary advantage number one to A. Wagner Enterprises. Advantage number two is the weight and size of this machine, or rather, its lack of weight and size. The whole unit is not much bigger than a London telephone directory, and weighs a bit less. So, at last, portability and mobility onstage for keyboard players. Until now, unless you could afford to have Moog get you a neck-hangable keyboard for a Minimoog, or use a ribbon controller (a bit limiting), keyboardists have been stuck, immobile, less interesting visually onstage than hip-swinging guitarists or vocalists (and consequently short on the chicks after the show). But seriously, this freedom to solo like a guitarist, liberated from static waiter-like duty behind a ton and a half of keyboard set-up, is something many of us have been looking for, and not finding, for ages.

Advantage Wagner, for the third time, is the portability when not onstage. Because, although the Wasp runs on mains power like every other synth, it also runs on torch batteries and has a small, built-in speaker. On the road, hotel room and dressing room practice with synths at last. You can take this little machine anywhere and play with it, explore its sound possibilities, and use it almost as a jotting pad for ideas wherever you are.

This has been a strange review so far, in that I've been lavish with praise in a fairly abstract way without actually describing the nuts and bolts of the instrument to you. So I'll remedy that right now, with the layout: the Wasp possesses a 25-note "keyboard". The word is in inverted commas because the keys are not separate articulating levers as on a piano, but diagrammatically drawn touch-sensitive areas corresponding to key positions, so that you don't actually depress anything ▶▶



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(apart from yourself, if you're out of practice) so much as set it off. This requires a little getting used to, as far as the technique goes, because the "action" tends to let you run away with yourself and play ahead of your brain (in my case, not difficult).

The whole instrument is cased in a high-impact plastic case, which is a moulding, and it really is high-impact for those of you who are now saying "Plastic? Cheapo, cheapo." Well, I dropped a Wasp out of the fourth floor window of Trident studios into St. Anne's Court one night, without any damage at all to it, and we then, surprised at its survival, backed a Volvo over it. This caused a few knobs to bend, and one to break, but it still worked faultlessly. There's tough plastic in them that Oxfordshire hills, methinks.

So on to the knobs panel. Starting from keyboard left, there's the pitchbend pot (like an Odyssey, rather than Moog wheel) with a glide control pot under it. The next bit is labelled Oscillators, and surprisingly, the Wasp has three – two for signals, and an LFO to control the other two, plus the filter. Oscillator One has five footage positions, from 2' down to 32', and choices of sawtooth and square wave forms. The square wave selection is linked to another pot which controls its width. Oscillator Two has similar controls, plus a pitch knob to allow fine tuning with Oscillator One. The LFO has a six-way switch providing a choice of controls; sine wave for vibrato, falling sawtooth, square wave, noise and Random, which turns on a sample and hold circuit. In the filter section, there are three types of filtering available: low pass, band pass and high pass. All have an adjustable "Q", which means they can move to a bus stop further down the road, as well as resonating the filter to help out individual harmonics. Another manual control adjusts the filter's frequency. Under this, the two knobs marked Control are used to control (what else?) the filter from the control oscillator. They are set in centre and have plus and minus functions.

There now follows a party political broadcast on behalf of the Envelope Party, for the Envelope Generator department is laid out as follows: knobs for Attack, Decay and Repeat, and a separate envelope used only to control the filter and providing a separate attack/decay/repeat facility. It also has a decay knob, giving up to one second delay. At the final output stage, the Wasp has a volume knob, doubling as a power on/off switch. The line out socket, if used, mutes the internal speaker, and connects up to a regular amp system. There's a phone socket, for cans-only monitoring, which also mutes the internal speaker if used. A 9v DC mains adaptor may be used instead of the batteries to power this little lot.

You must have noticed just how many

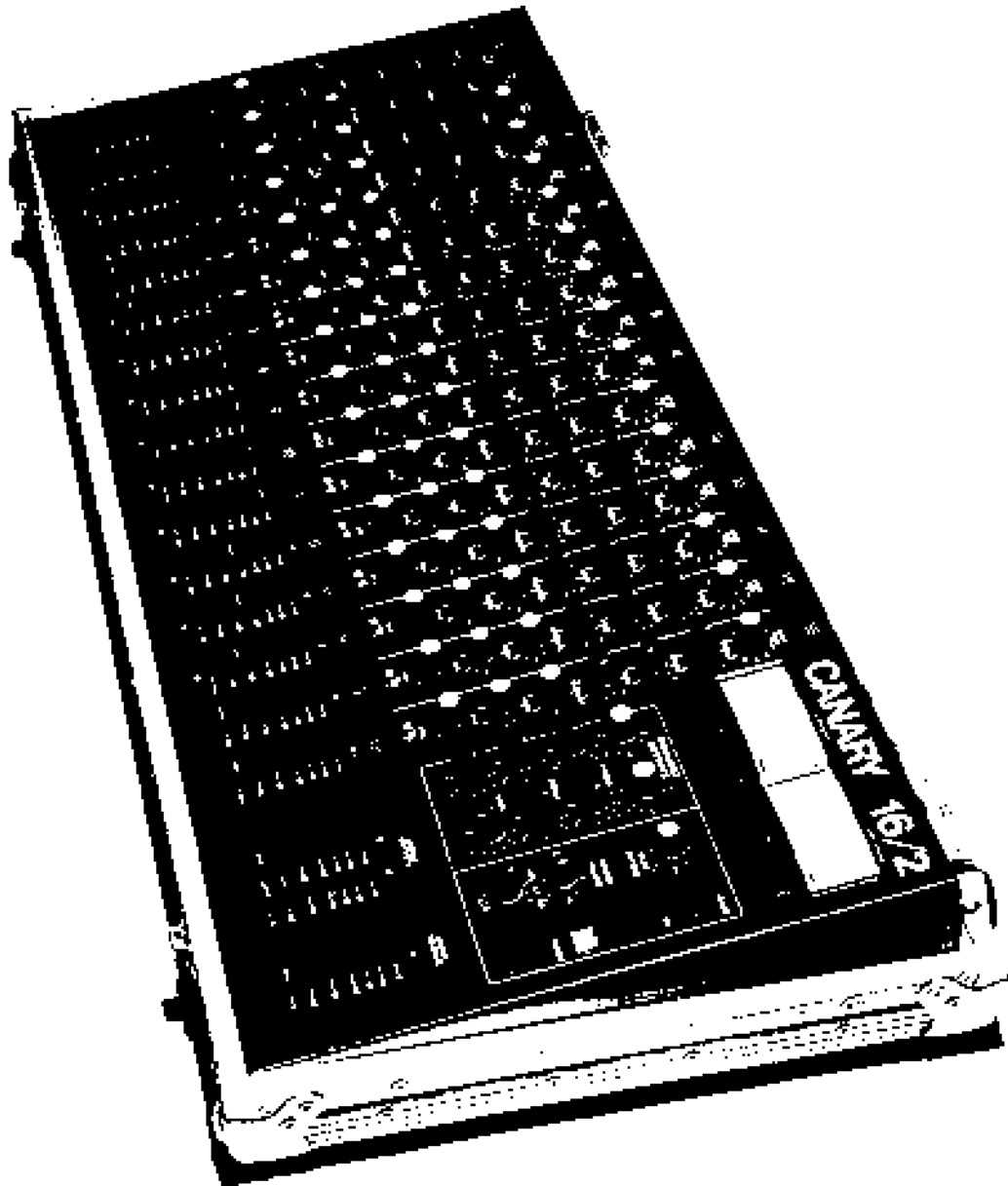
functions and oscillators there are on this machine. It has almost the same set-up as the Moog/Odyssey range, and at about one fifth of the price, plus the portability factors. This is quite amazing. The Wasp is a true synthesizer, and not a pre-set instrument. In my opinion, it is truly a revolutionary piece of gear, and my reservations about it are few. But the moans department reads thus: I dislike the non-keyboard type of touch triggering, but I fully realise that this feature is so purely as a low-cost factor. Besides, one can get used to it. Also, the overall sounds are a little thin compared to, say, a Minimoog, but then it's not really fair to make such a comparison when one considers the disparity in price tag values. It's great to see young keyboardists buying these Wasps, and having a chance to get into the principles of sound synthesis without gloomily regarding thousands of pounds' worth of synths through a music shop window, and having to wait for that day when . . .

That's not to say that this instrument is for beginners only. Lots of players who already possess an expensive range of gear are buying Wasps because they are such fun, and up to pro standard. Bob Styles has now got one, and I heard that American blues pianist Bart Tragen, who has only ever played an acoustic piano for 40 years, is using a Wasp in the States. There's no more to add really: if you play keyboards, do go and buy a Wasp. You'll have fun.

Robin Lumley



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Basscheck

Ovation
Magnum II
£570 inc VAT

Since observing a preview picture of this instrument in last year's Rose-Morris trade leaflets, I have eagerly awaited my first encounters with what looked to me like an exciting and futuristic addition to the Ovation range.

Since their innovative breakthrough into the acoustic-electric guitar field, their name has been synonymous with quality and value, and in this region they are leaders in the market. So far, their forays into the extremely tough, Gibson-Fender dominated field of solid-body electric guitars has been only partially successful even though they more than compete, with interestingly designed and sounding instruments, again of the highest quality. This is their first venture into the bass guitar end of the market with two models offered, the Magnum I and Magnum II, the second of which is reviewed here.

The main difference between the two models appears to be the tone control circuitry. The Magnum I uses normal volume and tone rotary pots for each pickup and the Magnum II a small three-band graphic which affects either or both pickups, depending on selection. A three-way selector switch gives the choice of neck pickup, bridge pickup or both, and there is just one overall master volume rotary control.

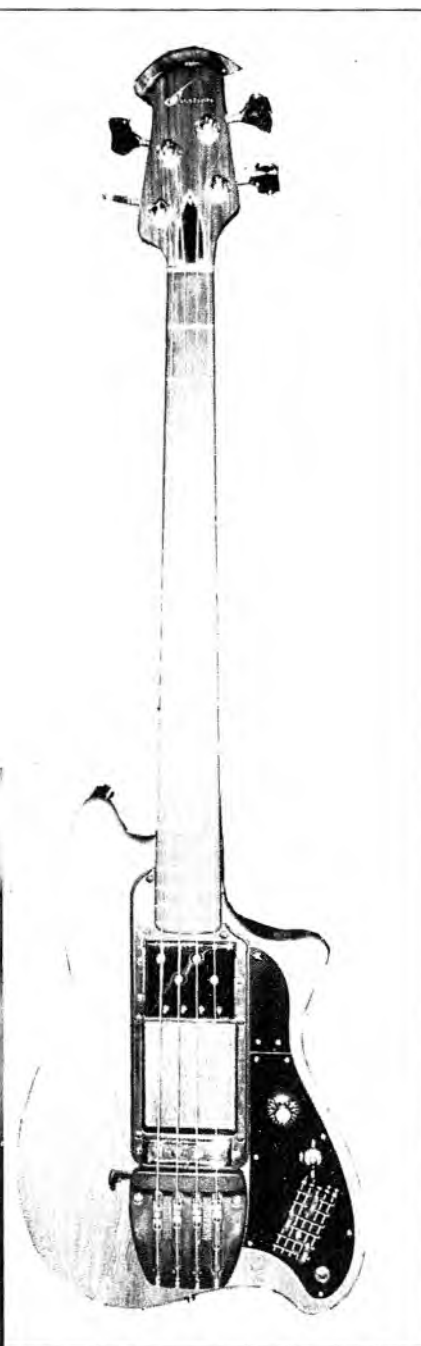
I have always preferred the very simplest control layout on any bass I play, to facilitate quick and easy adjustment while singing, leaping about or having to concentrate on other things apart from bass playing. It was with some trepidation then that I viewed this new, more refined EQ control on a bass guitar. But I'm happy to report that it turned out to be both simple and a delight to operate. It is far simpler, for instance, than the two volume, two tone pot layout which is normally provided on a separated pickup bass and gives a far wider range of tone to boot.

The three faders on the graphic control are simply marked Bass, 400Hz (middle) and Treble. All have adjustment between -12dB and +12dB, with the middle "O" position indicating a "flat" setting. It's possible to obtain an amazingly wide range of sounds from either pickup easily and positively. What's more, the graphic faders' visible correlation to the sound being produced is far more obvious than the tone pot settings on a conventional bass, which are often hard to see at a glance. The single volume control further simplifies the sound selection procedure, and the better-than-normal tone control concept seemingly does away with the necessity of separate volume controls for each pickup for "mixing" purposes.

Quick and easy juggling of the faders provides an extremely wide spectrum of bass guitar sounds, from the deep-round "plumminess" of a Gibson EB2 on the neck pickup through to the high treble "clang" of a Rickenbacker on the bridge pickup. Between these two extremes, it's possible to obtain pretty well any desired sound, including a very pleasing, predominantly middle sound, as used and preferred by most of the leading jazz/rock bassists today. The advantage of the graphic tone control system in this instance is that, if you set the middle fader at +12dB on either or both pickups as selected, you can colour this predominant middle tone as desired, by adding or subtracting bass or treble with the other two faders. This gives you complete but simple control in selecting a tone just right for your ear.

Another feature I like is the vast difference in sound between each pickup. The neck pickup provides a great, deep bass boost when flicked in, and the graphic allows you to filter out a great deal of this if you choose, leaving a pleasing roundness to the remaining mids or highs. The four pole-pieces on this pickup have individual slotted volume controls, adjustable with a screwdriver. This allows you to set the response on each string to suit your style of

Jim Rodford is one of the most experienced bassmen in British rock. His professional career started with the Mike Cotton Sound, and progressed through Argent to Phoenix. He has recently joined the Kinks as their regular bassist.





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Basscheck

playing. The bridge pickup provides ample punch and attack, and both pickups are height adjustable, by orthodox slotted screws on both sides of each. An attractive "antique metal" black metal surround frames both pickups, and provides a useful thumb rest at any point between the two pickups.

An elaborate and very effective preamp is built into the guitar, located under the pick guard, next to the tone circuitry. It is powered by two small 9 volt batteries, which I am informed will last at least a year before they need replacing. It is this unit that makes the tone circuitry so much more effective than normal (this concept is in fact being implemented by some other leading manufacturers, as the miniature silicone chip is allowing far more circuitry, and therefore control, to be built into musical instruments).

The tailpiece has an extremely chunky and functional look to it, almost to the point of looking cumbersome. But viewed in the context of the instrument as a whole, it complements the overall design, as well as presenting some interesting features. Its "antique metal" finish matches nicely with the pickup surround, and it provides considerable string length adjustment to the four brass string saddles. Ovation rightly point out that string gauges vary, even with two sets from the same manufacturer, so intonation can change each time you restring your bass. Reference marks are provided alongside each saddle, to allow adjustment between 33.8", through 34" (the scale length), to 35" to compensate for this, at .10" intervals. My only criticism here is that, to alter the string saddle position, you have to loosen the string and slip it out of its slot to get at the screw which anchors the saddle. Then by trial and error presumably, the right position is found after replacing and retensioning the string, as many times as it takes to locate.

The ball ends of the strings are simply slotted into their anchor positions, and an unusual "mute" mechanism is located just in front of the string saddles. A piece of hard black rubber is pushed up from under the strings by a push-in lever on the top side of the tailpiece. The idea behind this, presumably, is to provide partial as well as full muting, if desired. I think the idea is good, but in practice it doesn't work completely for me. When pushed full in, the desired full mute effect is attained - at the same time sharpening the tuning of the whole instrument, of course. When the rubber is lowered very slightly, fractionally more string movement sustain is allowed, but not uniformly on all four. Although the top surface of the strip of rubber is curved slightly to match the shallow bowed height settings between the four strings, it doesn't mute each string to the same extent in the partial mute positions, and also gives a rather rattling sitar effect. The answer may lie in using much softer rubber or even foam rubber, but I realise that wear and tear problems enter here, and this instrument is built to last in every department.

The body is one piece of natural, highly polished solid mahogany, with a distinctive and attractive double cutaway shaping at the front. The bottom cutaway allows easy access

right up to the top (20th) fret, and the back is contoured like a Fender Precision for comfort. The shaping of the back, tailpiece end, is reminiscent of the Ovation's six-string Breadwinner model, although not as extreme. Just when it seemed that all the conceivable permutations of solid body guitar shape had been used, Ovation should be congratulated on coming up with a beautiful distinctive body shape. It reminds me, when it's standing up straight, of a space rocket on the launching pad. Futuristic but tasteful.

The neck is also mahogany with three pieces of graphite reinforcement internally, one of which is visible at the centre back of the neck, presenting an attractive thick black line along its length. An adjustable tension rod is also provided, and the whole neck tapers somewhere between a Precision and Jazz bass feel. The fingerboard looks like ebony, with mother of pearl dot inlays, and the head is the usual attractive Ovation shape. The tension rod adjustment is located under a conventional black perspex plate just behind the nut, and the machine heads are excellent high quality low-ratio gearing components, also manufactured by Ovation. The gearing feature facilitates easy, very fine tuning, a boon for session players especially, as tuning discrepancies show up far more critically in the exacting, high fidelity conditions of the recording studio.

With this in mind, I feel Ovation could have gone one step further in the output stage of the electronics, and provided a balanced low impedance Canon socket direct injection facility for recording work, as well as the conventional jack output. This could also be used when DI'ing the bass into a PA system on live gigs, and would elevate this product to a very formidable competitor at the top end of the market.

I tested this instrument in situations varying from small live gigs to recording at Kong and Mayfair studios in London. It performed beautifully in all instances, and drew very favourable reactions from the engineers.

It is well worth its £570 price tag - although this may confine it to the more professional end of the market, where it is probably aimed.

Jim Rodford

Ovation Magnum II





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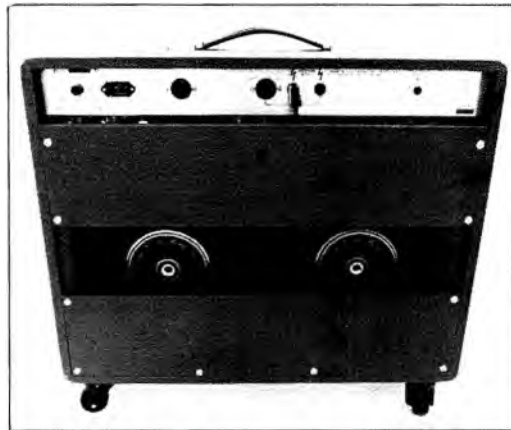
Soundcheck 1

Marshall 4140 Combo Amp £381.94 + VAT

I am sure that many of you will remember Henry Ford's famous comment when he first started producing cars: "You can have any colour, as long as it's black." On the whole, it seems that the audio equipment industry has adopted a similar stance as far as colour goes. Only occasionally have manufacturers made amps in anything other than a black finish; now Marshall have provided a further reminder that other colours can be equally smart and practical. The Marshall 4140 comes in a leather-cloth finish called "Brown Oak", teamed with a coffee and cream coloured speaker grill edged in white—a very subtle and smart colour combination. The amp is designed specially for country, jazz or club musicians, as it is a compact reverb twin-channel machine, offering rich and colourful sounds (this is not a pun), coupled with outstanding quality and a wide tonal range.

Construction

The 4140 is a twin channel 2 x 12" combo amplifier of unusually compact size, driven by a 100 watt "all valve" design Marshall head section. Both channels are designed with the same tone control features, i.e. middle, treble and bass, while the first channel is equipped with a reverb level control and a pair of sub-miniature Bright/Boost rocker switches.



Mark Sawicki M.Sc.(Eng.) is a consultant in electronics who also designs and builds electronic equipment.



Both channels are mixed together and the overall balance is controlled by a Master Volume pot found in the geometrical centre of the panel. On the far left and right are the usual 1/4" input jacks marked as High/Low sensitivity inputs, and the front side of the control panel has a pair of rectangular power switches — Standby and Power (illuminated in red).

At the back, two power output sockets are directly connected through the speakers' impedance selector switch allowing for 4 as well as 8 ohms operation, and these sockets are grouped in the middle part of the panel. For convenience during playing, Boost and Reverberation effects can be operated via a footswitch — the relevant 1/4" jack socket is at the right end. "Euroconnector" mains socket 2A (220-240v, 50Hz), or 4A (110-120v, 60Hz), fuse holder and mains voltage socket switch complete the rear side.

The metalwork is as on all earlier 100w Marshall amps, i.e. a badmed steel construction, but the basic difference is inside, where nearly all the small electronic bits and pieces including all 10 rotary potentiometers have been soldered onto a huge "motherboard" PCB. Previously, all these components have been separate. Another innovation on the circuit protection side is a comprehensive fusing protection which conforms with world safety standards and protects the expensive components. Notice that all the fuses (there are 10 of them) are internally mounted and for those interested, here are the values.

Valves filament (heater supply)	6,3v AC: 4 x 5At
Main HT supply	2 x 1At
Main HT supply (centre tap)	1 x 500mAt
"Negative" bias protection	1 x 100mAt
Mains	4At

This information may prove valuable to service engineers, since Marshall have never before employed such a sophisticated protection scheme. Other larger components, i.e. power supply/output stage transformers, electrolytic capacitors and nine thermionic valves, are the usual Marshall selection, with all the ECC83s being nicely screened and all the EL34s secured by a special spring holder arrangement — extremely important protection for these valves, which work upside down.

The main cabinet measures only 70cm x 530cm x 240cm and houses in its lower half a pair of 12" 80 Watt speakers built specially to Marshall's requirements and specifications. On the cabinet floor you will also find the reverberation sub-assemblies.

Conclusions

The Marshall 4140 combo is a really nice little amp, very compact and handy. The manufacturer's specified figures and those measured on my tests are virtually the same. For easy transport, it has a carrying strap-type handle on the top plus two recessed handles on either side, castors, etc. Indeed the 4140 is an attractive package for the country and western, jazz and club musician, as Marshalls claim.

The amp is carefully designed (it took over two years' research and the help of a huge number of musicians on both sides of the Atlantic advising at each stage of the development). In fact, I would love to own one myself. ▶

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Soundcheck 1

The sound this combo produced when playing the old organ (Godwyn 444P) was richer and more colourful than many other amps that have passed through these doors.

As far as the specification goes, 126 Watts RMS measured at onset of clipping is slightly better than claimed. THD levels expressed as a function of specific power levels indicate the enormously uniform character of the harmonic products (in a positive sense of course) varying between approximately 3 and 4 per cent.

I particularly liked the tone control circuit, one of the simplest in the world, but still capable of producing the exact sound of the moment. Channel No. 2 is designed specially with microphones in mind. Finally, the amp comes onto the UK market at £381.94 (+ VAT) and the American market at \$1350 - so buy it in Britain and save your dollars for other things!

Mark Sawicki



PARAMETER	RESULT	TEST CONDITION	COMMENTS
Specific power output Watts RMS Ref 1KHz	126.56W RMS 105.126W RMS	Onset of clipping into 4 ohms Onset of clipping into 8 ohms	Manufacturer claims the "clip point" is 125W RMS. The power amp uses four EL34 valves (6X50 in USA) and one ECC83 (double triode) as a phase splitter. My measurements were taken in Channel No. 1 with tone on controls at max, and both Bright/Boost switches on.
Tonal Harmonic distortion (THD) Ref 1KHz	3.92% 3.95% 3.91% 3.26% 3.1% 3.29%	@ 120W RMS @ 100W RMS into 4 ohms measured in @ 70W RMS Channel No. 1 @ 30W RMS and at low input @ 10W RMS @ 5W RMS	Rich and nice sound. At high output (i.e. above 100W RMS) harmonic distortion consists of mainly the 2nd harmonic component with a noticeable lack of crossover distortion. Both channels produce a great "Marshall sound". The amp averages about 170W RMS at 10% THD (1 KHz).
Input sensitivity in mV RMS for 100W RMS (20V RMS) output signal. Ref 1KHz	13.1mV RMS 6.5mV RMS 88.1mV RMS 31.7mV RMS	Chan. No. 1: Low i/p Chan. No. 1: High i/p Chan. No. 2: Low i/p Chan. No. 2: High i/p	Manufacturer claims 8dB gain difference between input sensitivities on channel No. 1 and overall controls except reverb at max. With Boost off the overload margin is approx. 600mV. Channel No. 2 is generally less sensitive and the manufacturer claims 30mV (with all controls at Max., Ref 1KHz, High i/p).
Tone controls (swing in dB)	38.5dB 15.3dB 35.2dB 39.1dB 18.1dB 34.0dB	Treble @ 10KHz } Ref. Ch. No. 1 Middle @ 400Hz } "middle" at Bass @ 50Hz } Min. Treble @ 10KHz } Ref. Ch. No. 2 Middle @ 450Hz } "middle" at Min. Bass @ 50Hz }	Marshall's tone controls are of the filter design type to provide a wide band frequency response shaping network best suited for musical instrument response. Quite effective. As can be seen from these results, "middle" control setting is critical to both treble/bass ranges. Manufacturer claims for Ch. No. 1: 40dB (10KHz) treble, 15dB (400Hz) middle and 34dB (50Hz) bass. Ch. 2: 37dB (10KHz) treble, 17dB (450Hz) middle and 34dB (50Hz) bass
Bright switch	approx 16dB	Ref. 10KHz: Ch. Vol. at 2	Boost switch "efficiency" reduces as volume increases.
Boost switch	approx 11dB	Ref. 10KHz	The Boost switch itself gives 11dB wide band gain boost, the footswitch being operative when panel switch is off.
Signal/noise ratio	Better than 60dB	All tone controls set "flat", Bright/Boost switches off	Unweighted RMS reading with ref. to nominal power output.
Capacitive load test	OK	2µF non-electrolytic capacitor and 4 ohms dummy load	Satisfactory
Open Circuit Stability Test	OK	Dummy load removed, tone controls set "flat", volume/ master volume set "max"	Good
Short Circuit Test	30 secs.		Worked when short was removed.

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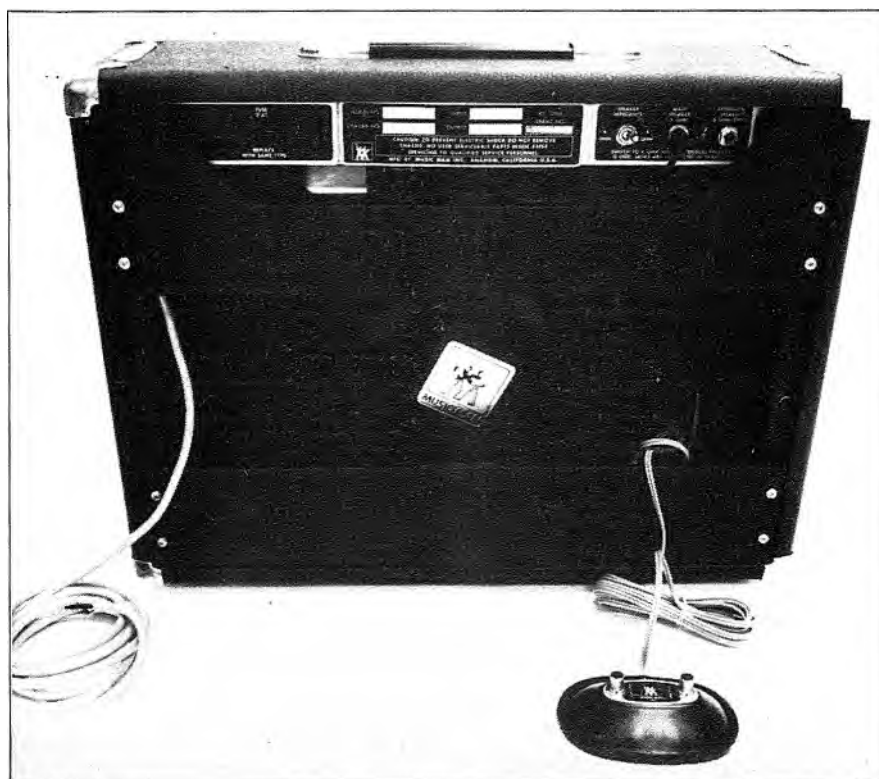
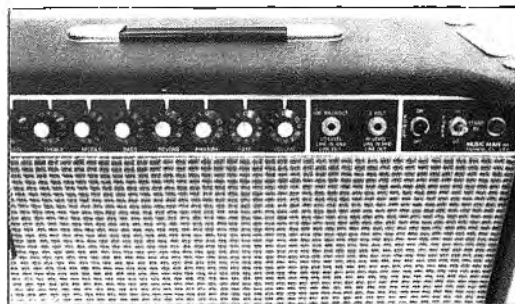
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Soundcheck :2

Music Man 112 RP 65 combo amp £324 + VAT



We haven't reviewed a Music Man amp in this column since February 1977, when we presented the 210-65 combo. Here's another member of the 65 family, the 112 RP 65, a little but extremely popular American baby combo with a large range of applications, due to its advanced circuit design. Among many other features, the amp has five-band equalisation, reverb, phaser, distortion, footswitch controllability and Lo/Hi level signal extraction/injection sockets (100mV/3 Volts). The Music Man tone equalisation circuits, in particular, seem a very promising feature, providing a variety of frequency contours appropriate to any particular instrument used, as well as individual preference in tone balance.

Construction

All 65 series Music Man combo amps are of the same dimensions – 18" high x 23 3/4" wide x 9" deep – significantly smaller than most similar amps on the market. Its weight is listed at 47lb. for this series. This combo comes equipped with quite an efficient Electrovoice 12L series speaker, 2 1/2" aluminium voice coils and 28oz Alnico magnets as standard. Like the other Music Man amps in this range, the 112 RP 65 has a superbly manufactured cabinet featuring 3/4" Ponderosa pine, lock joints and glued marine ply baffleboard, heavy duty hardware (carriers, castors, handles, etc.), a smart black Rexine finish and a woven grill cloth specially manufactured for Music Man.

The combo's control panel is split into three rectangular boxes incorporating (from left to right): two 1/4" jack input sockets, Bright/Deep switches, Rotary controls – Gain, Treble, Middle, Bass, Reverb and Flanger depth and rate. The "middle" box also houses one more practical option – inject/extract signal socket between the preamplifier and the output power stage of the amp. The last box (far right) incorporates a power reduction switch which is extremely useful in recording studios or when performing in "confined surroundings", as the manufacturers put it.

The actual power output reduction, as you can see from the specification table, is approximately 50% in both 4 and 8 ohms speaker load situations (Ref Lo/Hi power switch positions). Basically the electronics in the preamplifier as well as the power output stages are Music Man standard. The output stage uses two EL34 (Telefunken) power pentodes. Reverberation is provided by means of an electro-mechanical "Z" spring reverb device, incorporating a cascade arrangement of delay lines which result in reduced microphonics as well as mechanical shatter while still producing ample delay time. As far as the Phaser is concerned, this particular unit employs four solid-state photo resistors for accurate reliable phasing action. Because this phaser is built into the amplifier, there is very little noise problem, compared with the usual external units normally placed between guitar and amplifier. ▶▶

EVERYBODY'S GETTING BEHIND BGW

Even Crown and Yamaha



	POWER* @ 8 OHMS	HEATSINKS/COOLING SYSTEM: TOTAL # OF OUTPUT TRANSISTORS: @ 4 OHMS	SPEAKER PROTECTION:	MAINS (AC) PROTECTION:	CONSTRUCTION DESIGN:	TURN-ON DELAY:	CIRCUITRY:	T.H.M.	PRICE**	YEAR INTRODUCED	
BGW 750 B/C	225 Watts/ch.	360 Watts/ch 20	Forced air cooling for 2 massive removable modules	Active arc- interrupting circuitry	Front panel magnetic circuit breaker	Modular all Teflon wiring	Relay operated transient delay circuitry	Full complimentary	\$ 999 — Model 750C \$1099 — Model 750B	1978	
CROWN DC300A	155 Watts/ch.	NO FTC RATING 16	Passive airflow only	None provided	Rear panel fuse only	Hard-wired, non-modular	None	Quasi- complimentary	Not specified*	\$ 919 ***	1974
YAMAHA P2200	200 Watts/ch.	NO FTC RATING 12	Passive airflow only	None provided	Rear panel fuse only	Hard-wired, non-modular	None	Full complimentary	Not specified*	\$1095	1976

Here they are — The big guns of professional amplification: The respected Crown DC300A, The cosmetically impressive Yamaha P2200, And BGW's new, no-nonsense 750B/C.

Top-of-the-line professional power amplifiers from the industry's most respected manufacturers. All boasting impressive reputations. All costing about \$1,000.

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THE RELIABILITY FACTOR

Above all else, professional musicians and audio engineers want to know two things about their power amplifiers: How dependably they function under extreme conditions, and how well they interface with other components.

BGW's new 750 Series amplifiers have taken the lead in both areas. Twenty (20) output transistors as opposed to Crown's 16 and Yamaha's 12 provide a Safe Operating Area unmatched by either the DC300A or the P2200. While both Crown and Yamaha rely on passive "convection" cooling, the extensive heat sinks on BGW's pro amps are cooled by forced air for reliable, continuous performance even on the hottest outdoor concert stages. Unique new arc-interrupting circuitry protects speakers — not just the

amplifiers themselves — from catastrophic DC offset.

Like all BGW amplifiers, the 750B and C feature modular construction and front-panel circuit-breakers rather than hard wiring and cumbersome rear-panel fuses. The result: Maintenance is easier both onstage and in the studio — when time and tempers can be very short.

CLARITY AND PRESENCE

Now that audible Harmonic and Intermodulation Distortion have been all but eliminated from professional power amplifiers, Transient Intermodulation Distortion (TIM) has become important. Neither Crown nor Yamaha specifies TIM levels whereas TIM specs for BGW's 750's Series are published with the greatest of pride. The 750B and C consequently produce clearer, warmer, and more open sound.

Pros will also appreciate another BGW exclusive: A delay circuit that eliminates all transient "thumps" when the 750B and C are activated. Neither Crown nor Yamaha has anything like it.

POWER

This is where BGW really leaves the competition behind. While the Crown DC300A and the Yamaha P2200 are rated at

155 and 200 watts, respectively, BGW's 750B/C delivers a full 225 watts per channel into 8 ohms,** leaving the competition behind entirely at 4 ohms, with a whopping 360 watts. Only BGW has FTC rated 4 ohm power specifications.

Both the DC300A and the P2200 are good power amplifiers by conventional standards. But real recording pros don't deal with convention.

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Because the competition already is.

*Based on manufacturers' published specifications and prices available 7/1/78.

**BGW 750B/C FTC Specification: 225 watts minimum sine wave continuous average power output per channel with both channels driving 8 ohm loads over a power band from 20Hz to 20kHz. The maximum Total Harmonic Distortion at any power level from 250 milliwatts to 225 watts shall be no more than 0.1%.

*** Includes optional HMB-7 Handles (\$20.00, not shown)



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Soundcheck :2

At the rear, on the right of the amp, there is an impedance selector switch marked 4/8 ohms. The 112 RP 65 employs a single 12" 8 ohms driver, but if additional speaker cabinets are used (8 ohms) then the switch should be turned to the 4 ohms point.

Conclusion

The 112 RP 65 combo comes with a foot-switch, fixed type mains lead, guarantee document and instruction manual. As the amplifier contains a number of features which differ in concept from other Music Man amps, it is essential to read this manual carefully before plugging in for the first time.

The amp is supplied to Music Man dealers with a limited warranty card which should be returned within 10 days to the manufacturer.

The specification of the 112 RP 65 generally confirms the manufacturer's figures and levels -- although I could not confirm the booklet's claim that the amp can deliver 65 watts RMS to the speaker at less than 5% total harmonic distortion. As the spec. table shows, the output fell short by my measurements, even with the power switch in the High position -- but the difference is insignificant in dB terms.

This minor point in no way influences my opinion on this amp. It is carefully designed, nicely manufactured and produces the right sound. I can confidently reiterate my comments on the 210-65 (see Feb 1977) that this combo is well-built and exquisitely finished, albeit a little expensive by British standards. But if you want the best, you have to pay for it.

Mark Sawicki

PARAMETER	RESULT	TEST CONDITION	COMMENTS
Specific power output (Watts RMS) Ref. 1KHz	60.58W RMS	Hi power switch	Slightly lower than specified 65W RMS. Manufacturer claims that the 65 series is capable of deliveries 65 watts RMS power to the speaker at less than 5% total harmonic distortion. Under heavy distortion conditions in which the wave shape is essentially square, the amp delivers approx 110W of power.
	32.80W RMS	Lo power switch	
Total harmonic distortion (THD) Ref. 8 Ohms dummy load, 1KHz	64.12W RMS	Hi power switch	Mainly second harmonic. Satisfactory. Manufacturer recommends the gain control setting at 1-5 unless distortion is desired. After the amount of distortion has been set up, the volume control should be adjusted for the output power required from the amplifier.
	30.25W RMS	Lo powers witch	
	3.57%	@ 50w RMS	
	1.16%	@ 40W RMS	
	0.74%	@ 30W RMS	
Typical sensitivity for 60W RMS/8 Ohms (21.9V RMS)	0.76%	@ 20W RMS	Quite high sensitivity, which is more than enough for guitar amplifier applications. Very high level of "flexibility" on both Hi/Lo inputs as they will accommodate voltages even 50 times higher than presented here.
	0.84%	@ 10W RMS	
	0.98%	@ 5W RMS	
	1.49%	@ 1W RMS	
Tone controls range (swing in dB)	Hi: 1.15mV RMS	1 KHz, tone controls flat (5); Bright/deep switches off; Power switch high.	Good. Basically works similarly to those of Music Man 210-65 combo reviewed in Feb, 77.
	Lo: 5.6mV RMS		
	± 17.59 dB	Treble @ 10KHz; Mid/Bass-flat (5)	
Bright switch	± 9.15 dB	Middle @ 600Hz; Treb/Bass-flat (5)	Additional treble boost should be used in conjunction with treble/middle controls.
	± 18.12 dB	Bass @ 50Hz; Treb/Mid-flat (5)	
Deep switch	+10.2dB boost	@ 3 KHz, Treble @ 3; Bass/Middle flat (5)	Additional bass boost. Should be used in conjunction with Middle/Bass controls.
Lo level line in/out level	+ 10.5 dB boost	@ 50 Hz. Treble/Mid/Bass flat	May be used to extract/inject a signal between the pre-amp and power amplifier circuits.
Hi level line in/out level	approx. 100mV RMS	1KHz	As low level, A variety of sound modification devices such as graphic EQ flangers or additional phasers to provide bi-phasing may thus be injected at this point. The high level socket is particularly useful to drive another amp for increased power output.
Hi level line in/out level	approx. 3.0V RMS	1KHz	Very good. Internally built phaser with intensity and rate (speed) controls. The advantage of having the phaser built in is the elimination of noise that results when such a unit is placed between the instrument and the amp. Both Reverb/Phaser effects may be controlled by the footswitch provided.
Reverb/Phaser effects	Wide range of interesting sound available		
Capacitive load test	OK	2µF non-electrolytic capacitor and 8 Ohms dummy load.	OK
Short circuit test	30 seconds		No ill effects. The anodes of EL34 valves heat up quickly.

Keyboardcheck

Fender Rhodes Mk. I Stage Piano "73" £876.49+VAT

This is a difficult review to write because I must admit to being completely biased on the whole subject of Fender Rhodes pianos: I love them. Each one differs from the next in the same way that no two grand pianos are ever exactly the same – and that's no fatuous comparison. After all, some of the Rhodes pianos I've played have been superb musical instruments comparable in touch and response to a Steinway (well almost) while others have turned out to be cussed brutes with heavy actions that made you feel as if you'd

been pummeling dough for hours. Fortunately, this one – Mk. I stage piano (the least expensive of the family) – belongs more to the former category.

The compass of the instrument is from E two octaves and a sixth below middle C to E three octaves and a third above it. Hence the classification "73". They also make an 88-note version (the same compass as a grand piano). Easily the most portable of the group, it stands on adjustable legs, solidly braced. The finish (in black) and appearance are excellent. As well as the input jack it has two control knobs – volume and bass boost – both of which do exactly what they say. You'll need amplification for it, the more powerful and clearer the better, though it will sound good through a Twin Reverb or other similar combo.

Briefly, the sound of a Fender Rhodes is generated in much the same way as on a conventional piano, the strings being replaced in this case by metal rods called tines, which are easily tuned by careful positioning of tuning springs. When the tine is struck it vibrates across the pickup creating a small voltage signal which is then amplified. Above the tine and integrated with it is the tone bar and it is by adjusting the screws which hold this assembly on to the main chassis that you may vary the tonal characteristic of the instrument from bright to mellow. Incidentally, if you play it with the lid off you can damp the tone bars and get a muted effect. Should you break a tine in the heat of the moment, it is fairly easy to replace it. In fact, the makers have thought-



fully provided six spare tines for this very purpose.

But it is the action, the motions that cause the hammer to strike the tine, that have made the Rhodes piano the electric piano to judge others by. Closely modelled on that of the acoustic piano, it enables the player to transmit his or her distinctive "tone". Mind you, you do have to find one that feels good to play. The chances are that you might have to try a few before you find one to which the foregoing eulogy might apply. Even the heaviest action, however, can be made more accommodating if adjusted *by an expert*.

So really the whole thing becomes a question of whether you, the keyboard player, see a place for it in the kind of music you want to play. Certainly there are many contexts in which it's the wrong kind of sound — New Wave music, for instance, or great barrel organ classics of the 19th century. Nearly every time I pick up a music paper there's an article by some keyboard player who roundly declares that he wouldn't be seen dead playing one of the things. And then, if a kind of sadness assails me, I rush to the record player, the music of Corea, Hancock, Zawinul et al. peels forth, I am soothed, the rage abates . . . sorry, got a bit carried away there but it really is the definitive piano for that kind of "fusion" music. Properly amplified it is a great instrument for integrating with the rhythm section. And as a solo instrument you can wail to your heart's content (hopefully to others' as well). Put it through a flanger: the two go together as though the flanger was invented for just that purpose (whatever guitarists might think). I just got back from a tour where I had quite a few keyboards on the go and in fact, most of the soloing was on synths. But if you asked me what I regarded as the true heart of the system,

I would have to reply that it was still the good old Fender Rhodes.

Bear in mind that there are also the 73- and 88-note suitcase models, which sit on their own stereo amplification. The Mk. 2s have a more comprehensive EQ system and stereo vibrato ranging from very fast to slow, are much more expensive and require two people to carry them around.

One small piece of carping is the insistence on retaining the curved top, designed to doubt to turn pieces of music paper and synthesizers into lemming impressionists. If you want to rest other instruments on top, spend a couple of hours constructing a flat surface that fits over it.

Never mind — it's a classic instrument. One thing is for sure: if you do buy one you won't be wasting your money.

Tony Hymas



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Drumcheck

**Sonor
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Sonor drums are built about 100 miles or so north of Frankfurt at Aue in West Germany. In October 1975 they celebrated their centenary as percussion manufacturers and their products, as one would expect, reflect this longevity: their shells are extremely solidly built and their fixtures and fittings are the subjects of constant updates and rethinks. It's certainly a family business with Horst Link (the grandson of the founder) in control, heading up a very young team which also includes members of its fourth generation. Herr Link himself listens to every suggestion however hairbrained from his endorsees around the world and those which are practicable stand a good chance of being acted upon.

Sonor earned for themselves the deserved reputation of not only being the biggest and best of the European manufacturers but also being able to compete with the Americans on both sides of the Atlantic. More than 50 per cent of the Aue factory's total production is exported to approximately 100 different countries.

OK, so now you know the background of the company, let's get into their product. In the past *International Musicial* has reviewed three other Sonor sets which have all featured different configurations of their nine-ply beech shells. However since they do offer an alternative which only one other manufacturer "half-offers" — i.e. the rosewood shell — I

thought it would be important to examine and appraise it.

These Sonor drums have the normal nine-ply beech shells too but are veneered in rosewood on the outside *and* the inside. One has to pay 50 per cent more for this privilege, which doesn't make it a cheap set by any means, but it does make it unique. These veneers don't actually make it an 11-ply drum (unless you consider the plastic coating on a normally covered drum to count as one ply) but the shell is still remarkably thick at almost half an inch. The shells are formed from three separate pieces of three-ply wood which are stagger-joined around the circumference and diagonally-butted to strengthen them. These processes are carried out in an oil-heated press. All Sonor wooden shells have a 45° inverse edge camber with a very slight radius at their head contact point. In addition they are all undersize in relation to the hoop and the head — this results in a much clearer sound since the head sits on the drum in a timpani-type way where the collar of the head and the counterhoop don't interfere with the shell. The only head contact point is therefore at the bearing edge, which is a very insignificant percentage of the total head area.

So why rosewood? Well rosewood has been traditionally used for the solid tone bars on xylophones and marimbas for many years because it is a very hard and resonant material indeed. It ultimately makes for a thicker, denser sound with a little more balls than the normal shell offers. For example, when you strike the side of a normal (say a beech) shell, you get a "click". When you strike the side of the same size rosewood shell you get a "clonk".

The XK 1025 comes with a 22 x 14 bass drum, 13 x 9, 14 x 10 and 16 x 16 tom-toms and a 14 x 5½ metal-shell snare drum, together with hi-hat and bass drum pedals, two cymbal and one snare drum stands. The actual selection of sizes for the set is a little strange since normally the medium-sized bass drum set has a 12 x 8 with its 13 x 9, not a 14 x 10. Mind you, it wasn't until I had happily played the drums and was counting the tension screws that I noticed. So it can't have made any difference sound-wise.

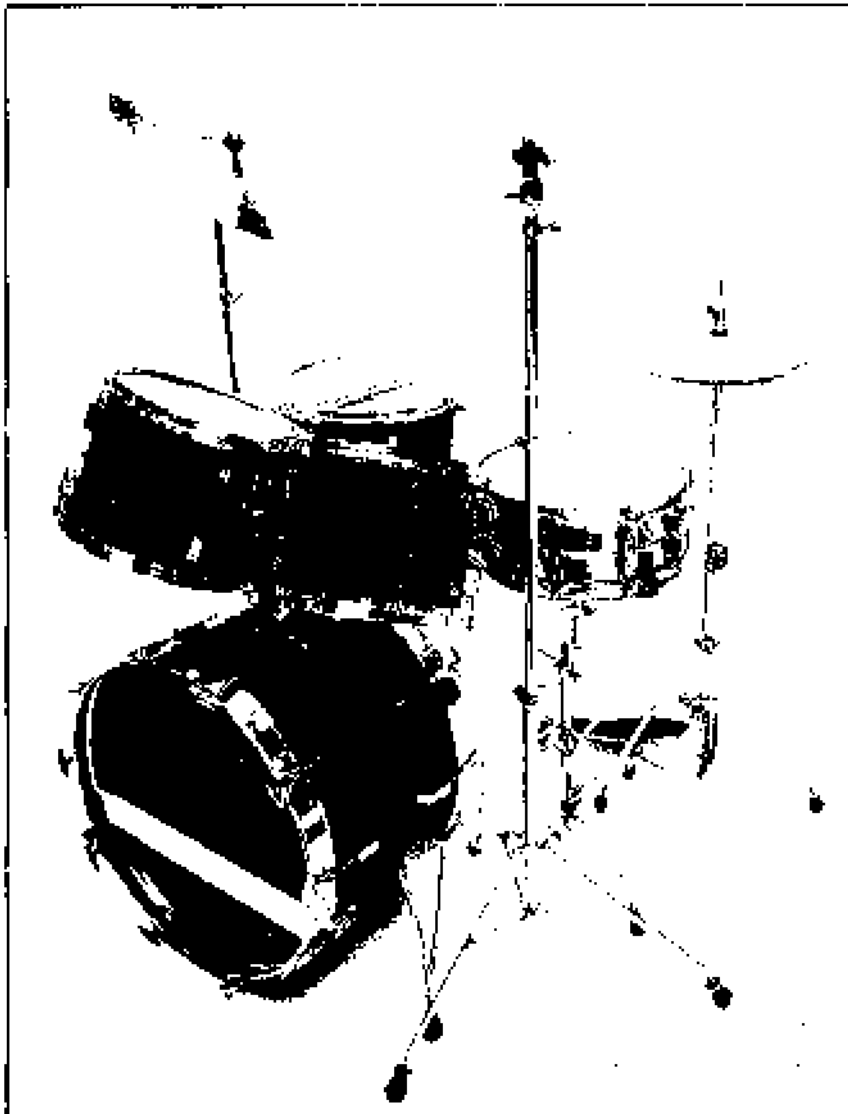
BASS DRUM

The rosewood bass drum has a feature which no other Sonor drum has (at least not in my catalogue). It's an internal adjustable damper working on its batter head which I'll talk about later.

This 22 x 14 drum has 20 cast T-handled tensioners and pressed-steel claws. These ¼" tension screws have a slightly finer-than-normal thread which does give more tension control. But they are a little prone to unscrewing, more so than screws with a coarser thread. (Mind you, because it is a fine thread, if it does undo you don't lose quite so much tension.)

The drum has a nice round sound with a creditable "thump", even with the two heads on — but then the front head had a felt strip damper on it too which of course helped this sympathetic head sound.

Sonor's spurs are really interesting looking. They're of the non-adjustable outrigger type made of thickish rod bent into a triangle with the company's ubiquitous screwed, optional



rubber or spiked tip at the apex of it. The whole unit is held in a bass-drum-mounted, cast clamp-block by its shortest side. The spur triangle is cleverly angled to face its tip frontways in a good position to put a stop to forward movement, and the adjustable jaw-action block has a square hole in it to retain the round section spur more securely. It is not necessary, nor is it easy to remove the spurs from the drum to pull it away because the triangle is twisted on its long sides to fit against the drum shell.

The rosewood bass drum is the only one Sonor make which has the adjustable strip damper. It works a little bit like Gretsch's Bobby Pratt muffler but is more sophisticated. It has two 1½" strips of felt spaced 3½" apart and wrapped round and fixed to a piece of half-round wood. These strips extend from top to bottom and the pieces of wood (there's one at the bottom too) are joined to a rectangular framework hinged to the centre of each side. Trixon, I remember, used to call this a double-parallelogram action. Anyway, the top rectangle is joined by its short side to the shell and there's a control knob at the top of the bass drum's shell which in turn is joined to the rectangle through the shell. As you turn the knob it pulls the piece of wood up in an arc (like a jaw) towards the head. At the same time, the bottom half-round piece of wood also moves in the same direction and presses tighter to the head. This bottom end is sprung so there's always constant tension on the strips and since the strips are first wrapped around the wood there's only ever felt to touch the head. I think the idea and principle are fine and better than any others but I was a little concerned that the felt might eventually stretch with constant stretching pressure.

I would have expected such a *wooden* drum to be fitted with solid rosewood hoops but this one had Sonor's normal metal hoops. I suppose I'm splitting hairs here since after all this drum had a great sound. But I would have been interested to hear it with solid hoops.

TOM-TOMS

These double-headed rosewood tom-toms have a really distinctive sound — round but with a definite cutting edge. I have heard them played single-headed and they certainly have plenty of balls. The 13 x 9 has six ¼" slotted tensioners per head, the 14 x 10 has eight each and so has the 16 x 16 floor tom. Like the bass drum, these tom-toms have a more comprehensive (than every other Sonor) dampening system. They have internal, under-head operating pads top and bottom. These are sprung on really thick steel and the pads themselves are ½" thick and of slightly larger diameter than anybody else's I've seen. The small toms have 2" diameter pads and the floor tom's are ¾" larger.

Except for Camco's old dampers, these must be the strongest and best internal pads available. I personally don't hold with these sort of mufflers and find the ones which work on top of the head better because they dampen the heads after it has been struck and has returned to the rest position. Sonor have this sort of damper (numbered Z5111 and Z5112) which clips to the rim and is adjustable in pressure with a wing bolt. They're available in

the same sizes as I've just mentioned and are the best I've seen and realistically priced. Great for recording.

All tom-toms have pressed steel triple-flange counter-hoops and Remo's see-through Ambassador heads fitted top and bottom. Sonor have developed a brand new locking system for their slotted tension screws. (You may remember those old knurled locking disc-nuts which used to be fitted to the extra-deep snare drum which locked against the inserts and, for me, never did the job.) These new ones definitely do work. The nut-box insert now has a little horizontal slot cut through it into the thread and this locates a half-round, D-shaped wire spring clip. Our tension-screw itself has a flat on two opposite sides and the spring clamps hard against this, wedging it tight. It's a great idea but will need a little getting used to from a tuning point of view because it changes the feel of the screw in its nut. (I understand you can buy these parts to update your old Sonor. The system is called Snaplock.)

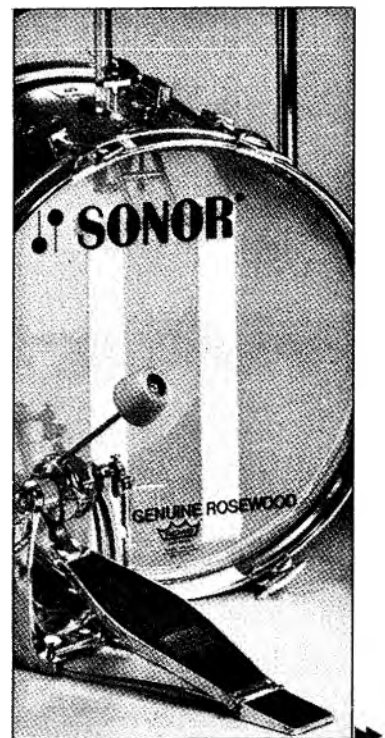
The floor tom-tom has three bent rod legs with spur-type block holders and normal rubber feet. These feet are strangely the only ones on the whole set which don't have the benefit of their famous screw-adjustable and lockable rubber/metal spiked ends. I can't understand why.

SNARE DRUM

The D505 snare drum supplied as standard with the XK1025 has a metal shell — not as one might reasonably expect a rosewood shell. (They just don't seem to make anything other than a metal shell drum.) This drum has a 5¾" deep, one-piece, ferro-manganese shell with a 45° inverse flange, centre bead to strengthen the shell and stop it from buckling, and a recessed snare "touch" area which is a slight dip enabling the snare to sit more comfortably on the head and maintain even tension all round the snare head. Like almost everybody else's snare drum, Sonor's has 10 tension screws per head but theirs are screwed into elegant, waisted, double-ended nut-boxes. (In the case of all the other drums I know these are padded with plastic foam so I suppose it's safe to assume the snare drum's casings are padded too.)

The snare strainer is a little unusual in that it is sensibly adjustable at both the strainer and butt end. This helps to ensure even throw-off and tension in the "off" position and helps to cure buzzing and rattling caused by uneven snare drop. It's a part-cast strainer and has a cam action on/off mechanism with a fine adjustment on its thread. The actual on/off lever locks up against the pressed-steel frame which holds the mechanism to the drum, and this is thoughtfully sheathed in rubber. Its butt end, too, is cast and also finely adjustable. The 22-strand steel snare is cord-attached to the strainer and the string passed through shoe-type eyelets in the snares, which will of course ease the wear on the strings. In future, Sonor's snares will have a slot in them as well as holes so the drummer will have the option of plastic strip or cord suspension.

The D505 has a bright, snappy sound which seems somehow too responsive, at least as far as heavy playing is concerned. It doesn't have the depth of sound or conviction I was looking for



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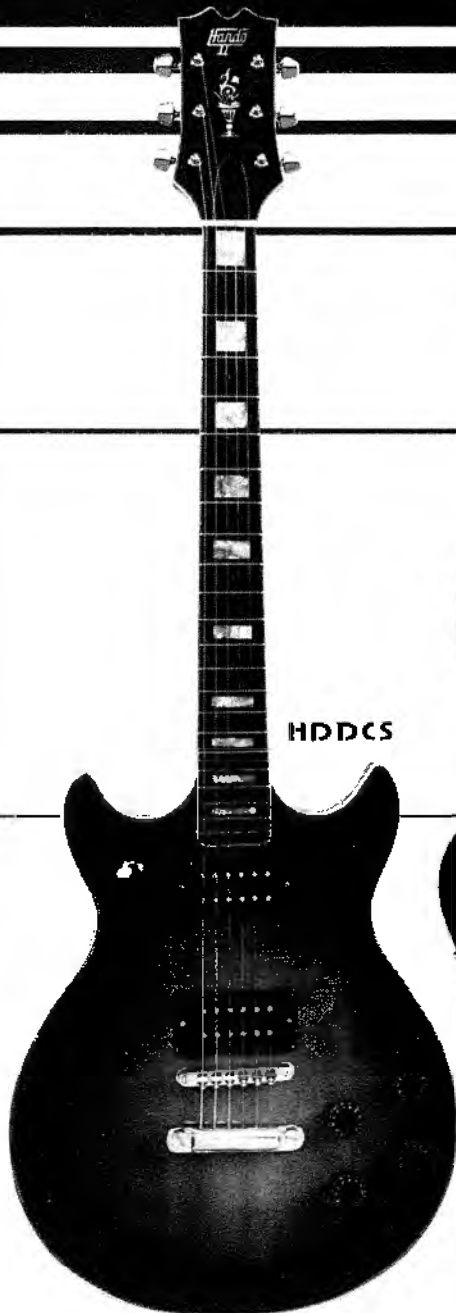
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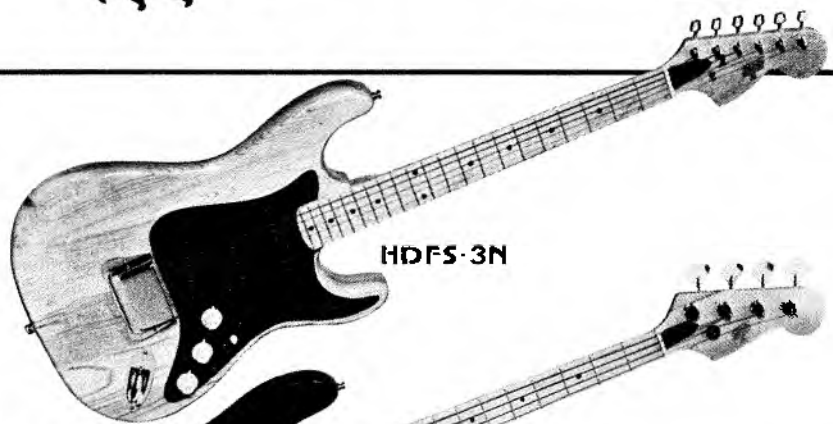


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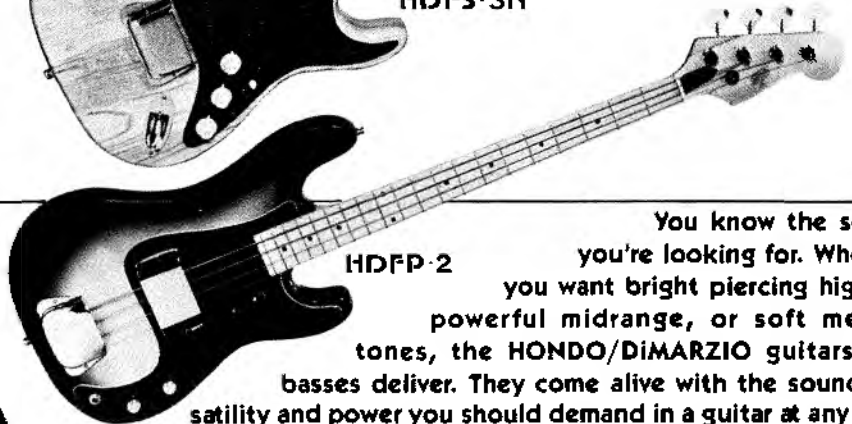
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Drumcheck

— although this doesn't in any way denigrate it as a drum, in some ways, it's probably too good a drum for my particular application. Of course, you might well have a special use for the drum — say as a jazz or dance band drum, which would suit it down to the ground.

ACCESSORIES

The tripod-based snare drum stand has a smallish diameter centre tube (by present-day standards) but substantially thicker legs fitted with the screw adjustable and lockable rubber or metal spike ended feet. The basket-type holding mechanism at the top has an innovation. Besides the normal gripping tension in the centres and underneath the basket actuated by a large knurled thumb screw, there is a lever-operated quick-release mechanism which works on a cam and makes snare drum removal extremely fast. The height adjustment is held with a T-bolt shaped like a bass drum tensioner, and the playing angle is extremely well-held with two substantial "L" screws, one at the pivot point and one just below. There's another bass-drum-type tensioner bolt which locks the tripod legs in the out position.

The cymbal stands have amazingly wide-spreading and substantial double legs, again with the adjustable feet. The leg spread is adjustable and lockable, again with bass drum tensioner-screws, as is the cymbal height at two positions. There's a stop at the bottom of the largest tube to prevent the legs from sliding off and a very substantial cast tilter at the top which is removable to accommodate Sonor's boom convertor if you wish. The ratchet tilter has thick felt washers on it and a wing nut with a thoughtful locking nut beneath it.

Sonor's hi-hat for the XK1025 is not their top-of-the-line one with adjustable springs but it does come with three springs of different strengths which you could fit yourself. The hi-hat is numbered Z5456 and has tripod legs with the adjustable feet. There's a rubberised two-piece footplate, a substantial adjustable bottom cymbal cup and a hefty turned top cymbal clutch with a large height adjustment screw. The top rod is made from hexagonal rod which is much better and effectively stops the clutch from slipping round in use. There's now a cast height-adjustment clamp fitted to the top tube.

The double tom-tom holder is more or less the one which the company started out with years ago. Basically, it's a cast ratchet tilter which holds the angle adjustment and is attached to a splined tube which locates into female carriers fixed to the bass drum and tom-tom shells. These carriers are very well constructed with a cast tube-retainer behind them (inside the drum) which keeps it steady for a few inches instead of the usual inch or so most holders of this type give. The height adjustment of the unit itself is held by a large T-bolt similar to a bass drum tensioner. The top two ratchet arms (left and right) locate into a pair of blocks fixed first to a plate and then to the top of the down tube. These arms can be adjusted towards or away from the player in a horizontal arc, held fast by two screws. The whole thing looks sturdy, works admirably and can be adapted via its plate to support another

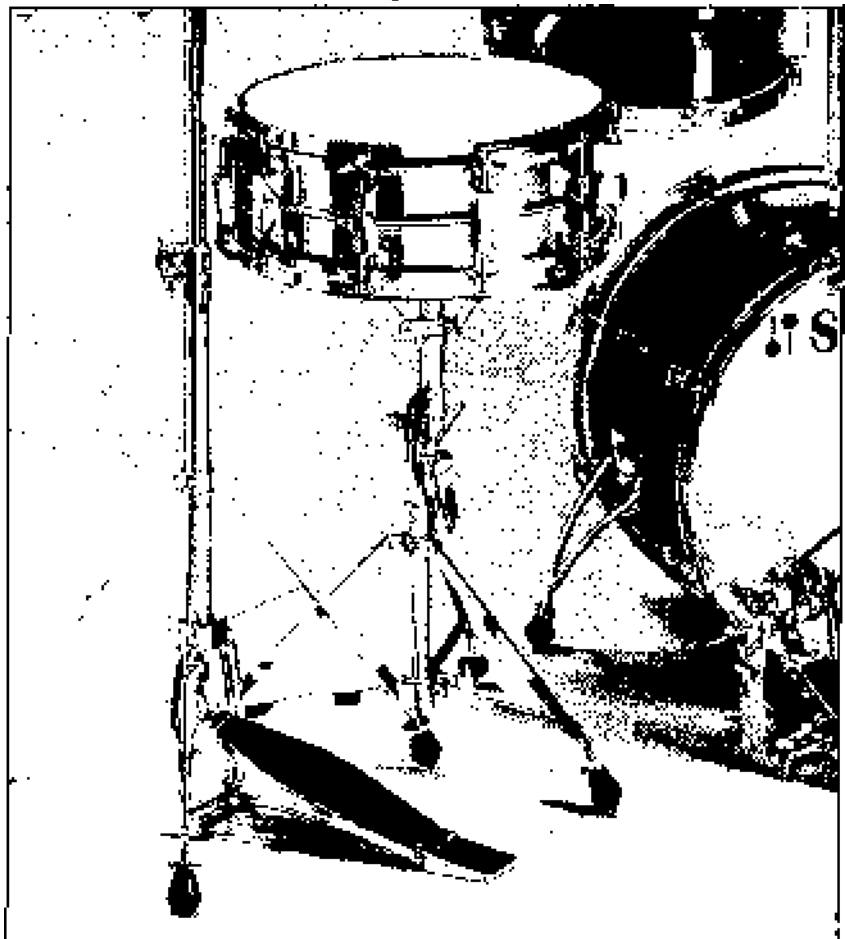
tom-tom or maybe a cymbal arm.

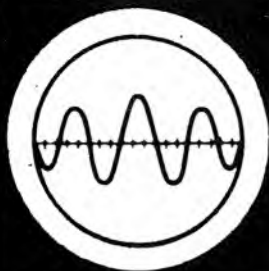
The bass drum pedal supplied (the Z5317) has its two-piece footplate rubberised like the hi-hat's and clamps to the drum from a convenient position half-way up the left hand side of its cast frame. There are two adjustably-sprung but bluntish spurs and a strong looking industrial fibre strap with a ribbed bottom which fits around a pivot bar on the footplate and then comes back to be joined to itself with a nut and bolt. This eliminates the wear at the strap contact point, which is where most straps break. The other end goes round a very large circular boss, fitted to the cam bar, which I think serves to de-gear the action and makes for a slightly longer strap than usual. The beater position, relative to the drum's head, is adjustable on a splined ratchet. The pedal uses twin needle bearings, one in each post, and providing nothing untoward happens, should last a long time. As with the hi-hat, three different strength springs are supplied. These are expansion springs which fit the pedal with a locking nut and give a smooth action.

The rosewood drums without doubt look superb inside and out, but since the outside finish itself doesn't appear to be protected in any way it would need careful packing away so that nothing knocked against the shells to mark them. I suppose though the sort of guy who's likely to pay 50 per cent more for this set is also likely to look after them.

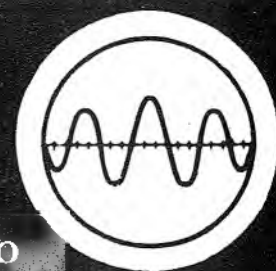
The set was furthermore beautifully tuned up, I presume ex-works, and was definitely the set I've had to do the least to to evaluate at optimum levels.

Henry Roberts





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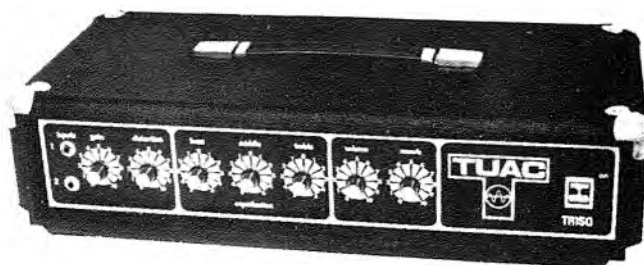
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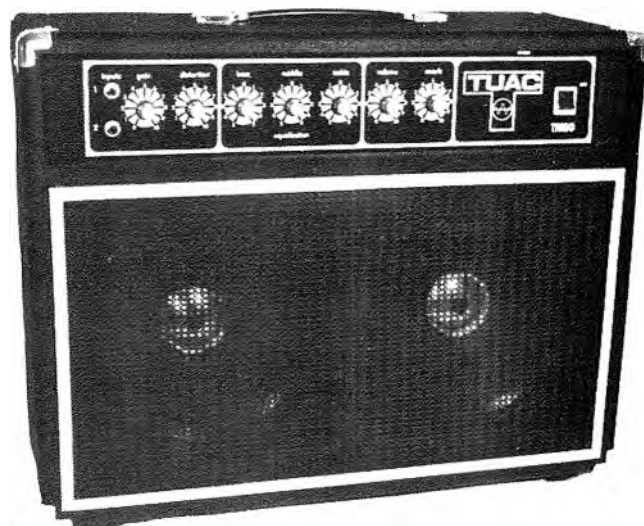


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EMO Systems Direct Injection Box £27.40 + VAT

This DI box is manufactured by a new (to me, anyway) company based in Durham, and distributed by Turnkey Ltd., of New Barnet, Herts. It's a very neat and tidy little unit, appearing in smart black-finished metal box which I surmise and suspect, is supplied by Radio Spares, seeing as the cast number on the bottom looks like a Radio Spares-type order number.

Thus the container box is strong, unmashable and finished in a chip-free matt black paint. Upon dismantling it, to find out the quality of the components before attempting to test it, I found the transformer *looked* like a Sowter made component, with the name removed. Now if this is so, this is good news for the unit. Because the heart of any DI box is the transformer it contains, as the whole purpose of a DI box is to act as a matching transformer which matches a three-wire balanced system to a two-wire unbalanced system (thus converting a high impedance instrument signal into a suitable low impedance signal for a recording or mixing desk's acceptance). And Sowter's transformers are widely used and respected by many manufacturers of mixing desks, as they are of top quality. So if EMO have used this brand of component, their box could be a good worker.

The rest of the internal circuitry seems very workmanlike and well assembled, with clean joints, and careful component arrangement within the enclosure. On test, running guitars and electric pianos through it, it performed perfectly well. After all, with something like a DI box, with its simplicity of function, it either works or it doesn't, and this one works, without any real addition of noises off. My only real criticism is a niggle, but the manufacturers ought to sort it out. That is, they have chosen to use the XLR type of connector made by Neutrik, which are not very good at all, owing to their poor tolerances.

In fact, on the test sample, the connector would not, under any persuasion, allow itself to be plugged in to its own unit, as the plug was bigger than the socket for which it was intended! So we chopped off the offending Neutrik article, and soldered up one of our own, in order to carry out the tests. Never mind, though. At £27.40, plus VAT the unit is very reasonable value for a stage DI box, or even for use in demo studios. It has a

good frequency response, which appears to correspond with the manufacturer's spec. sheet, and comes complete with ground lift switch. But please, EMO, don't use those naughty Neutriks! Robin Lumley

Morley Pro Flanger £179.95 inc VAT

The range of Morley pedals is without doubt one of the finest lines of effects units on the market and this brand new flanger rates as one of the best I've seen (or heard). Like all Morley units, it is pedal-operated and uses photocells instead of potentiometers, thereby making the "sweep" of the pedal linear and noiseless. The use of photocells also eliminates the possibility of "dead spots" in the pedal travel.

The construction is pretty much faultless. The pedal is robust and, equally important, doesn't look like it's going to tip over while you're using it. You'd be hard-pushed to knock this little beast over.

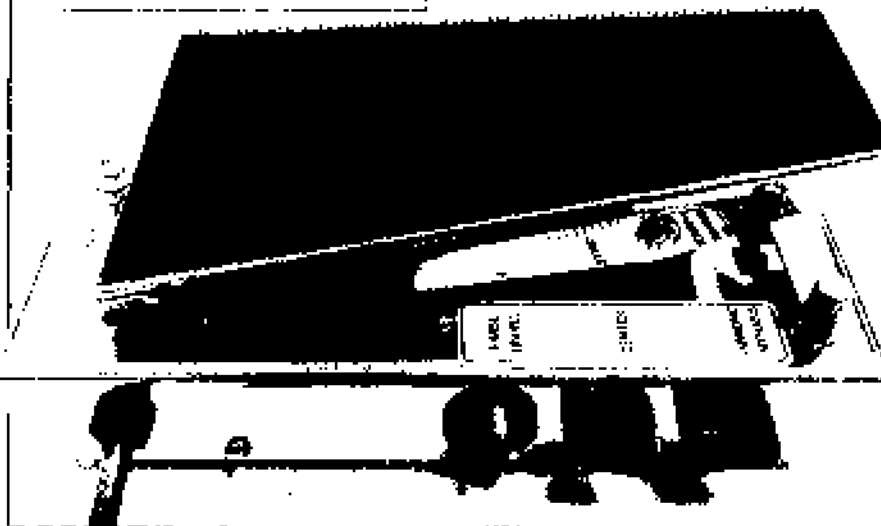
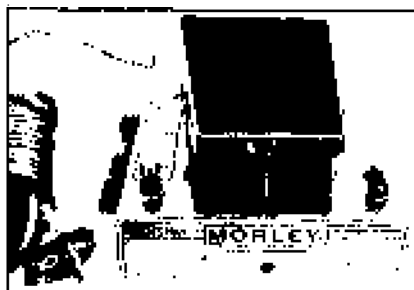
It actually looks more complicated than it really is. The design and layout of the controls is well thought-out for ease of operation. To the right of the pedal is the flanger on-off switch with an LED indicator above, which tells you when it's in the flanging mode and also pulsates at the sweep rate. The pedal, as you would expect, varies the sweep rate. With the pedal fully depressed it sweeps 20

times per second and, with the toe up, once every 20 seconds. This gives you an enormous range of sounds - you can get a nice rotary cabinet effect with the pedal about three-quarters of the way down and, with certain control settings, it is also possible to simulate a "chorus" effect.

To the left of the pedal is a switch labelled "Auto-Foot". Turning this on makes the pedal "manual", i.e. flanging only occurs when you move the pedal.

There are three controls on the left side of the pedal - Phase Travel, Center and Harmonic Emphasis. The Phase Travel control governs the amount of flanging and, set at its minimum, gives a straight, no-flange sound. The Center control selects the mid-point of the sweep and is at its best when used in conjunction with the Phase Travel control. The Harmonic Emphasis control regulates the amount of signal recirculated. The main point about all these controls is that the real range of sounds available comes from a *combination* of the three rotary controls and it really is a case of experimenting with them until you get the sound you're after. If what you want has anything to do with flanging, you'll get it from this unit.

The pedal, too, is important in that, whether in the "Auto" mode or otherwise, the sounds vary in every, and any, position. The important thing to remember when using the pedal is not to pump it as you would a wah-wah. The tonal changes are subtle but effective. Again, it's a case of experimentation. But it's well worth the time spent on arranging the controls for the sound you want. The other good thing about it is that it's mains-powered *and* includes a mains on/off switch (though you'd need an extension mains lead to use the pedal on a big stage). Eamonn Percival



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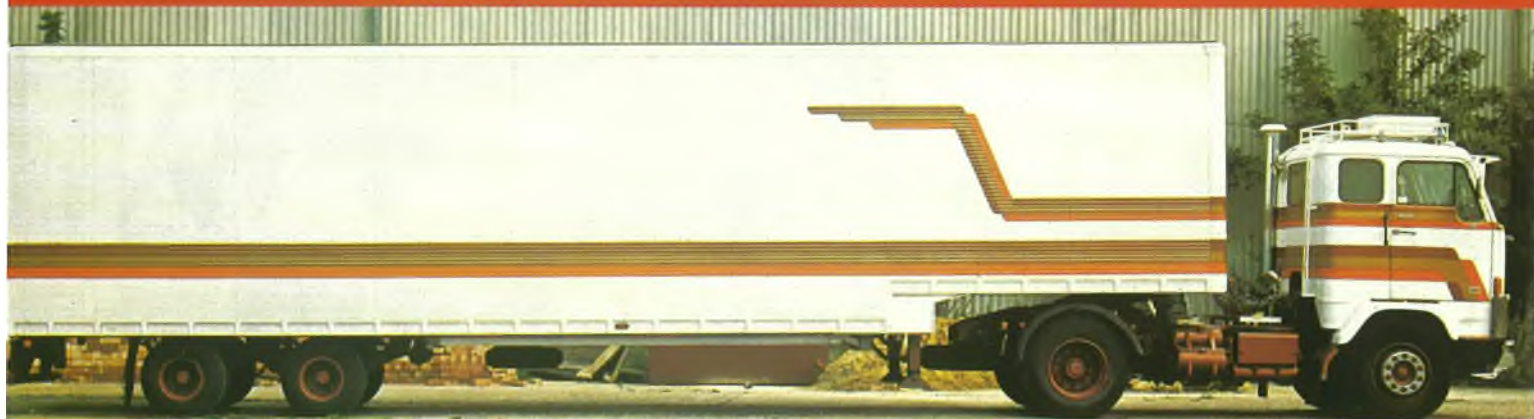
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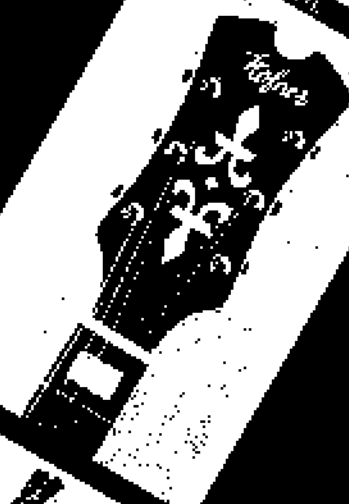
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He is perhaps the most respected and successful horn player in the business. His lines ooze with melodic flavours and whether it's a phrase from a theme song he's written — "Starsky & Hutch" and "The Bill Cosby Show" among them — or a passage from any one of his numerous solo albums, the sound is instantly recognisable as Tom Scott.

It has taken Scott many years to develop the style which has made him one of the most sought after hornmen in the industry. Starting clarinet at the age of eight, Tom received guidance and instruction from father Nathan, a composer responsible for the original underscores of "Dragnet" during the Fifties and for the music from "Lassie" in its last 10 years of existence.

Scott pursued private instruction until age 16. He was involved wholeheartedly in junior and high school bands and he was encouraged by instructors there to play in outside jazz, Dixieland and stage bands.

"I was very fortunate in that way because I had a real headstart. I learned how to read and was transcribing jazz solos and then entire big band arrangements off records. And I spent a lot of time doing that."

His main influences during the Sixties were the founding fathers Miles Davis, John Coltrane and Cannonball Adderley, and big bands like Count Basie's. At this point he began writing his own material. His first composition was an Indian-influenced piece in 7/4 time — a reflection of Scott's studies with a musician who had been a student of Ravi Shankar. Tom met this teacher through trumpeter Don Ellis, at the time teaching an extension course at a local university. This was in 1963 and from Scott's exposure to Indian music he began composing music in odd time signatures. That first piece — he was only 16 at the time of writing — was later recorded by percussionist Amil Richards, who worked with Paul Horn, and also covered by Vicki Hamilton for Impulse Records.

Scott made a big step when he joined the Don Ellis big band. Just out of high school, he was sitting in at a jazz club called Dante's with players like Howard Roberts, Roger Kelloway, Dave Grusin and John Guerin and it was here, playing with these musicians as well as with Ellis, that he first attracted popular attention. Through these acquaintances he began his first studio sessions at a time when the amplified saxophone was in its embryonic stage.



TOM SCOTT

guided by his instinct

by STEVE ROSEN

"The electronic saxophone had just begun and I kind of got in on that. So a lot of time I was called in to play on movie scores and things where I was the soloist on amplified saxophone. That's the way I sort of worked my way in."

Playing with those musicians at Dante's was seventh heaven for Scott. All of them represented his idols and made for a surrounding he likes to work in — with players better than himself to provide a "nice kick in the ass."

The amplified saxophone came to his attention initially via a device made by Conn called the Multivider. This project was in competition with Selmer's Varitone and in fact Scott was in on the consultation and construction of the Conn mechanism. He would drive to Conn headquarters outside Los Angeles and test it by playing with it and suggesting that it might sound better a certain way.

"I was in on it quite early so naturally I had one of the first Conn Multividers. I used it on my very first solo album in 1967 called 'Honey-suckle Breeze' and I think I used it on my second Impulse album called 'Rural Stillife'.

"I found where they could be used, and I also began discovering, as you do with all things that are new, that they can be overused. There are places not to use them. They are most effective when they are used sparsely and at the right moment."

Scott also used the electric saxophone extensively with filmwork and found that it demanded a different attitude and approach from playing on an album of his own. The goal of a soundtrack is to find a way of musically heightening whatever effect the film is portraying, whether it be a love scene, a chase or a tense moment. Scott has done exactly this in his film work but has found that the medium is often less significant than the message.

"In a way you have to sublimate your own personal tastes and what you like to listen to in music from the needs of the movie. And there the challenge really becomes different. The challenge becomes to provide whatever music will heighten the emotional effect or impact of a scene. There's no comparison really [between film and album work] and I wouldn't say one is better than the other. It's great making records, I enjoy that very, very much, but it's also very exciting and interesting to score a scene and play it back and have it really work effectively. It's very, very rewarding."

Most of Scott's compositions both

for screen and studio originate on the piano. He usually generates a bass line or rhythm figure initially, because he finds developing melodies a simple task. If a chord structure and a form can be molded then the melodies generally come fairly quickly. There have been albums where rhythm tracks have been written and recorded before a melody is even conceived. The melody is then written around the rhythm track.

Scott uses several devices to accent his superb melodies. One instrument is the harmonizer, which actually creates a second horn part either at unison or at some parallel interval with the original line. His main effect is simply multiple overdubbing which is acoustically playing three, four, five or as many as 15 parts by himself. This results in a far different sound than if a section of horns were recruited to play the parts. With an ensemble one hears the combined textures of all the players' styles but with singular overdubbing, phrasing, attack, crescendos, diminuendos, vibrato and pitch can all be matched exactly.

Neumann 87s are used to mike the instrument in the studio. Normally he employs a close miking technique which does not require a great deal of EQ. In the final mix gloss is added only if a particular track poses problems as regards having certain instruments cut through. The flute is occasionally problematic because it is such a soft-textured instrument and if it is playing against a particularly hard rhythm track with an abundance of drums it can sometimes be buried. Scott also experiments with different stereo balances and mixes. This is achieved by placing different parts in different positions within the stereo spread. This can often lift an instrument out without raising volume levels.

"It's trial and error, man, there are no rules. Unfortunately."

Fortunately, however, Scott is a fast worker within studio confines and usually comes up with a satisfying performance with the first several runthroughs. He is known in a few circles as Mr. One Take. And he has presented artists with instant lines which eventually found their way onto hit records.

"There was one thing by Paul McCartney and Wings called 'Listen To What The Man Said'. I just went into the studio and listened to the tune once and said, let me try a few things. And that ultimately ended up being the take and they loved it. Then I

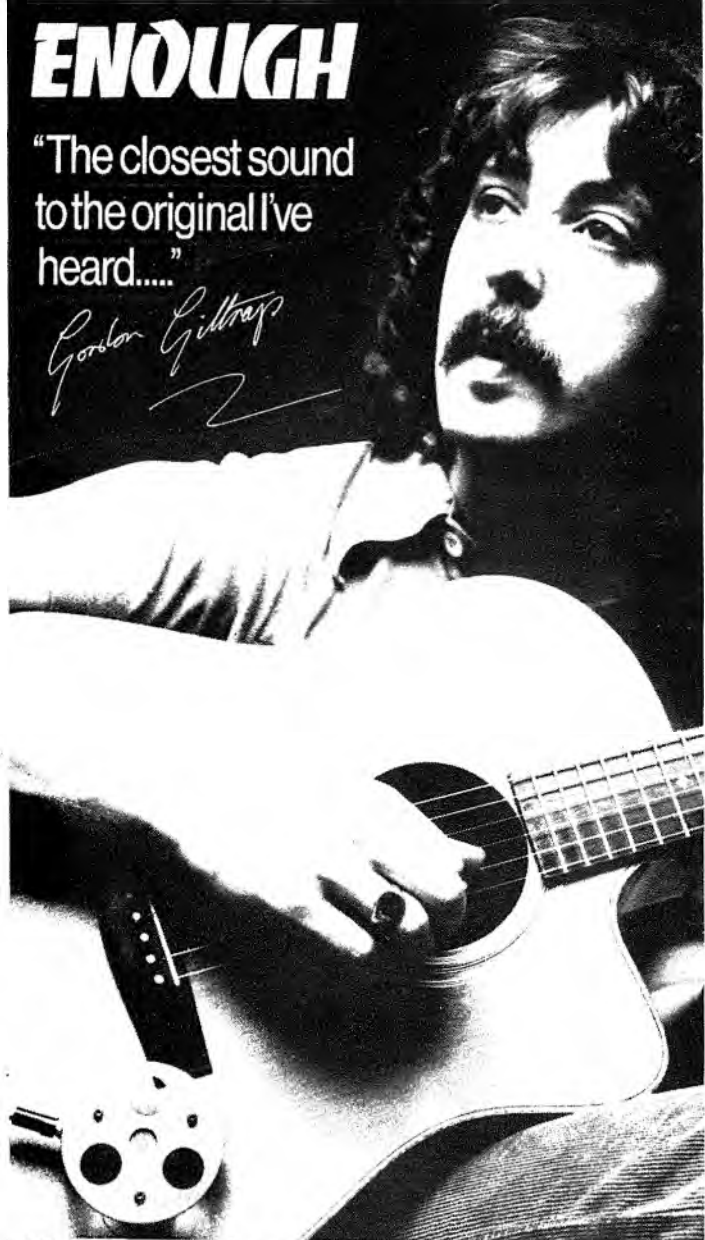
Scott: tried to achieve the sound he heard in his head



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TOM SCOTT

guided by his instinct

said, let me try another one and I did and they said no, we like the first one better. So I was in and out in about 15 minutes. The same thing just happened on Rod Stewart's new album. He wanted me to play in a solo section and I listened to it and played and that was fine. Then he let the tape roll and I really hadn't heard the tune but he wanted me to do some solo fills behind his voice. For me the chords and everything was fairly obvious even though I hadn't heard it. I could pretty well second guess how it was going to go. They were amazed that I could do that."

Instinct is what guides Scott, whether it be a McCartney, Stewart or Joni Mitchell session. He does not approach a session today any differently than he did many years ago, save for far more experience. Instincts are based on this experience as well as what he's heard on the radio — on the "general vibe of what's going on in music today."

Scott, as well as being one of the industry's most regarded session men is generally looked upon as the leading exponent of the Lyricon. It is a voltage controlled instrument like a synthesizer, but instead of a keyboard it has an instrument resembling a clarinet with what looks like a telephone inside, filled with wires. You blow into it and a tube takes the air out of the bottom, although the air is not creating a sound within the tube: it is triggering a transducer which responds to wind pressure and the keys on the Lyricon make electronic contact and determines what the notes are. With the wind pressure volume can be changed and it can be adjusted so timbre is altered. Lip pressure can also change timbre as well as pitch. So there are a number of sounds which may be programmed into the instrument simultaneously.

"This makes it quite a bit more versatile than a conventional synthesizer because when you're performing live with a keyboard synthesizer one hand is on the keyboard usually and with the other hand you can really only change one function at a time. Whereas with the Lyricon you have three or four different timbres at your disposal."

Scott's introduction to the instrument was in 1974 when he used it on the "Tomcat" album with the LA Express. Since then he's performed with it on dozens of records including all of his own albums as well as on George Harrison's "33 1/3" album and Quincy Jones' "Stuff Like That".

Generally speaking, he has always been involved in the more electronic aspects of the horn. That interest has led to its ultimate conclusion with the purchase of a

24-track recording studio. Called Brothers Studio, it once belonged to the Beach Boys and was purchased along with engineer Hank Cicalo (Scott's technical director). Future recordings will all be made here.

The acquisition of the studio will give the musician even more control of recording and will allow him to present his unique sound more fully. He describes his sound as somewhere between the softness of Stan Getz and the edginess of King Curtis or Stanley Turrentine. Scott himself used to wonder what his identity was in terms of sound because he heard many influences in his playing. Gradually he allowed his ears to guide him and tried to achieve the sound he heard in his head. In his case this inner voice developed into a style which pleased him but it did take quite a bit of experimentation.

In the early Seventies he went through some changes with mouthpieces and reeds but only as a way of helping him achieve the sound he heard inside. He maintains there is no definitive mouthpiece or reed but during the Sixties he was using a Berg Larsen 130/0 which he'd heard was a very "in" mouthpiece. He used it on his first two solo albums as well as several other artists' records. In 1969, he was working on the Glen Campbell Show and the saxophonist in that band, Bill Green, gave Scott a German mouthpiece with an adjustable chamber inside. There was a piece which moved back and forth and presented the player with a wide variety of sounds ranging from mellow to edgy. This aspect of the mouthpiece did not enamour Scott as much as the fact that when it was set on its edgiest adjustment it seemed to give a great amount of control and ease of playing, especially in the high register. Its trade name was Strathon and it is the same mouthpiece he uses today.

His choice of reed is somewhat unusual: fibrecane. He has been using one for many years (since age 17) and he was informed by his teacher at the time that if he could adjust to it he would be better off in the long run because they are far more durable than regular cane reeds which warp and change with the weather. Fibrecane reeds are composed of fibres compressed together in the shape of a reed and are virtually indestructible. They are also far more consistent in playing characteristics.

Scott himself has many playing characteristics to distinguish him from others. He is greatly caught up in playing with rhythmic accuracy. In other words, in the old days of the swing bands horn players always played a little back from the rhythm but in contemporary music the rhythm section has become a central

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There are many instruments in the Scott collection including Selmer baritone and tenor saxes, Yamaha silver alto and silver soprano saxes, a King soprano (mellow tone used on Joni Mitchell albums), a Haynes flute and a clarinet.

These instruments are used a great deal in Scott's live work. He uses a Frap pickup to amplify his instruments, although it does not prove quite adequate in amplifying the tenor and consequently he also uses a regular PA microphone to enhance the sound.

Scott plans to go out on the road with his new band, which includes Steve Khan on guitar. But he's even more excited about the release of his new CBS album, "Intimate Strangers", which he looks on as a milestone in his career.

"The album itself is a bit different because one side is like a suite, a story. It's an instrumental story about a certain unnamed saxophone player on the road who meets this girl while he's doing a one-nighter. And it's kind of a chronology of the relationship between the two of them."

TOM SCOTT

guided by his instinct

said, let me try another one and I did and they said no, we like the first one better. So I was in and out in about 15 minutes. The same thing just happened on Rod Stewart's new album. He wanted me to play in a solo section and I listened to it and played and that was fine. Then he let the tape roll and I really hadn't heard the tune but he wanted me to do some solo fills behind his voice. For me the chords and everything was fairly obvious even though I hadn't heard it. I could pretty well second guess how it was going to go. They were amazed that I could do that."

Instinct is what guides Scott, whether it be a McCartney, Stewart or Joni Mitchell session. He does not approach a session today any differently than he did many years ago, save for far more experience. Instincts are based on this experience as well as what he's heard on the radio — on the "general vibe of what's going on in music today."

Scott, as well as being one of the industry's most regarded session men is generally looked upon as the leading exponent of the Lyricon. It is a voltage controlled instrument like a synthesizer, but instead of a keyboard it has an instrument resembling a clarinet with what looks like a telephone inside, filled with wires. You blow into it and a tube takes the air out of the bottom, although the air is not creating a sound within the tube: it is triggering a transducer which responds to wind pressure and the keys on the Lyricon make electronic contact and determines what the notes are. With the wind pressure volume can be changed and it can be adjusted so timbre is altered. Lip pressure can also change timbre as well as pitch. So there are a number of sounds which may be programmed into the instrument simultaneously.

"This makes it quite a bit more versatile than a conventional synthesizer because when you're performing live with a keyboard synthesizer one hand is on the keyboard usually and with the other hand you can really only change one function at a time. Whereas with the Lyricon you have three or four different timbres at your disposal."

Scott's introduction to the instrument was in 1974 when he used it on the "Tomcat" album with the LA Express. Since then he's performed with it on dozens of records including all of his own albums as well as on George Harrison's "33 1/3" album and Quincy Jones' "Stuff Like That".

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THE INCREDIBLE STRING SOUNDS OF ROBIN WILLIAMSON

Robin Williamson's soft Scots/Californian accent seemed incongruous in the middle of West London, but it's an accurate reflection of the influences that have formed the music he's currently making. As he talked, it soon became apparent that he is a walking encyclopedia of Celtic lore. He's an unusual artist who writes poetry and prose as well as songs, and whose work with the Incredible String Band brought him accolades from

all quarters. He's been in California for the last four years and now has a new outfit called the Merry Band. With the latter, according to the Criminal Records handout, Robin Williamson "has been seeking . . . to create a contemporary Celtic music in America using the old instruments in a new way." Hmmm.

An articulate talker, he explained what he's trying to do with his new band. "What I'm interested in doing is taking some of the basic feels of the music I grew up with. When I was a kid, I learnt a lot about the sounds, structures and phraseology of the old ballads, and over the last two or three albums I've been trying to circle back over those influences and look at them again in a new light. I think my efforts to write new material with some of that traditional flavour seem to have been successful."

Robin sees the work he's doing now as directly related to what he was doing

with the Incredible String Band. In particular, he cites the early String Band album "The Hangman's Beautiful Daughter" as providing a clue to the approach behind his new music. He describes himself as a "writer, composer, musician" in that order, and it was his experience as a poet that led him to develop his particular style of song-writing, with its unique sensitivity to words.

"One of the ideas I felt I contributed to the String Band was the idea of taking a piece of music, a song, and using different kinds of instrumentation in the structure of the song to bring out the character of the words. In a way this led to what has since been dubbed 'fusion music', and I think the String Band was actually one of the originators of that kind of idea. I can't think of anyone else who was doing anything like that at the time."

A glance through past album credits reveals that Robin Williamson plays enough instruments to keep a family of octopi busy for an indefinite time. He's cut down a bit now, though, restricting himself mainly to guitar, fiddle, mandocello and whistle.

"I began dabbling with a whole lot of instruments early in the String Band's career, when it was just myself and Mike Heron in the band. In order to fill out the sound I picked up all kinds of exotic instruments, including some Eastern ones."

The Merry Band can also muster an impressive range of sounds. Sylvia Woods is a classically-trained harpist who now plays Celtic harp with the band. Jerry McMillan plays fiddle and sings. Like Robin, Chris Caswell plays a variety of instruments, including penny whistle, flute, accordion, bodhran, bagpipes and metal-strung harp. Robin was eager to provide background information about the band's instrumental line-up "The Merry Band is entirely acoustic. Sylvia plays the Celtic harp, which is a small harp without pedals and was the forerunner of the modern harp. It has about a four-octave range, but it's limited as to chromatic usage. In other words, you can't play it in all keys very easily. It can be done, but it's much more feasible to play around a group of keys like G, D, A minor and B minor. We also use a metal-strung harp, which is called a clarsach and that's like the more ancient form of the instrument.

"Then we use a wooden flute with eight keys, called a German flute. It's a style of flute dating from the 19th century. Then there's penny whistle, just the standard model, fiddle and mandocello.

"I have a Gibson mandocello," continued Professor Williamson. "Gibson were making a lot of them around the 1910s, and the one I have dates from 1906. At that time mandolin bands were very popular in America, and they used to play what were known as 'light classics'. The mandocello is a great instrument which adds a little bit of low end to the sound. I've been experimenting with ways to string and tune it."

The tuning that Robin currently uses on his mandocello is an octave and a fifth below the violin. It has four courses, like a mandolin (four pairs of strings tuned in octaves). He also uses a hand-made Taylor acoustic guitar, from San Diego.

Robin Williamson's sojourn in the land of Coca-Cola has inevitably led to his incorporating Stateside musical influences into his work. On the Merry Band's "American Stonehenge" album, for example, "Zoo Blues" has an intro straight out of the Ink Spots, while traces of rhythm and blues are discernible elsewhere. Robin enjoys the wide range of musics which have proliferated in the States.

'Ancient Britain is definitely a land of magic'

"I do have a lot of liking for traditional American music. On 'American Stonehenge', I worked on a couple of tracks with a friend of mine called Peter Grant, who also works with Hoyt Axton and the New Riders of the Purple Sage. He's basically a pedal steel player, and he's fond of Dobro too, which he played on the album. One of the tracks is called 'Pacheco'. It's a song about California, and it uses what you could call a Tex-Mex Peruvian harp sound, as well as Dobro. 'Keepsake' was intended to evoke a ghostly effect. There's a bit of r'n'b in there too."

"These Islands Green" from "Stonehenge" sees Robin Williamson looking at his native Scotland (his parents still live in Edinburgh) from America. He admits to missing Scotland a good deal, and would like ultimately to divide his time equally between there and America. He has no doubt, though, that his move to the States was the right thing to do.

"It was a very healthy thing for me to go over there and live for a while, because, for a start, you get a different viewpoint on things. You can step back from Britain for a while and view it from a distance. That way, I think you can see things that you don't see close up when you're right in the middle of it.

"I constantly have to fight off a

romantic emigre's view of the country where all is mists and magic. But in some ways the truth of the matter is that the thing I've always admired most about Britain is its mysterious and magical past. Contemporary Britain is . . . well, contemporary Britain. But ancient Britain is definitely a land of extreme magic, and to me that's its charm."

Robin has a very precise idea of his musical ambitions. His roots are obviously British, but he's absorbed what America has to offer with great ease. This has in turn led him to make a lucid analysis of the differences between the musical backgrounds of the two nations.

"Folk music never became defunct in America and consequently never had to be revived. It developed straight into bluegrass which was quite commercial in the Forties and continues to be so. From there, it developed further into country music. Black music went straight into rock 'n' roll via rhythm 'n' blues. In Britain, on the other hand, a natural transition was never made between what had been traditional music, like music hall and 19th century traditional music, and jazz and rock in the 20th century. I've been trying to bridge that gap to make something that has a relevance in a contemporary sense, but using the old instruments and the old styles."

This cultural crossover works two ways. A section from Robin's "surreal autobiography" (thank you, Criminal Records) appeared in an anthology of West Coast writers, "which," says Robin, "they now apparently consider me to be." The anthology, called "Outlaw Visions", was reviewed by the Los Angeles Times, whose critic compared Robin's section to William Burroughs' "Nova Express" and J. P. Donleavy's "The Ginger Man". Those authors are a far cry from the literature which Robin actually reads, among which he mentions early Welsh and Irish poetry, the Mabinogion, Cuchulain and Arthurian legends.

For the future, Robin would like to expand the Merry Band's instrumentation and perhaps introduce some modern jazz inflections into their music. He seems to have surprised himself by the success of the Merry Band. "It's by no means a mass appeal, we're not playing in any stadiums, but we're playing to very enthusiastic audiences," he explains. "Some of the audience have been String Band fans all the way along, but the bulk of them have discovered us only recently."

Robin Williamson certainly hasn't been idle in the last four years. Whatever he does next promises to be at least interesting. Anyway, it's a safe bet that he won't be playing disco music. =====

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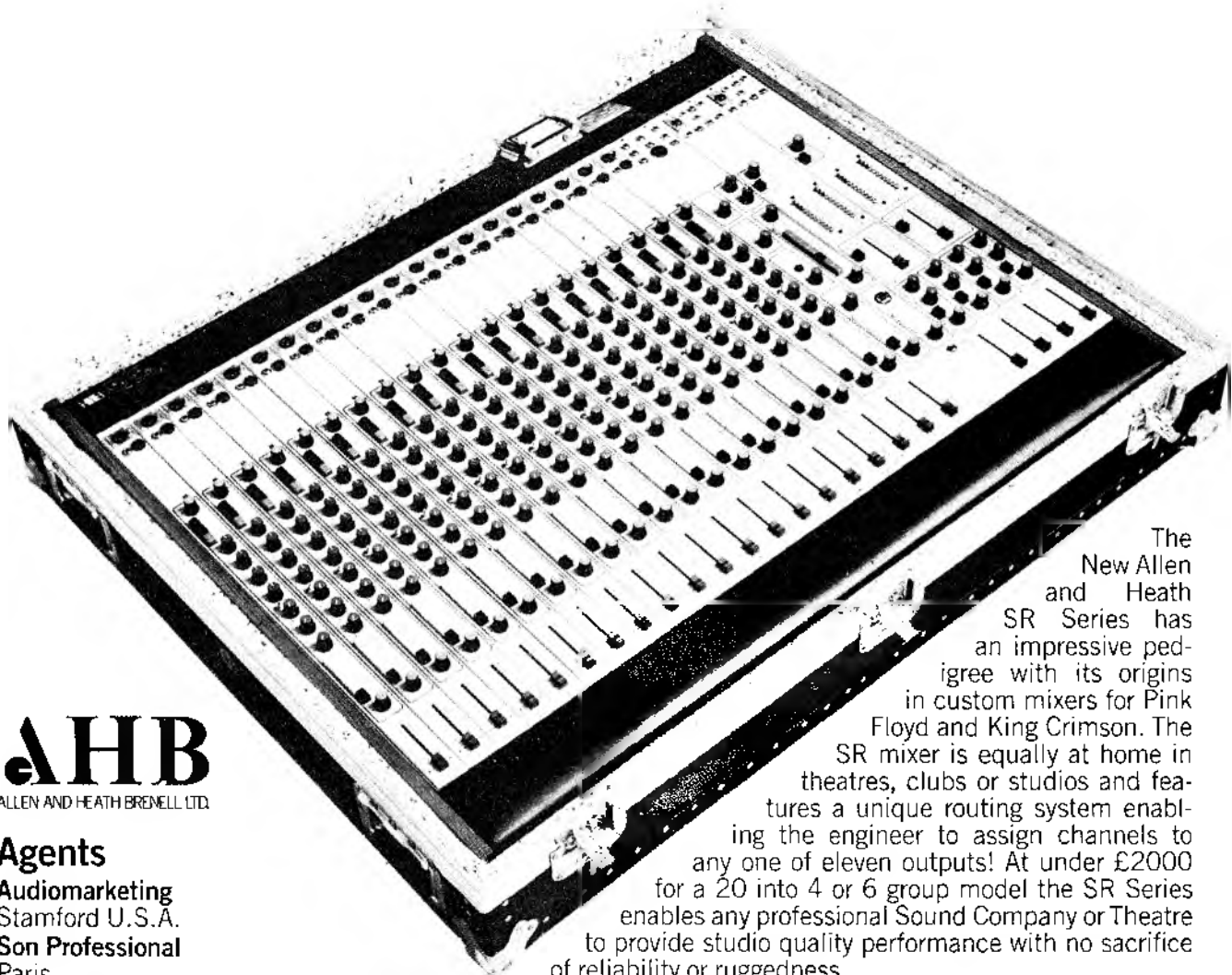
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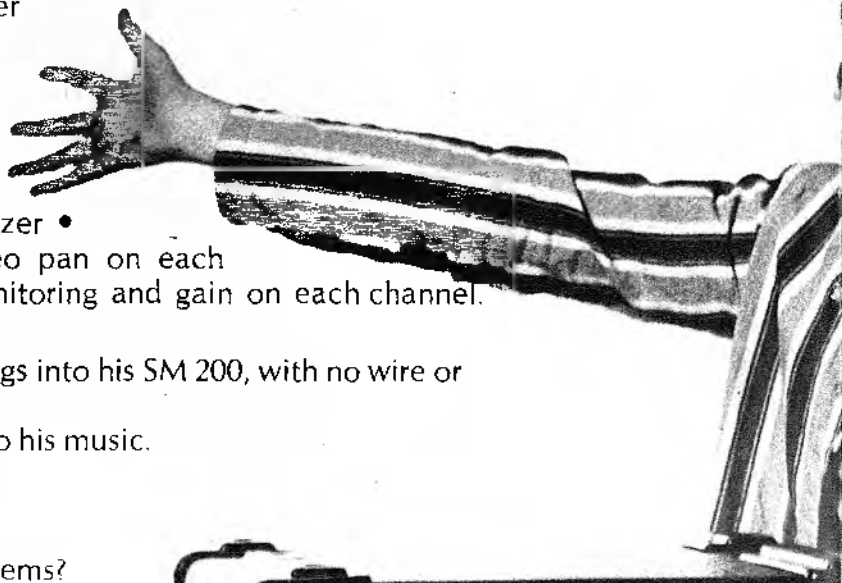
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Many label him a "jazz" guitarist. Many believe that he sank into the spiritual pit when he began following Sri Chinmoy. Many find him too esoteric, intellectual and often overbearing in his approach. But most people who hear him and experience his development of style and technique walk away a little bit wiser for the experience.

In short, John McLaughlin surpasses the cliché to become truly individual.

At Soundmixers Studio in New York, he is recording his newest album, which promises to establish him yet again as a formidable, if not visionary, guitarist and composer.

THE CULTURAL IMPROVISATION OF JOHN McLAUGHLIN

By Bill Stephen

No change in music comes without a development and change within the composer creating it.

McLaughlin has moved forward in many ways, although in some respects his last album, "Johnny McLaughlin, Guitar Player", suggested that he returned to foundations before building again.

One thing that provided change and an extension of sound and concept was the development of the Gibson 13-string guitar, a concept

which grew out of his intense study of eastern music and the Indian string instrument, the vina. He had the Gibson company make the guitar expressly to his specifications so that it would cope with the intrinsic problems imposed by a linear form of music. It is designed to allow him to accompany himself: it has seven sympathetic strings angled across the F-hole, which he strums as accompaniment using the little finger with a fingerpick, while playing lead on the regular strings.

"It turned out immensely successful," he explained. "The six strings are tuned as a normal guitar but the seven strings are tuned up for each piece. In Shakti we were playing with essentially a linear form of music — that means we were using the raga system, a kind of scale founded on scientific and astrological principals which are also directed to specific human emotions. This would allow me to tune all the strings differently and I would try to extract for me what was the most meaningful chord, or the chord that expressed the essence of what the piece was about."



THE CULTURAL IMPROVISATION OF JOHN McLAUGHLIN

This obviously allowed John a great deal of individual expression. When he worked in Shakti with the Indian violinist Shankar, it developed that each would come up with various synthetic scales which had their own mood.

McLaughlin explained: "This was very interesting because from a western point of view it gave me a real insight into harmony, which I now see in linear terms rather than chordal terms."

The Gibson 13-string also contains a new development in actual guitar construction which John has adapted to all of his guitars: the neck.

While studying at Western University in Connecticut, he began playing the vina which has a sitar-like neck - the strings never actually touch the wood but are depressed between the frets for a tension that results in a completely different feel and sound.

"I found that while studying the vina I got more and more into it, resulting in a desire to really understand the music and what it is all about. While practising more on the vina, and learning a variety of things, I began to grow dissatisfied with the guitar in comparison to the silken beauty that results from the vina's super big frets with nothing underneath. They're also strung opposite to a guitar (that is the low string is where the high string is). But I would practise the vina and practise the guitar and I'd find the guitar very stiff by comparison.

"I reached a point where I was cutting into my practice time on the guitar by playing the vina. I reached a crossroads in that I had to ask myself what I really wanted. Of course, it was an obvious answer: I'm a guitar player, I don't want to be a vina player."

This prompted John to attempt incorporating a vina-type neck into a guitar. When Gibson delivered the finished product, he knew it was right from the start and since then he's never looked back.

Currently he is using a Gibson 345

Stereo and that too has been fitted with the sculpted neck as well as a DiMarzio humbucking pickup. But John has a distinct preference for the Gibson sound.

"I have an L4C with a Charlie Christian pickup. I may put something of that on this album, but I'm not sure. That's a guitar I had many years ago and I had to sell it to keep body and soul together. It was a beautiful instrument. I've tried to buy it back from the guy I sold it to, but he won't part with it.

"I just found another one, not as good, but it's nice. It's really a jazz guitar, a very good one. But I get a good sound from the 345, not only that but this fingerboard affects the tone. I think it makes it sweeter and I certainly have greater control over sustain too. I have control over the note. It's the left hand where you can really hold it, sustain it or cut it.

"The left hand is very, very important for me and so it just changes it - for me it makes it more guttary, but some people feel it's a little Indian. That's natural enough since a lot of my influences come from the east."

Before McLaughlin was aware of anything east of Yorkshire, he was being influenced by many of the great American blues musicians of the Fifties and Sixties. Coming from a musical family he was quickly introduced into the world of piano but when a guitar made the descent from one brother to the next, finally ending with him, things changed perspective.

The revelation of the guitar neatly coincided with his introduction to blues, which quickly led him to imitate Muddy Waters. He felt his classical training did little for him as a guitarist, other than to train his ear.

"When I first heard blues music, Muddy Waters, it was amazing to me because it was an untempered scale. And also there was such a kind of elegance about it, an urban elegance. I didn't know how to play it, I didn't know anything about it, all I knew was that it was saying something to me which was very important. About feelings and about being. About four years after that, when I was 15, I heard Miles and in the meantime I'd gone through Django Reinhardt and traditional jazz which was very popular at the time.

"In a sense my fundamental discipline is jazz music. Jazz is truly an art form to me, but one that is very broad and has the possibilities to embrace many different impulses, cultural and planetary impulses. But for me, to play jazz properly you need technique that is second to none. You need to have a highly developed technique, you need high intellectual capabilities and at the same time a harmonic thought composition."

His interest in jazz emerged from his work in the blues and from listening to Reinhardt and Tal Farlow, two of the

giant jazz guitarists. From there, he was sucked into the world of Miles Davis and John Coltrane who, like McLaughlin, take their music beyond the conventional.

"I loved Charlie Parker and the old giants but for me this was the music of the future." And he jumped right into it. With Dave Holland, John Surman and Tony Oxley, John formed a band and did a few gigs in London. But bass player Dave was scooped up by Miles Davis and at that time John left for Belgium, where he started a band with a European line-up.

But John's name never seemed to quite leave Miles Davis' mind. Just a couple of years later he was summoned by the master trumpeter and before he knew it he was cutting tracks with Miles on his seminal albums "Bitch's Brew" and "In A Silent Way", establishing an international reputation for himself.

Jazz shares with eastern music the improvisational dimension. That common denominator, matched with the times, struck a sympathetic chord with John.

It is the discipline of improvisation that brings jazz and eastern music together. "There are similarities, but there are also big differences, too, in feeling. The jazz feeling is the jazz feeling, there's nothing like it and it's very beautiful. It's completely different from anything else.

"But the way of thought in Indian improvisation is brilliant, since they don't work with a tempered scale - they don't work with 12 notes. You can go up a quarter tone or even less and it's a different note; like the flattened third in jazz or blues. The flattened third can be quartered, can be halved - and so on with quite a number of notes on the tempered scale."

At various times during his playing career, the influences of eastern music have seemingly been predominant. But when asked if his music is a combination, a synthesis of the two cultures, he denies it.

"I don't believe one can talk about east-west fusions in music. One can only speak in personal terms - that's people. I feel very much at home in India, with Indian people, culturally speaking. I feel very much at home with most people, but the more you understand about their culture and idiosyncracies, the more at home you feel. For me, that's where the fusion takes place. It's not in the music. If you try to make an east-west fusion you're going to be a miserable failure right away.

"There were certain principles I applied to the Mahavishnu Orchestra that were certainly derived from Indian, maybe mathematical concepts, rhythmic concepts or even melodic concepts, since it is fundamentally melodic and rhythmic music in India."

McLaughlin is one of the many performers that find the act of performing live a thrill, a necessity to the development of the music. "When you have your



audience, you go out there and the adrenalin is flowing and the energy is flowing around and you feel what it really means. To me it means a lot in a lot of different ways. But in the studio, it's like I walk in and I've got miles of black tape that I can paint on. That's the way I see an album; it's really the possibility to paint.

"But there's nothing to equal live work. If you've got deep enough connections with the musicians themselves, it doesn't matter if there's no-one there at all. I've had rehearsals that you wouldn't believe, they were so good and no-one was there, just the musicians.

"An audience is just a participation. They give energy, of course, but if the musicians have a deep enough connection with each other, the music is going to happen. You never know when the unnameable thing is present, it's a presence."

McLaughlin has long been a motivator in the world of synthesis for guitar. Originally he was using a 360 system pitch-to-voltage converter with a bank of Minimoog modules one for each string. It was really the first guitar synthesizer. "I was using an L6S Gibson with a special pickup. It had circular magnets which the string would go through. It was the only way they could

get a really good sound in those days. It has changed now, but it's still not quite right, still not fast enough for me anyway.

"The problem is in the conversion from pitch to voltage. There are a couple of people who are working on digital conversion, which is the only way to go because if you play a very fast run on a low string it just cannot do its maths fast enough in the current system.

"This is one of the reasons I want to get into synthesizer because with a synthesizer you have total control over the sound. You can go through a nice Crown or Mackintosh amp with a super clean sound, and whatever resonance or harmonic distortion you get is intentional and controllable to a very, very fine degree. It will never replace the guitar. Synthesizer is not a replacement for anything, it's a new instrument.

"What happens is that it's very easy to apply pianistic technique to voltage synthesis, but I'm still waiting for the guitarist to have the possibility."

That could be why John is without synthesis today. He would like to incorporate synthesis into his music again, but he feels the systems just aren't ready.

It's ironic that the excellence of his technique has deprived him of a new instrument. He is just too fast for contemporary synthesis systems to keep up with him.

'The synthesizer will never replace the guitar'



A concept which he has been harbouring since 1974 is to have a guitar with a controller built in it like a calculator with computer memory for the patching. This may be a little closer now with the introduction of such products as the Prophet 5 which is a polyphonic keyboard with 40 memories.

"It's the only way to do a performance, otherwise you can spend anything up to an hour or more just doing a really excellent patch. If you do it beforehand, in the studio or at home, then it's punched into the memory. My idea was to have a little controller and to be able to address the computer and say 'Give me patch 29 immediately.' It would set the parameters instantaneously, which is perfect for performances.

"The synthesizer is an extraordinary instrument," he says. "I mean, every instrument is extraordinary to me, every instrument has unlimited possibilities really — it just depends on the artist's imagination and tenacity for hard work. But the synthesizer has something that I want to be able to look into and apply my guitar knowledge and techniques to."

McLaughlin keeps his sound fairly simple these days, and continues to use Marshall equipment. But in the studio he's found that direct injection from guitar to tape, bypassing the amp, has produced a good effect.

His excellence of technique has not come through idle searching but from hours of practising and applying complex eastern rhythmic styles to guitar playing.

"If I'm writing music, that usually take a lot of time. I may write music at any time but most of my practice I do on the road. Of course, there are many different aspects of practising. One is linear technique, for now anyway since I have this fingerboard, and I have a different kind of practice that is the horizontal sense.

"I have another technique that I'm working on which is a development of the cross-picking thing that I started a few years ago. It's very tricky because I'm working in odd groupings, mathematical groupings. This is a development of an Indian concept, but it's universal as regards the rhythm of an eight-beat cycle. I'll work in groups of, say, two fives and two threes, or three threes and two fives or even three fives and turn it inside out in all different ways. And this is something I'm working on right now that is very difficult. It's purely a right hand technique, it's very interesting.

"I'll work it on the top three strings, then the middle three, then try one on four strings — it's a bitch.

"In a sense it's related to the rhythmical theory that I studied in India — the theory behind it is singing, of course. When you study rhythm you

have to be able to sing it. I can't do it but I understand the mathematics behind it and so I'm applying it in a sense to my right hand technique.

"I just started working on a banjo too. This is something I want to put on the album. In fact, I want another banjo with some sympathetic strings and this fingerboard, because it's very percussive and I love percussion and banjo. There's something haunting about that sound. I only got the banjo the other day but I've been thinking about it for a couple of months. What I love about it is what I'm able to do with my left hand."

Back to guitar. McLaughlin uses light gauge strings for solo work — "I've been using D'Addario for a long time" — because the touch is just right for his vina-type fingerboard: "If you have light strings, like a sitar, you're able to pull them easily. If they're too heavy, you're going to spend effort on it. You don't want to think about pulling the string so it has to be light. But for any kind of rhythmical work, it's better to use heavier strings."

Many jazz artists have moved toward the more commercial side of music, musicians such as Chuck Mangione who develops a distinct melody line to leave with a listener. McLaughlin feels it is pure commercial philosophy. He doesn't choose to knock it, but points to a particular philosophy of his own that sums up his creative essence.

"I don't want to do anything really. All I want to do, as far as music's concerned, is to disengage myself from the conditioning prejudices that people place upon products because it's in their interests to."

This doesn't mean, however, that his recording sessions are not thoroughly thought out in advance — though, of course, the spontaneous creativity is all-important too: "That has to be there. That's what makes it magic, that's what music is finally all about. But for me, I have to think it out very carefully before I go in. At the same time, part of the thought that precedes the work is to set up a musical situation that will precipitate spontaneous combustion.

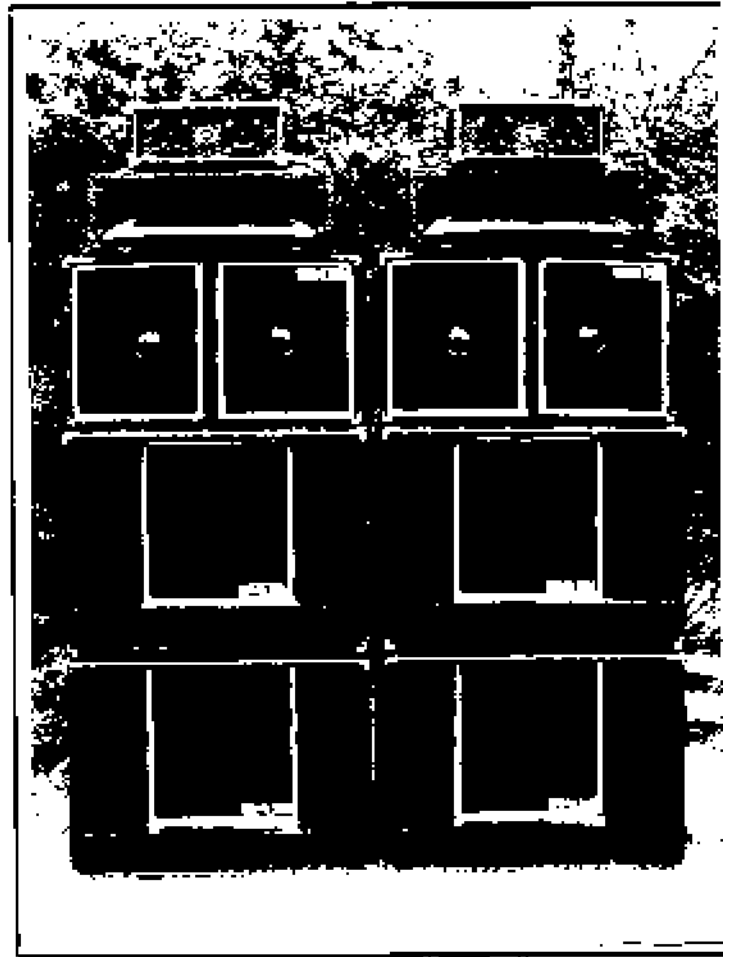
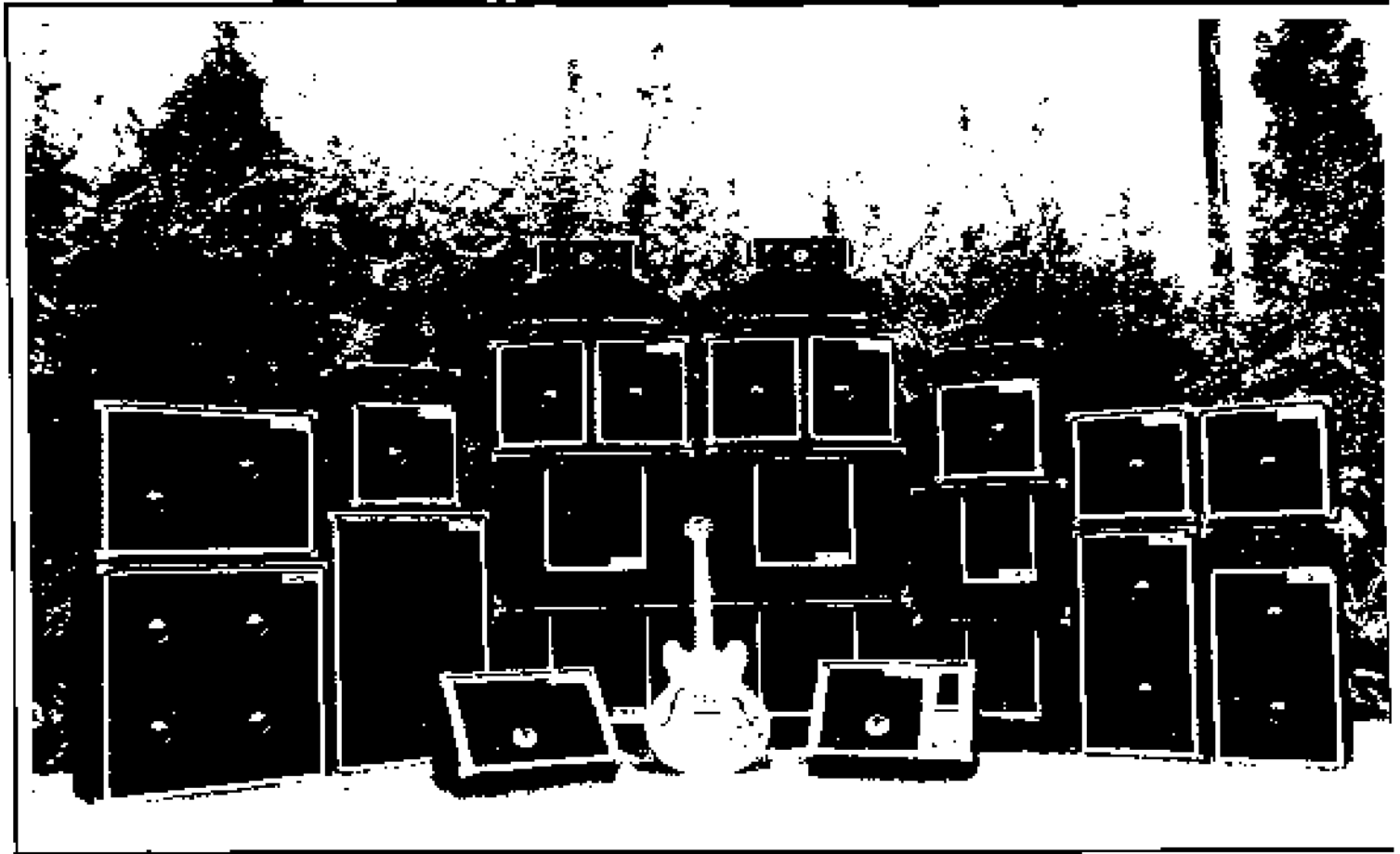
"When I write a tune and go to rehearsal, I have a fairly clear concept of the idea and of the emotional dress of that idea. You set a stage but you open up role possibilities and present the characters in the group with both the idea and an emotional stimulus. There's a central idea and a central feeling behind the piece and that's something that everybody has to be able to grasp. That's the thing that links it all together. The playing, of course, is everything, but there's a specific mood for each piece. A piece may go through two or three definite mood changes, too, and it's extremely important for the people involved to feel the emotional color."

THE CULTURAL IMPROVISATION OF JOHN McLAUGHLIN



'The playing, of course, is everything'

The **SOUND PAD**... **SPEAKER SYSTEM..**



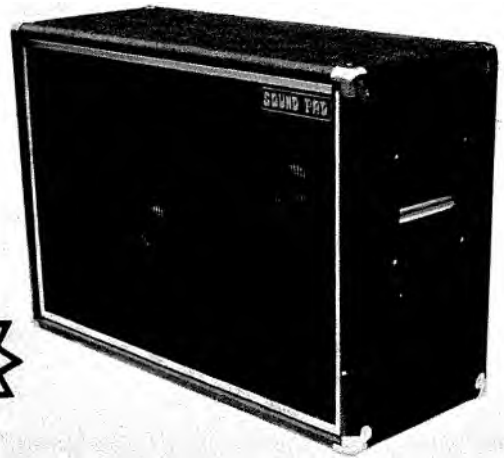
AP2x12

If you want a portable guitar or all-purpose cabinet then this is the cabinet for you. Two 65 watt 12" heavy-duty speakers. This will pack a punch to fill most halls.

Sizes: Height 20½" x Width 28½" x Depth 12"

Two - 12" PL 65 watt

Usable frequency response 50-6000HZ



£80
inc. VAT

AP4x12

This is the ideal cabinet for guitar or bass, using four 65 watt 12" heavy-duty speakers. It is superbly made and will handle up to 260 watts.

Sizes: Height 30" x Width 29½" x Depth 14"

Four - 12" PL 65 watt

Usable frequency response 50-6000HZ



£140
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B2x15

This strongly constructed, ported bass cabinet houses two 100 watt 15" bass speakers. It gives a super sound for bass and when used with an SP. RCF radial horn is ideal for keyboards.

Sizes: Height 37" x Width 24" x Depth 15"

Two - 15" B15L usable frequency response 30-4500HZ



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inc. VAT

PA1x12 & PA1x12H

The 1x12 and the 1x12H cabinets are for the small disco or solo artist who needs a unit that is compact and portable, although extremely small they handle 130 watts the pair.

The 1x12 has a 12" dual concentric speaker to give a deep crisp sound, while the 1x12 plus horn also houses an MF1000 horn for the extra treble response.

Sizes: Height 21" x Width 17" x Depth 9½"

(PA1x12) or (PA1x12H)

One - 12" DC 65 watt

Usable frequency response 50-12000HZ

One - 12" PL 65 watt

Usable frequency response 50-6000HZ

Plus MF1000 horn. 4700-16000HZ



£45
inc. VAT



£65
inc. VAT



PA 2x12 & PA 2x12H

The 2x12 and the 2x12H are extremely popular with discos, groups and solo artists alike. The 2x12 comes complete with two dual concentric 12" speakers with a power handling of 260 watts the pair. The 2x12H houses two 12" heavy-duty speakers with an MF1000 horn for the extra treble response.

Sizes: Height 32" x Width 17" x Depth 9½"

PA2x12 Two - 12" DC 65 watt

Usable frequency response 50-12000HZ

PA12x12H Two - 12" PL 65 watt

Usable frequency response 50-6000HZ

Plus celestion MF1000 horn. 4700-16000HZ

M1x12 & M1x12H

A wedge shape construction that is fitted with one 80 watt 12" dual concentric speaker for the use of monitoring on stage. The M1x12H is of the same construction but has an MF1000 horn added to it. Both units have in and out sockets for linking monitors together and all can be fitted with a volume control at a little extra cost.

Sizes: Height 15" x Width 20½" x Depth 19"

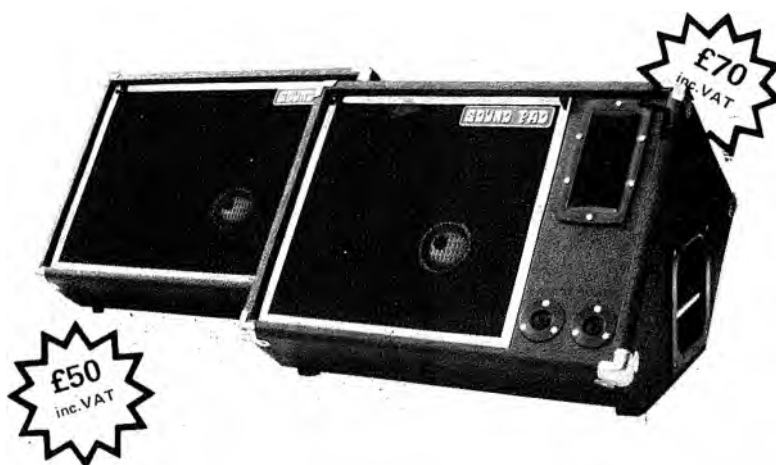
M1x12 One 12" DC 65 watt

Usable frequency response 50-12000HZ

M1x12H One 12" PL 65 watt

Usable frequency response 50-6000HZ

Plus celestion MF1000 horn. 4700-16000HZ



PA1x12A & PA1x15A

These superbly designed cabinets are to be used with the larger public address or disco sound system.

The PA1x12A has an 80 watt 12" heavy-duty speaker.

The PA1x15A is of the same design but larger to handle the extra bass end of the PA. It comes with a 15" bass speaker and handles 100 watts.

Sizes:

PA1x12A - Height 19½" x Width 24" x Depth 20"

PA1x15A - Height 22½" x Width 30" x Depth 26"

PA1x12A - One PL 80 watt

Usable frequency response 50-6000HZ

PA1x15A - One 15" B15L

Usable frequency response 30-4500HZ



(PA 1x15A £120)

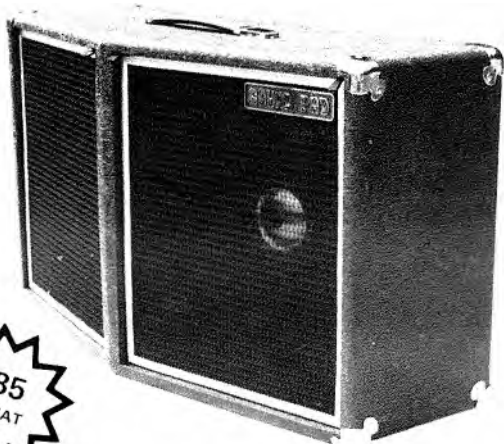
PA1x15J

This super low frequency bass cabinet is designed to complete the Sound Pad PA system, adding a rich and strong bass sound, and giving a tremendous bass boost to the system. It houses one 15" heavy-duty low frequency speaker and handles 100 watts.

Sizes: Height 36" x Width 30" x Depth 24"

One 15" B15L usable frequency response 30-4500HZ





£85
inc. VAT

MR 2x12

This particular unit is a midrange cabinet to be used with the Sound Pad PA system. You can have a choice of midrange cabinets as the PA1x12A is also a midrange cabinet. The MR2x12 can also be used for PA or disco and handles 130 watts with two 12" PA/disco speakers.

Sizes: Height 18" x Width 30" x Depth 12"

Two - 12" PL 65 watts

Usable frequency response 50-6000HZ

T2, T4. & RH

The Sound Pad horn is a RCF midrange horn that handles 100 watts and is designed to sit on top of the Sound Pad PA system. The T2 and T4 are very high efficiency tweeters to add to the midrange horn to give that extra high frequency response.

Sizes: RH - Height 8" x Width 24" x Depth 18"

T2 and T4 - Height 6¾" x Width 21¾" x Depth 9½"

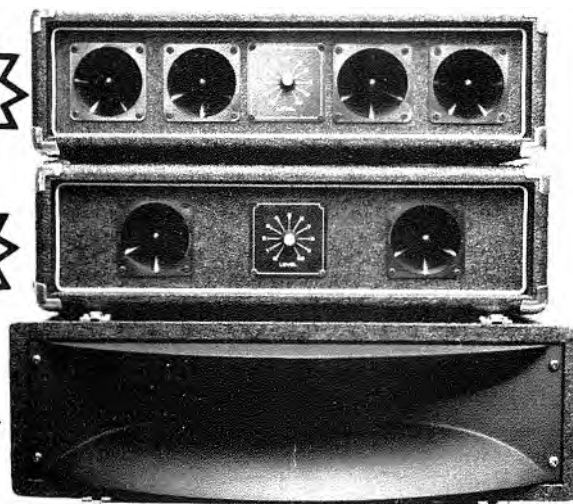
Radial horn - One RCF 100 watt driver

One fibre glass horn.

£60
inc. VAT

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- The guarantee is unconditional and we will repair or replace at our discretion
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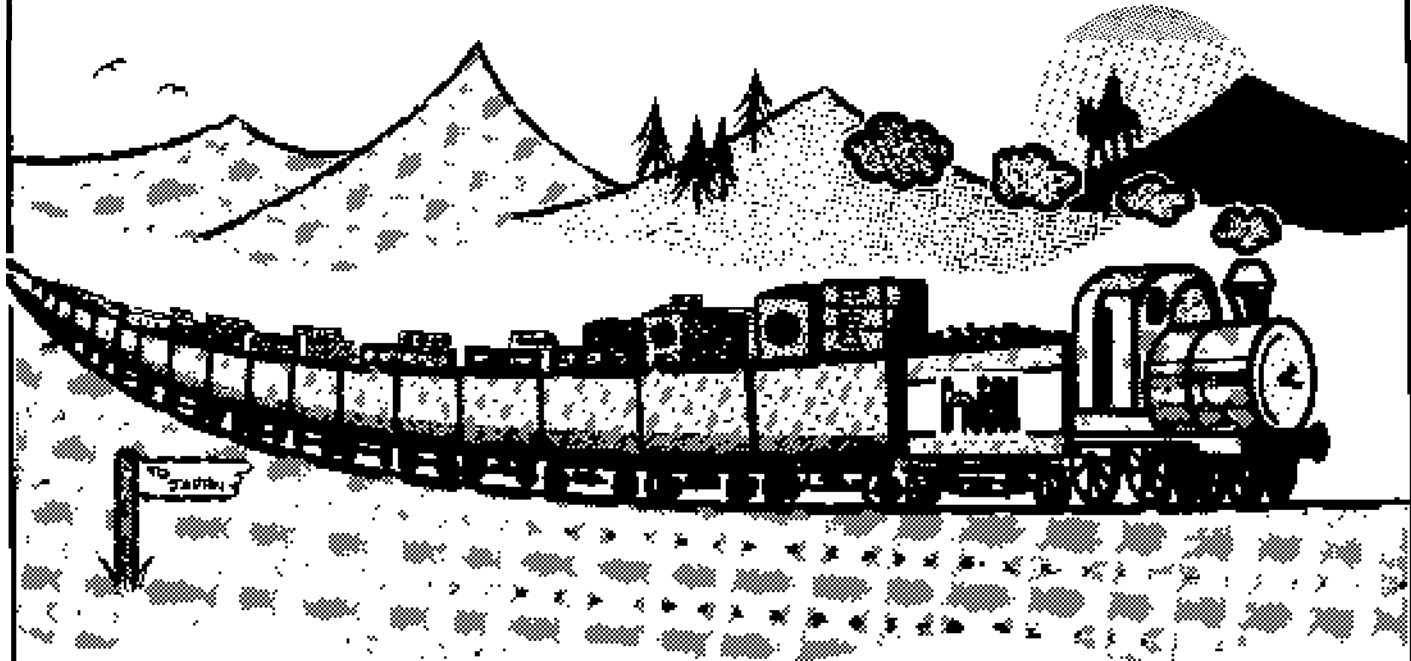


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The Clash

The Jam

Mike Oldfield

BB King

Dr. John

The Clash

Give 'Em Enough Rope (CBS)

On first hearing, somewhat of a disappointment. Much of the Clash's original fire and enthusiasm seems to have been lost. "Tommy Gun" is the track which stands out on Side One, being a powerful yet catchy number featuring some machine-gun drumming from Topper Headon.

"Guns On The Roof", which opens the second side, is probably the album's outstanding number, despite being a direct pinch from the Who's "Anyway, Anyway, Anyway", complete with Townshend-type slashing chords. Guitarist Mick Jones has a simple, direct approach, while drummer Headon once again delivers the goods with some thundering work. The number is completed by the sparse jerky vocals of Joe Strummer.

"Cheapskates" and "All The Young Punks" is typical Clash up-tempo stuff, but lacks power and originality. "Stay Free" deserves a mention because it features Mick Jones on vocals, and is so simple it verges on the naive, yet it remains catchy and appealing.

After a few plays the album undoubtedly gets better, but for me it still falls short of their first one. The reason may lie in their decision to use American producer Sandy Pearlman, or the fact that they simply took too long over it — maybe a combination of both.

David Lawrenson
Produced by Sandy Pearlman

The Jam

All Mod Cons (Polydor)

Only once in a decade does a band like the Jam come along. The sheer power and skilful execution of guitarist Paul Weller's songs attest to the Jam's self confidence. They may seem cocky but they have every reason to. In live performance the band offers something not available since the early days of the Who and the Stones — a bracket of songs that hit the target every time, like the knockout punches Weller so often alludes to.

On record, at this moment, they are without peer. "All Mod Cons" is a great album — and what an opener the title track is! So simple, an indomitable bass riff carries Weller through not quite two minutes of a fast rising rock star reading his diary. It is almost too powerful to live long.

This record overflows with classic cuts. "David Watts" gets a bare rock treatment, nobody could be more spare than the Jam playing this power chord work. To say Ray Davies' lyric is clever merely hints at his brilliance. "Billy Hunt", with its memorable chorus, will ring for ages as one of the best New Wave catch phrases. The images of repressed youth are inescapable except through the running, jumping and climbing bass runs. Weller's guitar positively snarls, like his voice on "A Bomb In Wardour Street", matching the savagery of his violent images. He can punch or stroke with his guitar and his lyrics bear such

The Jam's Paul Weller



The Clash

a striking resemblance to the naked protestations of Pete Townshend it is uncanny that they live in the same age. The Jam could make it as mimics alone but at the moment they put it together better than anyone else. The world might sing along.

Sean Hogben
Produced by Vic Coppersmith-Heaven.
Recorded at RAK and Eden Studios, London.

Mike Oldfield

Incantations (Virgin)

Oldfield may have been through a cataclysmic change in lifestyle and image — from highly-strung hippie to extrovert man-about-town — but his music hasn't changed a bit. This is the mixture as before, only twice as much of it, because it's a double album.

The format is the familiar one of small musical phrases (they're not meaty enough to be called licks or riffs), nicely orchestrated and repeated exhaustively. A repeated hook is the essence of a good pop single, but it simply isn't enough to build an instrumental album on them. The instrumentation here, in addition to multi-tracked Oldfield, includes flutes, strings, African drums, vibraphones and a choir, but although it's all deftly put together and immaculately recorded, it doesn't conceal the paucity of solid musical ideas.

It's all so organised, so pre-planned, that there's no room for any glimmer of spontaneity. That's what makes it so hard to listen to for long stretches. It's easy enough to bear it, like so many square yards of musical wallpaper, but listening to the endless repetition of trivial ideas is not so much hypnotic as soporific, and ultimately immensely irritating.

Jeff Pike
Recorded at Thorougham
Produced by Mike Oldfield

BB King

Midnight Believer (ABC)

Evidence that the blues is alive and kicking comes in this latest album from one of its premier exponents. This is no mere nostalgia trip for an artist living on past glories, it is simply a great album of music. BB's stinging guitar is used to maximum effect on a wide range of songs, from the New Orleans jazz tinged "I Just Can't Leave Your Love Alone" to the slow, smouldering blues of "Hold On". Despite the wide range of styles, the music always remains the blues, simply because everything the man does is filled with so much feeling and emotion which always shines through.

The Crusaders' influence on this album is very heavy. They pop up on most of the tracks and also feature in the production credits. Their soulful, funky approach is apparent on the title track, a superb cut which combines an excellent rhythm with BB's highly individual guitar, all topped off with a soaring string arrangement.

"Hold On" is another monster track which is destined to become a King classic. When he sings, there is no faked emotion — it is the real thing.

David Lawrenson
Produced by Stewart Levine (for Outside Productions Inc.) and Stix Hooper, Wilton Felder and Joe Sample (for Crusaders Productions Inc.) Recorded at Hollywood Sound Recorders.

Dr. John

City Lights (A & M/Horizon)

A significant release from Mac Rebennack. Not only is it his first album under his own name (or rather, his other name, Dr. John) for more than three years, it's also a big step forward musically.

There was a time when the Cajun medicine man Rebennack created with Dr. John threatened to take

him over completely (like Ziggy and Bowie). Now it's just a part of something bigger. The Creole subculture still appears on some tracks here, like "Snake Eyes", which positively oozes out of the steamy Louisiana swamps. And the New Orleans influence is almost as strong as ever, notably in Rebennack's rolling piano style and the Dixieland horns on some tracks. But Dr. John has travelled around a bit in the last few years. He's been to Los Angeles, he's been to New York, and he's learned things on the way.

The whole album is tougher than his earlier work, with more of a "street" feel — there's even a track called "Street Side". There are Hollywood-styled strings on some tracks, too, and on "Rain" they are augmented by vibes and an after-hours alto sax, while Rebennack moans the ballad Ray Charles-style.

And there's a brilliant funky pop song called "Fire of Love". And there's some near-jazz piano on "Sonata". And more besides. It's a very diverse album, but not a disjointed one. It's all held together by Rebennack's splendid fruity voice and his mastery of all the styles he handles. Welcome back, Doc.

Jeff Pike

*Produced by Tommy LiPuma and Hugh McCracken.
Engineered by Hank Cicalo, Kevin Herron and Al Schmitt. Mixed by Al Schmitt.*

Ray Charles

Love & Peace (London)

Can Ray Charles really be 56? Six of the nine tracks on this album can be categorised as disco soul '78-style, yet this middle-aged gent romps through them with more life and energy than most disco singers 30 years younger — and a great deal more vocal expertise. And it's not fair to accuse him of selling out or bandwagon-jumping. Charles has always been supremely eclectic: blues, jazz, gospel, soul, pop, it has all been grist to his mill in the past, so what more natural than that he should grab today's best-selling genre by the scruff of the neck and show the youngsters how it should be done?

He is aided and abetted by some fine biggish-band arrangements by Harry Goodnight, Roger Newman and Larry Mahoberack. But it's his voice that carries the show. Surely no other living soul singer has this degree of vocal flexibility and invention, except maybe Steve Wonder — and even he hasn't got Ray's spine-tingling falsetto.

Jeff Pike

*Recorded at RPM International, Los Angeles. Produced by Ray Charles
Engineered by Ray Charles and Bob Gratts*

Mark-Almond

Other People's Rooms (A & M)

Two gems flew out of the heavy rock avalanche of the early Seventies — Jon Mark and Johnny Almond. Known to few more than the determined collectors and FM freaks, the Mark-Almond duo have written and recorded some langorous but beautifully executed songs.

Triangles become tinkling cocktail glasses and the background is the foreground on the album. Jon Mark urges a string of gooey images out in breathy tones and sadly, Mark-Almond sometimes sound like the ultimate cabaret act. The opener, "The City", was a most impressive track from one of their first records, Almond's fiery sax solo and Mark's dream-like vocal marks them both as highly emotive musicians. All the players do their bits perfectly, Leon Pendarvis lays stardust trails of Fender Rhodes notes through "You Look Just Like A Girl Again" and John Tropea's phased guitar floats in a very warm space on the title track. There are no rough edges on this midnight music.

Sean Hogben

Produced by Tommy LiPuma. Recorded at the New York Hit Factory

Jack Tempchin

Jack Tempchin (Arista)

Despite his association with the Eagles, Jack Tempchin's writing owes more to Gram Parsons or the droller side of Jackson Browne. On the surface it's pretty standard West Coast fare, but closer inspection reveals a wry self-mockery and a refreshing lack of presentation.

The first side is the better of the two. "Fifteen Days Under The Hood" is an amusing tale of a car obsessive, played with a rollicking verve. "She Belonged To You" neatly sabotages the old myth that all males living in California are bronzed demi-gods who spend their time fighting off Charlie's Angels.

Standouts on Side Two are the bleary "Tijuana" and "Walkaway". The other tracks are somewhat forgettable, though the standard of playing and singing is high throughout. Producer Pete Carr has cannily avoided bland-out at all points by giving each track a clear focus of attention, whether it's the saxophone on "Golden Life" and "Walkaway" or the slide guitar on "She Belonged To You". Tempchin's voice, too, is strong and expressive, a real asset when working in a genre formerly believed redundant. Altogether, an impressive debut album. I hope Tempchin can retain his sense of perspective.

Adam Sweeting

*Produced and arranged by Pete Carr.
Engineered by Pete Carr. Recorded at Fame Studios,
Muscle Shoals, Alabama. Mixed at Muscle Shoals
Sound Studios, Sheffield, Alabama*

Various Artists

British R 'n' B (Decca Roots 6)

Savoy Brown (Decca Roots 7)

John Mayall (Decca Roots 8)

If you're old enough to remember Klook's Kleek, the Ricky Tick and The Fisherman's Arms circa 1964, then "British R'n'B", one of the latest in the Decca Roots series, is a must for your collection. It features 14 tracks by groups and artists who, in the Sixties, were leaders of the British R'n'B boom.

The oldest cut on the album (1962) is "Air Travel" by Chris Farlowe, one of the most exciting vocalists around at the time. Rod Stewart appears doing his best Sam Cooke impersonation on "Good Morning Little Schoolgirl", a 1964 single. My own favourite is a 1967 cut from the Small Faces — their version of The Miracles' "You Really Got A Hold On Me", featuring a very emotive vocal performance from Steve Marriott. Other artists included here are Graham Bond, John Mayall, Dave Berry, Alexis Korner, Zoot Money, Them, The Moody Blues and The Zombies.

Savoy Brown were everybody's favourite support band in the Sixties blues boom and, while they went on to fame and fortune in the States, they never really made it here. This compilation includes three A-sides and cuts from their "Blue Matter", "Raw Sienna", "Street Corner Talking" and "Hellbound Train" ▶▶

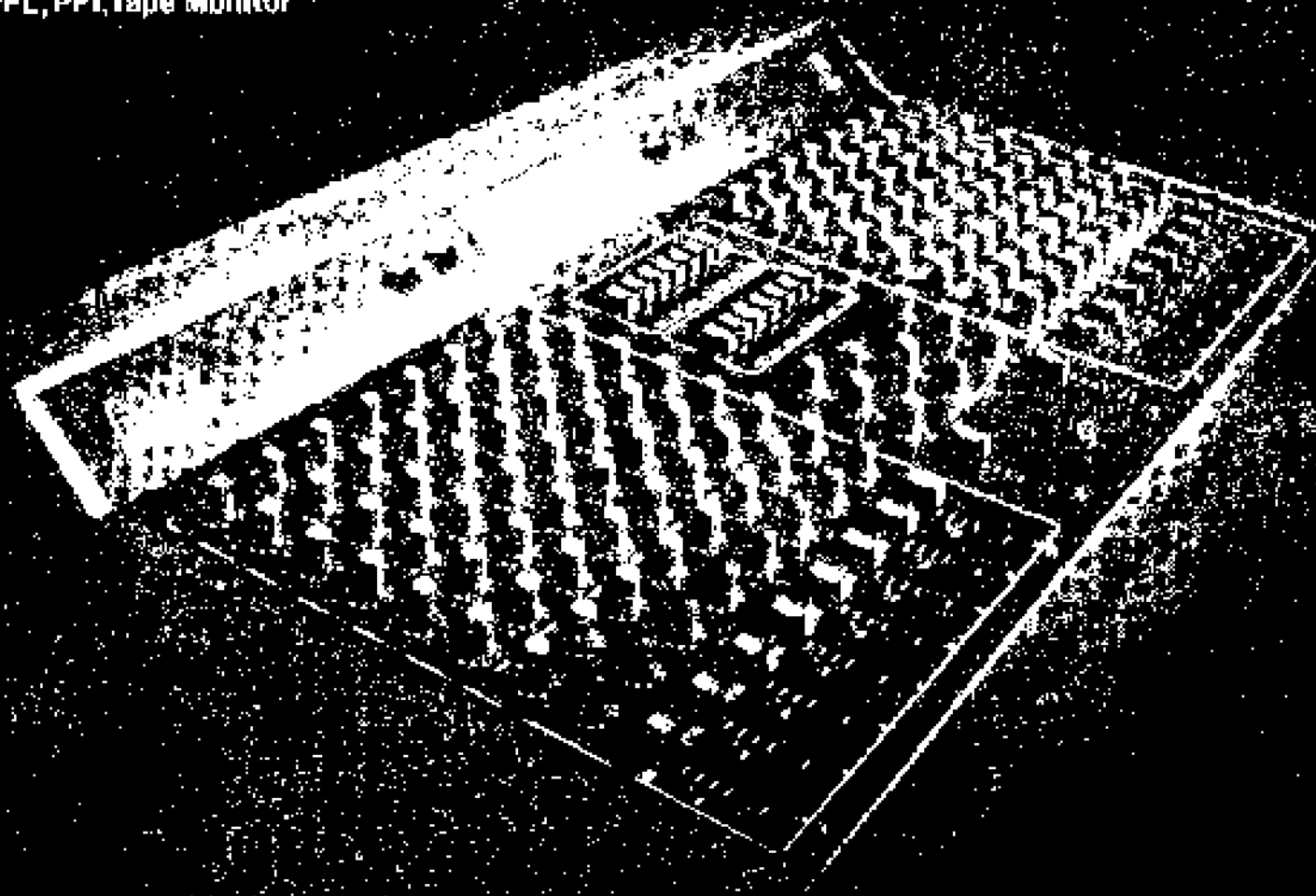


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Albums

albums. It's a fair representation of the group between 1968 and 1972.

The Mayall collection is a bit of a disappointment for, although the tracks include the Clapton, Green and Taylor line-ups, I would have chosen different tracks from these albums. Not a bad compilation but not a great one either.

Eamonn Percival

Wilton Felder

We All Have A Star (ABC Records)

I like the Crusaders. I like Wilton Felder, their front man and horn player. But I don't like his solo album as much as I hoped I would. For a start, it's more vocal-oriented than most Crusaders albums. No reason why it shouldn't be, of course, and the singers Wilton has picked to warble the rather trite lyrics are all pleasant enough, especially Khabir Ghani, who has a sweet, gentle voice. But the vocals do seem to water down the music's impact a little.

And as for the instrumental bits, of which there are lots . . . well, I'm wondering why it apparently takes two of everything to make music. Drums and percussion on most tracks (James Gadson and Paulhino da Costa respectively and between them they can't rustle up the urgency of one Stix Hooper. A whole cluster of guitarists around, too: Tim May, Roland Bautista, Paul M. Jackson Jr. and Billy Rogers. Perm any two from four on most tracks. And several times even two keyboardsters: Greg Phillinganes playing the routine stuff and Crusader Joe Sample taking the solos (which seems a little unfair on old Greg).

There's only one Wilton Felder, though, and he's good. Always inventive, occasionally exciting, with a warmth and uncluttered melodic approach to improvisation. But I've heard him play more inspired sax with the Crusaders. It may be unfair, but you can't help comparing this music with that of the Famous Five. And, although it makes for pleasant listening, it can't quite compare with the genuine article.

Jeff Pike

Produced by Wilton Felder, Stix Hooper and Joe Sample. Recorded at Hollywood Sound Recorders Inc. Engineered and mixed by Rik Pekkonen.

David Johansen

David Johansen (Blue Sky)

In which Staten Island is put on the map. Ex-Doll Johansen has written a bunch of fine rock'n'roll songs, found himself a hungry-sounding band and comes out way ahead of much of the Stateside competition. Johansen and co-producer Richard Robinson have brazenly opted for the shotgun-to-the-temples approach, which works admirably. Throughout, drums thunder and guitars crash, while Johansen's gruff bark of a voice rampages over the top.

The first side is full blast all the way, opening with the irresistible "Funky But Chic". Twin guitars bounce licks off the rhythm while Johansen growls the trashy lyrics. It's one of at least two classics here, the other being the sublime "Frenchette" which closes the second side. "Donna" comes close too, with its arresting riff.

"Frenchette" is the heart of the album. The intro is Johansen's shaky, damaged vocal over simple piano, and the number builds from a fragile melody to a storming climax. It embodies all the best qualities of the album: it's emotional without being sentimental, and when Johansen yells "Let's just dance!" - well, why not?

Adam Sweeting

Produced by Richard Robinson and David Johansen. Engineered by Dave Thoener. Directed by Steve Paul. Recorded at The Record Plant, New York

Siouxsie and the Banshees

The Scream (Polydor)

This is a chilling, intense masterpiece. The Banshees have perfected a group sound which is powerful but streamlined. On top of that, there's Siouxsie. Words and music combine to produce coolly dazzling images. Bassist Steven Severin's lyrics to "Overground", for example, precisely balance the careful and almost stately musical arrangement "... live a life of pleasantries / mingle in the modern families."

On "Metal Postcard (Mittageisen)", the Banshees achieve their most telling juxtaposition of sound and vision. John McKay's abrasive guitar is well forward as Siouxsie's voice swoops unnervingly, childlike but without joy. "Metal will rule in my masterscheme."

There's a strong sense of morbid obsession. "Nicotine Stain", "Carcass" and "Suburban Relapse" are very different expressions of the same disgust. In a media-saturated environment everybody can use phrases like "Suburban Relapse". The song is about a breakdown.

The deeper you go into "The Scream", the more connections you find, like interlocking railway lines. The insights are unsettling, given coherence by an ascetic attention to texture and detail. It's OK, R.D. Laing, you can stop making albums now.

Adam Sweeting

Produced by Steve Lillywhite & Siouxsie and the Banshees. Mixed by Steve Lillywhite at De Lane Lea. Recorded at RAK.

Hall & Oates

Along The Red Edge (RCA)

Daryl Hall and John Oates play the chameleons of rock. Probably bored with their own banal recordings, they turned a corner in their wardrobes and issued a vaguely exciting album in "Beauty On A Back Street", pulling out their hard rock suits and getting down to it. Their latest album does seem to be some sort of balancing act but the end result is a neat compromise.

Side One is the Hall and Oates of bygone days, all muscular rhythmic surges with carefully layered vocals decorating the tops. Their souls are pure white and Hall's melodic thoughts on "It's A Laugh" seem an apt match for his stupid lyrics. On "Melody For a Memory" and "The Last Time" Oates and lead guitarist Caleb Quaye fill the tracks up with undecipherable guitar parts, and only a solo displaying moderate skill saves the latter from a morass of strings. It may be pure disco, with handclaps, snare and bass drum echoing on the beat, but "I Don't Want To Lose You" features some fine components. Gene Page contributes the zippy string intro and at last a cluster of simple guitar chords appear. Side Two could well be a different album. Daryl is playing at New Wave again.

The list of players on this album is as impressive as the sleeve lettering. Among others appear Caleb Quaye on guitar, drummer Roger Pope, bassist Kenny Passerelli, Robert Fripp, Dick Wagner, Rick Nielson, Todd Rundgren, Steve Pocaro and George Harrison! What good production. I couldn't hear them.

Sean Hogben

David Johansen



Wilton Felder

David Johansen

Siouxsie and the Banshees

Hall & Oates

Wilton Felder



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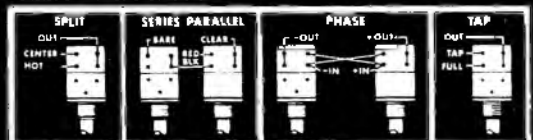
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Albums

David Kubinec

Some Things Never Change (A & M)

Despite the presence of such notables as Chris Spedding, Ollie Halsall and John Cale, there's no disguising David Kubinec's inadequacies as a songwriter. Cale's production has set off Kubinec's gruff singing voice against a barrage of instrumentation. "Sit On It" and "Another Lone Ranger" are driven by thunderous guitar riffing, very appropriate for Kubinec's bombastic but empty lyrics. "The Elf Sires" attempts to achieve an epic feel, but falls appallingly short, despite Timi Donald's Grand Canyon drum sound.

Kubinec continually overreaches himself. His lyrics are crammed with superficially potent metaphors which add up to a nothing.

Adam Sweeting
Produced by John Cale

Barbara Dickson

Sweet Oasis (CBS)

It would be easy to dismiss Barbara Dickson as simply an MOR artist, but "Sweet Oasis" deserves much more. She has an excellent voice, strong and powerful, yet capable of being pure and sweet as on the title track. She can also rock, as on her rousing version of Gerry Rafferty's "City To City".

There are plenty of straight pop songs like "Fallen Angel" and "Magic Man", which are well arranged and produced and show off the excellent musicianship of her band. In addition to her singing and writing the songs, Barbara also plays both acoustic and electric piano. An impressive performance.

David Lawrenson
Production and sound by Bones Howe

David Byron

Baby Faced Killer (Arista)

A pleasant surprise. This is a varied and tactfully arranged album, in which Byron proves that he's a singer with range and feeling. The title track and Side Two's opener, "Heaven Or Hell", both fall into the overblown category, but there's plenty more to choose from. "Acetylene Jean" is a Fifties-ish rocker with sax and rolling piano, where Byron contrives to sound a little like Ronnie Hawkins.

The best tracks are the slower ones, which suggests that Byron's previous existence was a case of miscasting. "Sleepless Nights" is a mid-tempo number which could almost be a single. "Everybody's Star", in particular stands out. It combines a spare arrangement with Byron's best performance on the disc, and includes a well-judged gospel chorus. Nice one. If Byron continues to develop this vein, he could find himself on a winner.

Adam Sweeting
Arranged and produced by David Byron and Daniel Boone.

SHORT CUTS

Eric Clapton: *Backless (RSO)*

It pains me to say it, but this is a very disappointing album from one of my favourite guitarists. It's a cross between Southern warmed-up boogie and sub-Don Williams country. Even a token attempt at a slow blues, "Early In The Morning", fails to take off and Clapton insists on playing slide throughout the track. He's since trimmed his band down to a four-piece so here's hoping.

Patrick Moraz: *Patrick Moraz (Charisma)*

An over-conceptualised concept album which will appeal to all lovers of multi-keyboards. The presence

of percussionists from Brazil and ethnic instrumentalists Djalmá Correia ensures a predominant Latin feel. Patrick Moraz knows his way around all the keyboards known to man, but the real highlight is his solo piano improvisation, "Intentions".

AS

Queen: *Jazz (EMI)*

Queen are a very inconsistent band. While "Sheer Heart Attack" still rates as one of my favourite rock albums, their recent output doesn't have the same spark. Some tracks are good, some OK and others too embarrassing to talk about. Highlights of this album - "Bicycle Race" and John Deacon's beautiful "In Only Seven Days".

EP

Peter Tosh: *Bush Doctor (Rolling Stones Records)*

Former Wailers member finds himself under the Rolling Stones' wing. In fact, Keith Richard and Mick Jagger turn up on a couple of the tracks. The album is largely uninspiring, with only the title track, which contains Tosh's usual plea for the legislation of cannabis, and "Don't Look Back" featuring Jagger on vocals, which are at all memorable.

DI

Kate Bush: *Lionheart (A & M)*

Kate Bush is an artist you either love or hate and I certainly don't hate her. "Lionheart" is only her second album and it's so good, it's frightening to think what she'll be doing next. There are no standout tracks - they're all good and it's interesting to see Pilot's David Paton and Ian Bairnson in there.

EP

Grateful Dead: *Shakedown Street (Arista)*

Surely this twice and gutless effort can't be the best the poor old Dead can do? Even the artwork is 10 years out of date. Worst of all, producer Lowell George let them get away with it and didn't even slip in a slide solo. Bloody awful.

AS

Olivia Newton-John: *Totally Hot (EMI)*

Livvy's steered away from country and, thankfully, disco and come up with a likeable album, excellently produced by John Farrar who also acts as arranger, guitarist and vocal group on most of the tracks. Particularly noteworthy is a very soulful vocal on "Gimme Some Lovin'".

EP

Various Artists: *Walking The Back Streets and Crying (Stax)*

A beautiful collection of rhythm 'n' blues (with the emphasis on the blues) dating from 1969 to 1973 - i.e. immediately after the classic Stax-Atlantic soul period. Albert King is the biggest name here, but he doesn't outshine the likes of Little Milton, Freddie Robinson and Johnnie Taylor. Good gutsy stuff.

JP

Barbara Thompson: *Paraphernalia and Jubiaba (MCA)*

A liberated lady who has mastered a basically male instrument, the saxophone. In fact, she is so keen, she leads two hands: a four-piece concept, *Paraphernalia*, and a nine-piece, *Jubiaba*. The two albums provide an interesting contrast. *Jubiaba* feels latin, percussive. *Paraphernalia* is more rocky. Both are free, this music has no ceiling, just feel and powerful rhythm. *Paraphernalia* is my favourite, though. The band is more concentrated, more funky and there is more room for the sax. The result is a thoroughly enjoyable album.

HC

Eric Clapton



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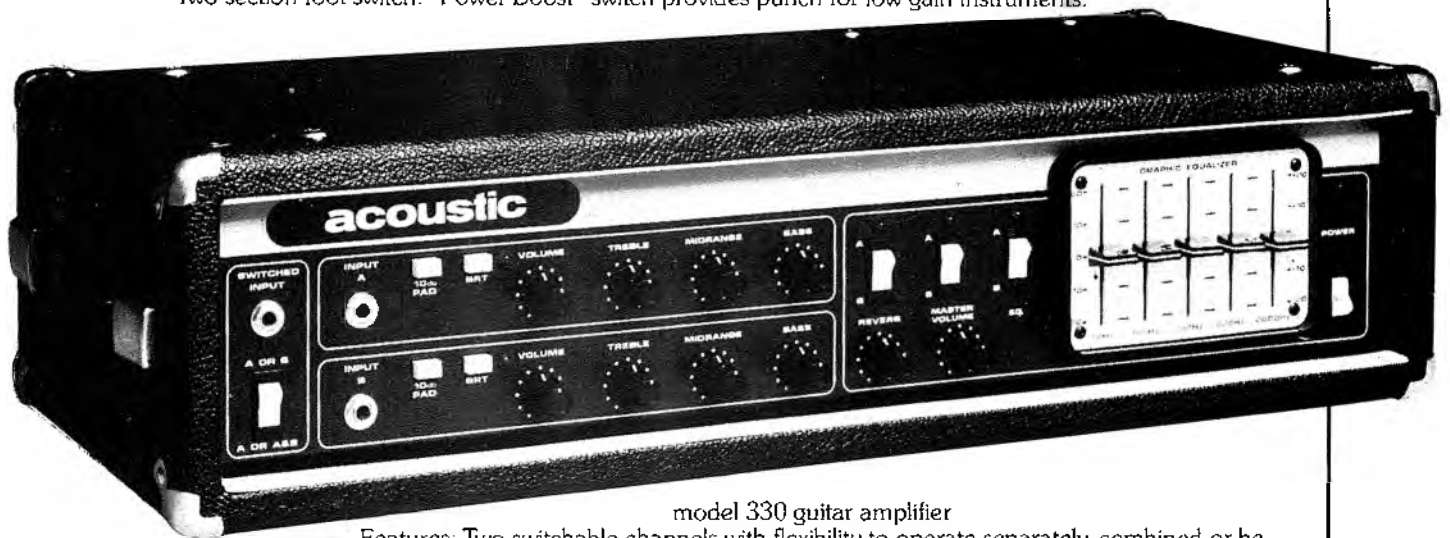
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Buzz

What's happening in the music biz

All-Star line-up

Leaving his bat and crash helmet to gather dust in the cupboard, your reporter made a recent trip to the Oval which wasn't altogether to do with nostalgia for the sound on leather on willow. The Cricketers pub, adjoining the now empty cricket ground, was playing host to the Stapleton All Stars.

The All-Stars are five very experienced musicians who've appeared in all kinds of disparate musical settings, including tours with Long John Baldry, Marshall Hain and many more. They've hardly done more than rehearse together a few times, but already they sound like they've played together for years.

Their music is best described as electric jazz. They play numbers by Jean-Luc Ponty, Larry Carlton and Charlie Mingus, as well as some of their own which include a subtle piece in 7/4 by keyboardman Ben Barson. Guitarists Alan Murphy and Nicko Ramsden can both solo at the speed of light, but always without flash. Preston Heyman supplies muscular drumming, while Felix Krish clocks in on bass. A band to look out for.

Making an Exhibition of themselves

If you like cold aircraft hangers you'll love the National Exhibition Centre's Hall 6, in Birmingham. Rory Gallagher and Bram Tchaikovsky's Battleaxe had the unenviable task of playing the Centre's first rock gig in December.

As bedeviled punters queued patiently in the cold, bands and soundmen did their best to cope with the hall's dauntingly vast echo. The stage was huge and stark. The hall is huge and stark, too. The sound was either very loud or shattering, depending how near the front you stood, but lost much sharpness among the pipes and girders hanging from the ceiling. Somebody could have made a fortune selling packets of atmosphere.

The one major advantage that the NEC has as a rock venue is the easy access to the backstage area. There's plenty of room for artists to drive right up to the stage and unload under cover, which has to be good news for sound and lighting crews.

The stage itself, on the other hand, is too high for photographers to get a decent view. When Rory Gallagher was onstage, it was impossible to get bassist Gerry McAvoy or drummer Ted McKenna in shot because they were positioned too far back. The bottom half of Gallagher himself was only visible when he made strafing runs across the front of the stage.

It was difficult to form an objective opinion of the show. Battleaxe sounded as though they might have been good, but their harmonies were lost and the instruments tended to blur together. Gallagher played too loud for too long. It was an education watching his hands, though. He rattled off pulls, bends, slurs and harmonics

without any visible effort, and made continual small adjustments to tone, volume and pickups. But all this apparent subtlety was wasted, since he and his rhythm section seemed intent on producing a sound which would stun elephants at long range.

The hall was nowhere near full, which was probably due to the fact that the NEC is a long way out of Birmingham. Nonetheless, the crowd produced a convincing chant for a duly-delivered encore. On the whole, the event was something of an endurance test for bands, fans and road crews. Birmingham deserves a better venue than this.

Winning Music Men

We're delighted to announce the names of the winners of the Music Man competition which we ran in our October issue. First prize of a Music Man Sabre guitar was won by V. Licinio, of Taunton Road, Bridgewater, Somerset. Second Prize winner Leo Lewis, of Sanced Road, Parkstone, Poole, Dorset, has opted for the Music Man 112RD-65 combo. Well done, chaps. However, *all* entrants to the competition may rejoice in the knowledge that Music Man distributors Strings 'N' Things have beneficently agreed to send a set of strings and a poster to each of them. Beats Cracker-jack pencils.

Incidentally, if you're still chewing your pencil over the answers to the competition questions, they were: 1, Eric Clapton; 2, Albert Lee; 3, Joan Armatrading; 4, Delaney and Bonnie.

Pianists prefer little men

A London service agency called Problem reports that 64 per cent of their customers prefer such domestic maintenance jobs as piano tuning to be carried out by "Little Men" rather than by larger companies. This does not indicate an exploitative attitude towards short people, but rather a preference for the traditional independent man who works alone.

Problem's MD Garran Patterson says that his customers prefer the small contractor because self-employed people move faster and are substantially cheaper than large operations. Most importantly, though, the "Little Man" can give a problem a greater degree of personal attention than the more impersonal large company.

Garran adds: "Certainly as far as we are concerned, there is a growing need for independent, self-employed, skilled contractors of all kinds."

You don't find features like this in NME.

Below: backstage at the NEC. Right: Rory G.





Electrotunes

Ovation sensation

Rose-Morris have announced substantial reductions in the prices of Ovation guitars. A Balladeer, for example, comes down by about £56 to £299.05, while you can now grab an Electric Custom Legend for a mere £845 — a reduction of about £150, which is not to be sneezed at. Let's hear it for Ovation.

But that's not all! Rose-Morris now offer you MXR Innovation devices (which means effects pedals) shorn of a stunning 17 per cent of their former price. The famous Phase 100 can now be added to your collection for a whisker under £100.



Ovation Balladeer

Steel Works Blues

Trouble at t' Steel Works. If you've been thrown into discord by the pedal steel exercises in Part 4 of Dave Hayward's Steel Works (1M December) this could well have something to do with the fact that we made a couple of (ahem) deliberate mistakes. Both of them occur in Example E. The second C chord should read 8 on string 4, and not 8A. In the final chord, G7, the bottom 3 should appear on string 9, not string 8.

Many apologies to all who are following the series, and of course to Dave Hayward.

Who said reggae?

Their motto is "It's the bounce that counts" — and by George, they certainly do inject a goodly dose of bounce into their set. The combo in question is a funky four-piece called Electrotunes who have been impressing London pub audiences with a collection of danceable ditties since they got their act together in October.

The band consists of Tony Hannaford (guitar and vocals), Adrian Cook (guitar,

Readers with news items for these pages — especially fax, pix and info on new and interesting bands — should write to Buzz, International Musician, Grosvenor House, 141-143 Drury Lane, London WC2B 5TE.

keyboards and vocals), Nick Pallett (bass and vocals) and Geoff Nicholls (drums). Apart from a few Motown classics, their material is all home-grown, a blend of strong melodies, witty lyrics and toe-tapping rhythms which owe not a little to the roots music of a certain sun-kissed Caribbean isle.

Electrotunes have been in the studio recently cutting demos and there are dark rumours that record companies are lending an interested ear. If you want a good nite out in the Big City, try to catch an Electrotunes gig — especially as they promise to have a "guest horn section" (well, two saxes) on stage with them soon. If you want to help the cause even more and book the lads, contact their manager Mick Coote on 01 828 1437.

Art lives in Birmingham!

The good people of the Arts Lab, Birmingham, have been bombarding us with an impressive list of events that have been occurring there. These include all kinds of

music. Ida, for example, is "a group of four Midlands musicians formed for the purpose of playing twentieth century music", and their repertoire covers Scottish folk songs, songs by Cole Porter and pieces by John Cage and Richard Orton. Jan Steele and John Adams' "highly unpopular" Free Jazz duo, on the other hand, play a "distinctive brand of free jazz" which has caused audiences to walk out and shopkeepers to turn nasty. But the Arts Lab has reggae, too.

In addition, the Lab runs a music publishers dealing with rock, experimental, jazz and electronic music. Many of the published pieces will be performed by the Lab's own ensemble, Anomaly, a trio comprising tuba, flute and piano. "In publishing and printing jazz," says the press release, "we will be almost unique in Britain, because very few jazz pieces are available to the public in printed form."

If you're interested, the address to contact is Arts Lab, Holt Street, Birmingham, B7 4BA. (021-359 4192).

Book Reviews

Rock Guitarists (Volumes I and II) by Guitar Player Magazine. £3.85 each.

We mentioned one of these books last April in an *In Brief* review but, at the time, neither volume was available in England. They are now both published in the UK and are definitely worth mentioning again.

Two excellent publications, both books consist of selected interviews with a plethora of guitarists by a host of different writers. The list of guitarists included is impressive and too long to detail here. Suffice it to say that most top rock (and otherwise) guitarists are covered.

Volume I was first published in the USA in 1974 and had just gone into re-print. As with the second volume, all the interviews have appeared in the pages of *Guitar Player* magazine, some dating from 1967 and all of them enlightening. A good example is the 1967 interview with Townshend in his pre-Tommy, Stratocaster days. This is followed by a 1972 interview when he had settled on Les Pauls. It's also interesting to read that John Enthwhistler (*sic*) was influenced by Chet Harris (*sic*) while Townshend used to listen to James Burke (*sic*).

There are also two interviews (1968 and 1973) with Jeff Beck which include lots of interesting facts and figures from him — like his reason for playing bottleneck in normal tuning: "It meant changing over, and I thought that looked terrible on stage, watching a guy change over a guitar. You know, I just liked to stand there after a number and look cool: I mean I didn't want to have to do all this toiletry."

Volume II has only recently been published and includes interviews taken from "Guitar Player" 1974. This book features excellent interviews with Hank Marvin, Roy Buchanan and Jimmy Page to mention but a few.

If you want to know how much Scotty Moore was earning with Elvis Presley

(Volume I) or who *really* played the solo on The Kinks' "You Really Got Me" (Volume II), then these books are a must. They're available from Omnibus Book Service, 25 East Street, Farnham, Surrey.

Emonn Percival

Jazz Picture Chords by Artie Traum. (Amsco Music Publishing Co., £1.50).

There's nothing particularly new in this modest volume, nothing that hasn't been covered more comprehensively in bulkier jazz guitar tutors. But therein lies the appeal and the value of "Jazz Picture Chords". It has no pretensions of being the ultimate all-the-chords-you-ever-wanted-to-know encyclopedia — which is just as well, because most of the books in that bag contain a barrelful of chords you'll never want to know, too.

This one sticks to a manageable collection of genuinely useful "jazz" chords, illustrates them in both diagram and photograph form, and provides pleasant-sounding sequences to practise them in. It makes a few basic assumptions. One is that you know the rudiments of harmony (like what a root is) and you know your way around the fingerboard. If you don't, you're stuck with the chords Artie Traum actually illustrates. He doesn't even hint how to transpose them to other keys. It also assumes that you can read simple melodies, because the chords are put to use accompanying some happy little original numbers (a good idea).

Finally, it assumes that you know what these chords are used for. It's a murky and confusing subject to explain in full, but a few clues about chord substitution wouldn't go amiss here. Still, for the competent guitarist who has just met his first A13 or D6(9), this is a clear, intelligible and useful guide to basic jazz harmony.

Jeff Pike

thing and only exists in reality when it is stored in some medium.

In computing terms, the software is operating systems, compilers, assemblers and possibly user programmes, not the tape on which they are stored, or the paper on which they may be printed.

I hope you can pass this point on to the MCPS because such usage can become infectious, and would cause great confusion and misunderstanding.

Andy J. Hennigan,
Stretford,
Manchester.



Andy's Wild Dog

Dear Sir: In your December issue, you mentioned that Paul Day is writing a book about Burns guitars and was looking for any snippets of information about Burns. I have already written to him but thought it might be interesting for your readers to know an interesting little snippet concerning Wishbone Ash's guitarist Andy Powell.

Before joining Wishbone, Andy used to play with a soul/blues band in Hemel Hempstead called the Sugar Band and his first good guitar was a sunburst Burns that he won in a Kellogg's cornflakes competition! He was a big fan of Peter Green in those days and found he could get that smooth Peter Green tone with the Burns going through a wah-wah pedal which he used to jam in one position with a drumstick!

Maybe you or Mr. Day could help me with a query on Burns guitars. I once saw a rock 'n' roll band called the Reasons many years ago and the rhythm guitarist had a white Burns solid with a tone selector switch. The tones were "Bass", "Treble" and "Wild Dog"! I know what bass and treble is but, pray tell me, what is Wild Dog?

Terry Pettit,
Hemel Hempstead,
Herts.

Taking an educated guess, the guitar you refer to could have been either a Burns

Duo-Sonic or a Tri-Sonic and the amazingly named Wild Dog setting was a sort of out-of-phase pickup mode. Like the rest of the Burns guitars and amps, it was obviously well ahead of its time. Thanks for the snippet on Wishbone Ash, by the way. Kellogg's have certainly got a lot to answer for.

Strange Customs

Dear Sir: It was very interesting to read your article "Anything to Declare" in your November, 1978 issue and Ken Ross has explained exactly how much one would have to pay on a \$1,000 guitar should one wish to import this into Britain.

Firstly, I would like to say that very few of us would be able to afford a \$1,000 axe. All the figures given were for a certain value, in this case, \$1,000. So the article tells us that one pays on the value of the goods, and thus our main concern should be to determine the value of the guitar we would like to import. For example, we could purchase a guitar in the USA (a) new, (b) secondhand from a shop, (c) secondhand from a private person or (d) as a present.

I will take as an example a Fender Stratocaster which is sold in Britain at a discount price of £240. This would mean that the value without VAT would be £213. The British importer/distributor/retailer will, in general, make 100% profit which means that Landed Cost of this guitar (cost + profit of manufacturer + delivery charges up to point of entry into Britain including the duty) is around £120.00 (10 per cent duty equals approx. £10.00).

I would like Ken Ross to tell us if he would accept an importation of a brand new Stratocaster with a declared value of £110.00 (\$200)?

If I would deduct a further £10.00 which an importer surely has to pay for freight between America and Britain, then the value of the Stratocaster would be approximately £100.00 (\$200). In this case, one would pay £10.00 duty and £13.75 VAT, which totals £23.75. Surely Ken Ross accepts the fact that a private individual should have the same costs as a Registered Company?

If we now buy a Stratocaster secondhand from a secondhand shop and we would be able to purchase this at approximately \$150 (£75.00) and we carry this guitar as luggage so that no freight would be chargeable (or payable), am I right in assuming that I could import this guitar at the value shown on the shop receipt, without reference being made to the selling price in the UK? Again, Ken Ross should accept that a private individual can make a profit in this country.

Points (c) and (d) mentioned above are, of course, the most difficult as far as importation is concerned as we may have no official proof of purchase. I am sure

that Ken Ross knows that the selling value (even in a Customs & Excise auction) would be no more than approximately £150.00 including VAT. So, the secondhand value in Britain would probably be approximately £130.00. Again, I would assume that I would be allowed to make 100 per cent profit as I have to import/carry this axe from America to Britain. That would mean that this guitar, excluding duty, should have a value of £65.00 for customs importation. Does HM Customs & Excise accept this valuation?

I am sure that many of your readers would be very interested to have some real figures quoted on an existing instrument, in this case, a Fender Stratocaster. If you think that 100 per cent profit made by British companies on an importation is not generally a realistic figure, then I can assure you that I have seen the invoice values quoted by Fender, Anaheim, USA, for the importation of their equipment into Britain.

Ken Ross makes the HM Customs & Excise appear to be the law in assessing the value of goods submitted for importation. HM Customs are quite willing, should an individual disagree with their valuation, to put his axe up for auction. But then, one would not buy an axe in the USA in order that it will end up on the HM Customs import desk! So tell me, how many individuals do not pay up?

I would like to give some advice to your readers. Try to get a written quote from a dealer in Britain, quoting the price he would be prepared to offer you, should you want to sell the axe you intend to buy in the USA. Once you have received this quotation, halve the price and this should then be the import value of the instrument you intend to import.

Ken Ross may disagree, but try it. After all, why should you have to pay more on import duty and VAT than does a Registered Company?

H.P.C. Roussard, M.I.E.X., M.S.Exe.,
Limpsfield Chart,
Surrey.

Ken Ross has promised to reply to Mr. Roussard's comments, but his letter has been held up in the Christmas mail. We'll publish it next month.

Do-it-yourselfers who are keen to embark on building a solid guitar are reminded of three IM offers. First, photocopies of individual articles in Stephen Delft's series are available at £1 apiece. Secondly, plans of the guitar's neck and body are on sale at £1.50, complete. And finally, for keen, patient guitar makers who are prepared to wait many months for the finished product, the whole series is being repeated in the new USA edition of International Musician: subscriptions cost £10.50 for 12 months, including postage. To avail yourself of any or all of these offers, send a cheque or postal order (payable to Cover Publications Ltd) to Ann Mear, International Musician, Grosvenor House, 141-143 Drury Lane, London WC2E 5TE.



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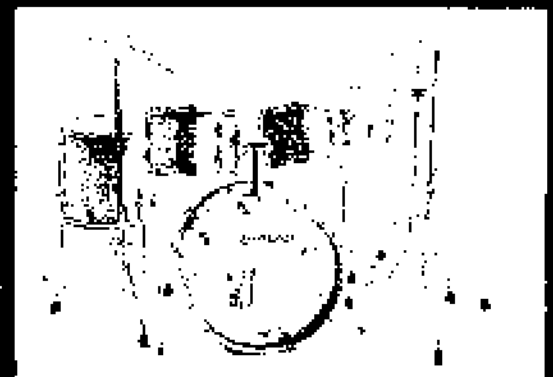
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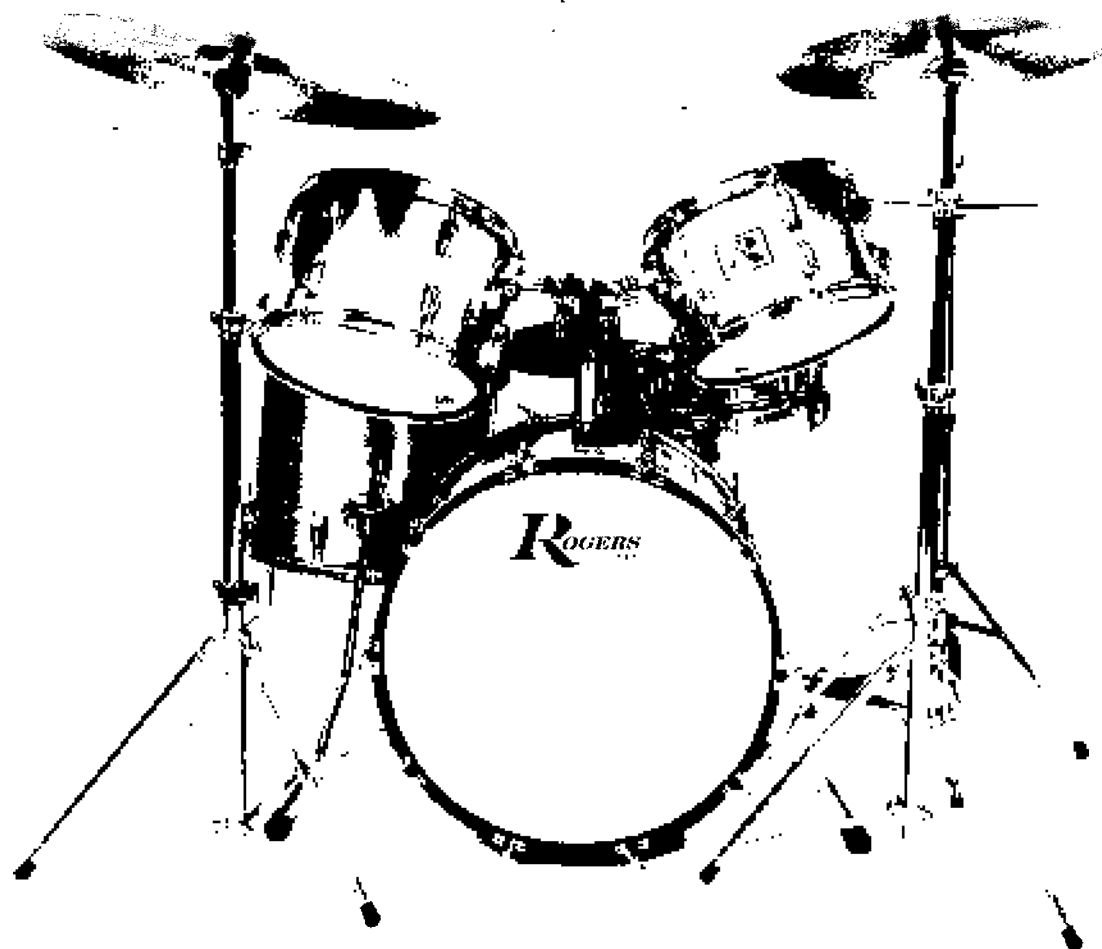
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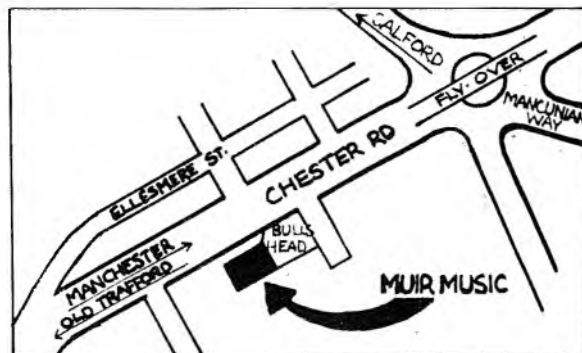
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I appreciate your help very much and I hope to hear from you.

Sincerely,
Mark Rochow

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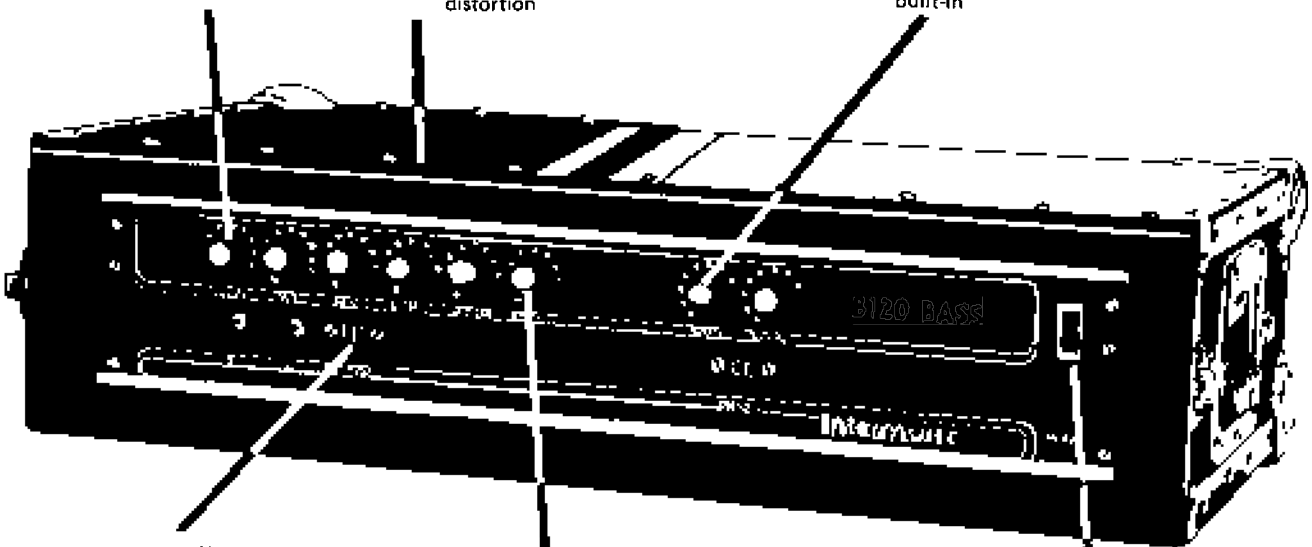
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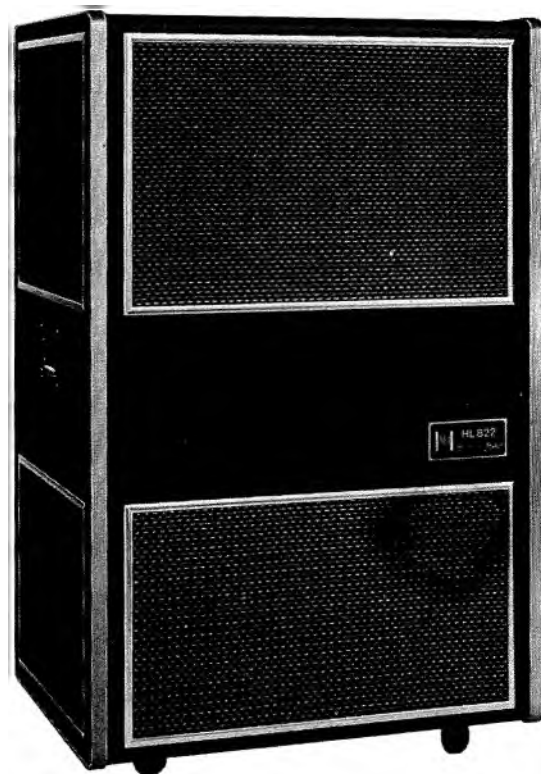


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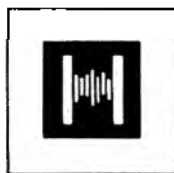
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MUSEX 78

SHOW REPORT



With their display of Roto-Toms and Fender guitars, CBS/Arbiter couldn't fail to make a big impression.



Olympic and Premier drums made a lot of noise on Premier's stand.



Quite a crowd gathered to gaze at the Electro-Harmonix range of pedals. With names like "Bassballs", it's hardly surprising. . .



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November 19th and 20th saw the music industry turning its spotlight on Liverpool. Hussy's Music Centre set up the Musex 78 show, at which the major manufacturers and distributors were eager to show their latest products to the North of England. IM's intrepid team was of course on hand to bring you the latest hot news.

Attendance figures were hard to calculate, but it is certain that over 10,000 people trooped through the doors of the Holiday Inn during the two days of the show. And, as the photographs show, the crowds found plenty to interest them.



Music men try out Music Man on the Strings & Things stand.



Yamaha's range of guitars and keyboards was undoubtedly one of the highlights of Musex 78.



Hobner Ltd displayed a wide range of guitars and percussion.



Punters were enraptured by Plug Inn's display of John Birch guitars.



Boss, Kramer and Roland — every one a winner on Brodr Jorgensen's stand.



As usual, HH aroused much interest with their amplification and PA equipment.



Our own very wonderful Richard Desmond chats to Dick Thomas from GMS, while Janet and Alan Andersson look on.



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This is the unit that simply 'speaks for itself' the Vocalizer goes one step beyond the voice box. By merely pressing down the pedal it produces all the vowel sounds AEIOU. The

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Bass guitar amplification

In my introductory piece on this subject a few months ago, I briefly touched on the topic of speakers and enclosures in relation to bass guitar. This month I would like to offer my thoughts and advice on the subject from within my own experience in this field, in the hope that it will help younger musicians, maybe still experimenting. There are two basic tips I can pass on to beginners. Firstly, whatever speaker cabinet or cabinets you're using, make sure they are in direct contact with the floor or stage. If they have castors or stands, remove them, and allow the whole bottom face of the cabinet to resonate against the floor. This way, the whole stage will also resonate in sympathy to some extent, depending upon its construction and the materials used. If it's one of those old-fashioned, high, wooden, box-shaped stages, you'll probably notice that your bass is providing a really deep, rich warmth to the sound of the band. This is because the stage is acting like a huge extension baffle to your system. If you are using more than one speaker enclosure, and like this effect, I find it best not to stack them, stage area permitting of course. The size and volume of the stage obviously has a large bearing on this. If you're unlucky enough to have to play on a stone or concrete floor, your speaker cabinet will get no help, and its own acoustic and "throw" capabilities must suffice.

My second tip may seem a surprising, but hopefully welcome one, especially to beginners. If you're working small gigs, or doing generally lower volume work, it's not necessary to spend money on expensive, high power handling speakers. To get the best out of a speaker, and make it sound good, you have to drive it fairly hard, and make it *work*. It follows that if you fit high power handling speakers in your cabinet, you will probably be disappointed with the sound produced at the realistic volume in which you have to work. An uninspiring "gutless" sound will probably result, and even if you turned up, it's likely that your cabinet would not have been built to handle the extra volume and vibration and would probably end up creeping across the stage and ending up in the orchestra pit. I must stress that I'm not talking about "quality" here, but pure power handling. Many of the better makes of British bass speakers designed to handle, say, 50 to 75 watts are perfectly adequate for your type of work and, treated respectfully in both performance and transportation, should give a long and trouble-free life.

The choice of speaker sizes and enclosure design open to the bass guitarist is extremely wide. When choosing, individual taste and experience are the most important factors on which to base your final decision. It also depends on the type of work you're doing, with regard to musical style, and the average size of the venues you're working. In an earlier article, I suggested that for larger halls, up to the biggest concert situations, a combination of 4x12" front facing speaker cabinets, for cutting punch and immediacy, in conjunction with Acoustic 18" bin enclosures for depth and "throw", provide a powerful and pleasing, full range bass sound to my ears, and to most of the

audience in a reasonable position in relation to the stage. I am disregarding the PA aspect of bass amplification at this stage, and will deal with it fairly extensively at a later date. Also my opinion is coloured by the type of rock music I have been involved in — with Argent, Phoenix and the Kinks — which definitely veers towards the heavier rock category. But even so, I feel this sort of combination offers a versatility to project the majority of rock bass guitar sound concepts required, from sizeable "concert" situations upwards.

Some of my contemporaries prefer different enclosures for the job, notably the Ampeg 8x10" cabinet powered by the SVT amp. This is also a highly effective rig in its own way, with the front-facing, small 10" speakers punching out the more middle frequencies, and the acoustic properties of the large deep cabinet design providing depth to the overall sound. This is a different, but undoubtedly valid, bass sound projection concept, from the Acoustic horn-loaded bin design, with its single 18" Vega speaker, for this reason.

In huge echoey halls, with hard surfaces everywhere, and therefore often diabolical acoustics for rock music, the instrument that suffers most is the bass. All the low end just gets lost and it's impossible to hear any definition between the bass notes if you use much bottom. The middle frequencies cut through much more acceptably, and if you're driving the cabinet pretty hard, warmth and depth will be added in some measure by the resonance of the enclosure. In this respect the Ampeg cab works well, with its 10" speakers seemingly practically suited for the job, so again it's all down to personal preference. I prefer to drive an 18" Acoustic bin hard, with dominant middle tone settings in this situation, to obtain a similar, but more pleasing result to my ears, even for the less heavy jazz-rock sounds. The 18" speaker provides more "guts" to the middle, and the internal design of the enclosure gives more "throw" to the resultant sound.

In much smaller venues like clubs or pubs, I feel it's advisable to steer clear of using the larger bin or folded horn type of enclosure because of their "throw" properties. In other words, in small rooms especially, it's important that your internal balance with the other musicians is similar to the overall sound audible in the hall, and this is often not the case when you use a bin. I have always felt that this type of enclosure was designed to project the bass frequencies of an overall PA mix great distances, to the further reaches of a large venue, rather than provide an ideal bass guitar sound to both the musician and a smaller contained audience, where the PA is used mainly for vocals alone. On stage, you may feel you are playing at the right volume, with a tone setting selection that gives nice definition between the notes. But a few feet from the stage, quite often, all that's audible is a horrendous rumble, and at the back of the hall, an overloud, muddy, deep bass drone is annoying the customers.

The danger here lies in the fact that the deeper bass frequency sound waves are still forming as they pass you by, so you don't hear them. A few feet into the audience



they become audible as the wave finally forms, and can easily be way above the balance of the other frequencies that you are hearing in much closer proximity.

I'm not suggesting that this is always the case, because with a top class rig like Acoustic or Ampeg (Ampeg also manufacture a 2x15" folded-horn bin) the superior amplifier and tone circuitry thereon allows you to filter out the unwanted frequencies, especially with the graphic facility on some of the Acoustic models. In experienced hands, this type of equipment can be effective anywhere, but it is extremely expensive, and in my view not worth contemplating in the earlier stages of a musician's development. In the smaller clubs or pub gigs, I still prefer a conventional single 4x12" cabinet containing decent 12" bass speakers, such as Celestion or Fane.

All 4x12" cabs look the same, just a box really, but the quality and thickness of the wood of the casing and the baffle all have a bearing on the acoustic properties and resonance of the enclosure, plus the nature of its construction, as with an acoustic guitar. It must have enough rigidity to avoid any rattling of any of its joints or fittings, but at the same time exude a warm resonance in sympathy with the speakers. I have found the Marshall or Hiwatt cabs of this type about the best. They seem slightly larger than most of the rest, and maybe the extra internal volume, allowing slightly more movement of air, has a bearing on this. The even larger 4x12" cabs available such as the Fender, I feel lack the punch of the aforementioned. These units allow you to hear yourself clearly on stage, and at the same time the 12" speakers' frequency response and the limited "throw" characteristics of the cabinet project acceptable, clear, punchy bass guitar sounds to the majority of the audience in a smaller venue. Front-facing 15" speakers can also sound good in the right enclosure in either 2 x 15" or 4 x 15" form. As long as they are front-facing on a conventional baffle, in a cabinet which is not too wide and deep.

The use of a combo for bass is not ideal because of the obvious disadvantage of the vibration of the speaker enclosure, directly affecting the amp. Also, in transportation, you're more likely to drop to bash a large, heavy, piece of equipment, with the likelihood of damage to any build-in electronic circuitry more acute than if it were housed in a separate small box.

In a future issue I'll attempt to cover the various available designs and concepts of bass speaker cabinet enclosures, with diagrams as well as information.

Jim Rodford



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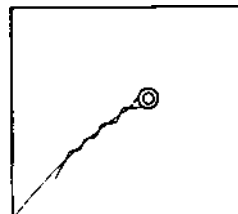
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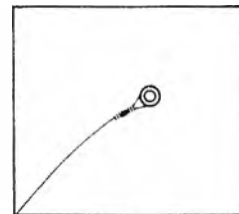
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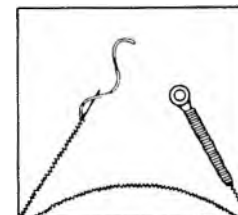
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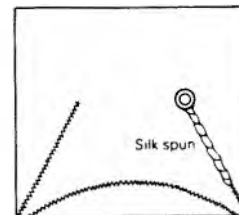
Usual method



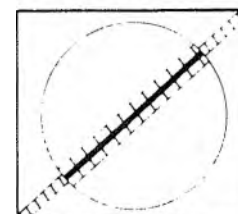
Sounder method



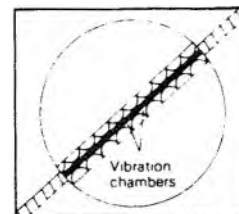
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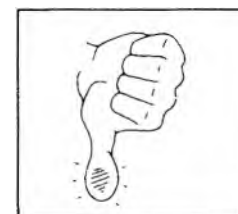
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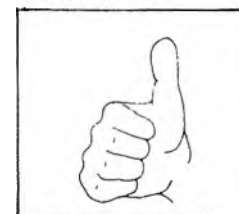
Usual method



Sounder method



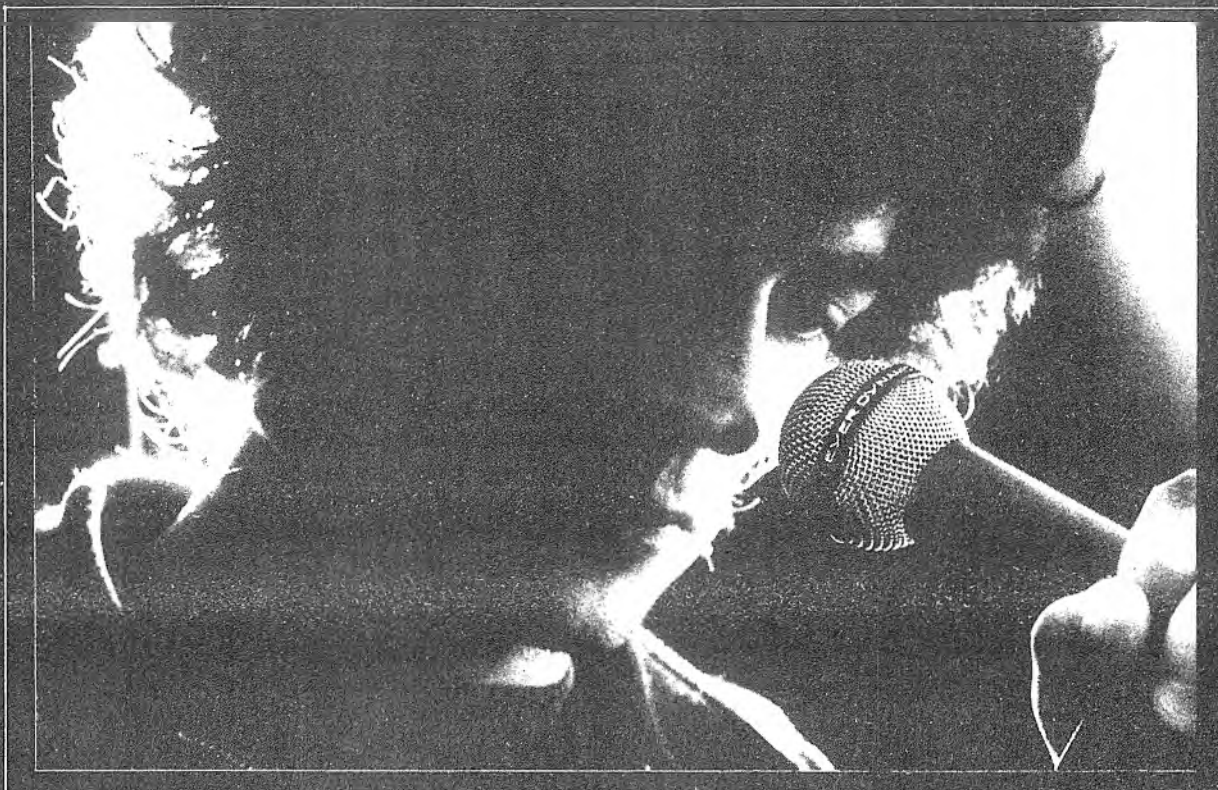
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Sounder result

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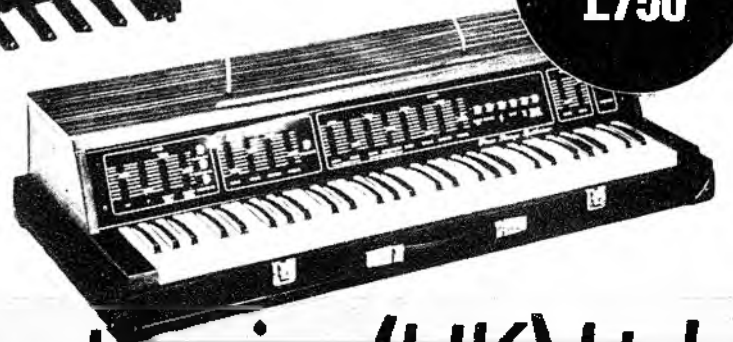
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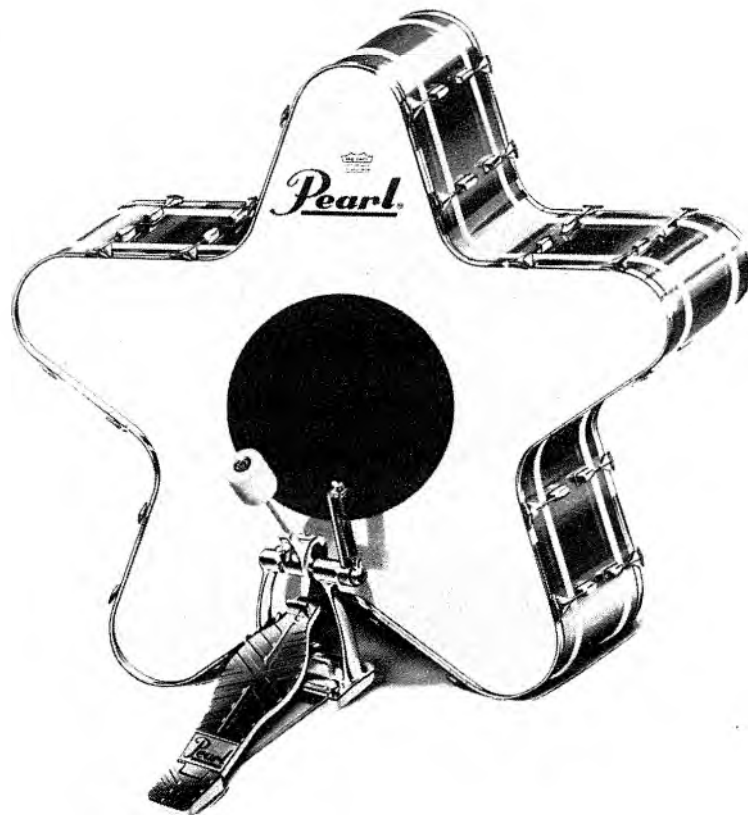
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LEADING LIGHTS

A Surbiton success story

Surbiton in Surrey is an unlikely setting for a export success story, particularly one in the music business. Yet for many European dealers, the typical London suburb means Cerebrum — and the very best in lighting.

Cerebrum Lighting, as the name might suggest, had its origins in the heady days of psychedelia in the late Sixties. The company's founder, John Lethbridge, had spent three years involved in light shows, but turned to making up strobe kits and selling them when he found himself on the dole. In 1970 he went into the business professionally and has since gone from success to success.

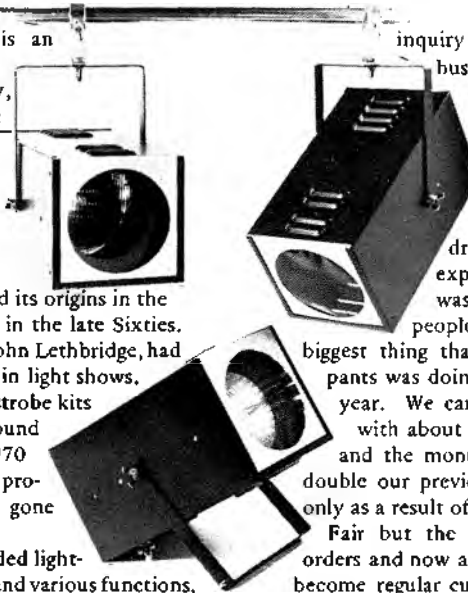
Originally, John provided lighting for small bands, discos and various functions, going out himself with the hire gear. Gradually, the business changed to become more involved in the selling side of things until the company are now one of the foremost suppliers of lighting in Europe.

Cerebrum actually bridge a very important gap between the companies who manufacture the equipment and the retail outlet to customers. John says: "We only manufacture our own range of spotlights and our own strobes. We are exclusive distributors for a range of stands called Powerdrive and we're also official distributors for Genie hoists and super towers which are used by most of the big lighting companies.

"We just distribute for the importers into this country into the entertainment market, because the importers are really in the building trade side of things. Basically we are buying from about 30 other manufacturers. It covers everything from disco projectors around the £20 mark up to Bank Strand CSI follow spots at £650 a time. We are the only people in England, as far as I know, who have them in stock — even Rank Strand don't do that.

"We have just received 50 of a new laser which sells at £800 a time. That's the sort of market we are into now, large value items. What we have specialised in over the last couple of years is the fact that we stock things that are long delivery from the manufacturers. A lot of the things we carry here in stock like the follow spots are 12-week supply from Rank Strand. So people come to a wholesaler like us and can get it at the same price off the shelf."

The real breakthrough for Cerebrum came about 18 months ago in the export market. Until then they had been dealing with the odd



inquiry from abroad, but their business was centred mainly on Britain. Now foreign orders account for around 80 to 90 per cent of the Cerebrum output.

John explained the dramatic success of their export drive: "Initially, it was small orders through people seeing our ads, but the biggest thing that gave us a kick in the pants was doing the Frankfurt Fair last year. We came back from Frankfurt with about £15,000-worth of orders and the month after that was almost double our previous record month. Not only as a result of the orders we got at the Fair but the following week-to-week orders and now a lot of those people have become regular customers buying from us every month.

"We are probably supplying about 30 music shops in Germany with lighting and one of the reasons for this is that some of the manufacturers that we distribute for have got exclusive agreements with a particular dealer in Germany. They aren't able to sell to any dealers in Germany other than their appointed agents, so the dealers end up coming to somebody like us.

"People definitely are mainly buying their effects lighting from Britain, also from Spain and Italy now for some of the low voltage fittings. On the projection side even the States seem to look to Britain, the Americans don't seem to be making things as well as the British companies."

The success of the company can also be

measured in the way that the premises has expanded. Just over 12 months ago Cerebrum Lighting occupied just the ground floor of a shop in Chiltern Drive, Berrylands, in Surbiton. Now the business covers all three floors of the building, with stock on each floor and in two garages as well.

Because of the volume of orders, Cerebrum has now also expanded to a new building across the road. This provides an additional 1500 sq. ft. of storage space for both new and hire stock and John hopes to have a second similar building in the near future.

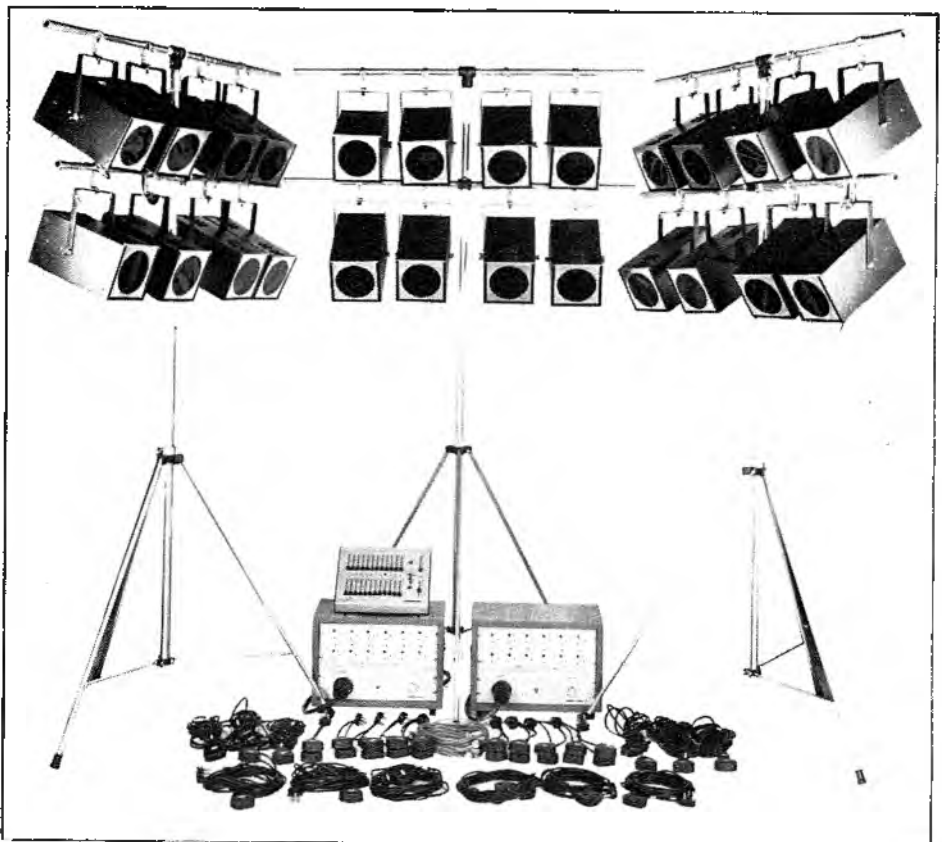
Having been part of the great lighting boom since its inception, John has seen all the changes within the business. "Initially it was a real creative thing, everyone was working at their own ideas for visual effects. Then it developed into pretty much a mass consumer market which has made it a little boring over the last few years. However, I think with the advent of lasers now it's going to get back to a more creative thing again.

"We've been doing one disco laser and now we've got the new one which is fully programmable. It is the first time that anything like that has been available for under £1,000. It's going to retail at £800, and basically it's like a synthesizer.

"It's a bit like a little EMS synthesizer with about 42 controls. These just vary the way the scanner mirrors move so you can do all sorts of spiral scopes with it, various circles and figure eights turning on their axes. It's got things like slow oscillators, and you can put a sound source into it and make it modify the patterns."

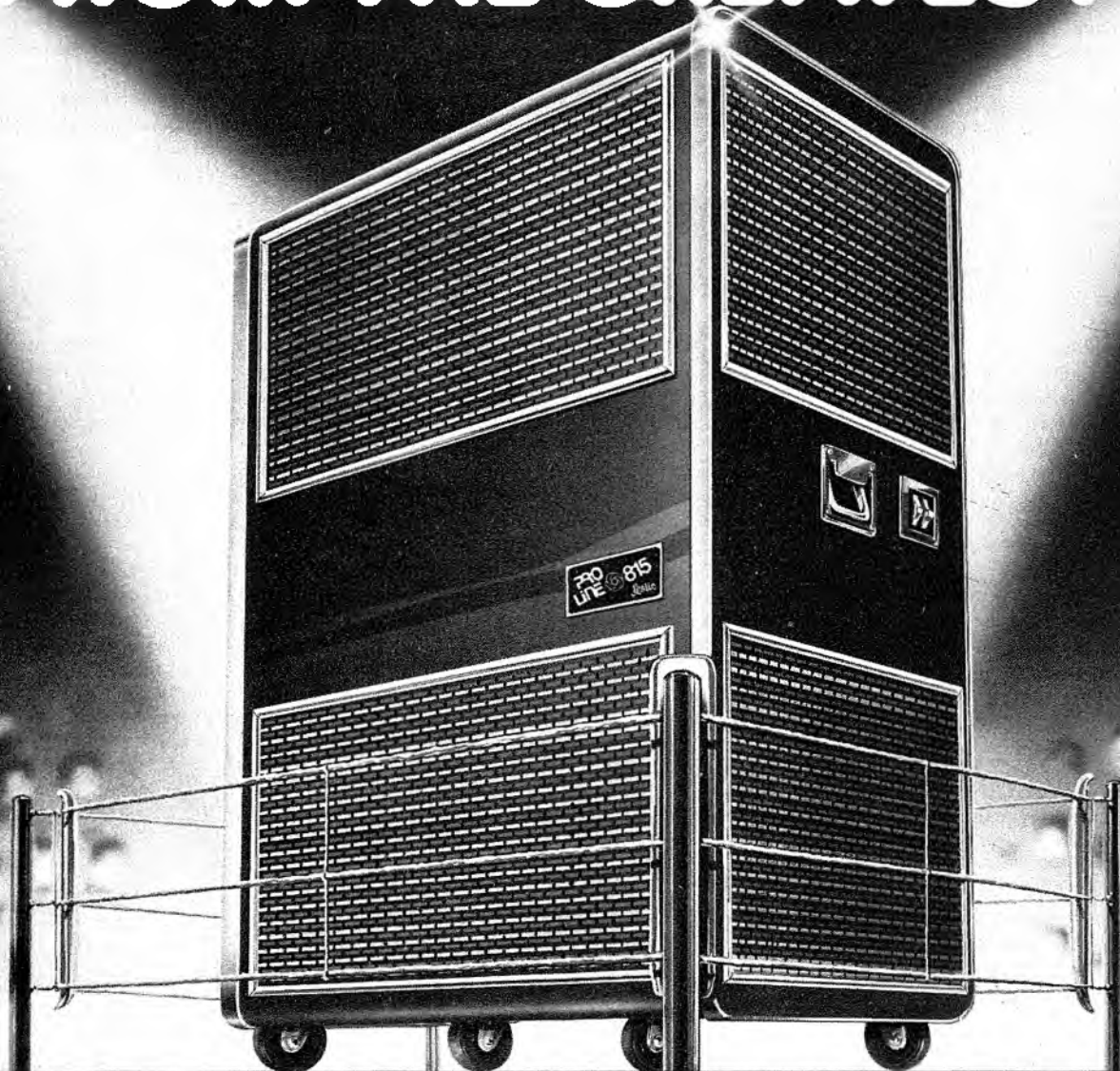
Whatever the developments, you can be assured that Cerebrum will always be leading the way and prove a guiding light in the business.

David Lawrenson



Left: £650-worth of follow spot. Above: Powerdrive stands.

THE LATEST FROM THE GREATEST



Pro-line 815 – from Leslie, the leaders in speakers. It pumps out 215 watts RMS of Discrete Quadrasonic Amplification but there's nothing discreet about this one – there's quality in the sound and it hits you. Hearing is believing but how's this for a whole bunch of features:

- Solid state, 2 channel bass-reflex speaker system.
- Stationary channel has a specially treated 15" woofer for pedal and bass tones and three matched 6x9's at front and sides for a wide spread of mid-range and treble frequencies.
- Sound in Motion rotary channel has 2 rotors.
- High compression treble driver and rotary horn for the upper range.
- Newly designed Rotosonic drum for the lower range.
- 4 separate volume controls and treble response sliders; create your own response curve!
- The 4 amplifiers virtually eliminate pedal keyboard intermodulation "garble" to give a superb, clean top-quality sound.

So go along to your Leslie dealer for a try out and he'll take you through the whole bit.

PRO LINE  **815**
Leslie
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M/H DC112	E118	Peavey Artist Combo	E347	Reart 50w Combo, new	E189	E375
M/H Pro 160	E128	Peavey Classic Combo	E250	Reart 100w Valve Head, new	E149	E255
M/H Pro 150	E158	Peavey TNT BASS COMBO	E159	Orange 100w M.V. Head, new	E180	E255
M/H Pro 208	E180	Peavey Backstop 30 Combo	E95	Orange 120w M.V. Head, used	E185	E250
M/H R15 Amp, used	E295	Peavey Standard P.A.	E225	Carlsbro Scepter Combo and ReV, used	E195	E375
M/H VS Musician Combo	E245	Custom Sound trucker P.A. & reverb	E148	Randall 100w 2x10 Combo	E250	E325
M/H VS Musician Combo	E267	Custom Sound trucker cabs and horn	E75	Musman 130w Combo, new	E500	E180
M/H R12 Cab, new style	E189	Custom Sound trucker combo	E100	Sound City 50w P.A., used	E75	E169
M/H R25 Cab	E204	Marshall Monitor Combo	E95	Wem P.A. 100, used	E50	E275
M/H Bass Combo	E245	Marshall 4x12, used	E75	Wem ER40	E45	E110
M/H Bass Combo, new style	E267	Marshall 4x12, new style and straight	E149	Carlsbro Mini Sine, used, pair	E225	E130
M/H VS Musician, 100	E189	Marshall 100w M.V., new	E210	FAL Bass, each (new)	E120	E375
M/H VS Bass, top	E147	Marshall 50w M.V., new	E159	FAL 12 into 2 Mixer, new	E250	E135
M/H VS Musician Combo, as new	E225	Marshall 50w M.V. Combo	E249	Moore 180 Combo, new	E258	E375
M/H VS Bass Combo, as new	E225	Marshall 100w M.V. Jam	E190	Marshall Bass Amp, new	E210	E130
M/H Studio 50	E145	Marshall 2x12 100w Combo, new	E399	Keynote Vortex Rotary Cab 100w	E345	E375
M/H Studio 50 New Style	E160	Marshall 1 x 15 Combo, used	E95	Jennings Rotary Cab	E150	E135
M/H Digital Multi Echo	E264	Simms West P.A. 100, used	E95	Practice Amps horn	E150	E399
M/H 12 into 2 Mixer	E271	Simms West 2x12 and horns, used	E358	ABC 2R2 columns, 100w the pair	E110	E375
M/H 16 into 2 Mixer	E338	Seward City 18 channel Mixer, used	E335	Yamaha PA200 Mixer, used	E150	E375
M/H SM 200 Mixer Amp	E335	Yamaha PA200 Mixer, used	E159	Marshall 1x12 Powerball Cab, 100w	E110	E375
M/H Echo For Mixers	E159	Stek 2x15 and Horn Cab	E110	Orange 4x12, used	E250	E375
M/H 115 base as horn	E110	M/H Radial Home/S/H	E205	M/H Radial Home/S/H	E205	E375
M/H 12 into 2 Mixer	E159	M/H HC100 used	E213	M/H HC100 used	E213	E375
M/H 4 into 2 Mixer	E159	M/H 4x12, used	E156	Carlsbro Merlin P.A., new	E110	E375
M/H AP360	E159	Carlsbro Bass Combo	E250	Carlsbro 60w Bass Combo	E189	E375
M/H AP360 ex hire	E159	FAL 50w Bass Combo	E189	FAL 50w Bass Combo	E189	E375
Intermix. Combo reverb and phasing	E189	FAL 100w Combo	E189	FAL 100w Combo	E189	E375
Maine 108 Amp, used						
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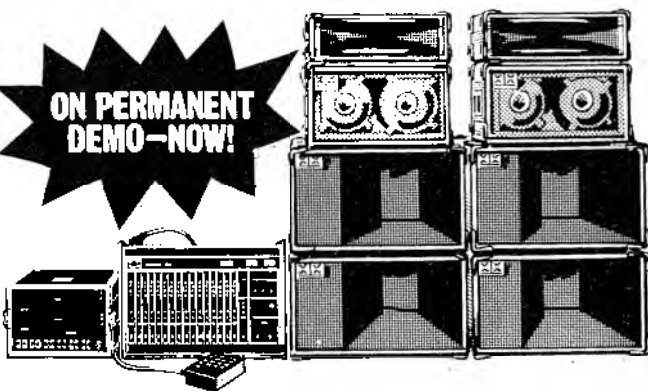
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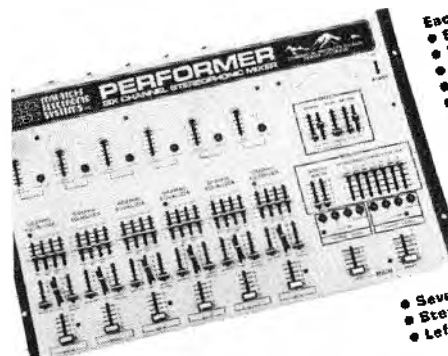
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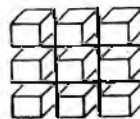


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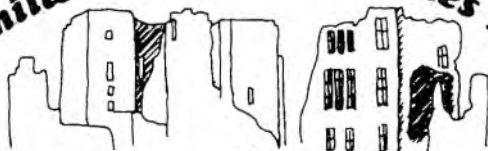


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For the past three years we've been telling you about the benefits of using graphic equalizers; now we've made it even easier to appreciate them. Introducing the MXR Dual Fifteen and Thirty-One Band Equalizers. Two equalizers designed with the imagination and understanding to solve your toughest equalization problems. Designed for use in either studios or sound reinforcement situations, our new eqs offer features not previously available at any price.

The Dual Fifteen Band Eq features two channels of equalization with the bands set two-thirds of an octave apart. By breaking the frequencies down further than conventional octave equalizers, you now have the flexibility to contour your music with much greater selectivity. As most musical information occurs in the midrange, this is where you need even more definition, and the Dual Fifteen Band Eq gives you six bands of contour in this area rather than the usual four. In addition, each channel has its own level control.

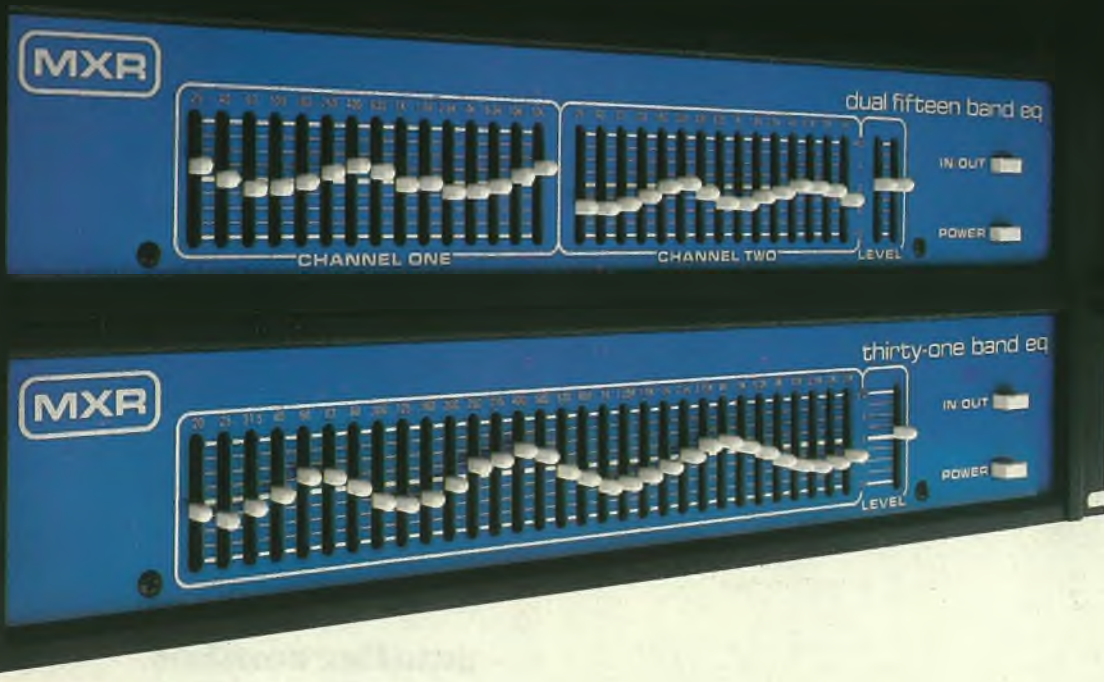
The Thirty-One Band Eq divides the frequency spectrum even further. A single channel unit, the Thirty-One Band features frequency bands set one-third of an octave apart, generally regarded to be the optimum amount of resolution.

When used in conjunction with any PA system, our equalizers can make a bad environment sound good, and a good performance sound great. Unlike parametric equalizers, the frequency response change is immediate and easily visible, so that when you shape a response curve you know what it's going to sound like.

Both units feature a range of -12 to +12 decibels on each band, standard 19" rack mount, and the rugged construction you always get with an MXR product. Both units also feature phone plug input/output connections, (the Thirty-One Band also features Cannon type XLRs), high slew rate (7V/microsecond), and incredibly low noise (better than -90 dBm). But not only do we offer great specifications, we produce great ideas... you wouldn't expect any less from us.

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	R.R.P.	Our Sale Price
E.Q. Tone System Models		
2700 Artist E.Q. - neck thru' body construction, with power supply	598.29	525.00
2700 As above, without power supply	541.38	485.00
2622 Artist E.Q., inlaid (similar to 2619 Artist model)	571.48	495.00

All above models feature 3-band Tone Equalisation and include metal flight cases. We are expecting deliveries of new Musician MC400 and MC500 E.Q. models in early January '79. Watch out also for new 'Studio' series ST200 and ST300 with 2-band E.Q.

'Artist' Series

2710 Neck thru' body (same as 2700 but without E.Q.) (in sound w/ups)	508.88	450.00
2619 Inlaid, tri-sound pickups, mahogany	422.22	350.00
2617 Inlaid, super 80's, ash body	377.09	335.00
2618 Mahogany, no inlays, 24 frets	374.50	335.00
2616/17 12-string mode of above	397.33	345.00
2640 Twin neck, 6&12, tri-sound	747.50	650.00

'Artist' Semi-Acoustic Thinline

2630 Stereo, inlaid, tri-sound pickup	408.83	325.00
2636 Mono, inlaid, tri-sound pickup	396.44	325.00
2629 Mono chrome parts, no inlays	376.22	P.O.A.

'Artist' Jazz Guitars

GB10 Semi-'George Benson'	650.75	585.00
GB20 Larger model - expected soon	695.00	P.O.A.

New 'Musician' Series

MC300 Neck thru' body, tri-sound pickups with gold plated parts	511.05	275.00
MC200 Neck thru' body, (fewer than 2700) chrome parts	281.18	225.00

Kramer

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DMZ 1000 2 super distortion pickups, natural finish	480.00	P.O.A.
DMZ 2000 2 DiMarzio dual sound pickups, natural finish	495.00	445.00
DMZ 3000 3 single coil pickups with 5-way switch - one helluva fat Strat! (Natural or black)	429.00	385.00

650 Guitar Artist, inlaid finger-board	587.00	525.00
450 Guitar Deluxe, 2 humbuckers	435.00	395.00

See Bass Guitar section for Basses

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Gibson Les Paul Standards	from 485.00	
Gibson Les Paul Deluxe	from 435.00	
Gibson S.G. Standards	from 395.00	
Hammer HS1 Explorer model	1,300.00	895.00
Hammer HCS1 Crown model	700.00	585.00
Hammer HDS1 Dot model	650.00	545.00
Fender Strat M/N with trem	from 350.00	
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Fender Strat M/N with case, less trem	from 250.00	
Fender Telecasters R/W and M/N	from 295.00	
Fender Tele Customs	from 295.00	
Fender Tele Deluxes - 2 humbuckers	from 325.00	
Guild S300AD ash body, D14 pickup	439.75	375.00
Guild, Hank single DiMarzio pickup	299.35	245.00
Guild sunburst, 2 DMZ single coil pickups	299.25	265.00
Yamaha SG 2000, amazing sustain	675.00	495.00
Yamaha SF 1000, b-sound	375.00	295.00
Yamaha SF 700	325.00	265.00

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Yamaha SF 500	285.00	P.O.A.
Music Man Stingray Guitar	433.00	375.00
Music Man Sabre II Guitar	389.00	325.00
Peavey - the new T60 guitar inc. moulded flight case		275.00
Aria PE 1000 Pro II, fitted neck	324.40	289.00
Aria PE 500 Pro II, gold parts	239.80	215.00
Aria PE 460 Pro II, phase switch	239.80	215.00

We always carry a selection of second-hand guitars, see our Monthly Maker advertisements for details.

KEYBOARDS

Our keyboard showroom has an enormous selection of synthesizers, electric pianos and string ensembles.

ELECTRIC PIANOS

Yamaha CP70B electric grand	2,050.00	2,565.00
Yamaha CP70 electric grand S/H		P.O.A.
Yamaha CP30	975.00	750.00
Yamaha CP20	725.00	P.O.A.
Fender Stage '73		P.O.A.
Wurlitzer EP200		549.00
Hohner Duo pianet & clavinet	772.95	650.00
Hohner pianet	345.88	275.00
Roland EP50 piano	637.00	499.00
Crumar 'Roadracer' with phase	345.00	295.00
Hohner K1 - excellent value	312.55	225.00
Roland - new MP600 piano	655.67	P.O.A.
Hohner K2 piano & strings	595.75	495.00

String ensembles and other keyboards

ARP Omni 2	1,598.67	1,150.00
Roland RS50b	991.88	895.00
Salina strings		P.O.A.
Roland Jupiter 4	1,499.00	P.O.A.
Korg Polyphonic Ensemble 2	995.00	795.00
Hohner K4 strings	368.30	250.00
Hohner K2 piano & strings	585.75	495.00
Hohner clavinet	539.85	439.85
Hohner String Performer	678.35	P.O.A.

SYNTHESIZERS

If you don't understand them, don't worry - we do! Come and try them out with no hassle - we sell out prior synth's, but give full price service.

Polyphonic		
Moog Polymong	2,999.00	P.O.A.
Moog Polymong keyboard	1,950.00	P.O.A.
Yamaha CS80 - 8 note, 2 channel	4,500.00	3,500.00
Yamaha CS50 - 8 note	1,950.00	P.O.A.
Yamaha CS50 - 4 note	1,200.00	P.O.A.
Roland Jupiter 4-note - probably the best value on the market	1,499.00	P.O.A.

Other Synthesizers

Oberheim OB1 programmable	1,350.00	P.O.A.
ARP Odyssey	1,096.47	P.O.A.
Roland SH7	1,063.14	955.00
Roland System 100, inc. 2 VCO's, sequencer and mixer	1,563.75	1,395.00
Moog Multimoog	716.00	645.00
Moog Micromoog	480.00	435.00
Moog Minimoog	950.00	850.00
ARP Axix	577.53	P.O.A.
Korg MS10 - New Generation	250.00	225.00
Korg MS20 - New Generation	450.00	395.00
Yamaha CS10	360.00	285.00
Yamaha CS30 - with sequencer	650.00	P.O.A.
Yamaha CS30L	735.00	P.O.A.
Moog Taurus bass pedals	499.00	450.00
Roland SH1	529.00	475.00
Roland System 101 expandable	552.32	495.00
Roland 102 expander for guitar synth or System 100	467.18	395.00
Roland 103 - 4 channel mixer	226.05	195.00
Thunderchild by Jeff Wayne Music		595.00
Wasp - beginner's instrument	318.20	199.00
Roland 104 sequencer	318.20	285.00
Korg Analog sequencer	350.00	315.00

Preset Synthesizers

Roland Jupiter 4	1,499.00	P.O.A.
ARP Pro DGC	1,017.00	795.00
Korg Micro Preset	315.00	285.00
Korg Micro Preset with speaker	349.00	315.00
Roland SH1000 and SH2000	675.77	539.00

We try to keep all the above synthesizers in stock at all times, but supplies are obviously short on some models. Please ring to check availability of current models before travelling any long distance (flight cases normally in stock).

BASS GUITARS

We have a good selection on display ready for side-by-side comparison.

Kramer 350B - one pick-up	385.00	345.00
---------------------------	--------	--------

Kramer 350B - left-handed		345.00
Kramer 450B - 2 pick-ups	460.00	415.00
Kramer 650B	545.00	490.00
Kramer DMZ 4000 - with preamp	540.00	465.00
Music Man Stingray	433.00	345.00
Ibanez 2626 Artist, inc case	435.10	345.00
Ibanez 2626 - left-handed expected soon		
Ibanez 2626 - fretless, inc case		P.O.A.
Rickenbacker 4001 - stereo	448.88	359.00
Fender Precision, M/N or R/N	from 295.00	
Fender Precision, fretless	from 325.00	
Fender Jazz, M/N		P.O.A.
Yamaha BB1200 - neck thru' body	475.00	395.00
Guild 8301 - 1 pick-up	299.80	265.00
Aria SB 1000 - amazing new 'bass with straight thru' neck and noise killer circuit. (Brass bridge and nut)	388.90	350.00

Budget-priced basses for beginners.

CSL Fender copy M/N	114.43	95.00
Aria Fender copy R/N	109.00	99.95
Aria sunburst, precision copy	156.00	140.00
'B3' 400		
Aria natural, precision copy	193.60	175.00
'B5' 500		
Aria fretless, precision copy	204.00	185.00
'PB500		

AMPLIFICATION

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combos for guitars and keyboards

Roland JC50A 1x12"	278.75	P.O.A.
Roland JC60 1x12"	399.00	319.00
Roland JC80 1x15"	425.00	340.00
Roland JC120 2x12"	509.75	399.00
Roland JC160 4x10"	575.00	460.00
Roland GA120 2x12" - 120 watt	475.00	399.00
Roland GA60 1x12" - 60 watt	345.87	275.00
Roland GA30 1x12" - 30 watt	179.95	145.00
Marshall 100 watt Master Volume	388.20	330.00
Marshall 50 watt Master Volume	277.70	245.00
Marshall 100 watt 4140 Country	412.50	350.00
Marshall 100 watt 2160 Rock 'n' Roll	342.35	275.00

Maine Musician 2x12" 120w	342.17	305.00
Maine Stage 2x10" 80w	269.61	245.00
Maine Club 2x8" 50w	199.00	179.00
Peavey Deuce 2x12"	389.34	375.00
Burman Pro 50 1x12" 50w	304.58	250.00
Burman Pro 2000 2x12" 100w	419.04	375.00
Burman - limited edition special		P.O.A.
MM Redmere (when available)	507.60	P.O.A.
MM Intermusic 100w reverb	255.96	225.00
MM Intermusic 100w 2x12"	227.88	195.00
Music Man 1x12" RD 65w	349.95	295.00
Music Man 1x12" RD 130w	449.95	395.00
Music Man 2x12" 130w twin	649.41	525.00
Music Man 2x10" 130w twin	558.49	450.00
Music Man 2x10" 65w twin	471.90	375.00
Lab Series 2x12" 100w L5	419.00	335.00
Lab Series 4x10" 100w L8	496.00	395.00

Mesa Boogie - please ring for models available.

HEADS AND CABINETS

Music Man 65 watt head	318.05	249.00
Music Man 1x15" cab	267.84	199.00
Music Man 430 watt head	402.63	325.00
Music Man 2x12" cab	318.06	249.00
Lab Series L2 head 100w bass	312.00	250.00
Lab Series L4 head 200w bass	389.00	315.00
Lab Series L11 head 200w lead	385.00	315.00
Lab Series 1x15" cab	153.00	125.00
Lab Series 2x15" cab	301.90	240.00
Lab Series 8x12" cab	525.00	420.00
Marshall 100mV head	241.85	199.00
Marshall 4x12" 120w	196.30	175.00

bass combos

Carlbro Stingray		coming soon!
Carlbro Cobra		coming soon!
Peavey TXO 1x12" 40w	165.66	149.00
Peavey TNT 1x15" 45w	226.00	195.00
Roland SB100 - unbelievable	605.00	545.00

smaller combos

Pignose Overdriver	65.00	65.00
Vox Escort - battery	43.12	35.00
Vox Escort b/mains	57.50	45.00
Fender Champ	85.25	69.00
Fender Vibro Champ	94.45	75.00
Custom Sound 45 watt	from 107.14	
Marshall 30 watt	171.10	145.00
Intermusic 50 watt	expected soon	
Intermusic 1mp 15 watt	69.63	53.00
Roland Cube 20	138.84	125.00

Hiand Cube 40	177.83	159.00
Roland GA 30 watt	179.85	145.00
Yamaha G 25 watt	155.00	125.00
Peavey Backstage 17 watt	103.78	89.00
Peavey Power 45 watt	184.14	159.00

Budget-priced electric guitars

We have carefully selected the following guitars from the hundreds of 'copies' on the market and we believe that, at the price we are offering them, they are the best value for money on the market.

CSL - 'Les Paul' copy	113.28	89.95
CSL - 'Strat' type with tremolo arm and maple fingerboard	138.00	110.00
CSL - 'Strat' type - natural	149.50	120.00
Aria PE110 - 'Les Paul' copy	159.60	145.00
Aria I S450 black L.P. special	190.95	175.00
Aria LS450 TB/S/B L.P. special	190.95	175.00
Aria LC550 AV L.P. special	219.70	195.00
Aria LS600 L.P. custom with phase and preamp	265.00	238.00

Aria ST400 - 'Strat' copy in white, black or sunburst	148.20	135.00
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Aria FA200 - wine red semi-acoustic	115.95	100.00
Aria ES800 - superb, 345, semi-acoustic	272.90	245.00

Special Offer

Ibanez PF100 'Performer' Series Most colours available	212.75
--	--------

Roland RE201 space echo	449.00	359.00
Roland DC 30 chorus echo	305.00	250.00
Roland DC10 echo	239.43	199.00
Roland DM1 pedal echo	158.56	135.00
WEM Copicats	104.00	89.95
Electro-Harmonix Memory Man	64.95	55.00
Moog 3-band parametric EQ	199.00	175.00

Gurian acoustics

We have a very limited quantity of these beautiful guitars. Each is handmade to perfection from the finest materials. You will be pushed to find anything finer for the price.

Bozo acoustics

As made famous by Leo Kottke. Now originally designed in America and made by Japan's finest craftsmen. All prices include deluxe case.

B80 standard model	316.25	250.00
B80-S deluxe model	442.73	350.00
B100 - beautifully inlaid	743.99	595.00

YAMAHA

Yamaha Jumbos - 20% off these best-selling acoustics:

6-string models		
FG330	73.00	58.40
FG335	89.00	71.20
FG340	101.00	80.80
FG345	116.00	92.80
FG350-W	125.00	100.00
FG385 - solid top	135.00	108.00
FG375 - solid top	165.00	132.00
12 string models		
FG312	93.00	74.40
FG412 - sunburst	96.00	76.80
FG512	125.00	100.00

Fender

Fender Jumbos - made in Japan to American standards - over 25% off R.R.P.!

6-string models		
F35	101.23	75.00
F65	128.85	95.00
F75	172.39	125.00
12-string models		
F55	125.22	89.95
F80	191.62	139.95

ACOUSTIC GUITARS

Jumbo and Folk

Guild

Still handmade in New Jersey, USA. Right from the ever-popular D25M through to the immaculate F50R, all Guild acoustics represent superb value for money.

D55, rosewood, inlaid	621.00	550.00
D50, rosewood	507.80	450.00
D40, mahogany, sunburst	394.20	350.00
D35, mahogany, natural	340.20	295.00
D25, mahogany or cherry	297.00	250.00
F50R, rosewood, inlaid	793.80	695.00
F40, maple	448.20	395.00
F30, mahogany	307.80	275.00
F20, mahogany, small body	243.00	215.00
F512, rosewood, inlaid 12-string	831.60	745.00
F212, mahogany, large body	534.60	475.00
F212, mahogany, 12-string	469.72	420.00
F112, small body 12-string	356.40	P.O.A.
Left-handed models in stock		
D50, rosewood	558.36	495.00
D35, mahogany	374.22	335.00
D25, mahogany	329.70	295.00
F50, maple, sunburst	712.80	625.00
F30, mahogany	338.53	295.00
F212, mahogany 12-string	504.90	445.00

Above are just a few of the models that we carry in stock. All 'D' guitars are Dreadnought shape, all 'F' guitars are of varying folk shapes and sizes. For details of Dreadnought 12-strings etc. please send for catalogue/price list. All models are available in sunburst or natural (sale prices normally relate only to current stock).

Cases for all above models 66.95 P.O.A.

B50 acoustic bass, fitted with hot dots, incl. carrying case, available for hire within London area or for sale.

Ovation

New lower prices on what are still regarded as the Rolls-Royce of electric-acoustic guitars for stage work.

E/A Custom Legend, stereo	999.95	799.95
E/A Anniversary	775.00	620.00
E/A Legend	635.00	499.95
E/A Glen Campbell 6	635.00	499.95
E/A Artist	539.95	425.00
E/A Custom Balladeer	520.00	399.95
E/A Applause	199.95	175.00
E/A Matrix	329.00	270.00

E/A Folklore	560.00	445.00
E/A Classic, stereo	639.95	499.95
E/A Country Artist	545.95	435.00
E/A Glen Campbell 12	695.00	555.00
E/A Pacemaker 12	649.95	435.00
+ just a few examples of the standard acoustic models		
Balladeer	355.50	285.00
Glen Campbell	449.95	350.00
Legend	475.00	375.00
Custom Legend	785.00	595.00
Matrix	239.95	189.95
Applause	169.95	135.00
Cases for all Ovation acoustics	89.95	69.95
Ovation type guitar stand	29.95	19.95

C.E. Martin

Possibly the finest investment around. We are expecting a delivery of the following guitars early January '79.

D18 - mahogany Dreadnought		
D19 - deluxe mahogany Dreadnought, stained top		
D28 - rosewood Dreadnought		
D28 - left-handed model of above		
D35 - distinctive rosewood Dreadnought with 3-piece back		
D35 - left-handed model of above		
HD28 - rosewood Dreadnought with beautiful herringbone binding		

We are proud to have been appointed London's newest Martin agent.

electro-harmonix

Effects pedals made in New York, USA - now in UK at Stateside prices direct from Chappell

SALE OFFER 1

If you buy E.H. units totalling over £250.00, we will give you, absolutely free of charge, an MXR noise gate line driver worth £64.00 and an amazing Electro-Harmonix 'Pet Light' - the latest USA disco sensation.

Newest Lines

E-H Vocoder - vocals and guitar	350.00
E-H 200-watt slave - too cheap!	125.00
Micro guitar synthesizer - interesting	130.00
Funky 12-rhythm box - inc. reggae	46.00
Full double tracking effect - ADT	38.50
Mix mixer (4-channel)	29.50
Electronic metronome - plugs direct into amp	6.00

New, unbelievable, lower prices

Memory Man deluxe echo + chorus	135.76	99.00
Memory Man echo + chorus	64.95	55.00
Echo, flanger + chorus	95.00	68.00
Electric Mistress deluxe flanger	49.00	39.00
10-band graphic equalizer	47.54	39.00
Clone Theory: jazz chorus + vibrato	37.67	29.00
Base Balls: envelope follower	37.67	29.00
Hot Tubes: gutsy overdrive	32.99	25.00
Doctor Q: envelope follower	17.00	13.00

Old Faithfulls

5X - simple mixer	3.00
Switch Blade - channel changer	5.00
LPB2 - power booster preamp	9.00
Hug's Foot - bass booster	9.35
Screaming Tree - treble booster	9.00
Little Big Muff Pi - AC/DC - distortion	12.00
Big Muff Pi	16.50
Slap Back Echo	20.50
Small Stone Phaser	22.50
Soul Preacher: clean sustainer/compressor	22.50
Deluxe Big Muff: sustain + distortion	34.00
Deluxe Octave Multiplier	40.00
Golden Throat: voice box	40.00

SALE OFFER 2

Sale offer 2: Buy any E-H unit or units totalling over £100 and we will send you, absolutely free of charge, an Electro-Harmonix 'Pet Light'. This unit heralds a complete new era in sound-to-light units, it is completely portable, battery run and has its own built-in microphone. Lighten up your act with Electro-Harmonix effects and their amazing 'Pet Light' £6.75 inc. VAT

Mike Matthews' 'Dirt Road Special' - 25 watt loud combo with built-in Small Stone phaser - superb value for money at our special price of £95.00

Please note:

In the past, some Electro-Harmonix effects pedals have had a reputation for being unreliable, should any effect that we sell become defective within one year of purchase, we will replace it free of charge by return of post if the unit is returned to Chappell & Co. Ltd. in its original box with your receipt/guarantee. In our opinion all Electro-Harmonix pedals that we sell are very reliable and excellent value for money. All prices quoted include VAT but exclude post + packing (please see separate order form).

Unfortunately we cannot guarantee that all items listed are in stock all of the time - obviously we sell items and it takes time to restock them, so please call us if you are intending to travel some way. We can always try and reserve an item for you.

EFFECTS PEDALS

MXR

	R.R.P.	Our Sale Price
Mains pedal flanger	149.95	115.00
Phase 100	119.95	85.00
Phase 90	75.75	60.00
Phase 45	65.00	40.00
10-band graphic EQ (mains)	112.00	80.00
6-band graphic EQ (battery)	64.00	50.00
Dyna comp (compressor/sustainer)	64.00	50.00
Noise gate (fuzz suppressor)	64.00	50.00
Envelope filter (auto wah-wah)	64.00	50.00
Blue Box octave divider	88.00	65.00
Distortion + overdriver	48.00	38.00

BOSS (Roland)

DM1 stereo delay pedal	158.56	135.00
CE1 jazz chorus	137.28	110.00
GE10 10-band graphic EQ	84.07	75.00
DB5 5-band EQ, distortion and attack changer	70.00	60.00
GE6 6-band graphic	52.15	45.00
PH1 compact pedal phaser	49.00	40.00
TW1 envelope filter	43.58	39.00
SP1 'Spectrum' tightens up sound!	39.00	35.00
OD1 overdriver	39.00	35.00
CS1 clean sustain/compressor	39.00	35.00
DS1 distortion/fuzz sustainer	36.41	32.00

All Boss effects pedals are quiet operating units and of professional quality.

Other effects units and accessories

Acoustix digital tuner	P.O.A.	
Acoustix phase five	P.O.A.	
Cry Baby wah-wah pedal	19.95	17.95
Top Gear volume pedal	14.95	12.95
20" straight guitar lead	2.10	1.89
20" coiled guitar lead	2.45	2.20
30" straight guitar lead	2.65	2.40
30" coiled guitar lead	2.95	2.65
Mail order strings (electric) - post free		
Ernie Ball extra slinky 008"	2.75	2.20
Ernie Ball super slinky 009"	2.75	2.20
Ernie Ball regular slinky 010"	2.75	2.20
Ernie Ball skinny ton, heavy hot	2.75	2.20
Gibson Rock 'n' Roll G740L	2.75	2.20
Gibson Rock 'n' Roll G740XL	2.75	2.20
Gibson Sonomatic medium	3.50	2.80
Gibson Sonomatic light	3.50	2.80
D'Addario XL110 reg. lite	1.99	1.55
D'Addario XL120 super lite	1.99	1.55
D'Addario XL130 X-super lite	1.99	1.55
D'Addario XL140 line 4 heavy	2.25	1.80
D'Addario round wound, long scale	9.99	7.99
- bass		
D'Addario half round, long scale	14.85	11.85
- s soft		

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 ext 136 or ext 122 for mail
 order details on larger items.

Please note: we have put as much information on products on this broadsheet as possible - should you require any further details please ring us (do not write) for special information and we will do our best to help.

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Ext 136

D'Addario half round, long scale, soft	14.85	11.85
D'Addario half round, long scale, regular	14.85	11.85
D'Addario half round, long scale, heavy	14.85	11.85
D'Addario half round, short scale, soft	14.85	11.85
D'Addario half round, medium scale, soft	14.85	11.85
(Acoustic)		
D'Addario Phosphor J15 X-lite	2.99	2.40
D'Addario Phosphor J16 lite	2.99	2.40
D'Addario Phosphor J17 medium	2.99	2.40
D'Addario Phosphor J41 X-lite 12	4.90	3.90
D'Addario J38 lite 12	4.90	3.90
Martin Phosphor extra light	3.45	2.75
Martin Phosphor light	3.45	2.75
Martin Phosphor medium	3.45	2.75
Martin Phosphor light 12	5.74	4.60

PICK-UPS

and Accessories

DiMarzio		Our Sale Price	
Dual Sound (humb. + single coil)	R.R.P.	31.95	25.55
Super Distortion		29.95	23.95
P.A.F.		29.95	23.95
Super II		26.05	21.55
Fat Strat		24.95	19.95
Pre-BS (Tele)		24.95	19.95
SDS-1		29.95	23.95
Model 1 Bass (EBC)		49.95	39.95
Model P (Precision)		39.95	26.95
Model J (Jazz)		comingsoon	
Mounting rings	long or short		60p
Hardware sets			70p

Full colour DiMarzio catalogue available on request

Gibson

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True Blues - L6 style	34.00	27.00
Laid Back - P80 style	36.50	29.00
Dirty Fingers - Black Beauty style	42.50	34.00
Gibson accessories		
Woven guitar strap		3.75
Woven guitar strap (wide)		4.25
Gibson bottleneck		1.00
50 pear-shaped medium picks		4.50

Mighty Mite

Screaming Distortion	21.50	19.35
Screaming Vintage	21.50	19.35
Above models available in cream, black, clear or cream + black - please state second choice of colour		
Screaming Strat	16.25	14.65
Screaming Tele lead	16.25	14.65
Screaming Tele rhythm	16.25	14.65
Screaming P. Bass	pair 25.50	22.95
Screaming Jazz Bass	19.00	16.95

All Fender model pick-ups available in black on request. Customise your guitar - we stock almost all Mighty Mite brass and chrome custom parts for Les Pauls, Strats, Teles and Basses. Free catalogue sent on request, but why not start with a brass nut for that amazing sustain?

Tele. Strat brass nut	4.80	3.95
P. Bass brass nut	4.80	3.95
Les Paul (wide or narrow)	5.40	4.95
5-position Strat switch	4.00	3.50
Light brass bottleneck	1.90	1.75
Extra large, heavy brass b'neck	3.75	3.35

Acoustic guitar pick-ups

Barcus Berry 1355 standard (T)	35.44	29.95
B-8 superboost pre-amp	20.84	18.75
B-3 Junior (T)	24.41	19.95
DiMarzio Acoustic II	42.95	34.00
DeArmond RHCB (M)	27.50	24.75
DeArmond 210C(M)	36.69	33.00
Beginners' model (M)		7.35
(T) = transducer system (M) = magnetic system		

All prices on this broadsheet include VAT and are current for the period December 27th 1978 to January 31st 1979 only. We reserve the right to withdraw any item listed.



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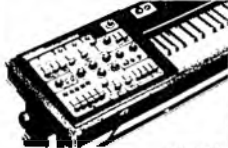
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BOOGIE-BASS £125

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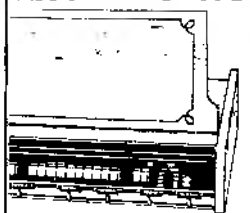
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Martin Rushent

Like it or not, the New Wave revolution has given rock music a welcome shot in the arm. It has thrown up new bands, new sounds, its own record labels, publications and, inevitably, its own producers.

One name which has cropped up on releases by the Stranglers, Buzzcocks, 999, XTC, the Rezillos and others has been that of Martin Rushent. In many ways, the success of Martin's career as a producer has been a direct result of his involvement with these new bands.

But he is no overnight sensation who happened to jump on a convenient bandwagon. In fact, unlike many producers who drift into the job after having tried other areas of the business, Martin wanted to be a producer from the age of 10!

An ardent Buddy Holly fan, he noticed the name of Norman Petty cropping up on the records. "I used to wonder what a producer was, and thought he must be the guy who gets it all together and organises it. From that point on, it had an appeal to me and I always wanted to be a producer.

"A lot of people drift into production from something else, but it's what I always wanted to do - although circumstances force you to do other things. I was in a band at school and we went pro for a year in about 1968 but it was a dismal failure. After that I was two years hustling to get into a studio and finally got taken by Advision. I even got that job by mistake because they thought I was someone else they'd interviewed. That was my break I suppose."

Then, as now, getting work in a studio was very much a question of persistence and hustling. Although a number of universities and technical colleges run courses for engineers, Martin insists there is no real substitute for on-the-spot studio training. He himself was turned down by every major studio at least three times.

"I spent about eight months as a tape op, then due to staff shortages and the fact that the studio was getting busier, I started to engineer. At first it was a nightmare, because you think you know it all when you stand by as a tape op and watch the engineer. Then when you sit down with 25 musicians, which was my first session, it just goes and all the knobs and dials seem to blur into one - but you struggle through it.

"I spent five years engineering at Advision, working with a lot of well known bands like Yes, ELP, Gentle Giant, T. Rex. And I did some stuff with the Stones and Zeppelin. It was all great experience but probably the best experience I ever had was



watching bad producers. The quickest way to learn how to be a good producer is to watch a bad one in action. It's slightly more difficult to learn from a good producer because they're so fast and confident there are no chinks to look through and say 'Oh, I see why he did that.' I found I learned more from the bad ones. Working with people like Visconti and Eddie Offord was great training too because they are so good. Visconti is a great talent, I did a lot of work with him. He's very skilful and a pleasure to work with, I admire him a lot. There aren't many other producers I can say that about."

Being an experienced engineer is one thing, but making the jump to producer is something else. Martin admits that this is the hardest step of all, although many of today's top producers, such as Roy Baker and Ken Scott, have made the transition successfully. The biggest problem is that artists find it hard to accept as a producer the person they have only seen engineering.

Determined to get into production, Martin left Advision to work as a freelance engineer, but also made it known that he was interested in production. The move was not exactly a great success: "Nothing of any substance was offered. I usually got the rubbish. Very often it was people who'd signed bands, been to all the top names who thought it was no good, realised they'd signed a bummer and got just anybody to produce them. I used to end up with that, and no matter how good a producer is he is only as good as his artist. If you are served up bum material you can probably elevate it from terrible to

bad, but that's the best you can hope for.

"I ended up building my own little eight-track studio in my house at Henley-on-Thames, to turn out my own records. I went into partnership with another guy, and the first band we signed were called Stretch. The very first record we made, 'Why Did You Do It', went into the Top 10. It was recorded in my garage! The only problem was getting money from it and unfortunately the whole thing fell apart in massive litigation.

"I was then out in the cold and broke, right back where I started, but I still wouldn't give up. I knew Martin David at United Artists very well, we used to work together on Shirley Bassey albums, and I told him I thought I had the talent but needed someone to give me a break. He suggested I join their A and R department because there would be production work as well as broadening my experience. It worked a treat. Andrew [Lauder, at that time UA A and R manager] and I had always got on well, he's a great A and R guy, and the combination of the two of us just worked.

"The first thing we got involved with was the Stranglers, then Buzzcocks and it all took off from there. If you speak to any A and R guy, he'll tell you that one of the major problems is getting together the right band with the right producer. I suppose I got one over on most A and R men inasmuch as usually when I'm gauging a band and deciding whether they could be successful, I'll get really interested if I think they're the right band for me."

"I was very fortunate inasmuch as▶▶

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RECORDING WORLD

it was that point in time when I was fired with absolute determination to succeed. I'd had all the experience with rock and roll bands and punk was just rock and roll, nothing fancy. I'd been going to gigs and kept in touch and I could see what was going to happen. Everybody around was saying, 'It's dreadful, there's no way', but to Andrew and me and other people, there was no way it *wasn't* going to happen. I got involved in it and believed in it passionately.

"I love rock and roll, and I really did think that music in the Seventies had just totally stagnated, there definitely was a dinosaur element. I mean, it's great to see that the New Wave has inspired some of what the punks call Boring Old Farts to get off their arses and do something better. Yes are a perfect example. Whether or not you like them, their last two albums have been streets ahead of the two they made a couple of years before. So it's made even those people go and do something. Anything that improves the quality of what we're doing has got to be worthwhile.

"If you go and see a lot of bands now that you thought were rough two years ago, they've come on so much it's unbelievable. Some of them have stagnated, it's true, some of them have got worse, but some of them are really good. I think it's the best thing that's happened to the business in years. If this hadn't happened, something would have given for sure - there were too many bored people in the music business."

It is all very well to be in the right place at the right time, but unless you have something worthwhile to contribute to a new phase in music the exercise would seem pointless. Martin had something very positive to contribute in that the sound which he was striving for coincided with the sort of music that the new bands were playing.

"The reason I originally built this small studio at home was that I did not like the sound I was getting in most of the majors. They were stone dead rooms with everybody screened off. Even if you took the screens away, the room was so dead it just soaked up all the sound, you couldn't get a rock and roll sound in there at all. They had been designed for what I term clinical engineers, the guys who write articles for 'Studio Sound', those sort of people. It's ultimate perfection in hi-fi - nothing to do with music at all. What good is 100 per cent separation if the sound you get at the end of the day is crap? What purpose



Martin Rushent: keeping his finger on the pulse

does it serve? The incredibly fancy consoles that are coming along have nothing to do with anything, that whole super technological area is just technology for technology's sake. I found myself surrounded by this stuff and you are constantly tempted to use it because it's there.

"It was mainly the acoustics of modern studios that I couldn't get along with so I built this really live room with concrete floor, plaster walls and wood ceiling. We got this raw, dirty sound and if you listen to the Stretch record now it's dirty. Although it's a soul-based record, if you listen to the sound it's not very different from what I popped up with 18 months later linked to the New Wave, because that was the sound I liked.

"It was all distorted and dirty but it made the adrenalin flow. I was lucky enough to find TW Studios in Fulham, which at that time was a dump demo studio but it had that sound. It had been thrown together with no consideration for acoustics at all and it sounded as raw as anything. And from that desire to get a much rawer, liver, dirtier sound and the type of music that New Wave bands were playing - raw and energetic - those two things gelled together. The Stranglers' recorded sound was their natural energy and that desire on my part to get a raw sound. That and a few little dabs of harmoniser, which we used in a way it wasn't designed to be used, gave birth to the Stranglers' sound."

Having made his name at United Artists producing New Wave acts, Martin left the company to fulfil another of his ambitions. He formed his own production company and built his own studio. This venture will

be closely linked to Radar Records, and therefore brings together again much of the successful UA team.

"Basically, we've put together in a slightly different form the original UA team which was Andrew, myself, Tim Reid, marketing, and Martin Davis - which is very exciting because it was from that team that a lot of success came. However good a producer may be, I think it's important that the company you are working for know what they are about. You may have the greatest record in the world, but unless it is marketed properly it doesn't happen and will just get lost. After all, there are 70 singles and 25 albums released every week."

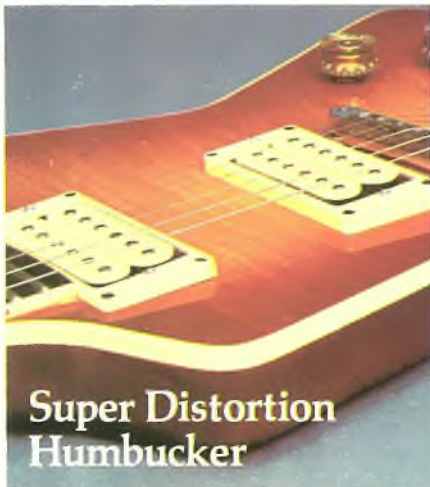
The key to much of Martin's success has been his ability to translate the sound and feel of the new bands onto vinyl. Keeping a finger on the pulse of what is happening is vital, and despite his success and the fact that the New Wave is two years old, he still believes in going to as many gigs as possible to keep in touch.

"I think any guy who is a producer or engineer, aspiring or otherwise, should be out on the street all the time. There's a tendency, particularly for engineers, to be very insular. They do work incredibly long hours so there is not a lot of opportunity to go to gigs but it's really important to keep in touch. Locked in a studio you can lose total perspective on what people want today, and you are usually making sounds that you wanted when you were out going to gigs. Things can change so quickly, so you should always be out there.

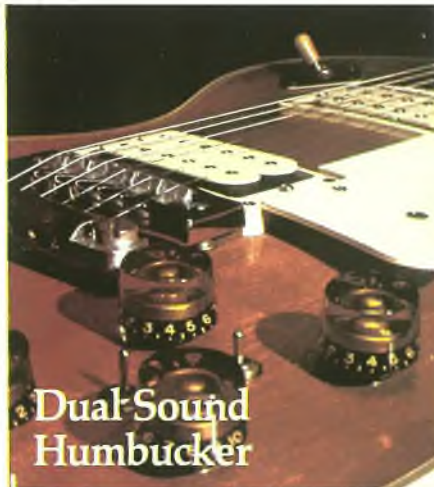
"There has been a change going on for the last six months. Whether it is going to happen in the way it happened two years ago, I don't know, but there are bands such as Pere Ubu, Pop Group and Red Crayola which have strong tinges of psychedelia in their music. Their sound is very brash and angular, offensive, it is not walls of guitars. Then you have bands like the Human League who are very synthesizer orientated, very mechanical sort of odd stuff. That is very definitely developing, and I hope to be able to work with one of those bands soon. How much commercial appeal it will have, I don't know, but out of that will come a new sound for me."

It is hard to combat rock music's built-in obsolescence, but the only way is to keep one step ahead - which is exactly what Martin is doing. With such a positive attitude the name Martin Rushent will be popping up on albums for a long time to come.

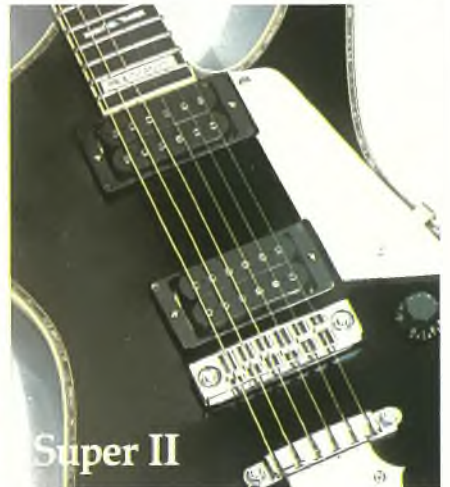
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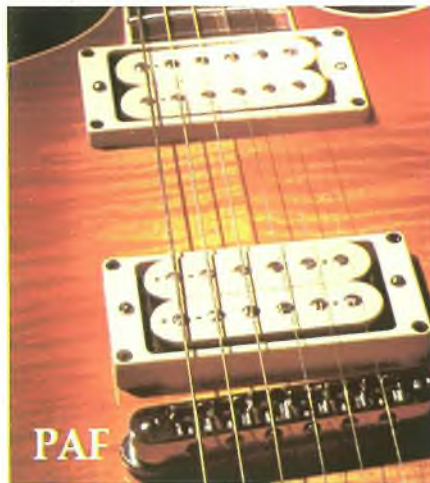
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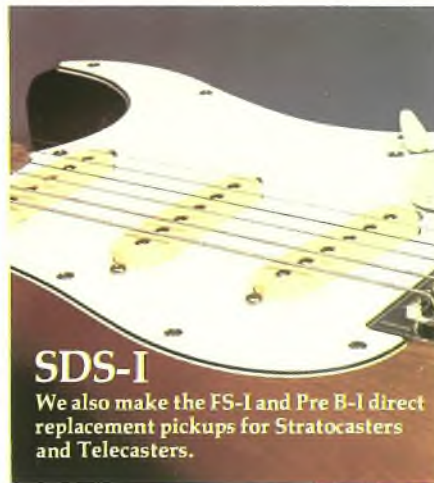
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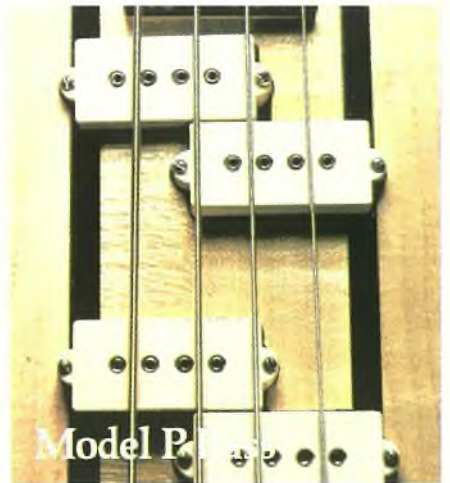


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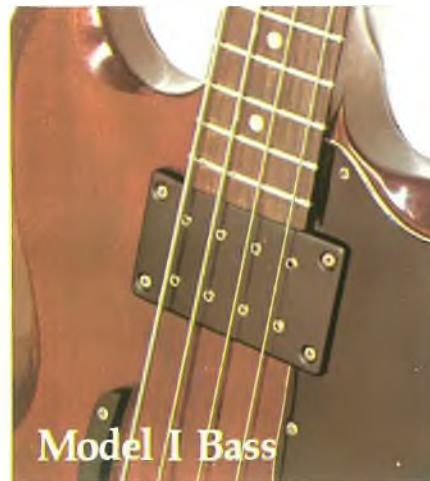


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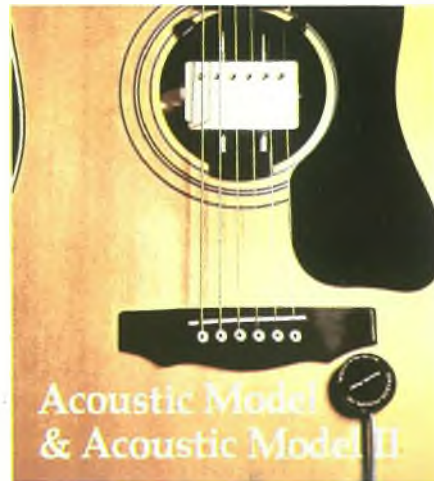
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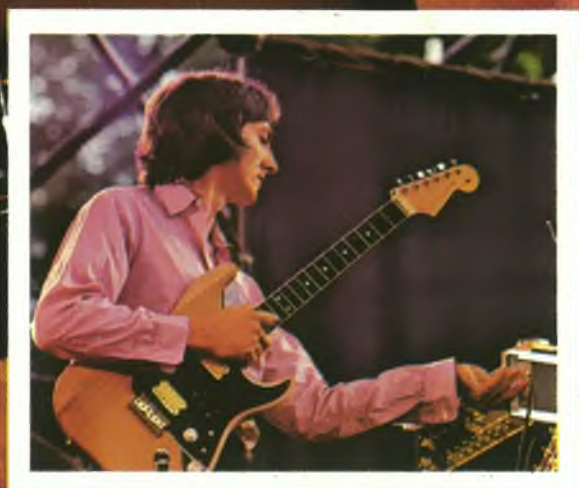


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ICC STUDIOS

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Technical Data

BM 16 track recorder with auto locate, 16 track & stereo Dolby A, MCI 28 into 28 mixing console ready for computer mixdown; Studer A80 8 track recorder, Studer A80 stereo recorder, EMT 240 stereo echo-plate, AKT BX 20 reverb unit. Eventide digital delay unit and harmoniser; UREI and A & D compressor/limiters; vocal stressor; Neuman, AKG, Sennheiser, microphones, Concert grand piano, Fender Rhodes electric piano, full studio drum kit. Use of comfortable artistes flat.

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ICC, Eastbourne

To most people, mention of Christian music conjures up visions of "Songs of Praise" and the Salvation Army. But over the past few years Christian music has developed into a kind of underground offshoot of mainstream popular music.

You may be surprised to learn that the movement has its own stars, its own concerts, its own record labels and even its own recording studios. One such studio is ICC (International Christian Communications) in Eastbourne, Sussex.

ICC began, like most other studios, with a four-track unit in a living room. The living room belonged to Helmut Kaufmann, an electronics graduate from Germany, who had decided to direct his talents into the Christian music field. His first recording on a Teac was called "Meet Jesus Music" which was voted the Christian record of the year.

This convinced Helmut that there was a real need for top quality recording facilities. Within 12 months of the initial recordings, an eight-track Studer A80 was installed in a mews in Silverdale Road, just off the Eastbourne seafront.

It would seem unlikely that a studio, particularly one outside London, could survive on Christian music alone. But ICC has done more than survive — it has expanded. The result is a new 16-track studio which can handle just about every recording need.

Helmut explains that the success of the studio is largely due to its atmosphere: "Atmosphere is so important. We've had people like the Yetties recording down here, and although they've worked in many other studios they really liked working here. It is important to have the right atmosphere when you are recording, and everyone who works here is dedicated to his work and to achieving the very best.

"Not only is there a demand for these facilities in Britain, but we have found that there is a need throughout Europe, particularly in France, Holland and Spain."

Although the studio has prospered by concentrating on Christian music, Helmut decided that the facilities should be made available to anyone who wanted to record there. A typical example is a freelance producer who lives locally and has worked for both CBS and Pye. As soon as he found out about the studio on his doorstep, he was in there recording.



Helmut Kaufmann (foreground) in the ICC control room with engineers David Aston (standing) and Andy Kidd.

The ICC complex houses three studios and cassette duplicating facilities under one roof. Studio One is a specially designed, purpose-built unit boasting a new Lyrec console which gives 16-track facilities, but with 24-track capabilities which should be introduced in the near future. Recording comes via a 3M M79 two-inch recorder with Sonaplan Autoclate and a Studer A80 Recorder for quarter-inch two-track and mono masters.

Additional features include Tannoy/Lockwood monitors, Dolby A noise reduction systems, Eventide digital delay unit and harmonisers, Universal audio limiters and graphic equalisers, Audio Design vocal stresser, Klark-Teknik graphic equalisers, EMT 240 stereo echo plate and AKG, Neumann and Sennheiser microphones. Studio One can accommodate up to 30 musicians.

Studio Two is of similar size and construction, with a custom-built console and an eight-track Studer A80 one-inch recorder, plus Studer B62 for quarter-inch two-track and mono masters. Studio Two also has Tannoy monitoring, BX20 stereo reverb unit, limiters and compressors with the usual range of top-quality mikes.

In addition to the main studios, there is a small studio equipped for radio programming, which is also suitable for drama/filmstrip soundtrack assembly. The studio can

accommodate half a dozen people for programme presentation, voice-overs and so on, and has stereo/mono capabilities throughout. The cassette duplicating service enables high quality stereo or mono copies to be made from tape or cassette masters.

Helmut uses his electronics background to full advantage, and is always on the lookout for improvements. A recent visit to one of the top Los Angeles studios alerted him to some of the latest technical innovations which will no doubt find their way into ICC before long.

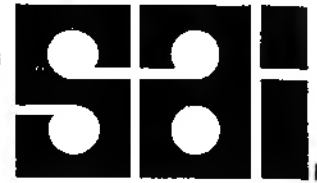
Resident engineers at the studio are Les Moir and Dave Aston. Les served his studio apprenticeship in London, while Dave is a product of the Eastbourne operation. Helmut stresses the importance of his capable and friendly team, which has contributed greatly to the success of the studio.

With so many studios to choose from, atmosphere and environment are so important to working musicians, and this is where the ICC set-up really scores. The studios are literally on the Eastbourne seafront — ideal for the artists who want to "cool off" between sessions. Next door to the studio there is a comfortable artist flat which can accommodate eight people and is fully equipped with kitchen, showers, TV, etc.

With facilities like these, and the high degree of technical expertise available, it is not hard to see why ICC has become one of the top Christian music recording centres. With this approach they now look set to repeat their success over a wider music scene.

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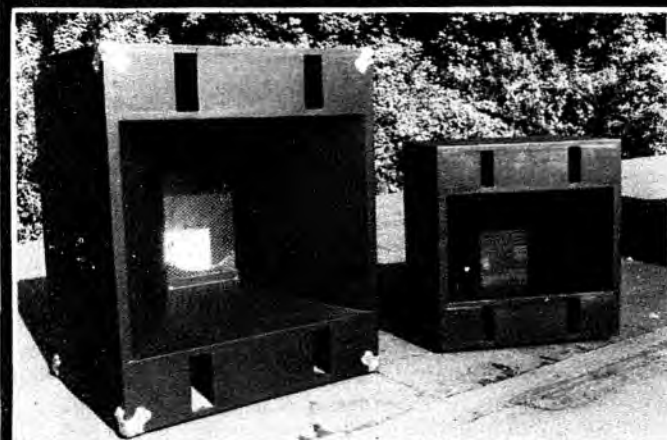
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MEET YOUR ENGINEER

Chris Lewis, Marcus Music AB, London

The studio at Marcus Music had been open for only a fortnight when IM spoke to an effusive Chris Lewis. Equipped with a brand new Studer 800 24-track machine, as well as a highly highly-modified Harrison console Marcus Music looks set to become a contender in the competitive London recording scene.

The studio was designed to Jan Setterberg and Marcus Osterdahl (the Marcus of the title). Jan was involved in designing Abba's studio, among other projects.

Marcus Music has been designed primarily for recording groups. The current small studio will shortly be joined by a very large 48-track one, measuring some 285 square metres. An accompanying complex with eating and drinking facilities will be opened in February.

John Taylor, Grosvenor Studios, Birmingham

Grosvenor Studios started about 30 years ago as a direct-to-disc recording studio, with an additional mobile unit. This set-up handled a range of work which included music, conferences and even weddings.

The advent of tape brought a new look Grosvenor mobile, and the company also became involved in film work. A concentration on recording film music and commentaries led to John Taylor producing dialogue and a mass of special effects for the Gerry Anderson TV puppet shows like "Supercar", "Fireball XL5", "Stingray" and the immortal "Thunderbirds". John's work at the Grosvenor has included, more recently, sessions with Birmingham's most famous son, Roy Wood, as well as Jasper Carrott and Carl Wayne and the Vikings.

John Taylor says that Grosvenor now do a lot of brass band and big band work. The technique he favours is to record directly onto 1/4" stereo tape which, as he points out, is only one step away from direct cut.

Muff Martin, The Old Smithy, Kempsey, Worcs.

The Old Smithy is the kind of studio you don't hear a lot about but which is replaced by a redesigned Tweed Audio model, and studio owner Muff Martin is very happy with the way things are progressing.

frequented by the biggest names around. David Byron made his first solo album there and Led Zep personnel have been observed in the vicinity. Could this have anything to do with the pub next door?

Albums for the Band of Joy and semi-pro legend Little Acre, plus new funkier jingles for Radio Luxembourg, are all part of a day's work for The Old Smithy. Muff Martin's optimism seems well founded.

Geoff Calver and Tony Swain, Red Bus Studios, London

Red Bus is a brand new 24-track studio or, more specifically, two studios. Designed by Eastlake — who used a new acoustic design system at Red Bus for the first time — the studios are equipped with computerised MCI 24-track machines. Particularly impressive is the foldback system at Red Bus, whereby four different mixes including a stereo mix are available, and musicians can have an individually mixed monitor sound in their headphones.

Geoff Calver and Tony Swain handle the engineering work at this very promising new studio. Managing Director Ellis Elias is also no stranger to the mysteries of slider manipulation, and can number Mungo Jerry among his past engineering credits.

Despite its short history, Red Bus has already seen Del Newman, Patti Boulaye and Rocket within its walls. The studio has a lounge and reception area, and there are TV and video facilities available.

Trevor Vallis, Mayfair Sound Studios, London

Trevor Vallis has been at what is now Mayfair for eight years, though it was called Spot when he joined. He served his apprenticeship at Mayfair, and is now a full engineer. He's done freelance work too, and can number among his past credits stints with Curved Air (a little), Peter Skellern (a lot), the Jess Roden Band and the pop group Hello.

Mayfair has recorders by Studer, both two-track and 24-track, as well as Revox and Otari. Studio manager John Hudson built the mixer, which together with Mayfair's JBL and Tannoy monitors is currently being put to good use recording a Swiss band called Why Blood. (Don't ask me, mate.)

Mayfair has its own production com-

pany, for which Trevor Vallis has recorded a group called Stiletto, and bookings at Mayfair already stretch well into 1979.

George Doherty, Hyde Park Studios, near Belfast, Northern Ireland.

Hyde Park studio is run in conjunction with three record labels, Emerald, Mint and Rip Off. These labels deal in country, pop and New Wave acts respectively, and Hyde Park handles the recording work for all these acts. Clubsound, a comedy band on Mint, have just earned a silver disc for sales of their album.

George Doherty started Hyde Park three years ago, because there was no 16-track studio available in Belfast. The studio has a 16-channel MCI desk and a 16-track MCI recorder, plus JBL and Auratone monitors powered by a Phaser Linear amplifier.

George, an ex-musician who used to play in a band called Candy, would like to expand to 24-track equipment, but fears that costs would be prohibitive at present. Hopefully, though, he will be able to realise his ambition within a year — as much for his own personal satisfaction, he says, as to increase trade.

John Burns, Essex Studio, London

Currently 16-track, Essex Studio will be switching to 24-track about the time you're reading this. The JBL monitors and AKG and Neumann mikes will remain, but a Trident TSM 32/24 desk will be brought in along with a modified 24-track Studer.

John Burns spent eight years with Decca before joining Essex nearly three years ago. At Essex, he has worked with X-Ray Spex, Anthony Phillips, Cleo Laine and John Williams. The studio is owned by Essex Music, and the company has two in-house record labels; these are Cube and Electric, Gordon Giltrap being attached to the latter.

Printz, Titanic Sound, London

Titanic Sound is now nearly two years old. Basically a disc jockey self-operating studio, the studio currently uses two-track equipment to make jingles and ads for commercial radio. A second studio is currently being built, and eight-track equipment is waiting to be installed.

Printz who has no further use for a surname used to work with Joe Meek, best known for his association with such artists as the Tornados and Screaming Lord Sutch. After a varied career, during which he set up a radio station in the middle east among other things, Printz helps artists to make demos at Titanic, and is involved in reforming the Tornados. He also has his own music publishing company, Titanic Music and Steam Navigation. Watch out for icebergs.

Sorry, Tony

In *Meet Your Engineer* last month we inadvertently printed the address of Tony Robins' Roak Studios as Stockport and not Stourport. We apologise for any inconvenience caused. The full address of the studio is Anglo House, Worcester Road, Stourport on Severn, Worcs.



Inside the studio at Grosvenor

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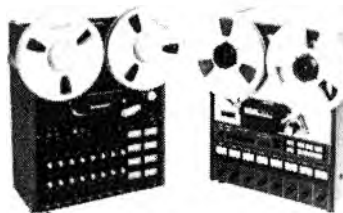
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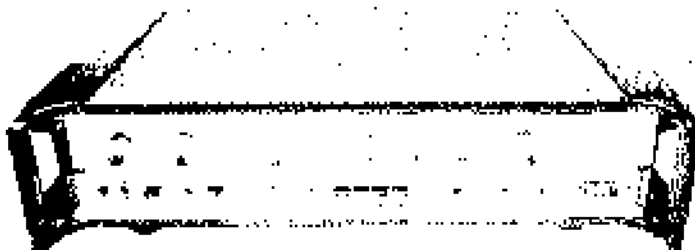
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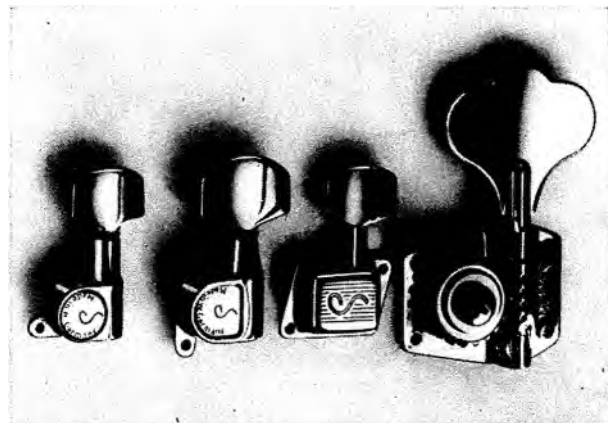
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More about screening

By Stephen Delft

Fender-type guitars (with most of the wiring and controls on removable front panels). See Photo 1. This shows a Fender Strat guitar body. The instrument in this picture has been modified to accept two alternative pickups, but the method of applying screening paint is just the same. In this case I have removed the front panel and wiring entirely, to provide a clearer photograph, but this is not necessary if the wires inside are fairly long. It is quite possible to paint one section at a time and allow the paint to dry before replacing that bit and lifting the next panel. This may help if the wires are rather short. To avoid scratching the guitar's finish, it is a good idea to place a folded duster between the front of the body and any parts which are to be laid on it. Masking tape can be used in addition, to stop parts sliding about and possibly straining electrical connections.

Remove any dust or old guitar polish from the area to be painted, preferably with an old toothbrush and a vacuum cleaner with a narrow rubber nozzle. Then wipe over the area with a clean cloth moistened with white spirit and dry with a clean cloth.

You will need to paint all the pickup and control recesses and also the jack socket recess if this is separate. It may be necessary to undercut the bridge-end of the socket hole, so that the long contact spring on the jack socket does not touch the painted surface and silence the guitar. A small overlap around the edges, as shown, is sufficient. Some part of this overlap should include two or three panel-fixing screw holes at a point where the metal lining of the front panel includes (or is very close to) the same mounting points. Screwing down the panel will then also serve to press the dried paint and the metal lining into firm contact. In my case, these screw holes can be seen at the top of the photo at centre/right.

The recommended screening paint (Condec 104) can be applied with an ordinary brush, just like household emulsion paint. However, as many guitars have an overspray of glossy lacquer on the inside surface, you should take care that the paint is brushed firmly onto the surface. Don't worry if you have brush-marks as the paint dries. As long as the paint film is thick enough to be opaque, and sparing enough that it does not lie about in puddles in the bottom of the holes, it is good enough. On this sort of guitar you can usually see a "shadow", indicating the outline of the front panel. Any paint which falls outside that line can be wiped off while wet with a damp cloth.

You must stir the paint thoroughly before use and preferably every five minutes or so during use. Allow the paint film to dry thoroughly before replacing the front panels. This seems to take a day or less. If you touch the dried film, some black colour will rub off on your fingers. This does not significantly change the paint's efficiency, but it tends to leave messy fingerprints everywhere. Washing your hands is quicker than washing the guitar!

This application of screening paint will provide almost complete screening if the

underside of the front panel is covered with metal sheet or foil, and makes a considerable improvement, even on those guitars which have only a token strip of self-adhesive foil next to the controls. If you want near-complete screening on these instruments, you can also paint the underside of the panel to cover the same area as is protected by screening paint on the body. You may remove the controls first if you are accustomed to guitar wiring work. However, it is usually possible to avoid splashing paint onto the wiring and controls by simply overlapping the paint onto the edges of the small strip of foil which is already there. This foil is usually connected, after a fashion, to the earth side of the circuit, via the bodies of the tone and volume controls. You can easily check this with the resistance (ohms) setting on any electrical multimeter. If the meter reading varies sharply as you touch the controls or flex the panel slightly, try carefully tightening the mounting nuts and screws for the volume and tone controls, and the selector switch, if there is one.

I have used the phrase "near-complete screening" because on this kind of guitar, the pickups are usually not screened from electrical interference. They are also frequently dipped in wax, and therefore difficult to paint with any sort of success. Some of the usual ways of screening single-coil pickups are detrimental to their tone and I would prefer to leave this subject until later in the series.

There is a further source of unwanted interference with single-coil type pickups, such as are found on Fender and similar guitars. In many cases these pickups are also susceptible to magnetic radiation interference from mains cables, high-power speakers cables and (most frequently) mains transformers in guitar amps. This form of interference is easily recognised. It is usually in the form of a hum or low pitched buzz. The pickup will act as a direction-

finding aerial and the hum level will change as the instrument is rotated, giving two opposite nulls and two opposite maximum points, as if at the four points of a compass. The hum level may also increase as you bring the guitar nearer the source of interference. This is a useful secondary check, but it can have other causes. No amount of screening paint or kitchen foil on the guitar will do much to help this magnetic interference problem. Either keep away from the offending amp, or have the amp fitted with magnetic shields or a transformer with a lower external field.

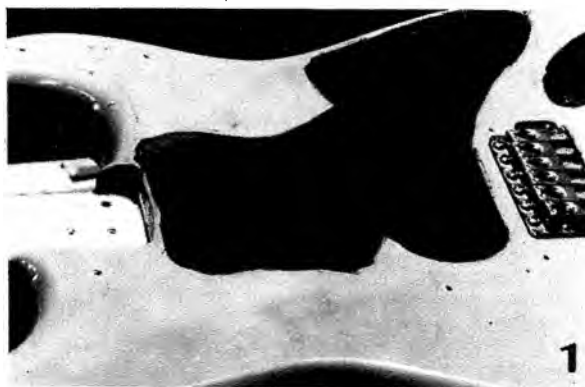
Gibson-type guitars with controls and pickups mounted on the body, and wiring access via removable back panels. See photos 2 and 3.

This can often also be done without breaking any connections, but you should be prepared for the possibility of a bit of careful soldering or unsoldering. If you plan to cut wires where necessary, and then

have a friend re-solder them later, be sure to label each wire before disconnecting it and mark its position on a clear pictorial diagram of the controls and wiring.

Some guitars of this type have the selector switch in the same compartment as the rest of the controls (photo 2). I will deal with these first. Start by removing all access panels on the back. Place the screws in a small plastic bag. If any of the mounting screw appears longer or wider than the others, identify its hole on the plate and on the guitar body with bits of tape or a very small scratch. If the jack socket has a separate fixing plate, unscrew this. Then remove the jack socket from the plate with a tubular or ring spanner and place any loose bits in a second plastic bag, together with the mounting plate. It is a good idea to make two small scratches on the plate before removal, indicating the rear edge, and also the position of the long jack contact spring on the inside. Some of these plates may only fit properly one way round.

Push the socket gently back into its tunnel and stick a bit of masking tape across to keep it in there. Number the back of each control with a felt-tip pen. Turn the body over, remove the knobs and unscrew the mounting nuts for all the controls. This should also be done with a tubular or ring spanner. Most people have a big pair of pliers in their household tools and they do look suitable for removing nuts on a guitar. Go ahead if you want, but you will probably regret it. They are likely to slip off the nut and if they don't take a bit out of your fingers, they will probably dig a lump out of the guitar front. Sometimes, just for a little variety, both of these occur at the same



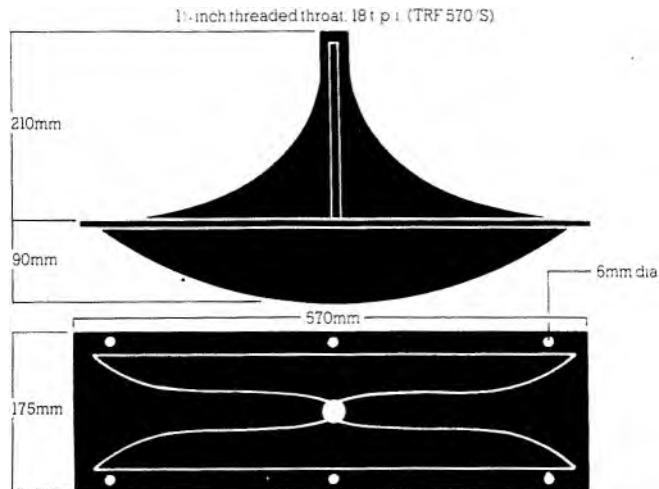
time. Cheap tubular spanners are just that: cheap. Two spanners won't cost you much, they don't grab your fingers and although they do sometimes slip on the nut, they can't go very far or do much damage. In the UK most of them seem to be called "Draper". I prefer the blue-painted ones when I can get them. They usually have some holes in the middle of the body so you can insert a pencil or a screwdriver as a handle.

If the selector switch is fixed with a small knurled ring, you may have to use pliers to remove it. Cut a hole in a piece of card which will just slip over the fixing ring and use this card to protect the guitar front in case the pliers slip. There is still a good chance that you will distort or scar this small fixing ring. If you know a friendly doctor or veterinary practitioner, he may be willing to lend you some scissor forceps. Mine are about the size of bandage scissors. They have thick, slightly curved jaws, with coarse serrations on the inside surfaces, and

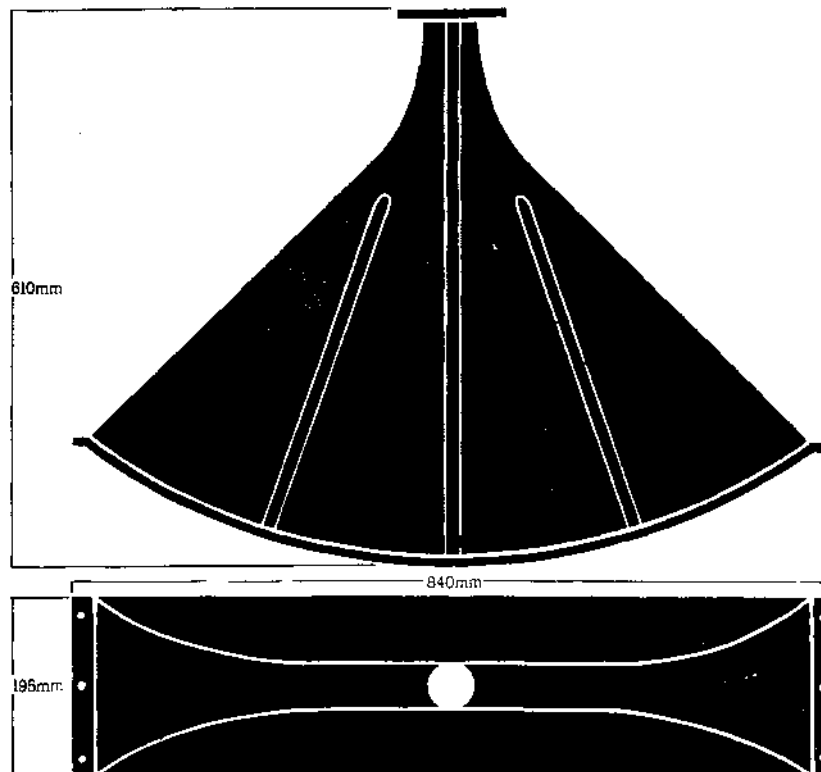
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they just fit the knurled serrations on most fixing-rings.

Place the nuts and washers in another plastic bag and put them on one side. If you run out of plastic bags, you could use small boxes, but keep the bits in separate groups. Turn the guitar face-down again and you should be able to lift the entire group of controls and wiring out and to one side, pulling the jack socket gently through to the inside of the guitar at the same time. As you do this, check the number, types and sequence of washers under each control, on the socket, and possibly also in the jack socket tunnel if there is one. Bag or box each group of bits separately, with a note of the sequence and the number marked earlier on the control. The groups of washers may be identical, or they may be different to bring all the knobs level on the outside of the guitar.

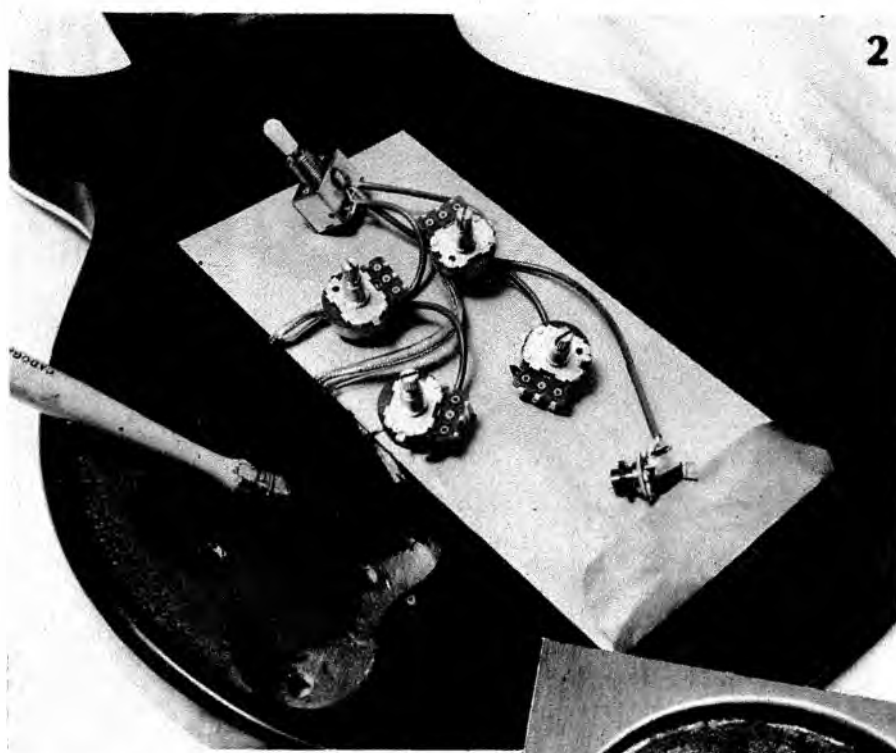
Lay the controls and wiring on a thick envelope or a piece of card as shown in photo 2, to protect the guitar back from scratches. Although not shown in the photo, it is a good idea to wrap a piece of plastic bag around the assembly to protect it from splashes of screening paint. There will probably be one thin, bare wire coming from a small hole in the side of the body cavity and soldered to the back of one of the controls. Take care not to strain this wire. If necessary, cut it at the solder joint and replace it later. If you have only a small soldering iron (generally less than 50 watts) and you need to cut the wire, leave about 10mm/½ inch attached to the control. It will be easier to re-solder wire to wire with a small twist for security than to solder wire to metal case.

Once you have moved everything out of the way, follow the cleaning and preparation instructions for painting Fender-type guitars. Allow the paint to overlap onto the recess where the back panel fits. If any overlaps further onto the back of the guitar, wipe it off with a damp cloth. Dry paint can usually also be wiped off but it takes more effort.

On this sort of guitar, the back access plates should also be painted, or lined with glued-in metal foil (kitchen foil and non-flam contact adhesive) which should make contact with the screening paint overlapped onto the back-plate recess. The inside of the plastic panel will take paint more easily if it is roughened slightly with fine sandpaper.

If the jack socket is fitted separately, it is worthwhile to paint the inside of its tunnel or recess. When the paint is dry, line this tunnel with an overlapping cylinder of card, to prevent connections on the jack socket touching the screening paint and possibly shorting out the guitar's output. For greater security, sleeve or tape over the last few inches of wire at the jack end unless it is already sleeved in plastic right up to the solder joint between the outer braid and the jack. Then enclose the whole jack socket in a slightly overlapped cylinder of Gaffer tape, before replacing it in the body. It is easier to do this if you first replace the socket on its small mounting panel (aligned with the marks made earlier).

When the paint is quite dry, the controls can be replaced in the reverse order to which they were removed. You will not have any difficulty deciding which washers and nuts belong to which control, because

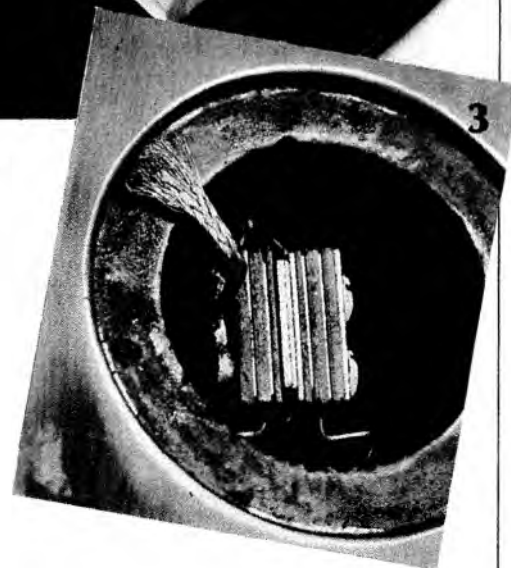


you have already bagged them in separate groups. Stick a double layer of masking tape, or a layer of thick Gaffer tape, onto the painted surface immediately under the solder tags of the volume and tone controls if there is any chance of contact with the screening paint, but keep the tape clear of the control fixing shafts and/or washers. Re-solder any disconnected wires to their correct points.

If your guitar has a separate body cavity for the selector switch, this should be treated in roughly the same way. It is essential to keep the back and the springs of the switch free from splashes of paint. It is also possible that there is very little slack in the wiring, and removal of the switch will require you to unsolder all the connections. If you are good at tricky soldering and you index the wires to a pictorial diagram of the back of the switch, this should be satisfactory, but I would emphasise that it is a difficult wiring job at the best of times. Photo 3 shows the completed job. In this case, I unsoldered the switch and wrapped the wire ends with tape while painting the cavity. Keep the switch solder tags away from the dry painted surface with double Gaffer tape.

The contact between switch frame and the painted surface at the bottom of the hole can be a little uncertain with these separate switch recesses, so I added a piece of flat braid to be trapped between the painted back plate and its painted recess in the body. It is usually necessary to file the plating completely off a small section of the switch frame before attempting a soldered joint. Cover the switch with tape or a plastic bag to keep metal filings out of the contacts, and clean up any metal dust with a vacuum cleaner and a stiff brush.

An alternative to painting this cavity is to stick a sheet of kitchen foil between two sheets of self-adhesive plastic so that all the metal edges are covered with a small margin of plastic-to-plastic beyond the foil. Add a sheet of thin card and coil the whole thing,



card inwards, around the inside of the hole. Trim it to fit, and cut a slot for the switch wires, double-taping over any cut foil edges. At the mouth of the hole, by the recess for the back plate, expose the edge of the foil and fold it over into the back plate recess where it will make contact with the paint or foil lining on the back plate. A wire braid link as shown in photo 3 will then connect both plate and foil "sandwich" to the switch frame and the earth side of the circuit. Using this method, it is not even necessary to loosen the switch mounting nut or ring. The screening will not be complete, but the most sensitive areas will be protected.

Telecaster jacks are best left alone if they are secure and work reliably. Screen the tunnel with a foil-in-plastic sandwich and an overlapped card liner as described for separate selector switches. This can be inserted with care from the inside of the guitar. Bring out a long, plastic covered tab of foil, which should be exposed at the end, and glued and possibly stapled to an area of paint-free wood. When the glue has hardened, extend the screening paint to overlap the clean, exposed end of the foil. Apply a second coat of paint in this area when the first is dry.



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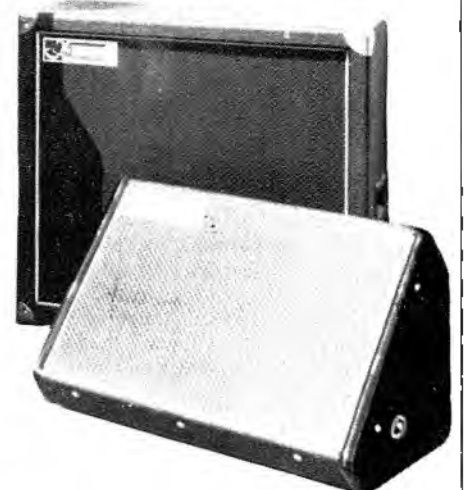
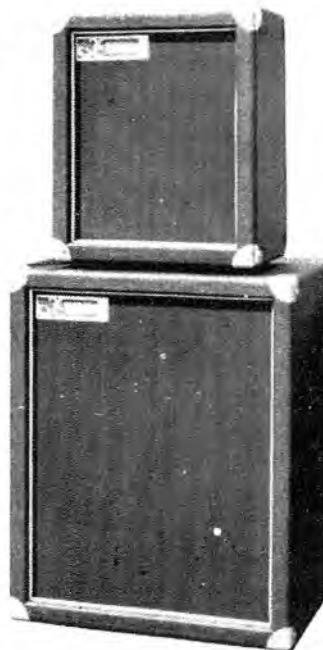
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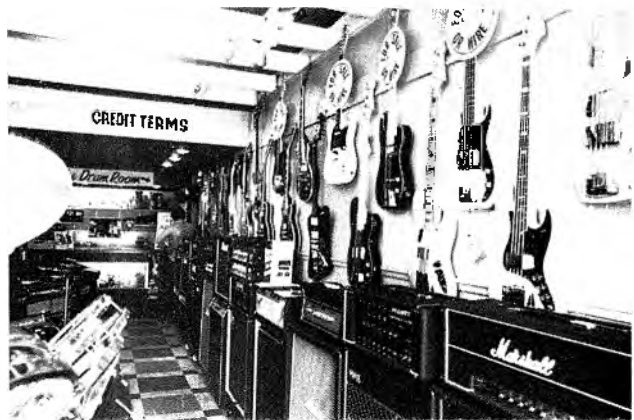
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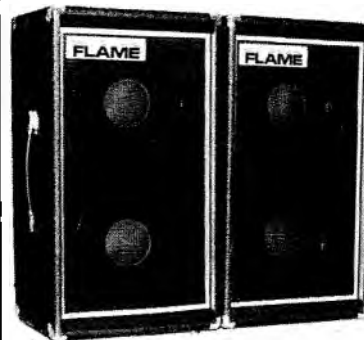
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Picks and Pedals, Bars and Leads

By Dave Hayward

I intend to devote this month's article to talking in more detail about some of the other items of equipment you must have in order to play pedal steel guitar, besides the instrument itself. These will include picks, bars and volume pedals.

Picks

In past articles I have only briefly mentioned the fact that it is the normal practice to use a thumb pick and two finger picks. Now let's delve a little more deeply. As with most aspects of pedal steel, there are many variations in use by different players. If I say that this way or that way is *the* way to do it, then you can bet your life someone will come up and say "Oh no it's not, so-and-so uses half a pound of wet spaghetti wrapped around his fingers, and he gets a great sound" - which makes my point perfectly because whatever feels right and gives you the sound you want *is* right, for you at any rate. There is no "right" or "wrong" to it really. However, for someone who is just starting out to play we have to start somewhere and the obvious choice is with the pick arrangement used by the majority of players. This is a plastic thumb pick and two metal finger picks, one on the first finger and one on the second. The reason for the plastic thumb pick, I think, is that the thumb is used a great deal on the thicker, wound strings and tends to create less unwanted noise on their windings if the pick is of plastic. Another factor is that the thumb is stronger than the fingers and when picking with both fingers and thumb, it helps to balance the sound up in terms of volume, as there is probably a slight reduction with plastic as opposed to metal, to compensate for the heavier plucking action of the thumb.

Different players prefer different shapes of pick as well. Some use fairly long points standing well out from the ends of the fingers, while others prefer short stubby points, perhaps curved well round to follow more closely the shape of the finger tip. Photos 1 and 2 show examples of differing personal preferences.



Picks can easily be bent to give the shape which fits your finger most comfortably, and filed to give you the type of point you prefer. Plastic picks can be dipped into hot water to soften them so



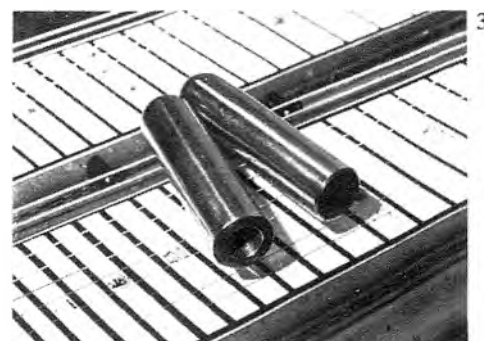
that they, too, can be tailored to your taste. This, then, is the most commonly used set of picks, but it's worth mentioning some of the other variations.

Some people prefer all plastic or all metal picks. Others use more than just the usual three. It's possible that if you're starting to play steel guitar you already use some configuration of finger picks perhaps for normal guitar, banjo, etc., and there's no reason why you shouldn't make use of these, or at least an adaptation, if they give you the sound you're after.

I know how unwieldy finger and thumb picks can feel when you first start to use them, so whatever you do it's important that they fit snugly but comfortably; you'll get used to them the quicker for it.

The bar

Not quite so many variations here. Most bars for pedal steel are made of highly polished stainless steel, are round with a bullet-shaped nose and flat end, and measure $3\frac{1}{2}$ inches long by $7/8$ diameter (to hell with metrication!). The two main types are either solid or hollow (see photo 3). In use, the hollow bar is obviously easier to move and locate quickly due to its lightness, when carrying out fast runs involving lots of bar movements, whereas the solid bar, having considerably more mass, might present some difficulty for some people. However, there is another important aspect, and that is the sound. A definite difference in tone can be heard between the two types of bar. As always, it's difficult to describe, but as you might expect, the sound takes on the characteristic of the bar being used - the hollow bar giving a "mellow" sound and the solid bar a "sharper" sound.



Apart from the normal bar, either a hollow or solid steel one, other types have been only rarely used, and then purely for unusual effects. These range, for example, from a Dobro bar which gives a sitar-like sound, to weird things such as cigarette packets which result in a sound resembling a banjo. By the way, the use of different materials for steel guitar bars, to vary the sound, is by no means a new development; ever since the instrument started evolving in Hawaiian guitar times, there has been much experimentation and practically no limit to the inventiveness of players in the various materials used.

Volume pedals

This item of equipment (see photo 4) is very important to the pedal steel sound and yet it is one thing that is frequently neglected when starting to play. Many people make do with perhaps an old cheap pedal which they may have had knocking around for years but what they may not realise is that the potentiometer in the pedal will influence the sound of their instrument to a great degree, and probably for the worse.



Now, I'm not an electronics whizz-kid by any means so I don't propose to go into the whys and wherefores of this. (Perhaps someone will enlighten me sometime.) But a good practical way to judge whether a pedal degrades the sound passing through it is to compare the sound of the steel

when it is connected direct to the amplifier, to the sound when it is connected via the pedal. Ideally, there should be little or no difference in tonal quality between the two methods. Also, when the pedal is operated there should be no change in tone as the volume is altered from minimum to maximum. Generally, the volume pedals (or swell pedals as they are sometimes called) sold by the pedal steel manufacturers are the best, although inevitably they are quite a bit more expensive than the more common proprietary brands. In my view they are worth it as, besides giving a more satisfactory sound, they have a much smoother mechanical action and are more robust, usually being made of quite heavy cast aluminium instead of thin pressed steel.

There are in existence a few of another type of pedal. They differ from the mechanically operated "pot" type in that they contain a lamp and photoelectric cell. As the pedal is operated, the amount of light reaching the PE cell is altered by interrupting the light beam either by a varying width slit or a graduated density filter, and the resulting signal from the cell is then made to modify the sound level electronically. I understand that these pedals work very satisfactorily, although they must be a little

more trouble to operate in view of the necessary power supply for the lamp.

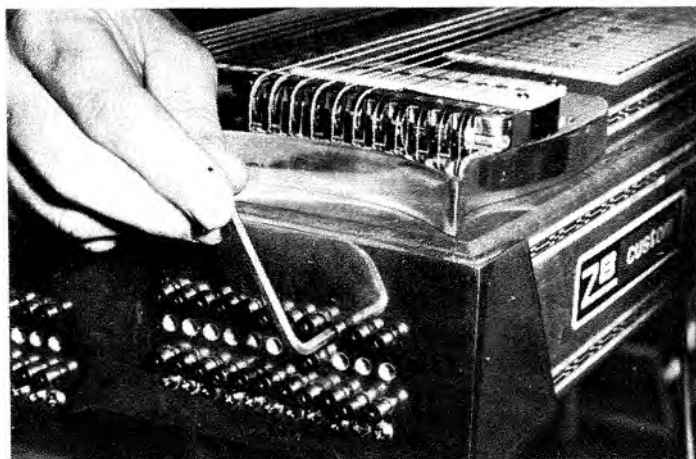
Leads

As with all guitars, the signal from a steel can be degraded if inferior quality connecting leads are used or if they are unduly long. It is preferable to use the very thick low-loss cable which is available now (as shown in photo 4) and to keep lengths to a minimum. Personally I don't much like coiled leads for pedal steel; although they are excellent for normal guitar they seem pointless and only get in the way on a steel.

I've included three more photos to illustrate some of the points I've been talking about in previous articles. Photo 5 shows adjustment being carried out on the travel of the third string which is raised by the "B" pedal (from G sharp to A).

Photo 6 shows a close-up of the right hand and illustrates in detail the way the picks are used and how the edge of the hand and little finger can be used to "block" or "damp" the strings.

Photo 7 is a head-on view of the bar on the strings and gives a good idea of how the fingers are positioned in order to locate the bar and damp the strings behind it (to the right in the picture).



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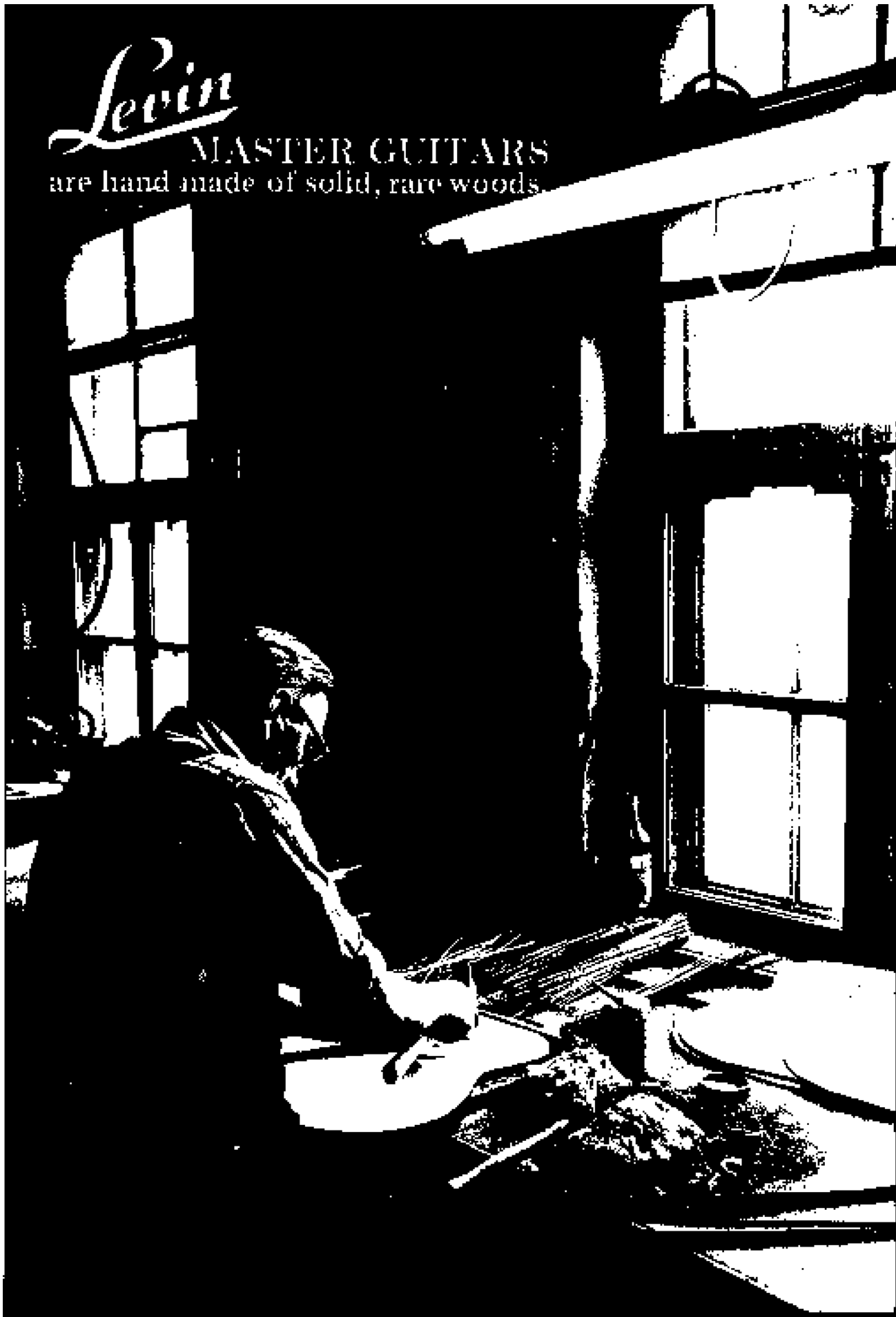
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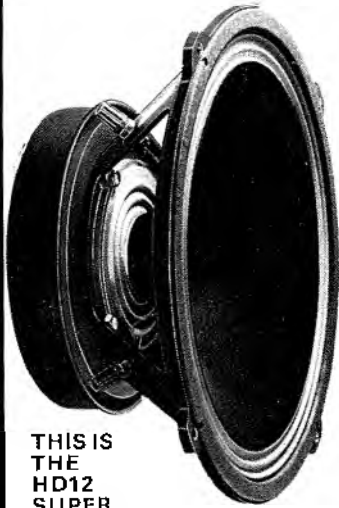
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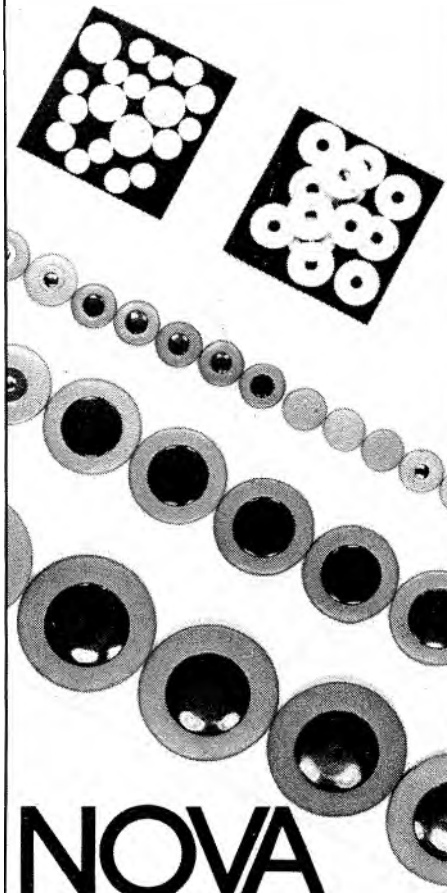
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UNDERSTANDING SYNTHESIZERS

PART 8

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

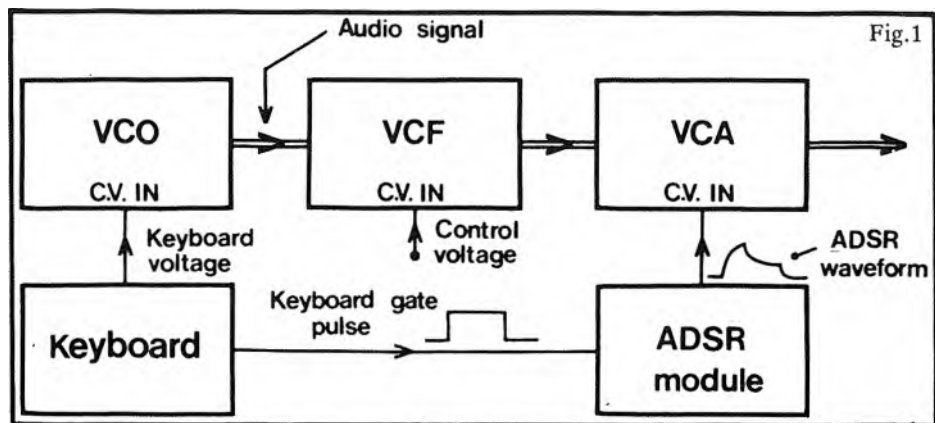
Before I describe in detail what filters are and what the voltage-controlled filter (VCF) does, let's first see how the VCF fits in among the other synthesizer modules I have already described (if you're not familiar with these, have a look at Parts 4 to 7). Fig. 1 illustrates how the VCF is positioned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

Frequency response

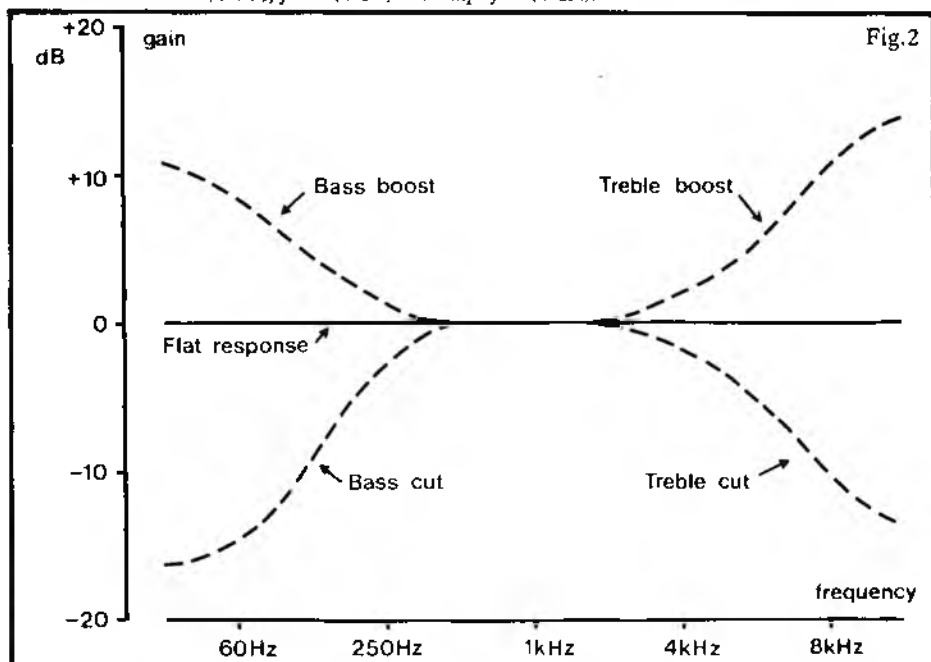
Everyone is familiar with the tone controls on hi-fi amplifiers or combo-amps: the "bass" control boosts or reduces the low frequency content of the sound and the "treble" control does the same to the high frequencies. In technical terms, what the tone control knobs do is to change the *frequency response*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

Filters

A filter is an amplifier with a particular frequency response tailor-made by the designer for a specific job. It can be made so that it almost completely removes all frequencies



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

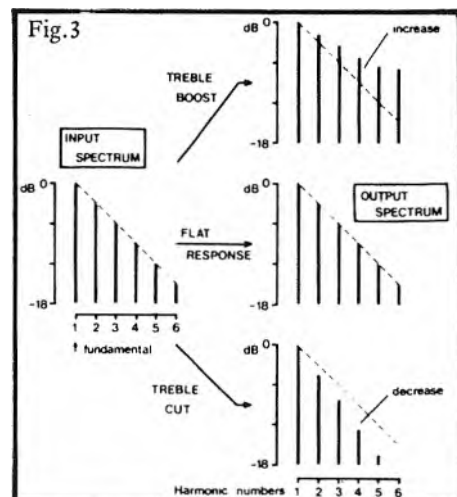


Typical frequency response of an amplifier with bass and treble controls.

below a particular value. This type of filter is called a "high-pass filter" because it lets higher frequencies pass through unchanged in amplitude. Alternatively, a filter can be made so that it removes all frequencies *above* a particular value; this type is called a "low-pass filter" because it lets lower frequencies pass through unchanged. Synthesizers always contain a low-pass filter (the VCF) and many now contain a high pass filter (which I will be describing next month).

Low-pass filters

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



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

1.5kHz *sawtooth* wave was sent into the filter, its fundamental (1.5kHz) would get through, but its harmonics (3kHz, 4.5kHz, etc.) would all be stopped: so in this case the "sawtooth" would emerge from the filter as a perfect sine wave.

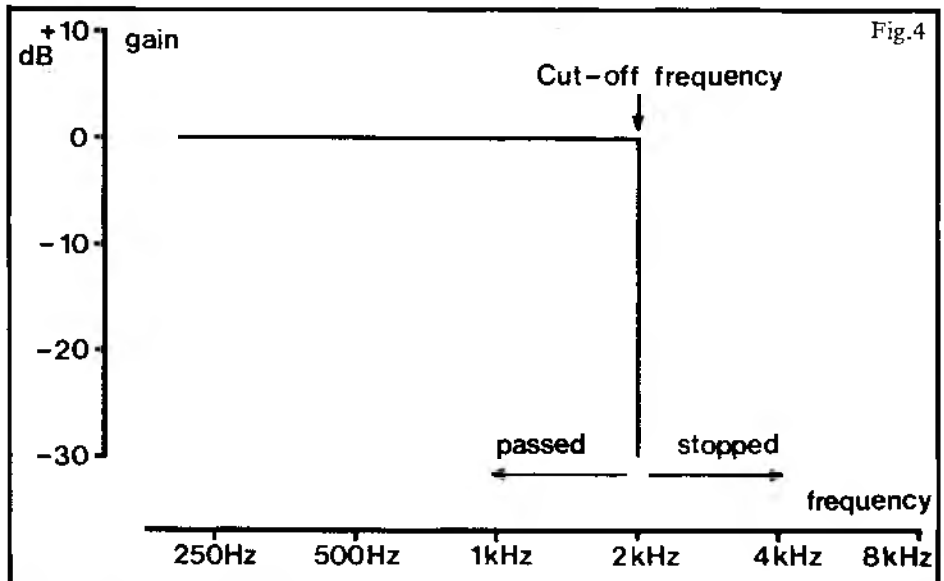
In practice, low-pass filters cannot be made with the ideal frequency response shown in Fig. 4. However, good filters come close to the ideal, and Fig. 5 shows the frequency response of a typical synthesizer low-pass filter. Because there is no sharp break in the frequency response, the cut-off frequency is defined as the frequency at which the filter's output falls by 3dB (see Fig. 5). The *slope* of the filter should be as high as possible and is expressed as "dB per octave". Good filters have slopes in excess of 20dB per octave, which means that above the cut-off frequency (in the case of the low-pass type), the amplitude of the output decreases by a factor of at least 10 (= -20dB) every time the frequency doubles.

Voltage-controlled filter (VCF)

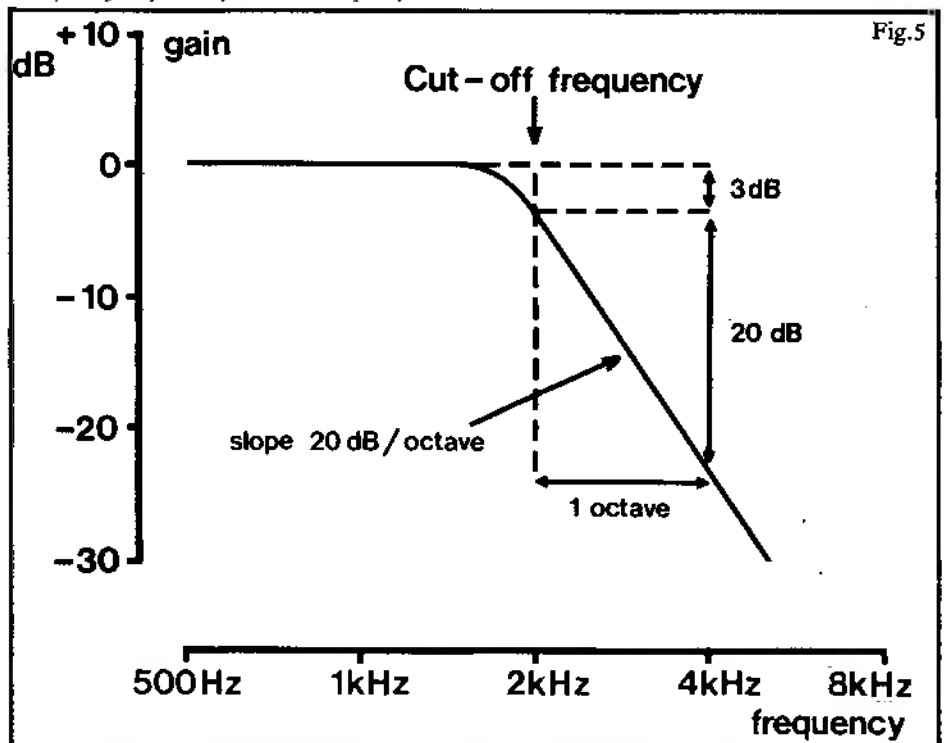
The voltage-controlled filter (VCF) in smaller synthesizers is invariably a low-pass filter in which the cut-off frequency is determined by a control voltage. As the control voltage is lowered, the cut-off frequency decreases, and conversely as the control voltage is raised the cut-off frequency increases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

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

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



Frequency response of an ideal low-pass filter.



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

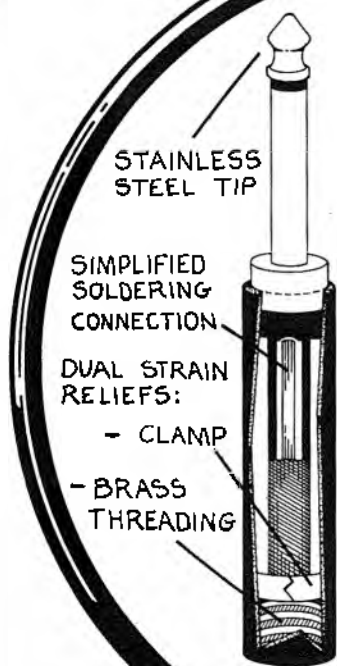
VCF effects

1. **Cut-off frequency slider** As I have already mentioned, this control determines the filter's cut-off frequency when all the other controls are set to zero. With the cut-off frequency set to maximum you hear the full spectrum of harmonics contained in the VCO's waveform. As you gradually reduce the control towards zero, harmonics are progressively cut out and

the sound becomes gradually less harsh. (If you use a pulse wave with a 5% mark/space ratio (see Part 5) and move the cut-off frequency control down very slowly, you may actually be able to hear each harmonic disappearing.)

2. **LFO slider** When the LFO's sine wave output is added to the voltage provided by the "cut-off frequency" slider (see Fig. 8), the VCF's cut-off frequency is periodically

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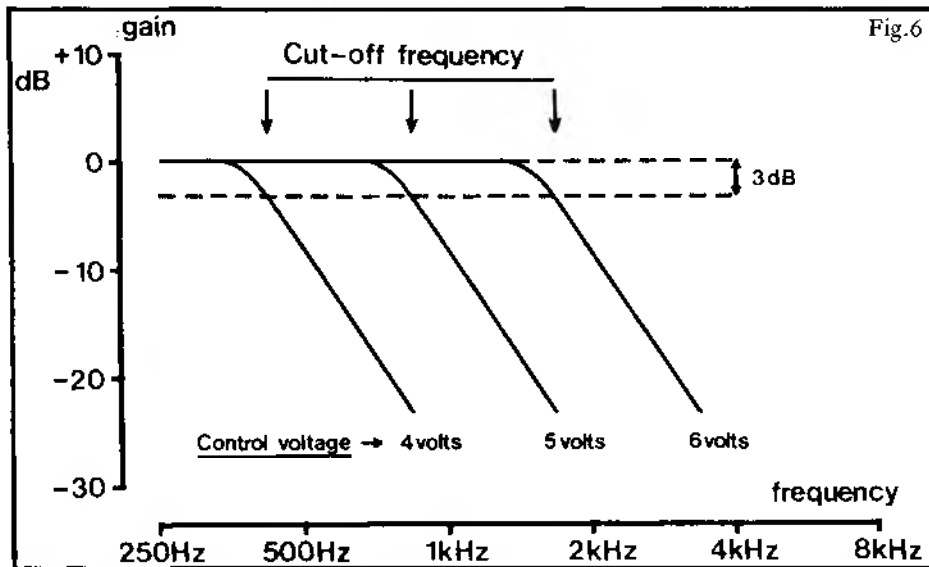
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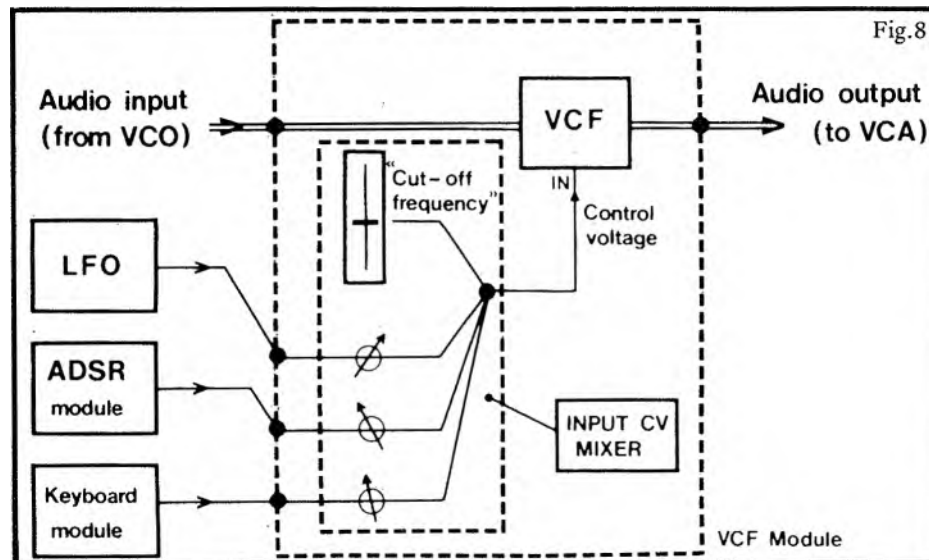
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UNDERSTANDING SYNTHESIZERS



Effect of varying the control voltage input to a VCF.



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

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

3. **ADSR slider** In the same way that the volume of a note can change throughout its duration, so too can its harmonic spectrum. In Part 7 I described in some detail how the ADSR module and VCA in combination produce short-term changes in volume during each note. If the ADSR's

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

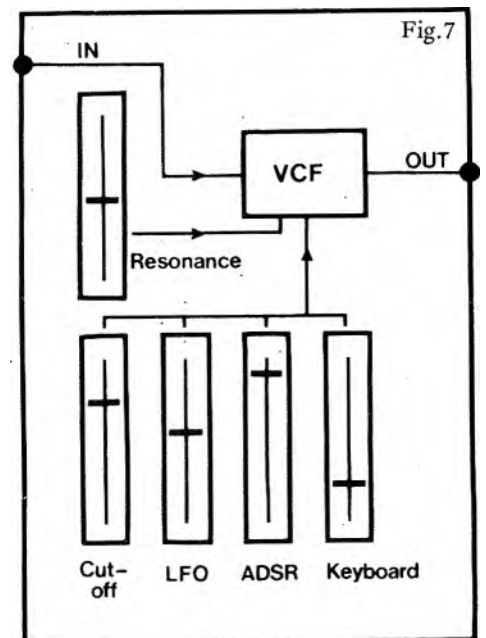
The output of AR module can be used to similar effect and in fact a major advantage of synthesizers having both ADSR and AR modules is that usually either one can control the filter and either one the VCA. (So, for example, the AR module might control the VCF and the ADSR the VCA, or vice versa.) This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

4. **Keyboard slider** At first sight, it may

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

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

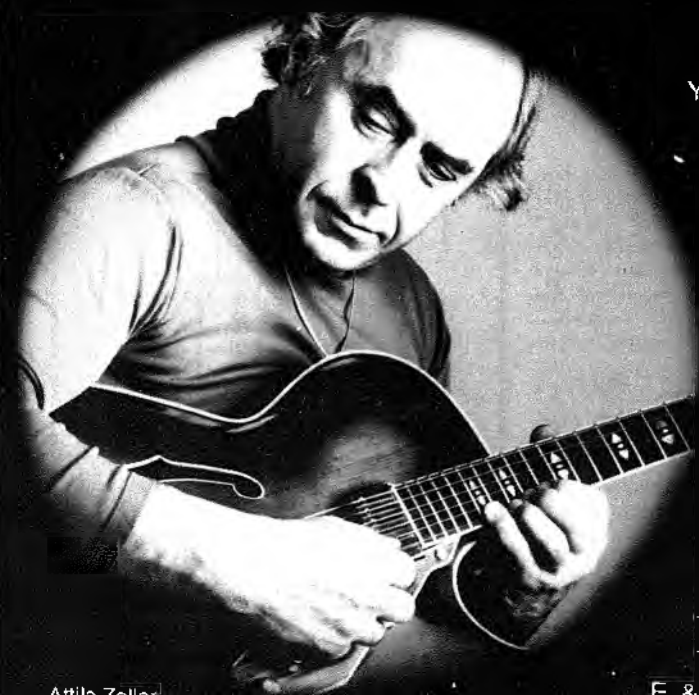
Next month I will be explaining what the resonance control does and introducing the other types of filter.



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

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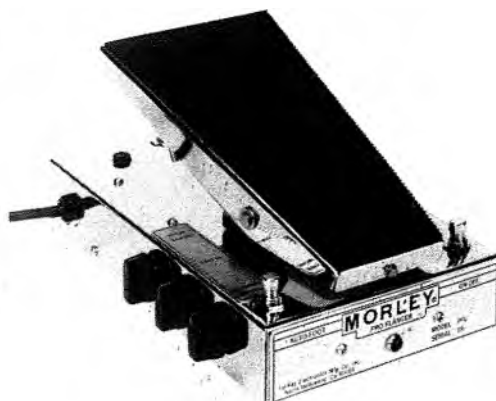
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Small Things

How to get your head together

A tip from Stephen Delft

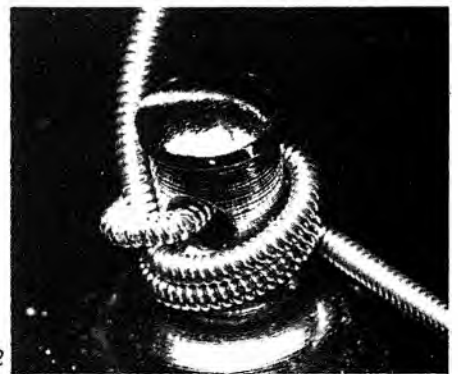
I am often asked to change worn, but usable, guitar machine heads, by players who complain that "the tuning slips". I don't mind changing machines when they need changing, and even high quality machine heads eventually wear out, but sometimes guitar strings slip simply because they are not fastened firmly to the machine rollers. This can prevent a stable tuning on one or more strings, irrespective of whether the machine heads are good, bad or indifferent.

There are several ways of fitting guitar strings to machine heads so they do not slip under tension. Some of them work so well that you may need to cut the strings off the rollers with a hacksaw when they need changing. If you ever break strings on stage, this could make the gaps between numbers rather longer than you intended. May I suggest one way of fitting strings which minimises slippage, but permits

fast string changing when necessary. If your string fitting looks like Photo 1, stop maligning your machine heads and try fitting the strings as shown in Photo 2.

If you still have problems with unstable tuning, rub some graphite pencil lead in the slots in the nut and check that the strings can slide freely in these slots. If you still find that your string tuning slips, you should probably have your guitar serviced. This may include replacement machine heads.

On the other hand, if your guitar has a vibrato arm (tremolo arm) you may always have a little trouble with tuning stability — but that's another story. If you want to use a mechanical vibrato arm on your guitar, many of the problems affecting tuning stability immediately become considerably worse. There are some adjustments and modifications which can reduce, if not eliminate, these problems and I hope to discuss them in a future article.



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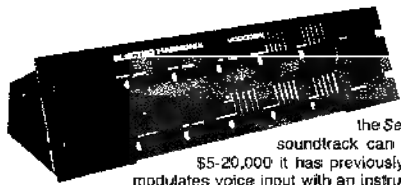
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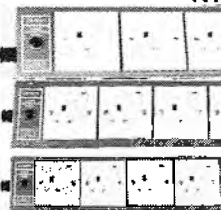
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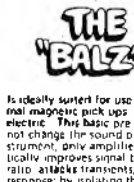
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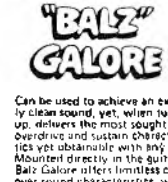
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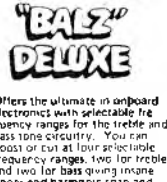
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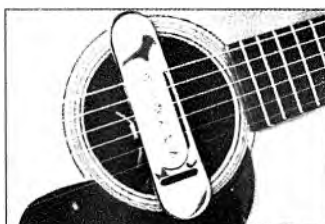
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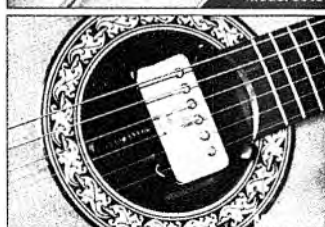
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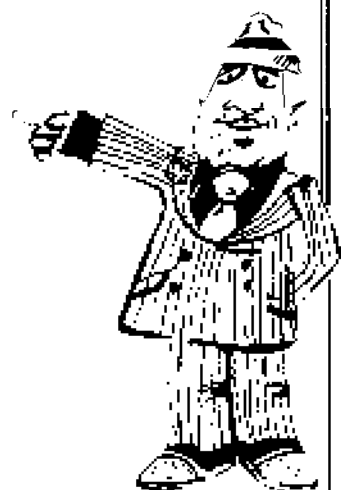
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SPEAKERCHECK

'Standard' compression drive units

By Ken Dibble

After a two month intermission, in which we updated our survey on 12" and 15" cone loudspeakers, we now return to mid and high frequency components. Regular readers may recall that in the August and September 1978 issues, we reviewed the performance of a whole range of integrated mid-range and high-frequency horns, and did a special feature on acoustic lenses in October. Here, we start off the New Year with a look at compression drive units which are sold as separate components for incorporation into the purchaser's own loudspeaker system, and which can be purchased over the counter (albeit to special order in most instances) at a music store or custom PA specialist.

As with the cone loudspeaker reviews, we have again split the samples up into "standard" and "special" categories, as there are two distinct types of product involved, with a large price gap separating the two. A natural division seems to manifest itself at around the £100 price tag, as units are either priced at considerably below this figure or else are considerably more expensive. (In fact, there is a much clearer dividing line with the compression drivers than was the case with the cone loudspeakers, where we found considerable overlap, where particularly expensive "standard" units run up into the "special" category price bracket, and particularly low-priced "special" units ran down into the "standard" price range. Generally, however, the method seems to have worked, as we have generally found that we have been comparing like with like. We shall therefore start this month with a look at the "standard" category in compression drive units, whatever their intended application, power rating, or method of coupling to the horn throat. Perhaps it would be useful to set out briefly the test procedure we have adopted for this exercise.

The first, and probably most important consideration was how to mount the samples sent for review. Three possible alternatives presented themselves:

1. Invite manufacturers to submit both compression drive unit and compatible horn and test the two components together.
2. Adopt a "standard horn" if such an animal exists, to which we could mount all samples.
3. Adopt the "terminated tube" method now in wide use in the States by manufacturers in evaluating and specifying their own products.

Despite the obvious technical merits of the third approach, the costs associated with the design and fabrication of a tube and all the accessories that would be necessary to go with it if any type of drive unit were to be accommodated — not to mention the time scale involved — virtually ruled this out. Also, we particularly wanted to evaluate the driver in

its own right — to convey a realistic impression of the way in which it can reasonably be expected to behave as compared to another similar product. As the whole performance of a driver can be extensively modified (either way) by the characteristics of the horn to which it is coupled, we were not very keen on the first alternative either. Also, by not adopting this approach, we would leave the way clear for a subsequent review on horn flares as separate components, which should prove an interesting exercise in its own right.

The more we thought about the "standard horn" approach, the more sense it made. After all, compression drive units are always used on horns — not with special tubes. We have already had success with a standard enclosure for cone loudspeakers of given size, and the relationship of a horn to its driver is directly comparable to that of the cabinet or enclosure to the cone loudspeaker unit it houses — so why not use the same approach? Also, mounting should not be an insurmountable problem, as there are a wide variety of throat adaptors available as standard items from most manufacturers, which would enable virtually any drive unit to be accommodated on our horn. The only problem was to obtain a suitable horn.

The prospect of designing and making an ideal horn was as daunting as the manufacture of a terminated tube, but at the same time using a commercial product was out of the question — or all the manufacturers whose horns we had not used would be up in arms and probably refuse to co-operate with our project! Anyway, we felt that we needed a horn that was virtually free of self-resonance at any frequency within the frequency band we were likely to encounter, and which provided good acoustic loading to the drive unit. In other words, we were looking for a true exponential horn of substantial air column length.

As is so often the case, while sitting discussing this problem over a pint of best bitter in a London pub one night, I learnt that a UK manufacturer had already developed just such a horn for use in their own development section. I went along to see it, and it was just what was needed. I must therefore offer my thanks to Neil Young (Managing Director), Doug Johnson (Chief Development Engineer) and Hayden Warren (Consultant) at Vitavox Ltd. not only for making the horn available to us, but also for their valuable assistance and willingness to give up valuable time and help. It is indeed most appreciated.

The Vitavox laboratory horn is shown in the diagram opposite. It can be seen that the throat consists of a series of sections, all of which bolt together by means of flanges, to provide entry at a number of points, depending upon the

type of drive unit being tested. The approximate dimensions of the various horn lengths for the different entry configurations are shown so that the reader may assess the loading characteristics applied to a given drive unit. The natural cut-off frequency of the horn, with all its sections assembled, is 190Hz, which is low enough to ensure good acoustic loading from 380Hz upwards. This is a much lower figure than that normally found with the flat radial type of horn usually employed on a PA stack and therefore no manufacturer can have grounds for complaining that his unit was not adequately loaded. The flanges accommodated all standard types of entry, but in one or two instances, where totally non-standard coupling arrangements are used, we had to resort to a clamped assembly — but always with a cork gasket between the appropriate horn entry flange and the face plate of the drive unit under test. Fortunately, the discrepancies were always with the spacing of the mounting holes, and not with the actual diameter of the throat entry itself, so with careful alignment, the clamped assembly suffered no disadvantage.

The tests applied to each unit were as follows:

1. Sine wave frequency response curve, swept from one octave below the maker's recommended crossover frequency to 40KHz, with an input voltage calculated to dissipate 1 watt at the manufacturer's stated nominal impedance, measured at a distance of 1 metre on the central axis of the test horn. This response is also used to assess the average sensitivity of the unit, and is published as part of the test result.
2. Distortion at manufacturer's rated input power is measured on a second sine wave plot, this time swept from the manufacturer's recommended crossover frequency to 40KHz, with an input voltage calculated to dissipate 10% of the maker's programme rating at the manufacturer's stated nominal impedance. The second and third harmonic components present with the fundamental frequency are then plotted on the same curve and the ratio between these are calculated and expressed in percentage terms. A distortion figure of 10% or less qualifies for a confirmation of the maker's power rating.
3. The active impedance of the unit is plotted right across the frequency spectrum and maximum and minimum impedance values are read off this curve, being the maximum and minimum values attained above the maker's recommended crossover frequency, and below the maker's stated upper frequency limit. The resonant frequency of the system is also taken from this curve.

The tests are carried out at the GEC-Hirst Research Centre at Wembley under anechoic conditions using the following equipment (in signal-chain order):

SPEAKERCHECK

Bruel & Kjaer type 1024 Sine/Random Generator.

HH Electronics type TPA-100D Power Amplifier.

Bruel & Kjaer type 2606 Measuring Amplifier.

Bruel & Kjaer ½" condenser microphone.

Bruel & Kjaer type 2113 Frequency Spectrometer.

Bruel & Kjaer type 2305 Chart Level Recorder.

Regular followers of this series will no doubt have noted that we have raised the permissible distortion figure from the 5-6% level hitherto applied to 10%. This is because the 5-6% norm was established after experimentation with cone loudspeakers, and in the event proved to be about right. However, with the small, dome-shaped diaphragms employed in a compression unit, we would be failing about 90% of the samples on this criterion so after some further tests and outside consultation, we have decided to introduce a new norm of 10% for units of this type. The 5-6% will remain in force for cone loudspeakers.

We have a fairly varied selection of sample units, from American, Italian, Spanish and UK manufacturers. Among these units, the manufacturer's own specifications have been arrived at in a number of different ways, using different test procedures, and for this reason our own results are often at variance with the maker's own figures. This need not in itself be at all detrimental - always provided, of course, that the unit comes up to a reasonable performance standard, and that the specification that is published

is not grossly misleading. In the reviews here undertaken, we find variations in performance, and one case in which the product is very much under-rated by its own manufacturer. Due to the wide variation in performance found with the samples submitted, I have in some cases dwelt at length with application aspects in the individual review, rather than trying to cover this aspect of things in a general way here. This has sometimes resulted in a longish review, but is, I feel, worthwhile and in the best interests of the manufacturers and prospective users alike if best results are to be obtained from a given unit.

What of the results? One point that has certainly emerged is that generally, you get what you pay for - the only exception to this being the two DAS units, which although nicely made, have some peculiar performance parameters, and were among the most expensive units tested. With all other units, we found that the best performance was obtained with the more expensive products.

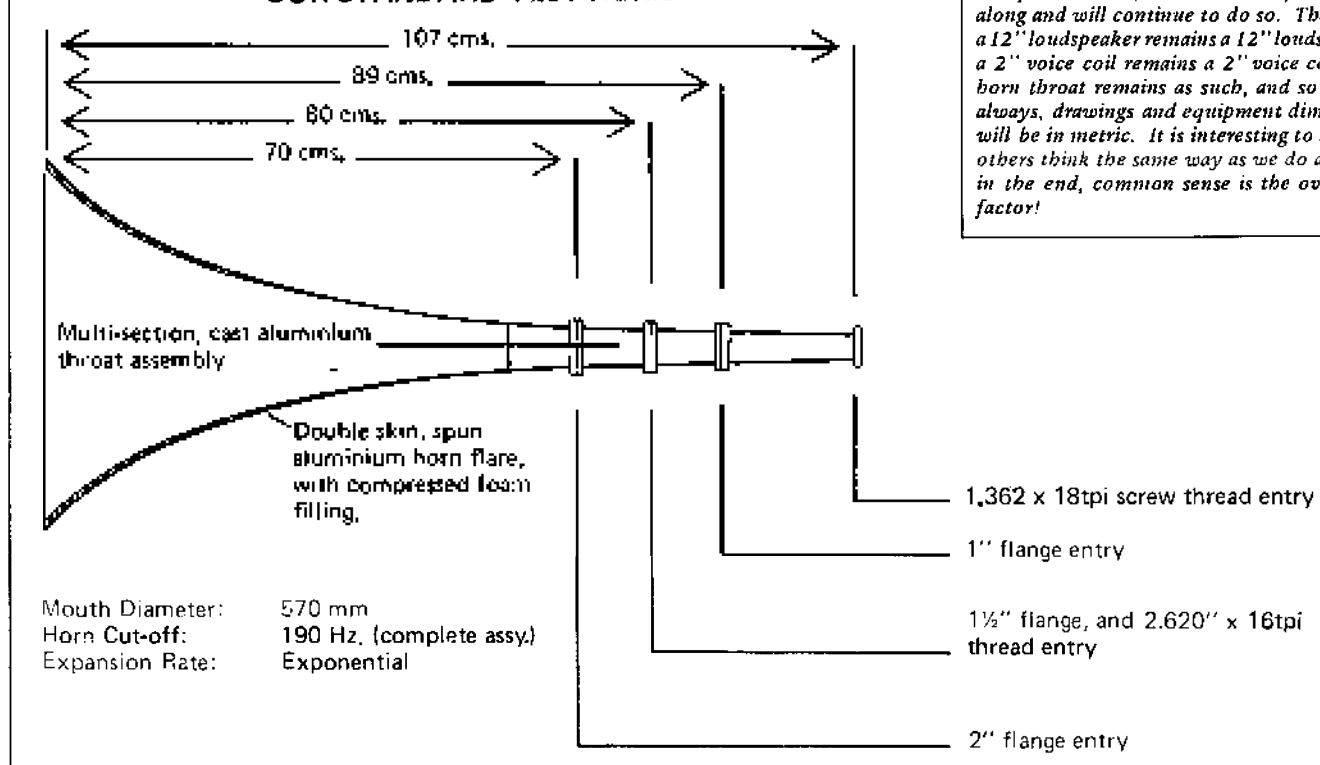
As usual, the samples from the Electrovoice stable totally complied with the maker's figures - almost to the letter, and showed themselves able to handle considerable amounts of power without damage. Used within its ratings, I would suggest that it would really take some doing to blow an EV 1823 for example although its frequency response is by no means exceptional. For my money, the two Vitavox units, the GP-1 and GP-2 have exhibited the best overall set of results, with by far the smoothest frequency response - a very important

consideration in a compression drive unit - good sensitivity and total compliance with the maker's figures. The GP-2, at £46.44, is excellent value for money, while the GP-1 offers at extended and smoother response at £70.20. I would have expected more sensitivity from the GP-1 as well, but our results did not support this. I would, however, urge the manufacturers to seriously consider the re-rating of these units for application within a wide-band music loudspeaker system, as the present ratings apply to wide-band use as a driver for public address horns at sporting events, etc. From our results, I would expect the GP-1 to cope easily with a 100 watt system rating at frequencies above 800Hz, and the GP-2 to be not far below - probably 50 or 70 watts system. However, the manufacturers should of course be consulted on such matters before manufacturer's ratings are varied on a commercial scale.

Next month, we have another eight reviews of compression drivers in the "special" category. I would suggest that you keep this month's copy for reference in conjunction with next month's feature. The test procedure information will not be repeated next month.

The November 1978 issue of "Studio Sound" magazine carried as its leader, under the heading "Imperialisation", a policy statement to the effect that it will in future publish colloquial measurements such as tape dimensions, tape speeds, tape spool sizes, etc. in imperial units, therefore abandoning metrication in this particular respect. They are continuing to publish equipment dimensions, etc. in metric units. In Speakercheck, we have done just this all along and will continue to do so. Therefore, a 12" loudspeaker remains a 12" loudspeaker, a 2" voice coil remains a 2" voice coil, a 1" horn throat remains as such, and so on. As always, drawings and equipment dimensions will be in metric. It is interesting to see that others think the same way as we do and that in the end, common sense is the overriding factor!

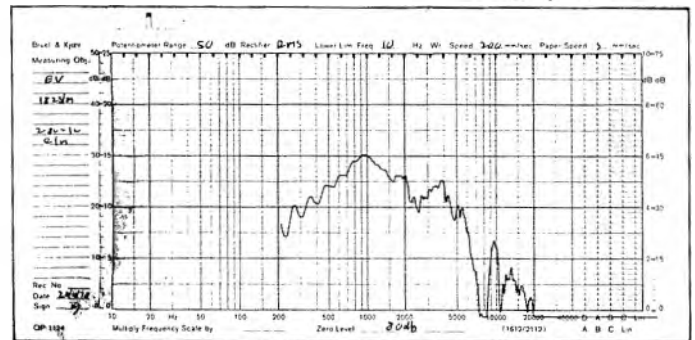
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SPEAKERCHECK

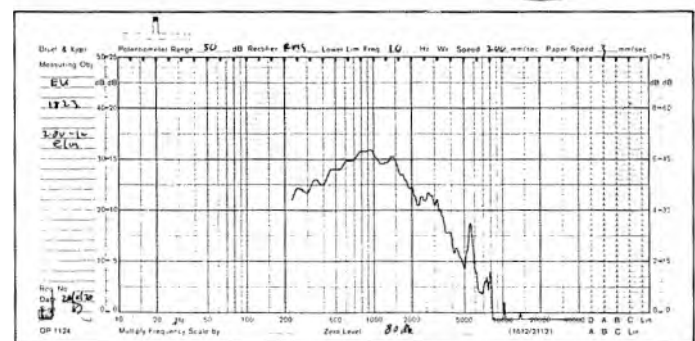
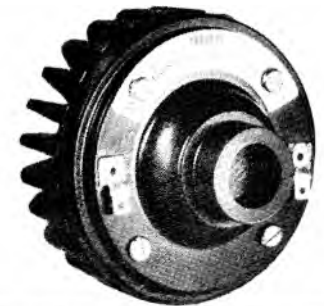
ELECTROVOICE 1823/M RRP incl. VAT £69.12

Parameter	Manufacturer's Rating	Test Result
Power	60 w long term average 600 w short term	Confirmed at equivalent sine wave power of 6w RMS above 400Hz
Distortion	Not stated	5% @ 6w as above
Sensitivity	105dB @ 1w @ 1m when coupled to EV 8H9 horn	105dB @ 1w @ 1m averaged between 1.5KHz and 5KHz — see graph
Resonance	Not stated	800Hz coupled to standard test horn
Impedance	8 ohms nominal	10-16 ohms
Recommended c/o frequency	800Hz	800Hz
Useful freq. response	800Hz-3.5KHz + or - 3dB	400Hz-6Hz @ -12dB — see graph



ELECTROVOICE 1823 RRP incl. VAT £61.56

Parameter	Manufacturer's Rating	Test Result
Power	110w programme 90 w sine	Confirmed at equivalent sine wave power of 11w RMS above 400Hz
Distortion	Not stated	8% @ 11w as above
Sensitivity	126dB @ 90w @ 4ft coupled to EV AR400 horn	109dB @ 1w @ 1m averaged between 500Hz and 2KHz — see graph
Resonance	Not stated	700Hz coupled to standard test horn
Impedance	8 ohms	6.5-12.5 ohms
Recommended c/o frequency	Not stated	400Hz
Useful freq. response	350Hz-8KHz	400Hz-3.5KHz @ -12dB — see graph



These two units are of identical basic construction, and I suspect that the 1823/M was developed from the basic 1823 unit for specific application as a mid-range reproducer. Like the two Vitavox units reviewed this month, the 1823 was originally intended for use as a high power public address horn driver for speech announcements and also for electronic siren applications. Hence, its specification sheet refers to sometimes odd and unusual parameters, such as the way in which the sensitivity figure is expressed. Due to their origins, both these units are brute-force drivers and are able to handle almost as much sine wave power as they can musical programme. We did in fact carry out a sine wave test at 90 watts RMS in verification of the maker's spec, on the 1823, and to our surprise, the unit seemed quite happy — although distortion did rise to about 20% in the process. Both units are of sound and robust construction, with a cast iron, fluted 'pot' enclosing the Alnico type magnet, a heavy, cast face plate, and standard 1.362" x 18tpi threaded entry.

Termination is unusually by means of a pair of 0.25" AMP connectors, which are not colour coded, but marked as 'T1' and 'T2'. The purchaser has to read the small print in the engineering data sheet supplied with the 1823 to establish that 'T1' is the positive terminal, and in the case of the 1823/M, you presumably have to hazard a guess! This cannot be described as a desirable state of affairs and is a matter that the makers would do well to look at. Incidentally, the mating AMP type connectors are supplied with the units. The 1823 is finished

in grey stove enamel and is somewhat utilitarian in presentation, while the 1823/M is finished in black, with smart aluminium label plates and other cosmetics, and certainly conveys the more professional image of the two.

At a first glance at the frequency response curves, one might be forgiven for thinking that this unit is another 'peak' generator, but if it is realised that these units are marketed solely as midrange drivers, then a rather different picture exists. The 1823 M, if crossed over at 800Hz as recommended, will give a useful response up to about 6KHz, but would be better crossed over again at the recommended 3.5KHz to a high frequency unit. The 1823, however, has a more useful output at the lower end of the mid band, but falls off rapidly above about 3KHz, and my own inclination with such a unit would be to crossover into the unit at about 400Hz, and crossover again at 3KHz or even lower. This approach will ensure that the units are used to maximum benefit in terms of useful response and sensitivity. It can be seen that both units confirmed the maker's power ratings, and that sensitivity figures also lined up with the maker's claims.

These are without doubt, a pair of very useful, workhorse, midrange drivers. They will handle incredible amounts of power without damage and are of robust mechanical construction. Finish and presentation are also of a good order and they are not expensive by current market prices.

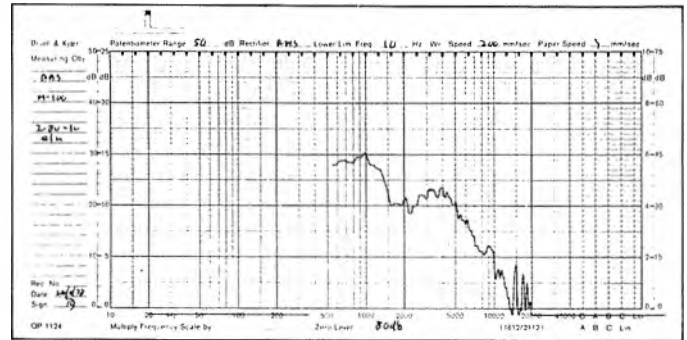
SPEAKERCHECK

DAS M-100

RRP incl. VAT £63.43



Parameter	Manufacturer's Rating	Test Result
Power	7w 'Continues' 20w Cont. Music 60w Peak	Confirmed at equivalent sine wave power of 2w RMS, and at 7w RMS
Distortion	Not stated	3% @ 2w and 6% @ 7w as above
Sensitivity	99dB @ 1m input level not specified	101dB - 1w @ 1m averaged between 1.5KHz and 6KHz - see graph
Resonance	Not stated	1.3KHz coupled to standard test horn
Impedance	8 ohms	5.5-15 ohms
Recommended c/o frequency	800Hz or 1.5KHz - implied	1.5KHz @ 18dB/octave - see text
Useful freq. response	1.5KHz-15KHz unqualified	1.5KHz-10KHz @ -12dB - see graph

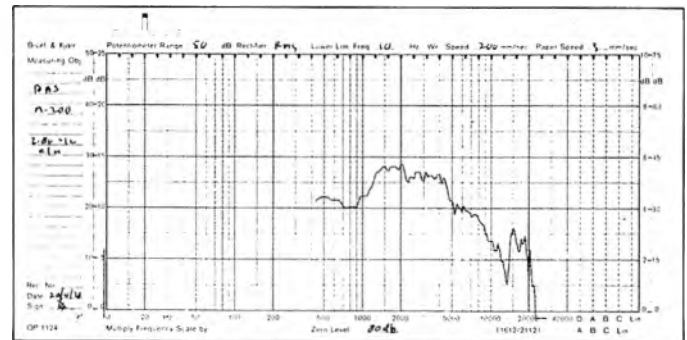


DAS M-200

RRP incl. VAT £87.04

Parameter	Manufacturer's Rating	Test Result
Power	10w 'Continues' 40 w Cont. Music 100w Peak	Confirmed at equivalent sine wave power of 4w RMS above 800Hz
Distortion	Not stated	10% @ 4w as above
Sensitivity	102dB @ 1m input level not specified	106dB @ 1w @ 1m averaged between 1KHz and 5KHz - see graph
Resonance	Not stated	1.3KHz coupled to standard test horn
Impedance	8 ohms	7.5-15 ohms
Recommended c/o frequency	800Hz implied	1.5KHz - see text
Useful freq. response	800Hz-15KHz unqualified	800Hz-9KHz @ -12dB - see graph

Note: these manufacturer's figures apply to the respective unit coupled to a DAS horn type D-100, using an unspecified pink noise test signal. The expression 'continues', given against the power rating presumably means sine wave, and has been interpreted as such.



These units are manufactured by Acoustic's S.A. of Valencia, Spain. The manufacturers use the trade mark DS on their own literature, although for some reason the importers seem to prefer to use DAS. At present, there would seem to be two companies, Eurotronics of North London, and Electronic Manufacturing Sales Ltd. (the Laney Amplification people) in Birmingham, battling for an exclusive agency, while the manufacturers seem to be keeping their options open - for the time being at least - and are supplying both. No doubt this situation will resolve itself in due course, but for the first time, we received two sets of samples of the same product from the two importers! As it happened, this was just as well, as one of the M-200 units arrived without a diaphragm assembly, and one of the importers had no M-300 units in stock (to be reviewed next month), so between the two lots, we managed to assemble a complete working set of the three units listed in the maker's catalogue.

Both units are of identical construction and presentation, the M200 being about twice the size and weight of its baby brother. Both units are designed to mount only onto the DAS range of horn units, as although a 1" flange type, three bolt entry is employed, the pitch circle diameter of the fixing bolts is different to the standard arrangement as used by JBL, among others. The units consist of a flat ceramic type magnet with a tapered hole through the centre, carrying the diaphragm assembly on its rear face. Therefore, the acoustic output is taken from the underside of the dome via the tapered passage in much the same way as employed by JBL (see next month's Speakercheck). The diaphragm assembly is then protected by an unnecessarily large, but nicely made, cast alloy rear housing which, in the case of the M-100, is acoustically damped to provide a loading chamber for the diaphragm. The M-200, however, is fitted with a totally enclosed diaphragm assembly, and therefore the large rear cover serves no useful purpose at all, apart from imparting an impressive size aspect to the unit. In fact,

the whole form and design of these units, visually at least, is very similar indeed to the JBL way of doing things. The standard of workmanship, quality of materials and finish is generally good, and the whole diaphragm assembly can be replaced in a matter of seconds with just an allen key and a screwdriver with the unit in situ - again, virtually a replica of the JBL arrangement.

From a performance aspect, however, the similarity with its obvious progenitor ends. The sensitivity of the M-100 is the lowest of all the units tested this month, while the M-200 is about average. Provided that a steep slope crossover is employed to cut the unit off below 1.5KHz, then the M-100 exhibits a reasonable frequency response up to about 10KHz. However, if the maker's recommendation of an 800Hz crossover for the M-200 is adhered to, then a very steep rise in response will be apparent immediately after the crossover point. It is my opinion that it would be better to cross this unit over at 1.5KHz as well, in order to avoid a dip in the system response at crossover. Power rating seems to present no problems, and distortion was particularly low in the case of the M-100, at just 3% - the lowest measured.

These drivers are certainly nicely made, but I can see many problems in application. Mechanically, the throat coupling is non-standard - a practice often adopted to ensure that the maker's own horns are purchased as well, and a practice which usually results instead of none buying the unit! Performance-wise, the crossover points necessary to achieve a sensible response curve are too high for mid-range application, but the top end response is not good enough for use as a high frequency unit, as it would really be necessary to crossover a third time to a 'super tweeter' at about 5KHz. Therefore, I see a main application as a second, or upper, mid-range driver in a four way system, rather than as a general purpose driver for which these are intended. Also, there are several superior units included in this review at similar, if not lower, prices.

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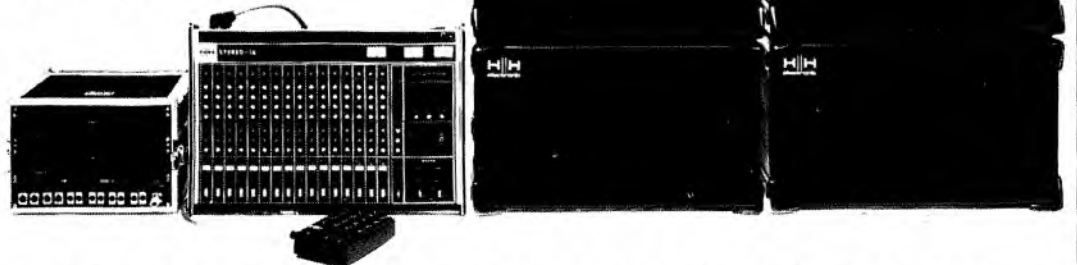
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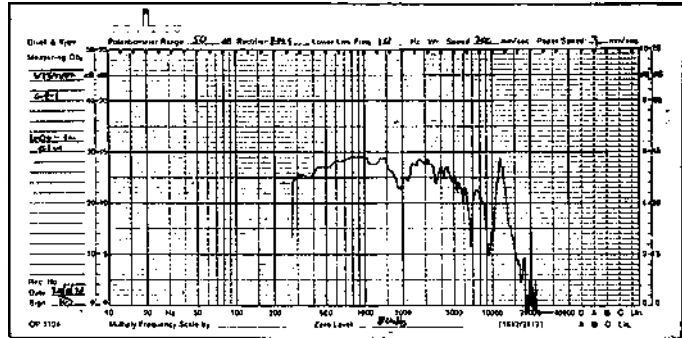
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SPEAKERCHECK

VITAVOX GP-1

RRP incl. VAT £70.20

Parameter	Manufacturer's Rating	Test Result
Power	20w above 200Hz	Confirmed at equivalent sine wave power of 2w RMS above 400Hz
Distortion	Not stated	10% @ 2w as above
Sensitivity	Not stated	108dB @ 1w @ 1m averaged between 500Hz and 5KHz
Resonance	Not stated	2KHz when coupled to standard test horn
Impedance	15 ohms @ 1KHz	11.5-22.5 ohms (15 ohms confirmed @ 1KHz)
Recommended c/o frequency	Not stated	Above 400Hz
Useful freq. response	200Hz-14KHz nominal	200Hz-14KHz @ -12dB - see graph



This is a superbly made, high performance drive unit that was originally designed many years ago for use as the drive unit on industrial and open air public address horns — dare I say it, 'Tannoy' systems, if you like. For this reason, it has been largely overlooked as a compression driver for use over the mid and/or upper registers of a two or three way PA or disco loudspeaker system for application in the music business. The maker's own power rating of 20 watts is in all probability one of the reasons why the unit is rarely used for this purpose, but if the crossover frequency is raised to, say, 500Hz, or even better, to 1KHz, and a 12 dB/octave filter employed, then the unit can be expected to cope easily with a 100 watt system rating. In fact, I have personal experience of two GP-1's used in just this way in a University students' disco, that have so far been in continuous service for ten years without a single failure — and they do get a thrashing! To verify this, we did re-test the unit at 10 watts RMS sine wave, and although distortion increased somewhat, there were no real signs of stress. Maybe the manufacturers should do a re-rating exercise on this unit and start selling it as a music system driver. What is more, Vitavox are an old

established British maker, and these are the only products to be submitted for our review by a British manufacturer.

The unit is solidly built, based on a large Alnico type magnet structure, carried by a cast alloy face plate. The unit is heavy to handle and is very nicely finished, with machined aluminium screw terminals and clear labeling. The throat coupling is to the international standard, 1.362" x 18 tpi screw thread. As can be seen, the unit performed very well indeed, with quite the smoothest frequency response obtained during these tests, and good sensitivity, although distortion, in keeping with most units tested, is on the high side.

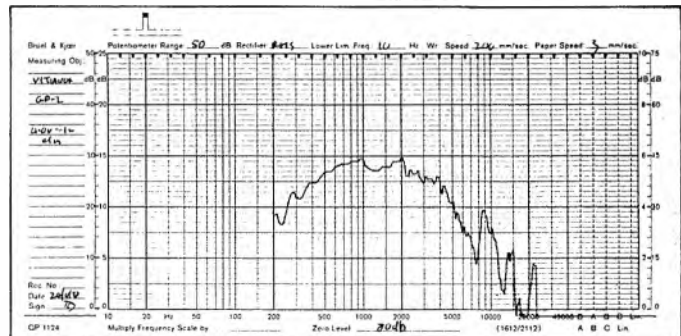
Note that the manufacturer's specifications — the few that are furnished, that is — are exactly confirmed by our test results. There is, however, one slight drawback to the GP-1, this being that the diaphragm cannot reasonably be replaced on the road. As the operation involves breaking the magnetic circuit, the makers strongly recommend that the unit is returned to the factory for repair.

Altogether, a very nice unit, and not excessively expensive for this level of quality and performance.

VITAVOX GP-2

RRP incl. VAT £46.44

Parameter	Manufacturer's Rating	Test Result
Power	20w above 200Hz	Confirmed at equivalent sine wave power at 2w RMS above 400Hz
Distortion	Not stated	8% @ 2w as above
Sensitivity	Not stated	108dB @ 1w @ 1m averaged between 500Hz and 5KHz — see graph
Resonance	Not stated	1.8KHz when coupled to standard test horn
Impedance	15 ohms @ 1KHz	14-18.5 ohms
Recommended c/o frequency	Not stated	Above 400Hz
Useful freq. response	300Hz-10KHz nominal	300Hz-10KHz @ -12dB — see graph



This is another soundly constructed unit from this British manufacturer, and is the baby brother to the GP-1 reviewed above.

A rather smaller, Alnico type magnet is employed, although in this instance, the face plate and screw thread are moulded in a hard black plastic, and the nice machined terminals are replaced by a pair of ordinary screws. Even so, it remains a nicely made unit at just two thirds of the price of the GP-1.

Again, a good set of results, and in exact confirmation of the maker's specification, with a usefully smooth frequency response and good sensitivity. Like the GP-1, this unit also started out in life at the end of a PA trumpet type horn — probably on a wet Sunday afternoon at a showjumping event or something similar! It is this alternative applica-

tion which accounts for the comparatively low power rating of these units, as in such a situation, they would be used as a wide band loudspeaker, often down to 100Hz without filters. At the reduced energy present at mid and high frequencies of a two or three way, filtered loudspeaker system for music application, these ratings can safely be increased by factors of four, five or even six times, depending upon the actual crossover frequencies employed. One advantage offered over its big brother is that the diaphragm is field replaceable, although the operation does involve the use of a soldering iron.

A nice little unit, at a sensible price, that should, from our figures, be in far greater use in the music industry than it is at present.

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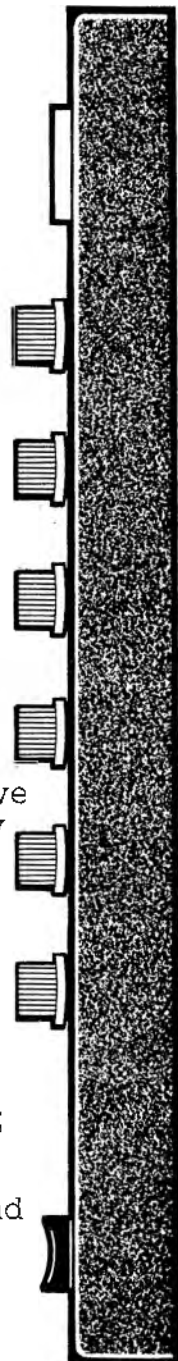
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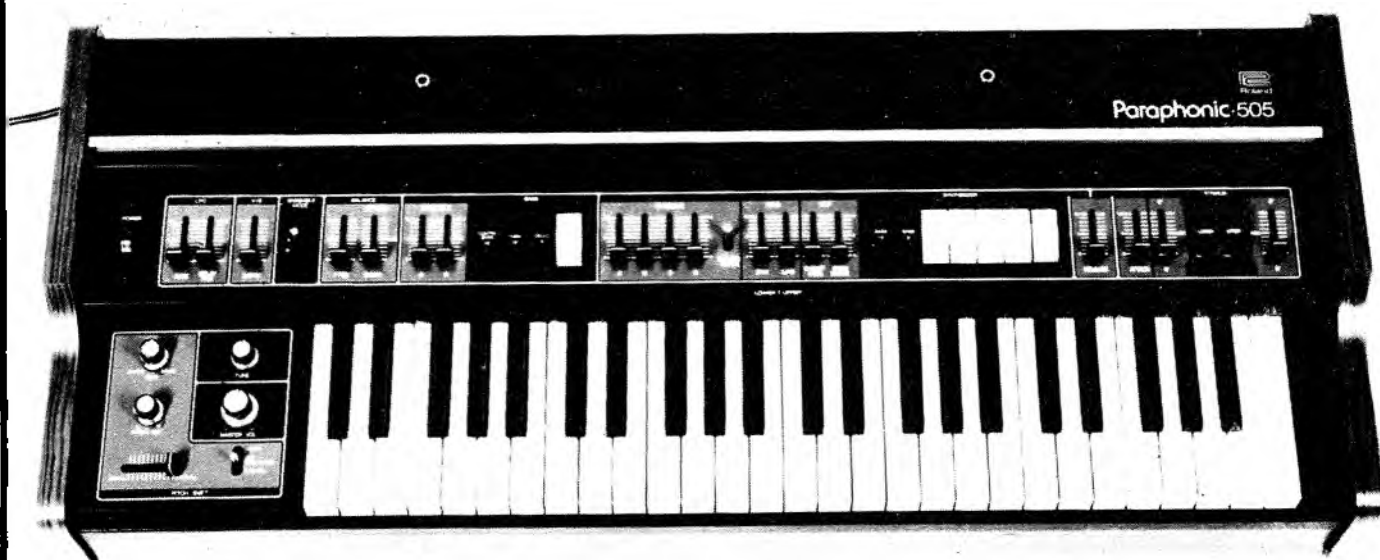
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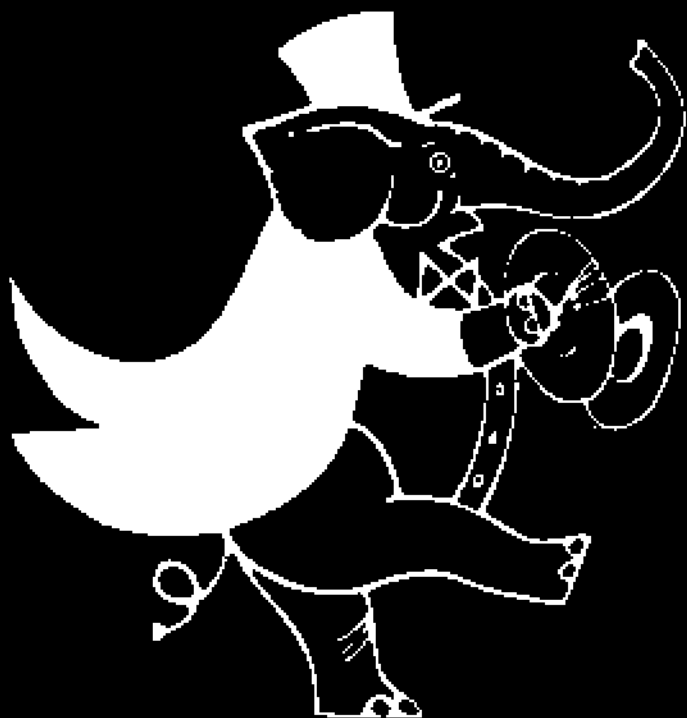
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THE HIRE COMPANIES

An alphabetical run-down of the firms who provide the PAs, the lights, the back line gear and even the instruments. If you've got the money, all this can be yours...



Who are they?	How much power?	What does it consist of?	Crew and transport	Previous clients	Cost and contact
ACME PA HIRE, Willowbank, Leeds Road, Otley, W. Yorks. 09434-2261	1Kw	Martin bins, JBL and Gauss drivers, JBL horns, Crown amps, Kelsey 16 channel mixer, Shure, AKG, Beyer mikes.	Yes	Penetration, Johnny Moped, Pacific Eardrum, Boyfriends	£50 per night plus fuel. Contact John Hay and John Sessions.
ANDROMEDA SOUND SYSTEMS, 1 Thirlmere Gardens, Belfast 15. 0232-772491	10Kw and 36Kw lighting	Martin bins, flares, Vitavox multicells and radials, Gels and MM 24, 16 channel mixers	Yes	Queens University Festival, Ralph McTell, Tom Paxton, Harry Chapin	Prices negotiable. Contact John Connolly
BAN MANAGEMENT 89/97 St. John Street, EC1. 01-253 9410	200w-5Kw	JBL, Gauss drivers, Yamaha, Phase Linear amps, Midas, Gelf, Yamaha mixers, Shure, AKG mikes	Yes	Steel Pulse, X-Ray Spex, Little Bob Storey, Adam and the Ants	200 watts, take away £10 a night. 5Kw + monitor mix £140 per night + 15p per/mile outside London. Contact Angus Boucher
BIGGLES MUSIC, 85 West Street, Old Market, Bristol. 0272-552147	6Kw + backline amps and most instruments	ATC, JBL bins, JBL, Vitavox, HF, RSD and Turner amps, Soundcraft, Hill and RSD mixers, AKG Shure and Sennheiser mikes.	Yes	Rich Kids, Adverts, Wayne County, Pop Group	Prices negotiable. Contact John Botting
BRITANNIA ROW, 35 Britannia Row, London NW1. 01-359 5275	1Kw-60Kw, studio electronics 300Kw lighting. See lighting section.	Martin bins, JBL cabs, JBL and Altec horns, Gauss and Coral HF, Phase Linear and BGW amps, Midas mixers	Yes	Bob Dylan at Blackbushe, Pink Floyd	Prices negotiable. Contact Robbie Williams
CASCADE MUSIC & HIRE, 42-44 Upper Tooting Road, London SW17. 01-672 3997	Up to 3Kw + 1Kw foldback	JBL bass bins and drivers, ATC midrange, Vitavox HF, Amcron amps, Soundcraft and MM mixers	Yes, UK and Europe	999, Steel Pulse, Reggae Regular, UK Subs	Example: 3Kw main rig, 1Kw foldback, 3 man crew, transport, London, £115 per night. Contact Steve Bramhall
COLAC, 39-51 Highgate Road, Kentish Town, London NW5. 01-267 9239	4Kw-15Kw and Genie lighting rigs, effects. See lighting section	Martin bass and mid bins, JBL horns, Midas and HH mixers and amps, Shure and AKG mikes	Yes	John McLaughlin, J.J. Cale, Black Sabbath US Tour, Lindisfarne	Prices negotiable. Contact Keith Davies
CUSACK'S MUSIC, 33 Braunstone Gate, Leicester. 0533-548517	Up to 2Kw	Martin bass bins with JBL drivers. Flared 15" bins for midrange. Flared 12" cabs for high mids, RCF horns and piezos for high frequency.	Yes	Chrome Molly, Scene Stealer, Big Red Door	Prices negotiable. Contact Steve Cusack
ELECTRO SOUND PRODUCTIONS, 11 Marshalsea Road, London SE1	Usually 10-30Kw but unlimited. 150Kw light rigs. See lighting section.	Own design and built "turbo-cabs", JBL drivers, horns and HF radiators, Amcron amps, JBL amps in USA, Soundcraft mixers.	Yes	Rod Stewart European Tour, Queen, Bruce Springsteen, 10cc	Prices negotiable. Contact Simon Woodroffe.

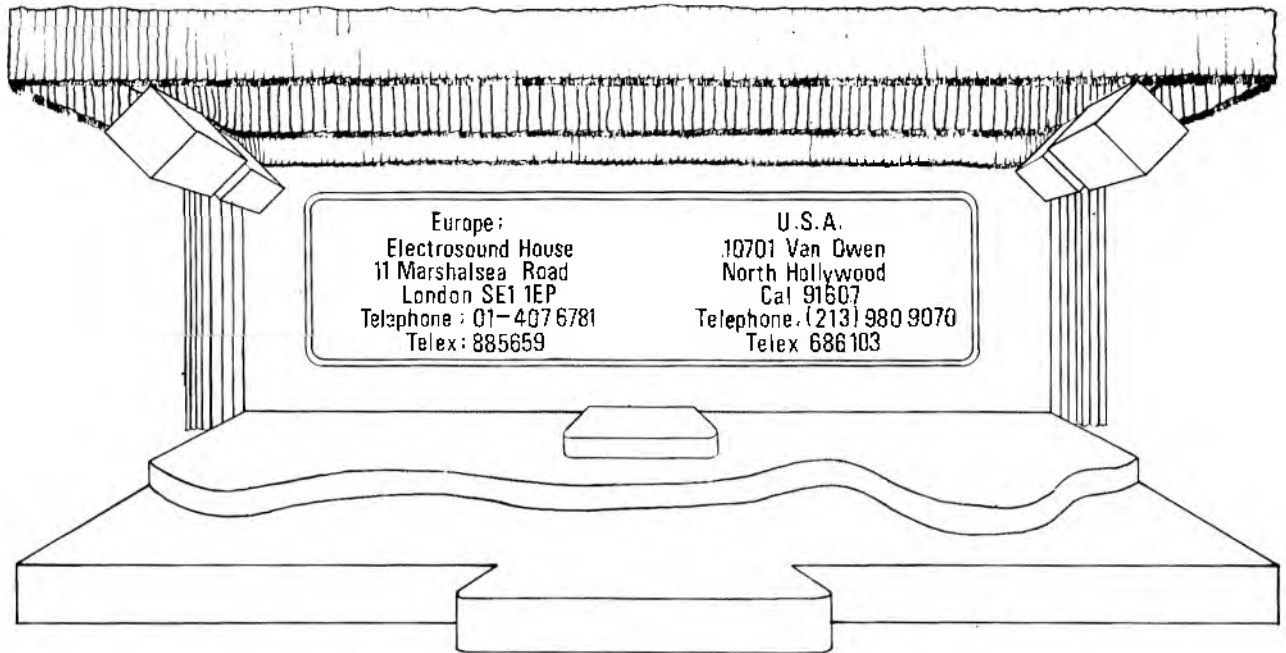
Who are they?	How much power?	What does it consist of?	Crew and transport	Previous clients	Cost and contact
ML EXECUTIVES, Shepperton Studio Centre, Squires Bridge Road, Shepperton 093-62611	PA power unlimited. Hire wide range of instruments and backline amps, three rehearsal studios. See instruments section	Martin bins and mid range cabs, JBL horns and Gauss and JBL tweeters, Crown, BGW, HH amps, Gelf crossovers, Midas, Neve and Soundcraft mixers, studio effects	Yes	Sailor, Devo, Grateful Dead at the Great Pyramids	Prices negotiable. Contact Roger Searle
MUSCLE MUSIC, 74 Great Suffolk Street, SE1 01 928 6649 or 01-633 0065	6Kw PA, 5½Kw foldback. Rehearsal studios for hire	Martin bins, Cervin-Vega bins, JBL drivers, Emilar, Gauss and Piezo HF gear. Own design and built mixer, RSD amps	Yes	The Jam	Prices negotiable. Contact Mark Hardy and Alan Wick
MUSIC HOUSE, 387 Lincoln Road, Peterborough 0733-51485	400 watts, backline amps available, 5Kw light rig	HH mixers, Electrovoice bins and horns	Yes	Cabaret acts	Amp tops from £3 per night. Contact Chris Allen
MUSIC STUDIO, 69 Main Street, Cambuslang, Strathclyde, Scotland 041-641 5322	200-500 watts, also backline amps	Altec drivers and bins; Vitavox drivers, Custom Sound amps, Shure, AKG mikes, Custom Sound combos	No		Prices negotiable. Contact Dave Findlay

ENTEC, Shepperton Studios, Squires Ridge Road, Shepperton. 09328-66777	Usually 30Kw but unlimited. 30Kw-150 Kw lighting rig. See lighting section.	Martin bins, JBL horns, JBL H4 tweeters, BGW, Crown amps, Midas, Soundcraft mixers	Yes	Reading Festival, Lou Reed, Patti Smith, Climax Blues Band	Prices negotiable. Contact John Denby
ESE HIRE, 2 Upperfont Road, Maidstone, Kent.	7Kw, backline amps and instruments available	JBL bins, horns and tweeters, Crown amps, Soundcraft 24, 16, 12 channel mixers	Yes	Isaac Hayes, Charlie Pride, Don Williams, Hall and Oates	Prices negotiable. Contact Steve Thorneycroft
GROUND CONTROL, 9 Wood Close, E2. 01-739 1448	three 5Kw rigs	JBL, Gauss speakers, Amcron, Turner and Crown amps, Turner mixers.	Yes	Frankie Miller, Peter Tosh, Jacques Higelin in France	Prices negotiable. Contact Robin Mayhew
HW AUDIO, 174 St. George's Road, Bolton, Lancs. 0204-385199	1Kw, 36Kw lights, instruments and backline amps available	Altec, Electrovoice, Tyas and HH components	Yes		1Kw and backline plus technicians £80 per night. Contact Chris Harfield
MALCOLM HILL ASSOCIATES, 6 Lillie Yard, 19 Lillie Road, London SW6 01-381 3446	100Kw	All equipment designed and built by Malcolm Hill's ATC bass and mid drivers, Gauss upper mids, JBL tops, Shure, AKG, Sennheiser mikes	Yes	Third World, The Lurkers, Split Enz, Racing Cars	Prices negotiable. Contact Ron Blechner
KEYBOARD HARMONY, 82/84 The High Street, Redhill, Surrey. 01-916 8821	1Kw, can supply any sort of backline amps and instruments	Traynor bins and amps, Altec bins, HH mixer.	No	Screen Idols, Woody Woodmansey	£1000 of equipment £30 + VAT per week. Contact Jan Pickett
KVA AUDIO LEASING, 28 Powis Terrace, W11 01-229 4665	2Kw	Four Audio Leasing Concept enclosures including 15" bass driver, 12" midrange, four piezos, four Goodmans horns, Custom designed amps, Kelsey main desk, Mavis monitor desk	No		For six month hire of rig, £172 per week. Contact Richard Vickers
LIVEWIRE, 25-29 Bulwer Street, W12 01-743 9527	Up to 12 Kw	JBL speakers, Crown and BGW amps, wide range of backline, rehearsal room monitoring, lighting	Yes	Graham Parker, The Dickies, Motorhead, Caravan	Rates negotiable. Contact Will Roberts for PA, Dave Gardiner for lights
LOUGHBOROUGH MUSIC HIRE, 18 The Rushes, Loughborough, Leics. 0509-30398	1Kw backline amps and disco hire	Goff Products 12 channel mixer and amps, Shure, Sennheiser and Beyer mikes	Yes		Prices negotiable. Contact Barry Coleman
MERIDIAN, Kingston Road, New Malden, Surrey 01-942 0265	5Kw	Electrovoice and ATC powered low and mid bins, Electrovoice, Fane and RCF horns, JBL tweeters, Kelsey mixers, Shure, Beyer and AKG mikes	Yes	Generation X, Eric Clapton, Jose Feliciano, Shooter	Prices negotiable. Contact Paul Adrian

THE PA COMPANY, 7/9 Market Road, N7 01-607 0087/8	5Kw club installations and lights available	JBL and Gauss drivers, Soundcraft mixers, Yamaha amps and mixers	Yes	Gene Pitney, John Martyn, Nana Mouskouri	Rehearsal and monitoring rig £20 and above, 5Kw rig, crew and transport in London, £80. Contact Ralph Harrison
PANORAMA SOUND, incorporating Big Vu, 31 Banham Road, SW2 01-733 0369	5Kw, average 3Kw. Reggae specialists	Martin bins, JBL, Gauss and ATC drivers, Amcron amps, Amek mixers, AKG Shure and Calrec mikes. JCL monitors	Yes	The Clash, Rezillos, I Roy, Reggae Regular, Blast Furnace	3Kw rig, £550 per week. Contact Chris Aye.s
PANTHER SOUND HIRE, 6/8 Avon Trading Estate, Avon More Road, W. Kensington 01-603 4438	200 watts- 5Kw rigs, 12Kw lighting rig	Zoot-Horn equipment, ATC bins and mid cabs, Gauss HF horns and Electrovoice tops, BGW amps, Zoot-Horn and Soundcraft desks, Sennheiser, AKG, Shure mikes	Yes	Merger, Squeeze, Chelsea, John Otway	Prices negotiable. Contact Paul Lillie
PASE EQUIPMENT HIRE, Armley Ridge Road, Leeds 12 0532-632402	5Kw	Martin low and mid bins, JBL horns and tweeters, Amcron and HH amps, Midas mixers, Shure, AKG mikes	Yes	Iggy Pop, Johnny Mathis, Max Boyce	5Kw rig with crew of three and truck, £200 per day. Tours negotiable. Contact Derek Smith
PEAK SOUND AND LIGHTING, 12 Buxton Road, Hazel Grove, Stockport, Manchester. 061-456 6100	400 watts- 7Kw lights up to 24Kw	Own bins, Gauss, ATC drivers, Altec horns, RCF tweeters, RSD Custom Sound amps, own mixers	Yes	Open air festivals, John Cooper Clarke, Penetration, Vibrators, X-Ray Spex	Prices negotiable. 1.6Kw rig with crew delivered in north west England. £50
PILEDRIIVER EQUIPMENT HIRE, 11 Harrison Gardens, Edinburgh 11 031-337-1071	3Kw, backline amps available 12Kw lighting	JBL bins, ATC powered mid cabs, Coral tops, also Bose speakers, RSD amps, MM mixers, Shure, AKG, Beyer mikes, HH, Marshall and Custom Sound combos	Yes	Radio Forth, Rosetta Stone	Prices negotiable. Contract Dave, 'Doggie and Pete
RENT A RIG, 2a Coolhurst Road, Crouch End, N8 01-485 0693	5Kw, and backline amps	JBL bins, Crown, RSD and Phase Linear amps, Soundcraft desks, Shure, AKG mikes, Fender, Marshall, HH, Hiwatt combos	Yes	Marianne Faithfull, Barry Ford, Angle Tracks, Gonzales	Prices negotiable. Contact John Ryan and Geoff Beadman
RIG HIRE, 20a Russell Parade, Golders Green, NW11 01-458 5807	3Kw-20Kw see lighting section under "Liquid Lens"	Own manufacture bins, ATC drivers, CTS, JBL HF components, Hill amps and mixers, Shure, AKG, Sennheiser mikes	Yes	Hawkwind, Motorhead, Osibisa, Link Wray and Robert Gordon	Prices negotiable. Contact Gary Nielson
RSD, Home Farm, Northall, Eton Bray, Dunstable, Beds. 0525-221331	4Kw-20Kw hire studio mixers	RSD bins, Gauss drivers, Electrovoice mid cabs, JBL horns and tweeters RSD amps and mixers, Shure, AKG and Sennheiser mikes	Yes	Judas Priest, Hi Tension, Ultravox, Clash	Most prices negotiable. One off gig 4Kw rig, crew £150 plus expenses. Contact Dave South

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RED U.K. PA HIRE Coddery, Rising Lane, Lapworth, Solihull, West Midlands 05643 2960	Between 1.5Kw and 5Kw plus 1.5Kw foldback	Electrovoice horns, Gauss cabs, Gauss-loaded Martin bins, ATC HF radiators, JBL horns and bins, RCF horns, Piezo tweeters, RSD and Turner amps Gell and Canary desks Acoustic and Marshall back line	Yes	Sonia Kristina, Tyla Gang, Johnny Thunders and the Heartbreakers	Rates negotiable 3Kw rig costs roughly £450 per week plus VAT and transport. Contact Mark Robbins
STAGE SHOWS, Marzell House, 116-126 North End, Road, London W14 01-381 3547	0.5Kw, 95Kw lighting rig	Gauss and JBL drivers, Amcron amps, Gell monitor mixers, Sound- craft main mixer	Yes, Europe and UK	Dr. Feelgood, Barbara Dickson, Elkie Brooks, Rory Gallagher	Cost for one week in England including sound, lighting, trailer and crew bus - £2600 Add approx. £200 per week for Europe. Contact Keith Ferguson
STARHIRE, The Store, Clare Crescent, Baldock, Herts. 0462-892480	1Kw to 6Kw	All speakers are EV, RSD and MM amps, Kelsey and custom built decks	Yes	Tanner Zuki, Merger, Split Enz, Junior Walker	Package offer of 3Kw main rig, 1Kw foldback, 24Kw lighting with crew and transport - £800 per week. Contact Roger Barrett
TASCO, 113/115 Lambeth Road, London SE1 01-582 3020	10Kw- 150Kw 300Kw high rigs (see lighting)	Martin and JBL low and mid bins, Gauss drivers, BGW, Peavy amps, Midas, Mavis and Yamaha mixers, Shure, Neumann, AKG, Electrovoice mikes	Yes	Santana, Elton John, Al Dimeola, Moody Blues	Prices negotiable Contact Euan Craig
TELECOMMS, 189 London Road, North End, Portsmouth, Hants 0705-60036	1Kw-5Kw back line amps available	1Kw MM package Base speakers, HH amps, Sound- craft mixers	Yes	Bruce Forsyth, Mary O'Hara, Staa Marx, Nick Hugg	Prices negotiable Contact Mike Devereux
THEATRE PROJECTS, 10-16 Mercer Street, London WC2 01 240 5411	1Kw-5Kw (see lighting section)	ATC, Gauss, Alter., Bose speakers, Amcron, BGW, HH amps, Soundcraft, Theatre Projects mixers, Shure, AKG, Buyer makes	Yes	Sammy David Jr., Gary Burton, Tommy Steele, Andy Williams	Prices on application Contact Mori Huffington and Paul Sparr
WESTMILL AUDIO, Westmill Road, Colinton, Edinburgh 031-441 7926	Up to 12Kw out front and 6Kw foldback	Gauss, ATC and JBL bins and speakers, BGW and Crown amps, Midas desk, lighting and some back line available	Yes	Boomburn Rats, Stew Hillgate, AC/DC, XTC	Rates negotiable Contact Billy Worton
WHALE AUDIO VISUAL, 20 Belmont Park Road, Maidenhead, Berks 0628-21696	4Kw-10Kw lighting rig	Martin bass and mid bins, Gauss HF and tweeters, HH power amps, Allen and Heath mixers	Yes	Meal Ticket, X-Ray Spex, Some Throat, Cado Belle	Combination 6Kw sound and 32Kw light rig for £150 per night Contact Mick Fincher
WIGWAM ACOUSTICS, St. Anne's House, Ryecroft Avenue, Heywood, Greater Manchester 0706 68766	Up to 5Kw	3Kw rig JBL, ATC, Hill and Gauss components, Crown, RSD and Hill amps, Hill and Midas or RSD desks	Yes	Christian bands, varied music	Rates negotiable Contact Mike Stratt
THEATRE PROJECTS, 10-16 Mercer Street, WC2 01-240 5411	Over 150Kw	Variety of Genie and truss rigs, Altman Rank-Strand and Leko lamps, memory desks	Yes	Geared for "straight" theatre but have lit Isaac Hayes, Shirley Bassey	Long lease negotiable, fixed price list for individual compo- nents. Contact Steve Prince and Danny Murphy
LAMPLITE, 16 Beech Grove Terrace, Aberdeen 0224-24256	90Kw	Genie and truss rigs, Tale, Altman lamps	Yes	The Saints, Steel Pulse, XTC, Talking Heads	30Kw rig and operator from £250 per week Contact Sandy McRobbie

Lighting Specialists

Who are they?	How much power?	What does it consist of?	Crew and transport	Previous clients	Cost and contact
LAIRHURST, 7 Wood Coed, E2 01-739 7543	Unlimited	Hartman mixers, Leko, Altman Super CS1's, aircraft landing lights, design and construct any rig to order, stage sets as well	Yes	Grateful Dead at the Great Pyramids, Wings, Roxy Music, Peter Gabriel, Genesis	Prices negotiable. Contact John Coppin
ELECTRO SOUND, 11 Marshalsea Road, SE1 01-407 6781	Unlimited	Design and construct their own equipment including boards and trusses	Yes	Rod Stewart in Europe, Queen, Bruce Springsteen and 10cc	Prices negotiable. Contact Simon Woodroffe
LIQUID LENS, c/o 20a Russell Parade, Golders Green, NW11 01-458 5807	250Kw	278 different lamps, memory desk and dimmers of their own manufacture	Yes	David Essex, Child, Ian Matthews	Prices negotiable. Contact Gary Nielsen
ZENITH LIGHTING, 115-125 Lambeth Road, SE1 01-582 3717	Nine rigs of 60Kw average	Altman, Leko, Rank- Strand lamps, boards own manufacture	Yes	The Jam, Elvis Costello, Robert Palmer, Jeff Beck in Japan	Prices negotiable. Contact Bruno Gethen, Paul Turner and John Sinden
RDE, 84 Leathermarket, Weston Street, SE1 01-403 1300	200Kw	Genie and truss rigs, Alderham dimmers, stage effects and theatrical design	Yes	Steve Hackett, Blondie, Dolly Parton, Millie Jackson	One off hire from £50, prices negotiable, Contact Richard Dale
ENTEC, Shepperton Studios, Squares Ridge Road, Shepperton 09328-66777	120Kw	Assortment of Genie and truss rigs, theatrical equip- ment, strobes, etc.	Yes	Uriah Heep, The Sweet, Patti Smith, Wishbone Ash	Prices negotiable. Contact Derrick Unwin
TASCO, 113/115 Lambeth Road, SE1 01-582-3020	300Kw	All standard equipment for large Genie and truss rigs	Yes	ELO flying saucer stage set, Corone in Europe	Prices negotiable. Contact Euan Craig
HW AUDIO, 174 St. George's Road, Bolton, Lancs - 0204-385199	36Kw	Rank-Strand, Altman lamps, CCT + ADB mixing boards, pyrotechnics effects, strobes	Yes		Prices of lights negotiable. Contact Chris Harfield
COLAC 39-61 Highgate Road Kenish Town, London NW5 01-267 9239		Two Genie rigs equipment specified	Yes	John McLaughlin in Scandinavia Black Sabbath US tour	Prices negotiable Contact Keith Davies
BRITANNIA ROW 35 Britannia Row, London NW1 01 358 5275	300Kw	Genie and truss rigs, Strong spots, Gladiators Supertroopers. Set designs	Yes	Pink Floyd	Prices negotiable Contact Robbie Williams
E-Z HIRE, 7/9 Market Road, Islington, N7 01-670 0246		Backline amplification for tours and studio, acoustic and electric guitars, pianos, organs, synths, drums and percussion. Also Artists Security and rehearsal studios	Yes, as is main- tenance	Peter Tosh, Millie Jackson, Graham Parker, Kate Bush	Prices negotiable. Contact Pat or Mac
JULIAN'S, 2 Churchill Street, NW2 01-459 7284		All group instruments, guitars, keyboards, pianos and drums	Trans- port	Three Degrees, Wings, Oscar Peterson	Prices negotiable. Contact Shirley Leigh
MAURICE PLACOUET HIRE, 69 Jeddo Road, Shepherds Bush, W12 01-749 3232		All instruments, brass and woodwind specialists, hire acoustic pianos, backline amps, guitars, drums, synths	Trans- port	BBC, Dean Friedman, many studios	Prices negotiable. Contact John or Mike
PRO PERC, 2 Highgate Road, Kenish Town, NW5 01-485 0622/4434		Every sort of percussion instrument there is, specialists in tuned percussion and drum kits	Trans- port	Many London studios, Sammy Davis Jr., Charles Aznavour	Five drum kit £15.50 per day, vibraphone £7 per day. Contact Chris or Duncan
HENRIT'S DRUM STORE, 112-114 Wardour Street, W1 01-734 7121		Every sort of percussion equipment and drum kits	Yes	Genesis, Thin Lizzy, ELO, Buddy Rich	Studio rates for live drum kit and cymbals, £12 per day Contact Collin Nash

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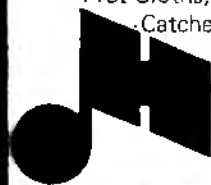
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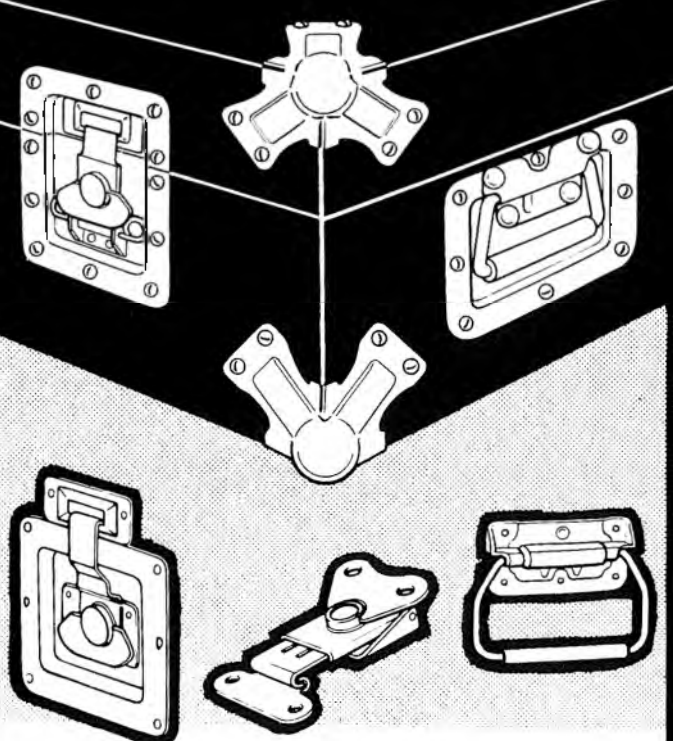
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