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LONDON

International Musician and Recording World is published monthly by Cover Publications Ltd., Grosvenor House, 141-143 Drury Lane, London WC2B 5TE. TELEX No. 24676. TELEPHONE: 01-379 6342, 01-379 6917. Distributed in Great Britain by Independent Magazines Ltd., Bridge House, 131 Queen Victoria Street, London EC4V 4DD. Tel: 01-248 3482 (10 lines). Printed by Carlisle Web Offset, Carlisle, Cumbria, England. International Musician & Recording World is a trademark of Cover Publications Ltd. All rights reserved. © Cover Publications Ltd., 1978. Whilst every care is taken in the publication of the magazine, the publishers cannot be held responsible for any results arising from the contents thereof. Subscriptions, 12 months only: UK £10.50. Worldwide (surface mail), £12.00. US (includes 12 issues, shipping charges to New York, NY and mailing costs from NY) \$20. Second class postage paid at New York, NY and at additional mailing offices. Air mail rates Europe £17.00, S. America and S. Africa, £25.00, Australia and Japan, £31.00

NEW YORK

Executive Offices:
The Gulf and Western Building, 15 Columbus Circle,
NY 10023, USA. Tel: (212) 586-5417
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277 Old Nyack Turnpike, PO Box 414, Spring Valley,
New York, NY 10977, USA. Tel: (914) 356-6797.
Telex: 131566.
POSTMASTER: if undelivered, please send form 3579
to International Musician and Recording World, PO
Box 414, Spring Valley, New York 10977.

MONTREAL

Ian Cooney, 4770 DuChastel Street, Chomedey, Laval,
Quebec H7W 1X3, Canada.
Tel: (514) 681-9135
Sole International Distribution Agents:
**Gordon Gotch (Canada) Ltd., 55 York Street,
Toronto, Ontario M5J 1S4, Canada.**
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64 LUMLEY'S KEYBOARDCHECK

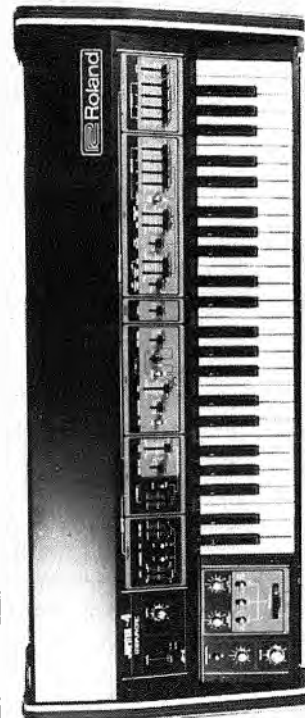
Robin takes a respectful look down memory lane with an appraisal of the legendary Hammond C3.

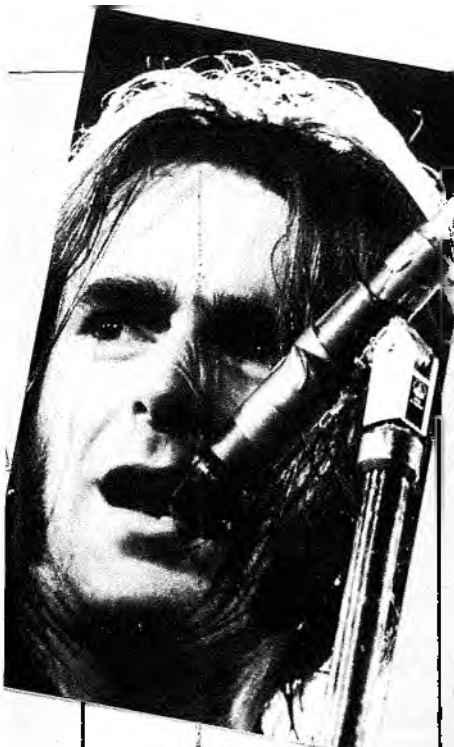
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A few pearls of wisdom on a new Roland combo, an MXR graphic equaliser and a Bird Brothers flight case.

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Even been baffled by an acoustic lens? Well fear no more because this month Ken lays bare the mysteries of the units and compares their performance.





SPECIAL FEATURES

22 Rossi on the State of Quo

Status Quo are one of the most enduring bands on the rock scene. They have experienced more ups and downs in their 16 year career than they care to remember but still retain an incredibly loyal following. Bill Stephen talks to guitarist Francis Rossi about the life and times of Status Quo.

38 Gene Simmons — Kiss' Buzzsaw Bassman

Fire eating doesn't usually fit into a bass player's role, but then again Kiss wouldn't fit into some people's idea of a group. Gary Graifman catches up with the inflammable Gene Simmons and gets his opinions on rock and roll, playing bass and his solo album.

70 The Gravenites Blues

Scott Kutina tracks down the legendary guitarist, singer, songwriter and producer, Nick Gravenites.

90 Simon Phillips

Simon Phillips has packed an incredible amount of drumming into such a short career. Still only in his early 20s, his work has spanned all areas of music from pop, jazz, reggae and rock. A much-in-demand session drummer, we talked to Simon while he was working on the new Jack Bruce album.

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David Lawrenson spotlights an exciting new band

102 Ian Matthews — Stealin' Home

After a long self-imposed exile in the States, singer/songwriter Ian Matthews returned to Britain recently for a much awaited tour. IM spoke to Ian about his career as he prepared for his opening concert.

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Alan Holmes on mouthpieces for the metal alto sax.

149 Taking Care of Business Part 8: Publishing

If you have been following Alan Holmes' series closely you may end up with a hit, in which case you'll want to know how much you're likely to get for your efforts. Alan reveals all about royalties etc. in his latest piece.

158 Understanding Synthesizers: Part 5

Tony Horsman continues his fascinating insight into the world of VCOs and LFOs.

167 The Producers -- Richard Hewson

Producer/arranger Richard Hewson has had a busy and varied career since his first job as arranger on Mary Hopkin's "Those Were The Days" hit. A multi-instrumentalist (he virtually IS The Rah Band) he covers the whole music spectrum from playing and writing through arranging and producing.

175 Meet Your Engineer

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£1,500 worth of Music Man equipment to be won.

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Once again IM brings you coverage of the very first New Zealand musical instruments trade show.



EDITORIAL

Last month, Keith Moon graced our cover with an exclusive interview. Much to our sadness and regret it was his last.

When we interviewed Keith, he proved his usual jolly and outrageous self. But when the time came to discuss his playing, Moon became as serious as any professional musician whose playing resulted in some of the most brilliant and innovative music of an era.

Unlike many reports, Keith thoroughly enjoyed talking about his drums and the technical aspects of drumming. Twice we had the pleasure of interviewing him and on each occasion he proved both intelligent and revealing when discussing his kits, his style and the various styles and influences that affected him as a drummer.

From his first cut, "I'm The Face", recorded when they were still the High Numbers, to the latest release of the definitive "Who Are You", Moon remained the man pushing the limits of drumming. In the style of the big band drummers, he brought the rock drummer out of the backstage and into the limelight.

With his return to England, he brought an enthusiasm for his job as the publicity man behind Shepperton Studios, the Who's latest venture, and was full of new ideas and directions for himself and the band, including such unlikely projects as planning a stage version of Mel Brooks' "The Producers".

Keith Moon will be missed, there is no doubt about that. But we have his music, his style and a wealth of Keith Moon stories that will keep him long in our memories.

WE'RE ON THE MOVE AGAIN!

Yes, the continued success of the magazine has forced us to move yet again to bigger premises in Central London. Such a move is necessary if we are to maintain our high standards and bring you the best musicians' magazine in the world.

Our new address is: International Musician and Recording World, Grosvenor House, 141-143 Drury Lane, London WC2. Tel: 01-379 6917.



VOL. 4 NO. 10
OCTOBER 1978 (UK)
NOVEMBER 1978 (USA)



Bernie Taupin

Alan Holmes replies: Being just a lyric writer means that you can only write half a song, so you need to team up with someone who writes music but can't do lyrics. Perhaps there are several IM readers who would like to collaborate with you. Send all the prospective writers the same lyric and see which you like best, in fact I believe that Bernie Taupin used to send lyrics to Elton John by post and I seem to remember that they met through an advert in the Melody Maker, so if all else fails you could always advertise.

Regarding copyright, all you need to do is copy your lyrics and put them in a registered envelope which you post to yourself and don't open. It should be sealed with wax and if it came to a court case can be used to date a composition and provide proof of authorship.

You could also contact one of the established music publishers like Chappell, Essex, Francis Day & Hunter, Dick James, EMI, Rondor, and see if they could team you up with one of their contracted writers.

Axe Log

Dear Sirs: I am amazed at the lack of interest in Stephen Delft's suggested list of stolen instruments and serial numbers. Surely it would be a godsend to know at a glance before we buy. Perhaps some do not wish to know.

The police keep lists of stolen instruments, but do not publish them. Their attitude seems to be, "tell us what you've got and we will tell you if it's hot." Lovely, I lose the instruments

and the money.

Would it not be reasonable for Norlin, CBS etc. to issue a log book with each instrument (to be left at home, not in the case). Would-be buyers could insist on only buying an instrument that has one. This would help in the future, but for today, a list in your magazine and a kick in the behind for guitarists who are notorious for their carelessness, is a must, please.

Roger Cave
Cave Instruments, Stroud, Glos.

See page 34 for the Stolen Instruments File

The M.U. Want You

Dear Sir: We are a band who has only recently started playing to a larger audience. Could you tell us what rules we may be breaking as we are not members of the Musicians' Union and if any type of performance licence is needed? Thank you!

Mr. A.K. Sharpe
Belper, Derbys.

You are not breaking any rules by playing to large audiences, although we would recommend your joining the Musicians' Union as they can be very helpful in a variety of ways to the working musician. However, you are supposed to fill in a PRS (Performing Rights Society) form if you are playing other people's published material. We suggest you contact Mike Evans, the National Rock Organiser at the Musicians' Union, 29 Catherine Place, Buckingham Gate, London SW1, for details.

Nut Problem Cracked

Dear Sir: I have often experienced tuning problems with guitars due to string friction in the nut slots. This generally has the effect of allowing the strings to go sharp after a string bending session as the string tensions on each side of the nut balance up.

I have found a simple (and cheap) remedy that may be of interest to your readers.

Before fittings new strings, cut a piece of PTFE tape (as sold at every hardware shop for gas pipe joints) and lay it over the nut. When the strings are fitted they force the tape into the slots and the tape, being very thin, does not upset the guitar action.

The low coefficient of friction of PTFE effectively prevents the strings binding. This could be the answer to that tuning problem that has always plagued you.

Paul White
Malvern, Worcs.

P.S. I enjoy your excellent equipment reviews, keep it going.

Thanks for your comments on the mag and thanks for a very helpful tip. It should certainly solve a few problems regarding nut/string friction and is infinitely better than jamming bits of paper under the strings.

Oral Sax

Dear Alan Holmes: Thank you for your letter dated May 3rd answering my questions on mouthpieces. I have bought a Selmer Jazz F and find this satisfactory. However, I still find the notes middle D & D sharp are still very flat (the notes preceding and following these notes being perfectly in tune with the rest of the instrument). The pads are in good condition and it's very unlikely to be my embouchure, as these notes are flat when played on their own. I have come to the conclusion that the venting must be at fault. I have a Selmer Mk6 tenor sax and would like to know how to adjust all the adjusting screws through the instrument. The correct procedure on how to do this would be gratefully appreciated.

Maybe this would be a good article to publish as information on this is very hard to come by.

Martin P. Long
Cheltenham, Glos.

Alan Holmes replies: The adjustment of the lower 'C' key is a very common fault in overhauls. I had some trouble with this myself and looked closely at a new Mk6 and also a new Mk7 and the opening of the C is quite higher than the other keys.

The easiest way to measure is from the back of the key to the guard. This should be around 1/8th of an inch measured with the sax upright and at the front edge of the key, with Selmer pads. The E flat is not so open and should be around 3/8th of an inch from the tone hole to the pad, and although this is difficult to measure accurately, it should be similar to the main action.

The adjustment is done very carefully with a large screw driver until the note sounds right when played in sequence with the other notes. The height of the main action (the keys with pearl finger tips) can vary according to the preference of the player. A closer than standard making for flatness of pitch and stuffed up sound. Wider than standard being both louder and sharper. The key that often gives trouble due to sharpness is the high side 'E' and this can be adjusted by gluing pieces of felt, velvet or cork under the stop until it sounds right. The gap under mine between the pad and tone hole is 1/8th of an inch.

The height of the main keys can only be adjusted by a competent repair man as they are all interlinked and this would cost about £15 as it takes around two or three hours.

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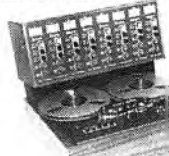
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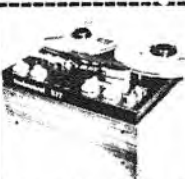


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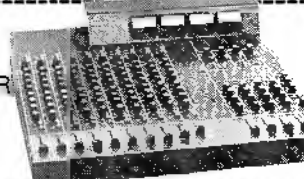


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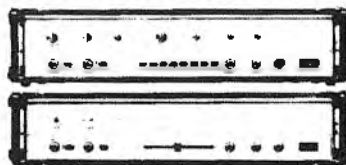


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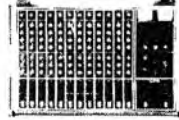


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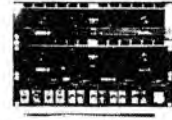


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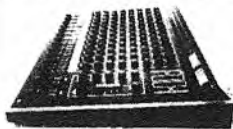


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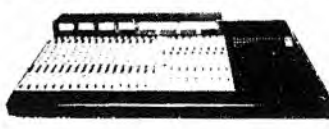
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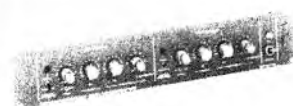


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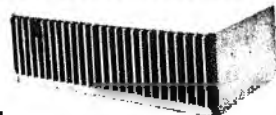


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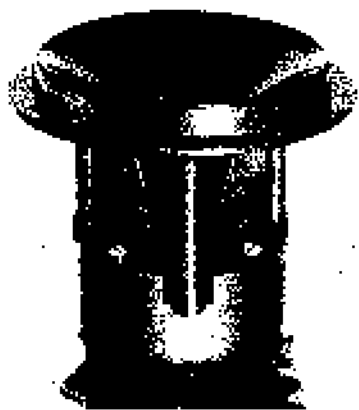
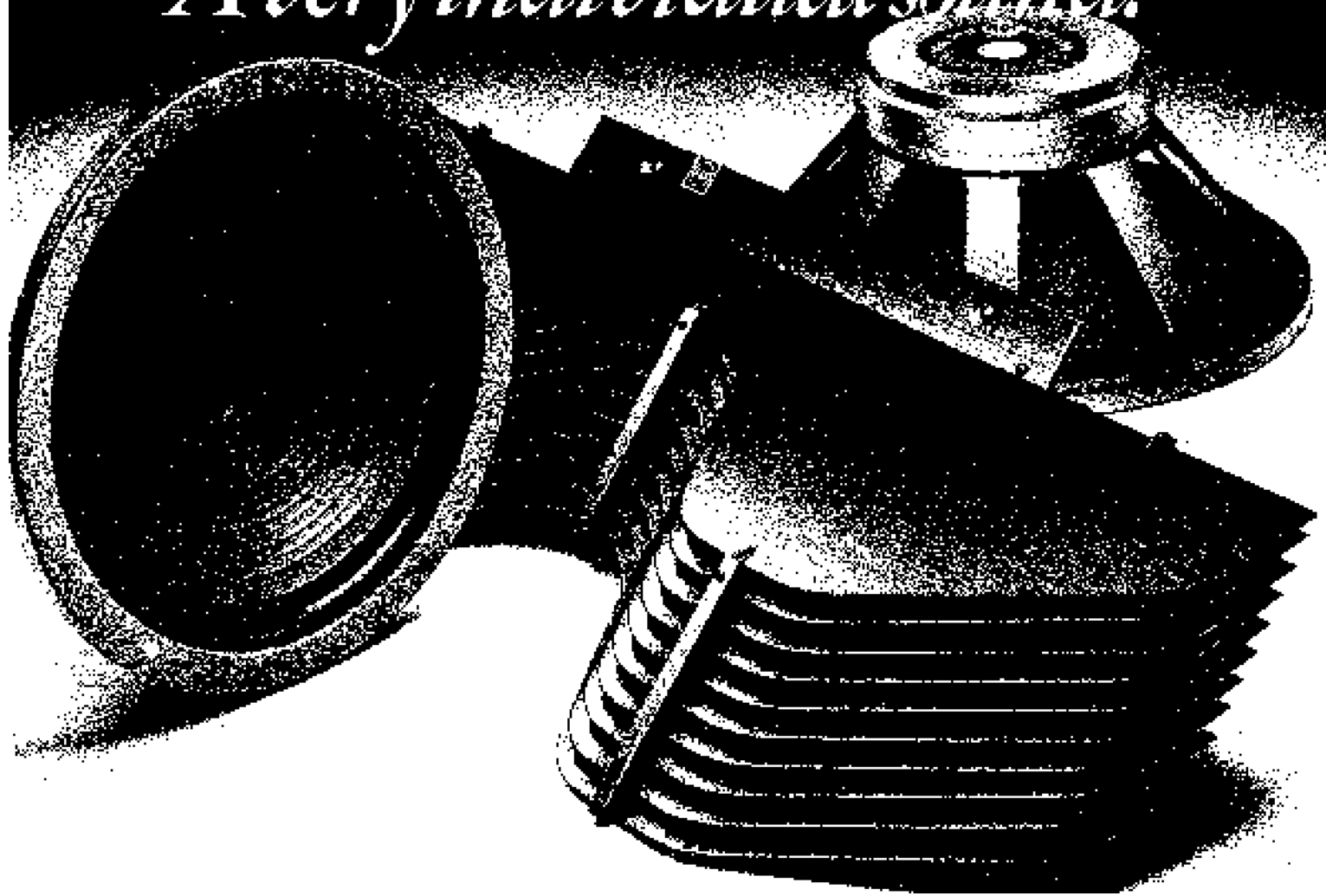
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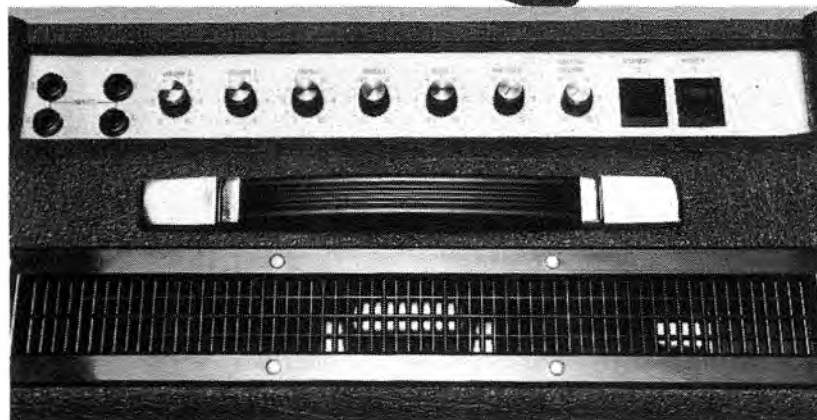


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The Westbury Track IV Bass is a beautiful instrument to look at — and to play. The sculpted arched top design is attractively finished in walnut and the back is also carved to rest easily against the body.

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Happiness Is A Warm Hofner

Dear Sir: Firstly I should like to thank you for an excellent magazine, it is heartening to find a publication that constantly improves its coverage of our profession or hobby when so much of the music press seems only too happy to reduce the quality and quantity of their coverage. Particularly I should like to express my approval of the Blindfold Tests where musicians that most of us know and respect give their opinions of sound equipment in the test sections. I hope you plan to continue this feature and perhaps to increase its coverage to include their opinions of guitars, keyboards etc. as well as just sound equipment.

I also noticed, over the past few months, a number of letters regarding Hofner guitars, especially informative was the one from Mr. Tull of Sutton Courtenay and whilst I agree with his comments I think the implication in his letter that they were basically European copies of better known American guitars to be slightly misleading. That may or may not have been the makers' intention, we will never know, but I have always felt that these guitars, especially the semi-acoustic range, had their own distinctive sound in the same way as we expect certain American and Japanese guitars to display the characteristic sound properties we come to associate with them. That may be the reason for people such as McCartney continuing to use a particular model, namely the Violin Bass, for a long period of his career. I wonder what other readers think?

Finally, on the subject of Hofners, I would just like to mention that after finding out that they were once again available in this country (through your magazine, by the way) I thought it a good idea to try and replace some of the parts on an old Verithin which after 10 years' use was getting a bit ragged so on the off chance I called at Barretts of Manchester as I was in the area and within about five minutes of informing them of my requirements I was supplied with everything I had asked for with the compliments of the Company. After the delays I have experienced waiting for spares for some of the more expensive and household name guitars and amps, supposedly in the 'big league' and relatively new production models at that, I thought it well worth a mention.

S.G. Land
Louth, Lincs.



Speaker Life

Dear Ken Dibble. I have owned an HH Bassamp and 215BL speaker cabinet for about twenty-two months and, until this week, have been more than pleased with its performance.

During a rehearsal the speaker cab started to make 'rude' noises. Eventually we decided that the topspeaker was the culprit - more precisely the cone itself.

Fortunately, my story has a happy (with reservations) end; although our diagnosis was confirmed, a replacement speaker was found and fitted by a franchised HH dealer and within two hours I was in action again. I cannot even complain about the price as £37 seems reasonable, and as the friendly salesman told us - that should last you another couple of years! And there's the rub - will I need to replace the speakers so frequently? I appreciate the technical difficulties involved in reproducing bass frequencies (and I don't wish to appear naive) but I find it difficult to accept that two years is about the life expectancy of a 15 inch speaker, even though it may be from the lower end of the market, price-wise.

I have a fairly 'light' bass sound and as yet (touch wood) the other speaker is behaving itself!

I would be extremely grateful for your advice and apologise for the length of this letter. Terrence Gregory
Harlow, Essex

P.S. How about some horns in your 'Speaker-check'?

Ken Dibble replies: All HH speaker cabinets have gone through a somewhat chequered history, mainly due to problems in obtaining a drive unit of sufficient quality at a price low enough to enable the product to be sold at a sensible price in the retail shop. To my knowledge, the 215BL has been fitted with the American-made Eminence 15" unit, and due to problems with this unit, HH changed over to fitting a Fane unit. Although this was more successful, there were still problems and so, eventually, HH set up their own loudspeaker manufacturing unit and designed and made their own drive units in an attempt to overcome the problems.

For the last 12 months now, most HH speakers have been fitted with their own drive units and I have not experienced any problems at all since then.

Two years is certainly a very short life expectancy for a reasonable 15" loudspeaker unit. There is no reason why a unit of this type should not last ten years at least - provided, that is, that it is not overdriven and that it is looked after.

Speaker Specs.

Dear Sir: Having been following your "Speaker-check" feature over the last few months, I would like you to clarify for me some points concerning the tests.

First of all I would like to know the exact meaning of the term "second harmonic distortion" and what significance it has to the user. I would also like to know exactly of what construction and dimensions the speaker enclosures are.

The answers to the above questions are of substantial importance to me as I am in the process of planning an "A"-level physics project on the frequency response of a microphone.

I would like to know how to compensate for the frequency characteristics of the speaker I will be using in the practical part of the project. (Unfortunately I do not have access to the speaker at the moment but I would be glad of a few general hints).

Also, do you know of a better, more inexpensive material with which to lag the enclosure to be used in my experiments (to be made of wood - do you recommend any particular type?) than the glass fibre used in the speaker tests?

Thanking you in anticipation.

Chris Archer

Great Barr, Birmingham

P.S. to the Editor of IM: I think the mag is great - more instrument reviews please and thanks for taking care of business!

Ken Dibble replies: Actually, most of the points you raise have already been covered in the articles that accompany the test results; however, I will answer the specific points you mention.

Second harmonic distortion is simply a convenient method of assessing the ability of a loudspeaker to handle its rated input power. There are so many aspects to power rating - many of them involving long term thermal considerations, the measurement of which are outside our time and equipment limitations. It so happens that most of the factors that affect power rating result in the cone movement becoming non-linear with respect to the input signal whenever the unit is overdriven. This condition manifests itself in practical terms as distortion as the cone is no longer held under control. Experiments have shown that second harmonic distortion is so much greater than third harmonic that the latter can be disregarded for our purposes. It seemed sensible to run the loudspeaker at the makers' rated input power, measure the second harmonic content of the reproduced sound and to express this as a percentage of the fundamental response. For this purpose, we disregard the second harmonic peak present at resonance. Its effect in practical terms is simply distortion - the lower the figure, the cleaner the sound and the better the ability of the loudspeaker to handle its rated input power. A figure much in excess of 5% would indicate a non-linear condition.

The test enclosures are built from high density chipboard, with lapped, pinned and glued joints, such joint being sealed with a sealing compound and the entire cabinet lined with a 75mm layer of fibre glass lagging. Ideally, bonded acetate fibre should be used and there really is no cheaper alternative to fibre glass that is effective. The dimensions of the enclosures are not critical, but must be calculated to provide an appropriate internal volume for the type of loudspeaker being housed. For our tests, all 12" units were housed in a 50ltr. enclosure, 15" units in 90ltrs. and a 130ltr. cabinet was used for 18" units. All enclosures were of the infinite baffle type.

Lonely Lyricist

Dear Sir: I am writing to you in the hope of your being able to help me. I am a lyric writer and I wondered if you have any addresses of people who could perhaps help me.

I believe, and have been told, that my lyrics have great promise, the problem being that I have no contacts, and have no idea how to go about getting my work even looked at.

I have thought of sending my work to various people advertised in the papers asking for lyrics, but have been advised not to do so, due to no security once sent.

Also any advise on copyright would be very much appreciated. Looking forward to hearing from you.

Sue Aylett
Harlow, Essex

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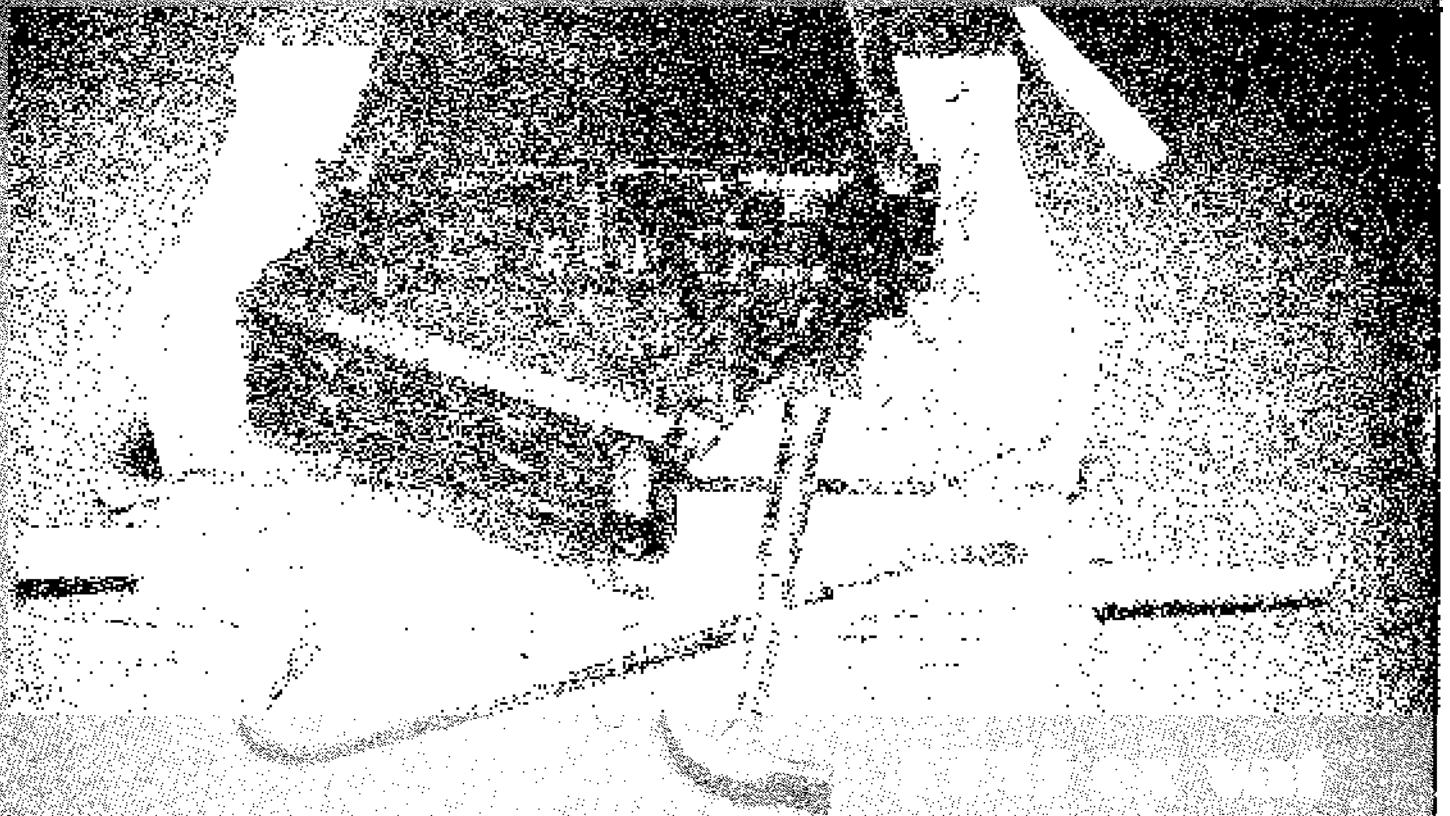
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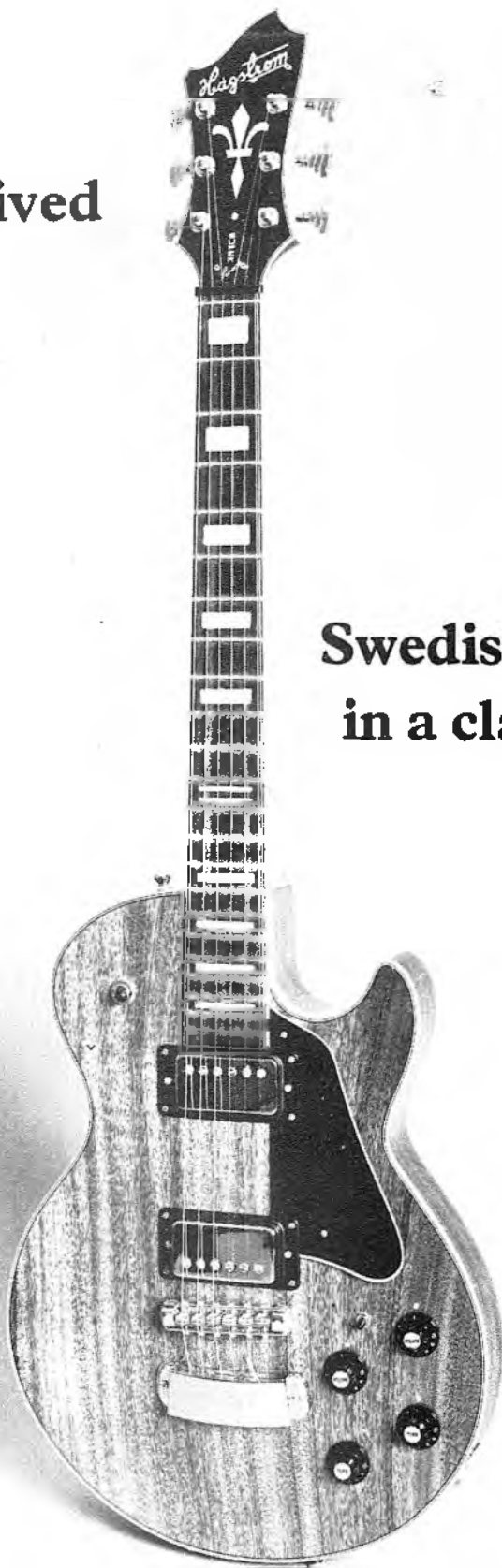
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Rossi on the State of Quo

by Bill Stephen

Status Quo have been together now for 16 years. In that time they've developed a style of music that still keeps them in the charts with gold albums like "Rockin' Around The World" and "Status Quo Live".

They formed a band at school and stuck together playing schools and youth clubs before turning professional in 1966 as The Sceptors. By this time, they were working at various holiday camps all over England backing visiting American singers and doing their own cabaret-orientated set. The turning point in their career came in 1967 when, as Status Quo, they had a hit with "Pictures Of Matchstick Men", a successful combination of psychedelia and straightforward pop. They followed up with more hit singles including "Ice In The Sun", "Down The Dustpipe" and "In My Chair", the latter two singles veering more towards the stomping boogie style they are now undoubtedly masters of. By the early Seventies, Quo had firmly established themselves as one of Britain's leading heavy metal groups.



A "street-type" band, Quo have kept their music simple and basic but, as lead guitarist Francis Rossi says, "that doesn't mean that it's easy". Rossi has found that the three-chord, 12-bar style of Status Quo has developed in the hard edge that is much of the band's attraction and that keeps them within a musical spectrum that they feel is both comfortable and stimulating.

"To me it's like ELO," said Rossi, "Jeff Lynne has done what so many people in rock and roll have wanted to do. But sitting down and analysing it, not knowing it was ELO, you would say that it's grossly over-produced, and totally contrived."

Quo have come in for more than their fair share of criticism over the years because of the fact that their records are,

in the main, straight 4/4 boogie 12-bar material. Does Rossi find this format limiting?

"I think it's limiting only if you think 'I'm going to sit down here and show the world I'm going to do something different.' That's fine. I think anyone can do something different whether or not it works in terms of commerciality. But if you're trying to be clever and trying



to make something of it, it just won't work. I find it hard to get something again and again in the sequence, because that's what freaks me out. So I sit there and work it out and sometimes I'll throw in an odd minor. I don't really find it either helpful or restricting, I just can't do it any other way. That's why, when so many people say 'It's simplicity, you just play basics,' I say, 'Yeah, sure it's

simple, but it is in no way, shape or form easy."

Rossi's initial interest in music was as a result of listening to early Everly Brothers' songs. In fact, Don and Phil's "Price Of Love" was a stage favourite in the early days. Was their surface simplicity an influence on Rossi?

"Just because I liked them, it doesn't mean that I wanted to be like them.

That's what I like about music today. You can like the Carpenters, ABBA and Pink Floyd and it doesn't matter anymore. I also used to like Guy Mitchell and Connie Francis. I still like her.

"It wasn't until some years later, when I'd done a few tours in America, that I realised that most of the artists were Country & Western singers or at least they had that background. It was then that it started to make sense as to why I liked the 'three-chord' and why certain sorts of music appealed to me more. I used to like Johnny and the Americans because they used to take trite melodies and make them fantastic. Every time I hear it it's got something; it's magic."

Unlike many musicians who start out on a cheap Woolworth's guitar, the young Francis Rossi had a head start with a quality instrument.

"I was using a Guild Starfire then. I didn't know anything about them, I just thought it was nice and my dad had a few bob, just a few, so I got one. After that, I got a Gibson Stereo; I don't remember the number but it was a real old one. I swapped it like a schnook. In 1968 when we broke, the guy from Badfinger, Peter Ham, had a Grimshaw I liked the shape of, so I made a straight swap. Two weeks later, the bridge collapsed right on stage. But I thought it looked great. At that age you're more interested in what the guitar looks like on stage."

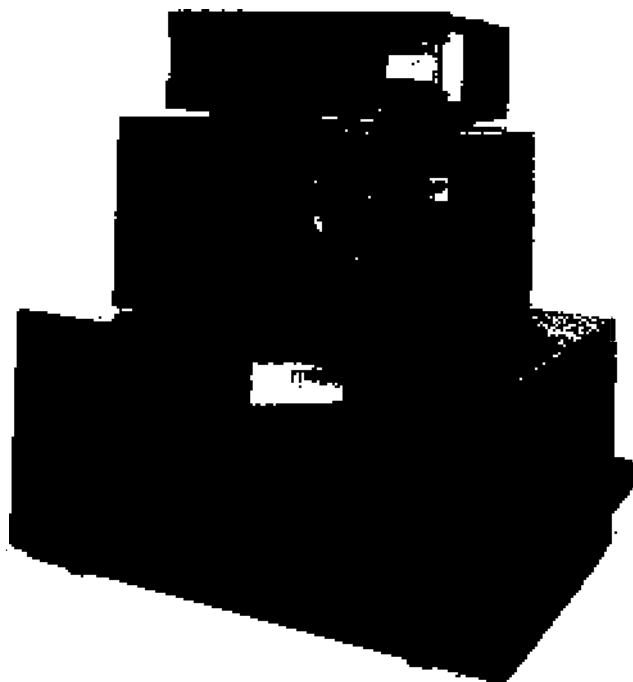
From the Grimshaw, Rossi linked up with the brand of guitar that he still uses, the Telecaster: "I got one Tele and then I picked up the one I still use now. I've got a '58, a '59 and a '62. I've also got a '69 Stratocaster. But the best one is the '59 Tele.

"I change the bridges. I don't like Fender bridges. I know the principal of the strings not touching any wood gives them a twanging sound but it does tend to make them feed back - it makes them very microphonic. I originally took the bridge off and put on a Gibson Tuneomatic bridge with a stay on the bottom so the strings don't go through the body. I do that with all my Teles.

"The reason was that I was having trouble tuning strings, especially octaves. So I thought I'd get the Gibson bridge because I'd got on with one before and you can adjust the saddles. This is really helpful because you do get strings varying. You get a bottom E that is dreadfully sharp and another which is dreadfully flat. I used to get all that trouble so I put on the bridge and it wasn't until some years later that it dawned on me that with these nylon saddles I was getting the distinctive Tele sound I have.

"Although I tried to copy on the rest of my Teles exactly what I had done to

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Rossi on the State of Quo

the '59, they didn't sound the same. The only disadvantage I found with the Tele is that they just won't sing. I've got a Travis Bean which I tried to sell for a year and couldn't so I got it out and decided to try using it just for recording and it's been fantastic. I still don't find it better than the Tele for the basic track but, for playing licks, solos or fills, it sings. They're the ultimate in singing guitars. I use standard pick-ups on the Tele. There's just something about those pick-ups I really like."

Many bands who favour a "wall of sound" approach like Quo tend to opt for the evergreen Les Paul or a similar humbucking-type guitar. Rossi likes it loud but he likes it clean.

"The trouble with Gibsons is they tend to go all woolly, although I've got a Flying V which I fell in love with. I'd always disliked them until I realised that putting my leg between the "vee" made it a very comfortable guitar and that way the neck is fully exposed so that wherever you are you can see. I've also got a Gibson 335. I've had extra magnets put on the back pick-up so that it brightens it up a bit. But even if you put them through an AC 30, it still doesn't seem to have the middle bite that the Teles have got.

"I originally bought the Travis Bean because I was looking for a guitar that would make me sound better. Like Gibsons make you sound better than you are. If you are a certain standard and you play a Gibson, they make you sound better. Or at least they make what people interpret as sounding better. It sings better. In short, it makes the player seem a better guitarist. I thought the Travis Bean would do that for me. But if it comes out of the truck cold, it

stays like that for a long time."

Temperature plays an important role in keeping guitars in tune, and Rossi has suffered as much as anyone.

"If we go in to a gig early and the guitars warm up to the temperature of the caravan, we tune them to that. Then, when we go outside again, they'll drop out of tune slightly, and so on. The Travis Bean is really bad for that so I keep it in the studio where the temperature is fairly even."

For Quo's back-line, Rossi and Rick Parfitt use Vox AC 30's. Each of the guitarists use eight amps but, as Rossi says, "It's really not that much because they don't throw.

"What we were getting to was four 4 x 12's each, which is the equivalent of eight AC 30's. So we were getting into Powercells and they'll cut your head off. And as we were getting louder and louder, we were needing bigger monitors. So we messed about awhile with different systems and came up with using all 4 x 12's for the bass on the bottom of the stacks and using all the AC 30's on top. But since we move around the stage quite a bit, there was no way that we could hear what we were doing. So now we stack them in a zigzag so that no one person's sound comes out of one place. When it's right on and the conditions are perfect, it's great because you can walk along the backline and always hear yourself and everybody else. It also cuts down on monitoring problems. Before we got the new equipment, we had a lot of trouble with overspill onto the mikes, but this system improved that 100 percent."

Onstage, Status Quo keep their sound simple using the minimum of special effects. Rossi does use an old Colorsound volume box that has a treble and bass boost. He also uses two MXR special effects units.

"We are using a Spectrum Analyser to help us suss out the sound of the gigs but, other than that, the only other effects we use is a Roland Space Echo."

In strings, Rossi find that Fender Rock 'n' Roll suit him best.

"I was using Picato strings, UL 77's, for a long time because they were real twangy but they were dreadfully inconsistent. I remember one night in particular I went through five bottom E strings before I could find one that would stay reasonably in tune and I went through the same thing with the D strings. So I use Fender now. The gauges are .10, .13, .15, .26, .32, .38. I complained to Picatos and they were real nice and said they would try a couple of things to put them right. But, to be honest, I never tried them again. Personally, I don't feel I can say 'I'll give your strings a try'. The only time I can do that is on stage and, if I try

them on a gig and they're no good, I'll freak."

On stage, Status Quo are a dynamic band but their equipment is kept to a minimum.

"I use two Teles and an Ovation on stage," said Rossi, "I use the Ovation Viper and it's really lovely. I've also got a Glen Campbell, a Matrix and a 12-string Ovation because I think they give you that fantastic broadness of sound that nothing else has got. And when you use the transducer pick-up, it has a sound that nothing else has got. The Viper isn't really a wailing guitar, I use it mostly for rhythm work. For onstage work, I also string one of my Teles with heavy-gauge strings because they're much better for tuning and when you bash them, they're really lively."

In many top bands, image is important and Quo have been through various trends from the satin shirts and back-combed hair of "Matchstick" days to the much-maligned denims, waistcoat and plimsoll present-day image.

"At times," said Rossi, "I don't give a shit about image because, since 1968, people in the papers seemed to say the main problem with the band was a lack of image. Well, the image is what people see and it's very hard to see your own image unless you start to create something that you want to look like. I remember we used to paint our faces orange! We were brought up on thinking you had to wear make-up on stage. I remember one night I peeked out of the curtain on stage and the tour manager came up and told me if I did that again I would be off the tour. It was always like that and it didn't dawn on the artists that they were the reason that the people were out there.

"But I remember going out on stage for the first time in a pair of jeans, plimsolls and any old T-shirt. I was nervous because I thought, 'This is a bit much.'

"But I think that being image-conscious can hurt your music only if you get carried away with it. When you start wondering if you look the way that kids want you to look and that you might be letting them down when they see you, it can get bad. If I carried on thinking about that I'd go potty."

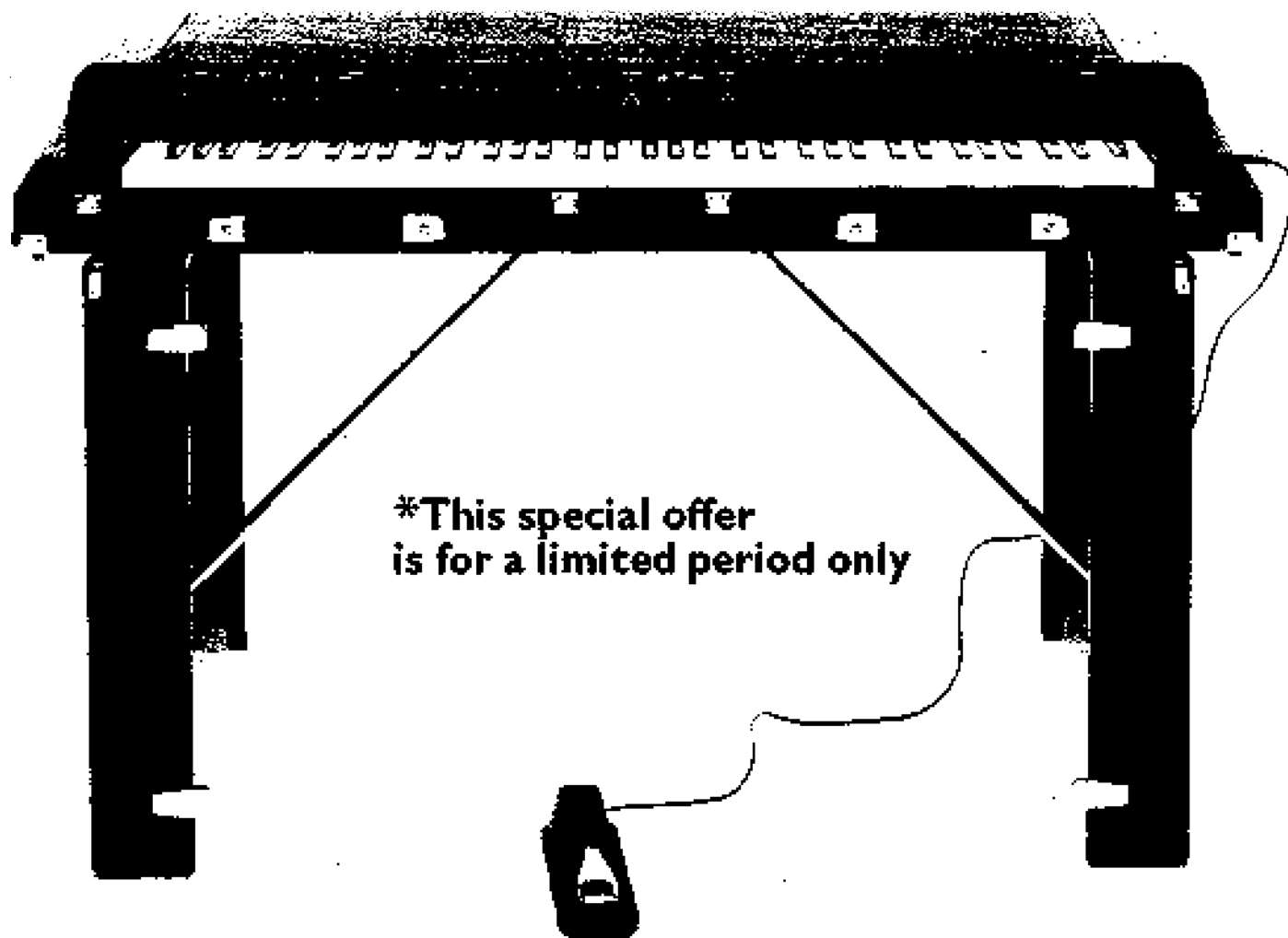
Being on the road for most of the past 16 years is important, Rossi stresses, but it doesn't make recording any easier. In the studio, Status Quo do what only a few rock and roll bands do: they record as if they were playing a live gig.

"In the past, recording that way, we tended to get a lot of overspill from the other instruments. Guitar mikes would be picking up the snare and vice versa but now we've got it right. There's a certain amount of overspill because that 'bounce' helps for a live feel."

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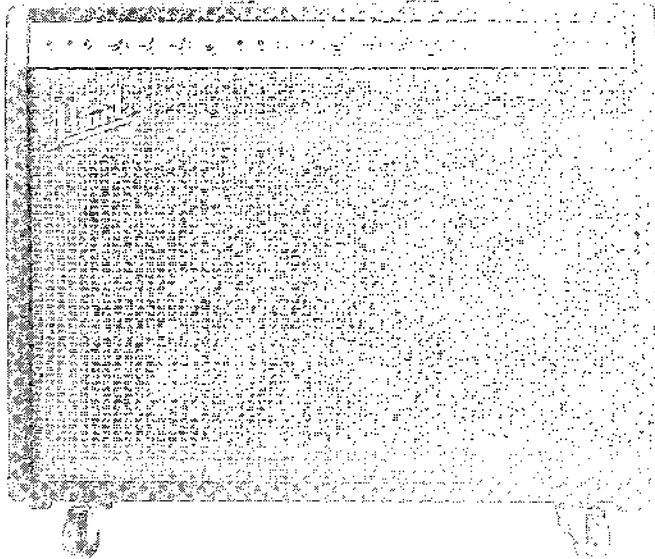
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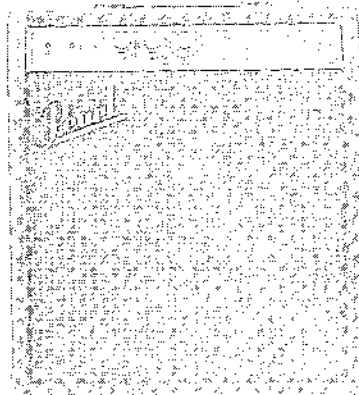
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SPECIFICATIONS

OUTPUT: 100W RMS, 200W Music Power
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 SEMICONDUCTOR: 13 Transistors, 5 FET, 8 Diodes
 CONSUMING POWER: 250W
 DIMENSIONS: H525 x W670 x D250mm
 WEIGHT: 22kg
 ACCESSORIES: Foot Switch, Vinyl Cover

SG-101



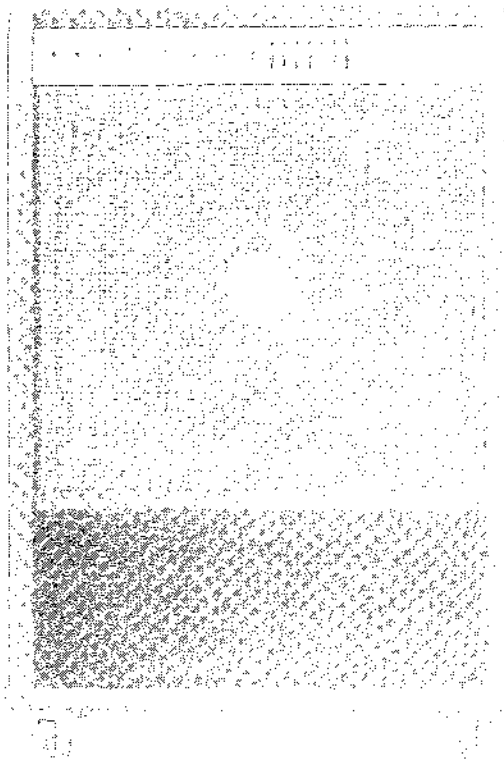
Pearl's newest compact amplifier (also suitable for use with headphones).

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OUTPUT: 30W RMS, 60W Music Power
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 CONTROLS: Volume, Treble, Bass, Distortion
 SEMICONDUCTOR: 8 Transistors, 7 Diodes
 CONSUMING POWER: 50W
 DIMENSIONS: H411 x W362 x D160mm
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 ACCESSORIES: Vinyl Cover

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OUTPUT: 100W RMS, 200W Music Power
 SPEAKER: 38cm x 1, P38-100B
 CONTROLS: Volume, Treble, Middle, Bass, Equalizer Bright
 SEMICONDUCTOR: 10 Transistors, 2 FET, 4 IC, 7 Diodes
 CONSUMING POWER: 250W
 DIMENSIONS: H820 x W535 x D335mm
 WEIGHT: 33.5kg
 ACCESSORIES: Vinyl Cover

SG-101B



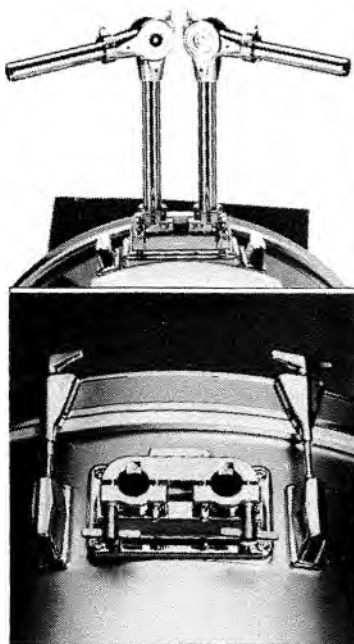
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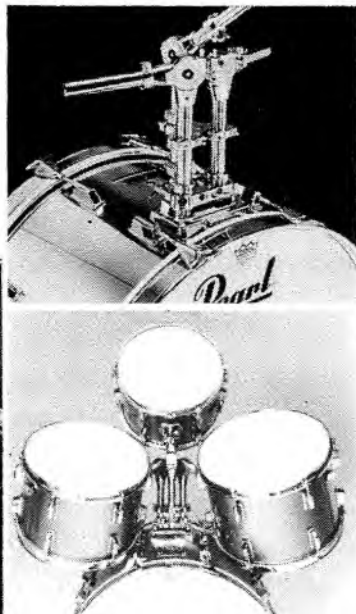


• TWIN TOM-TOM HOLDER



• TRIPLE TOM-TOMS

VARI System twin tom-tom holder
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VARI System single tom-tom holder



• TWIN TOM-TOM HOLDER WITH
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TOM-TOM HOLDER

VARI System twin tom-tom holder
Adaptor
Concert tom-tom holder

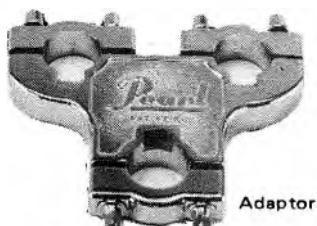


• TWIN TOM-TOM HOLDER WITH
CYMBAL HOLDER

VARI System twin tom-tom holder
Adaptor
Cymbal short boom holder



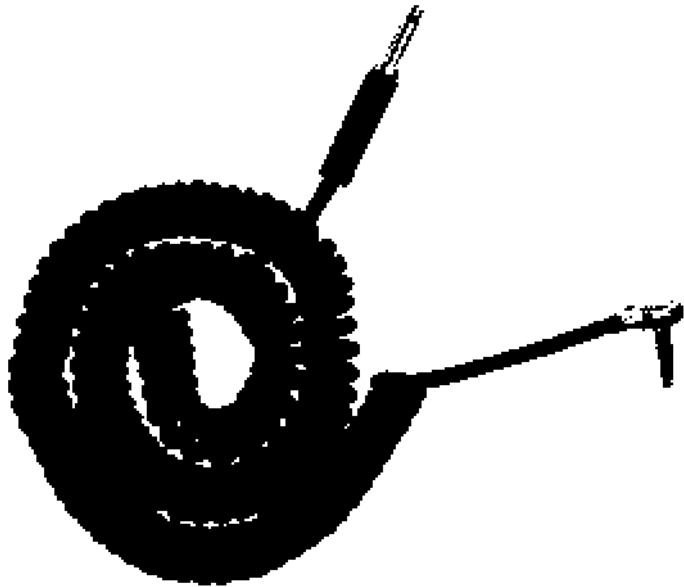
The adaptor of the VARI system and the stand in the New Pro 900 series comply with the same standard. With only a few stands, many Tom-Tom units and cymbals can be set up in a compact arrangement.



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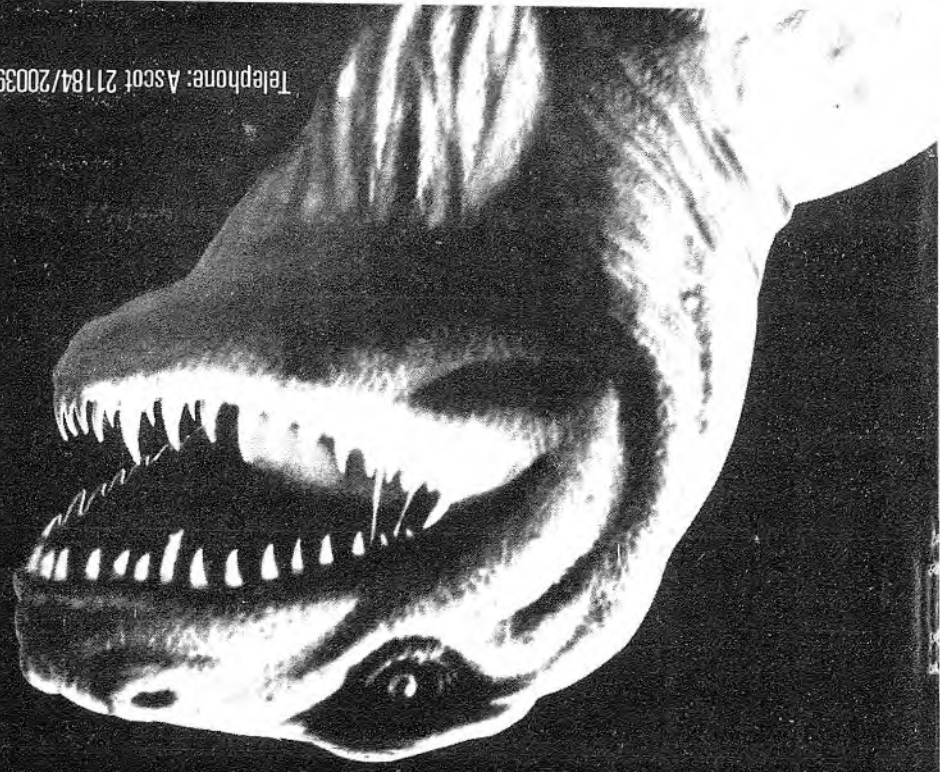
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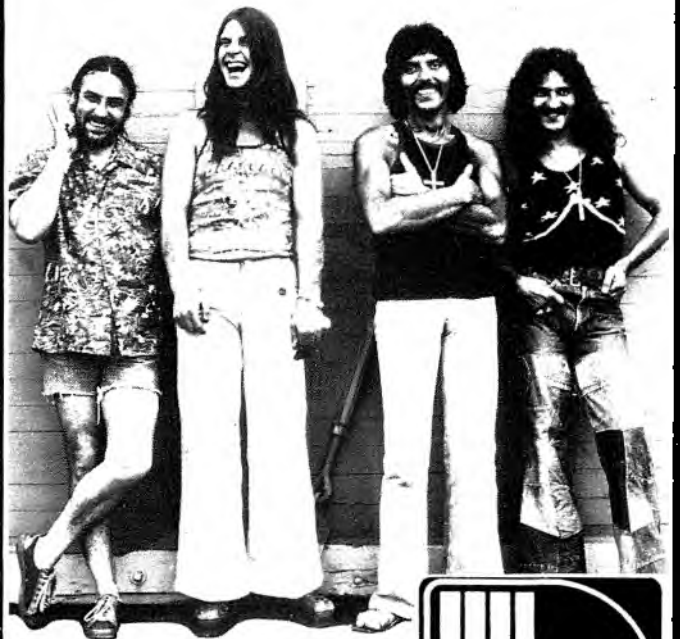
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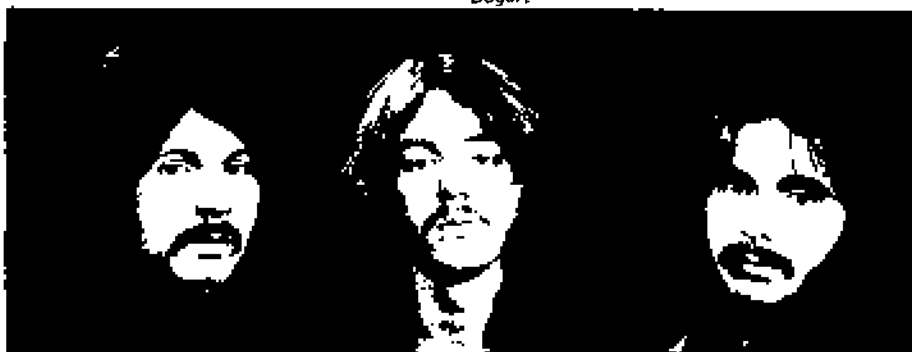
Anniversary

Based in the North of England near Lancaster, Anniversary are a three-piece who have recently brought out their first EP. The record contains four original band numbers and comes with colour photograph and plastic bag.

At present the band are playing mainly in the North but they intend to try and break into the London circuit in the near future. Anniversary pride themselves on a high level of musicianship and will play just about any type of rock gig. They are still seeking an agency, but will take bookings anywhere in England (Tel: 0524-33887). Their second single is due out this month, which once again contains a couple of their own numbers.



Bogart



Anniversary



Bogart

We recently witnessed an interesting band called Bogart, who are based in Watford, and look like having a bright future with a single due out at the end of October. The band is: John Beech (vocals), Phil Hardy (guitar/vocals), Peter Jones (Bass/vocals) and John Phillips (drums) and they have been together for 18 months playing their own material which is described as a cross between Power Pop and New Wave.

They're a very powerful, tight band and they recently signed to Secret Records, a new independent label. The single is called "The Reebaneba" and is written by Phil and John.

Most of their gigs have been at local colleges but they are currently working their way into the London pub circuit. Their manager is Martin Hooker and he can be contacted on Rickmansworth 76921.

The Needles

The Needles are a young outfit who hail from Gorleston-on-Sea in Norfolk. They have been together almost a year and have made their mark with many successful gigs around East Anglia.

The line-up comprises Richard Hammerton (vocals), Michael Brown (guitar), John Child (bass) and Stewart Marshall (drums). From the outset, the band have been writing their own material which has led to their present set made up entirely of originals.

Their music is New Wave-orientated, but with their own distinctive sound. Gigs are not easy to come by in East Anglia so anyone who can provide The Needles with bookings should contact Dave Bracey at 36 Veronica Green, Gorleston-on-Sea, Great Yarmouth, Norfolk.

Riff-Raff

A well-known name on the London club and pub circuit, Riff-Raff are also a music business as well as a band. Formed in 1977, they are made up of David Pattison (lead guitar), Fred Pattison (bass), Mark Weaver (lead vocals) and Mac (drums).

The members are part of a company called Train Musicians Ltd., which deals with musical equipment, light hire and sales as well as musician management and promotion.

STOLEN INSTRUMENTS FILE

As a service to musicians we will, from time to time, be featuring a stolen instrument file. The aim is to put shops, instrument dealers and musicians on the look-out for the stolen items, many of which are both valuable and rare, and so help in their recovery.

If you have had an instrument stolen, write to us and we will consider it for inclusion in the Stolen Instruments File. However, certain factors must be borne in mind when you write:-

The file will deal with musical instruments only - amplifiers, mixers, effects etc. cannot be included.

Only instruments stolen from private individuals will be featured. Regrettably, due to lack of space, we cannot deal with matters relating to the trade, although dealers can be of help in keeping an eye out for the instruments mentioned.

The area is restricted to the United Kingdom.

The theft must have been reported to the police and/or insurance company.

Please include as much information as possible on the instrument and its theft i.e. serial number, any identifying marks, where and when stolen.

Because of time and space, International Musician cannot enter into any correspondence with regard to the stolen items.

Gibson ES345 Stereo guitar

Stolen from a flat in Rastell Avenue, Streatham, London SW2, an old sunburst Gibson ES345 TD stereo electric guitar belonging to Dave Briggs. The serial number is 177194 and it was in a hard, black, shaped case which also included a leather strap and a phaser. A Yamaha acoustic was also stolen, but Dave is particularly concerned about his Gibson which is irreplaceable.

Anyone with information concerning the stolen instrument should contact Dave at Flat 1, 22 Rastell Avenue, Streatham, London SW2.





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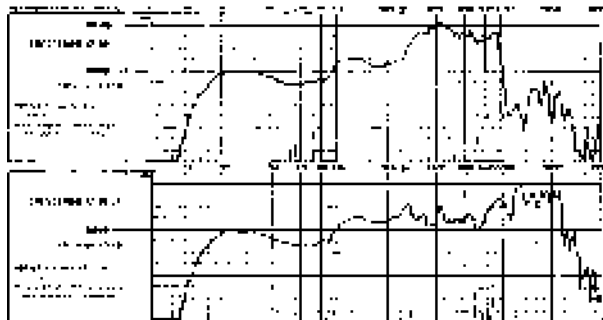
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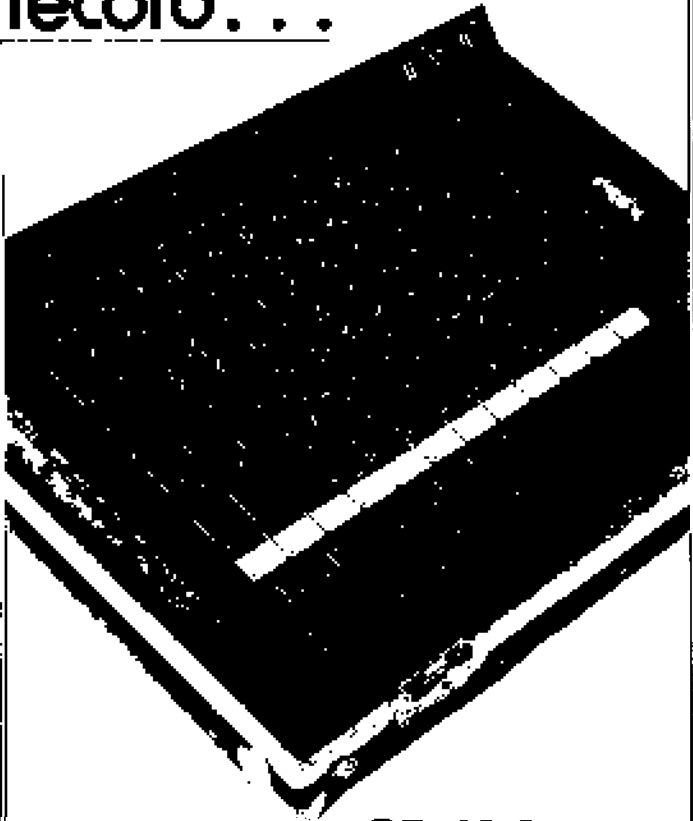
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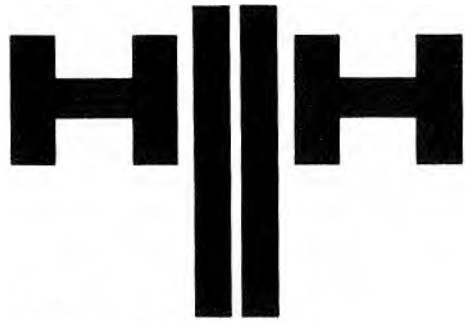
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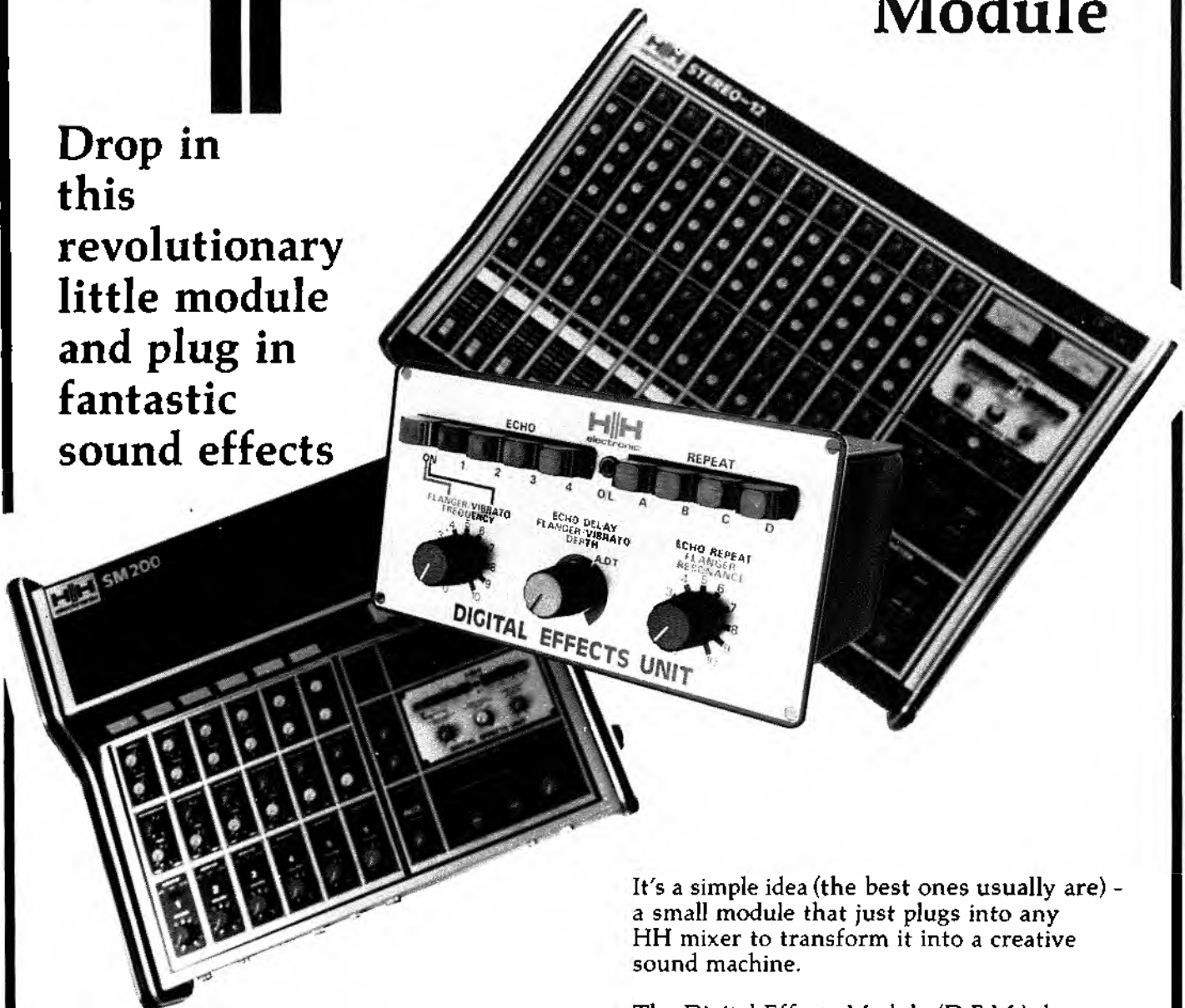
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Gene Simmons

...the mid-seventies, Kiss had become one of the decade's biggest music phenomena. "You haven't seen a rock stage show until you've seen Kiss" was the testimony of many rock fans. Replete with instrument destruction, fire-breathing (Gene's speciality), wireless guitars and hydraulic lifts which raise the drum kit 30 feet in the air during a drum solo, the performance is certainly one of the more innovative and fast paced around.

As a group, Kiss has broken concert and album sales records around the world. Now, while still retaining the group identity, the four members have each completed solo projects - albums of songs which don't fit into the Kiss concept. Each member has "gone off into his own direction" and the results should be four musically diverse albums.

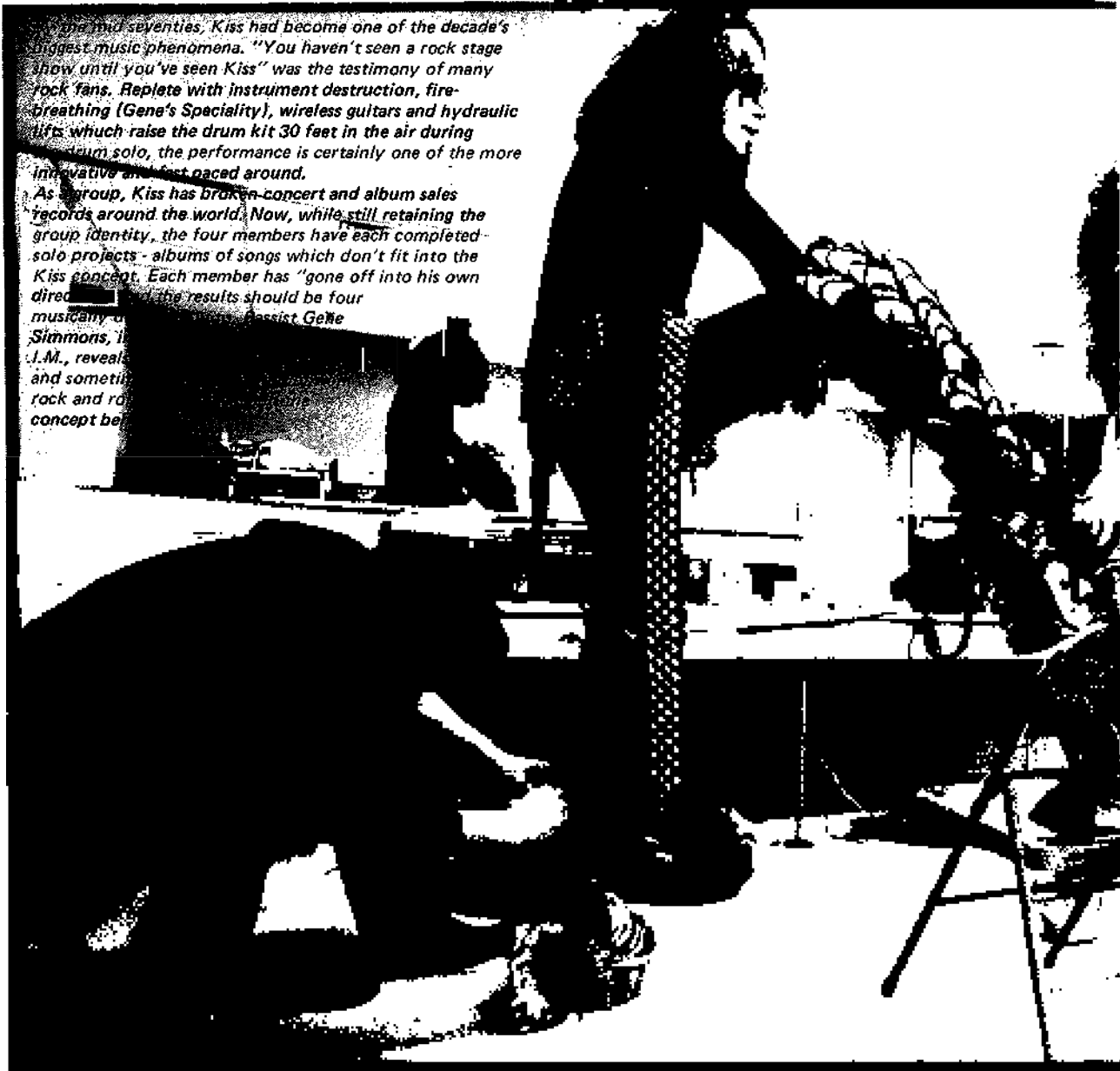
Simmons, bassist Gene

J.M., reveals

and sometimes

rock and roll

concept be



Kiss' Buzz-saw Bass man

by Gary Graifman



What direction would you say your album is going off on?

The concept for my albums was not to do another Kiss album, because I know how to do that well enough, but to do tunes that don't fit the Kiss sound. That is, in Kiss, if the bass would play a riff, everybody would play the same riff together, kind of a heavy vertical pattern. And usually, during the riffs, the drums would go into 4/4, which is high gear — not 2/4, but a heavy downbeat — bang, bang, bang, bang, with the kit doing very little other than that. But this music is a bit more varied. There is some melodic stuff, some heavy rock numbers, but some lighter things as well.

The point of my album also, aesthetically, was to try to get away and do it in different places. For instance, I was always concerned that England had never caught onto the band, for whatever reasons, so I did the basic tracks at the Manor, in Oxford, in April. All the previous Kiss albums were done in New York, usually at Electric Lady, and I thought it would be good to get away from that.

When a member of a group does a solo LP, sometimes it reveals what his influence on the group was. Will this album show the Gene Simmons influence on Kiss more clearly, or is



this in a completely different vein than the music you contribute to the group?

On a couple of songs you might see Gene Simmons' influence on Kiss, but that's definitely not the intention of the album. What I want to do is show people I can do other things. It's not to prove that this album will sell four or five million — I'm pretty sure it will, just because of what or who it is. But I'd like to show people — for instance, musicians — that I can do other things besides grunt and groan and do all those other noises I do so well. I want to show people the music is worth listening to.

What instruments do you play on it?

I played guitar — rhythm guitars and many of the lead guitars. All of the vocals are mine. I don't play bass on it. I co-produced it with Sean Delaney. The engineering is done by Mike Stone who did the Queen albums.

Did you find doing an album of your own was different from doing a Kiss album?

No. I know some groups, for instance, actually write songs in the studio but most of the Kiss songs were written before we got into the studio and that's how this was done. For the first few LPs, we would go into the studio, lay it straight down, put on vocals and lead guitar and that was it. After three albums of using that technique, we decided to arrange

the albums more. Partly because we started getting more time. The way Kiss wrote then was different. For example, "Calling Dr. Love". That was written on the road. Before recording it, I'd sit down with Peter, our drummer, and play a scratch guitar to work out the drum parts with him — how he's going to play the verse, how he'll pick up the beat a little on the bridge and finally open up all the way in the chorus. I'd figure out the verse/chorus order and generally arrange the song while playing it with Peter. Once that was done, we would build on the basic tracks.

In the past, it's been the stage show rather than the albums which have been the centerpiece of Kiss' performance. . .

For older people, yes. I will grant you that anybody over 20, misses the energy of block chording and power music.

Well, for a studio album, won't it have to be the music itself which propels it?

Yes. Kiss albums were attempts to capture the energy of the group's live playing on record. This album will definitely be a studio album as opposed to a live concept, which is something completely different for me. There's keyboards and choirs and members of the Los Angeles Philharmonic doing orchestrated parts, barking dogs, background girl singers. Lots of famous people who dropped by to play on it.

Anybody who you've always wanted to play with?

No. I've never really had any preoccupation of that sort. For example, I always thought the Who were wonderful, but I never really cared about the musical intricacies of the band as much as the fact that they were stars. Instead of playing with them, or figuring out their music, I wanted to be them.

That's another thing that people work towards — becoming a virtuoso. I don't want to become a virtuoso. I don't want to learn the instrument to the point where I lose the audience because the vast majority of people who listen to music don't grasp a John McLaughlin or the complexity of a virtuoso.

Again, that goes back to the question that Kiss' success may be due more to their showmanship than their musicianship?

No. I wouldn't say that. People can say whatever they want to but I think, at the outset, you must assume that when one buys a Kiss album they're not going to get a flash pod or a levitating drum kit. If I liked a group live it doesn't necessarily mean I'd like them on record. I think when you're talking about millions of people buying millions of records, enough of those people are buying them because they like the songs, period. They may not understand what high-fidelity is, or what equalization is, or the difference between the recorded sound of a Stones album and a Queen album — that is, different levels of the state of the art — but that's not what's important. I think what's important about being a rock and roll star and/or musician is to entertain people. I'm not here to teach anybody about the fact that you can add a ninth to a suspension and get an interesting chord. I'm interested in writing very disposable songs, which you listen to, and like for a certain time, and hopefully they'll stick with you for a while. I'm not pompous enough to think that, 40 years from now, everyone's going to remember "Calling Dr. Love." And that's not the intent of the group. I think anyone who is going for that is pretty much royally blowing it out their ass.

Especially in rock and roll. Initially, it was called beat music, then, later, rock 'n' roll. "Rock and roll" initially comes from a black term which means screwing. "Come and rock

and roll with me in the sack all night". That's all it meant. It's as primitive a music as we have — and it's the most popular because people want to have music that moves them.

Five years from now, if a bass player said that Gene Simmons was his foremost influence, what kind of bass would he be playing?

He'd make his own bass. My newest bass is made for me by a guy named Spector. What I do is combine the best from various instruments which have the sounds I want. The sound I want has a lot of mids because it's designed to play in huge arenas and/or stadiums which have no ceilings, or ceilings 40-50 feet high. So, if you're talking about a high-fidelity bass and/or a terrific amp — like an Acoustic which will give you plenty of bottom and plenty of top — your sound is sure to get lost in a large hall. Low frequencies need level ground and walls to travel on. The higher the ceiling, the less you'll be able to hear the low frequencies being pushed out there. Plus you'll need so much wattage to push out the bass frequencies in a 20,000-seater that you'll destroy yourself. So, it's been my experience that bass frequencies in huge halls are just useless. Your best bet is to give yourself a lot of mids and a lot of highs. Also, your bass in a huge hall should not be a Fender Precision because you get too much bottom, unless you play the way many disco players play it now, by slapping the bass, to get that sharp edge and rolling off the bass tone and pushing the mids and highs.

Which basses influenced you, when you were designing your own instrument?

I like the Fender Precision neck, which is comfortable, but mine is lighter wood. The neck and the body are balanced better that way. It's important, for instance, when I put my hands up in that victory salute, I know the bass will hang there, perfectly balanced. I don't have to worry about holding the neck of the bass. The bridge guard is also a Fender Precision. I think it's the finest because it covers the whole bridge and you don't cut your hands if you run around on stage and flick your tongue out while you're playing. The fingerboard is totally exposed, up to the highest note, which is a design I got together with Spector. It's not so much for fast playing but for sliding up and down smoothly.

There seems to be a lot of Fender influence in your bass?

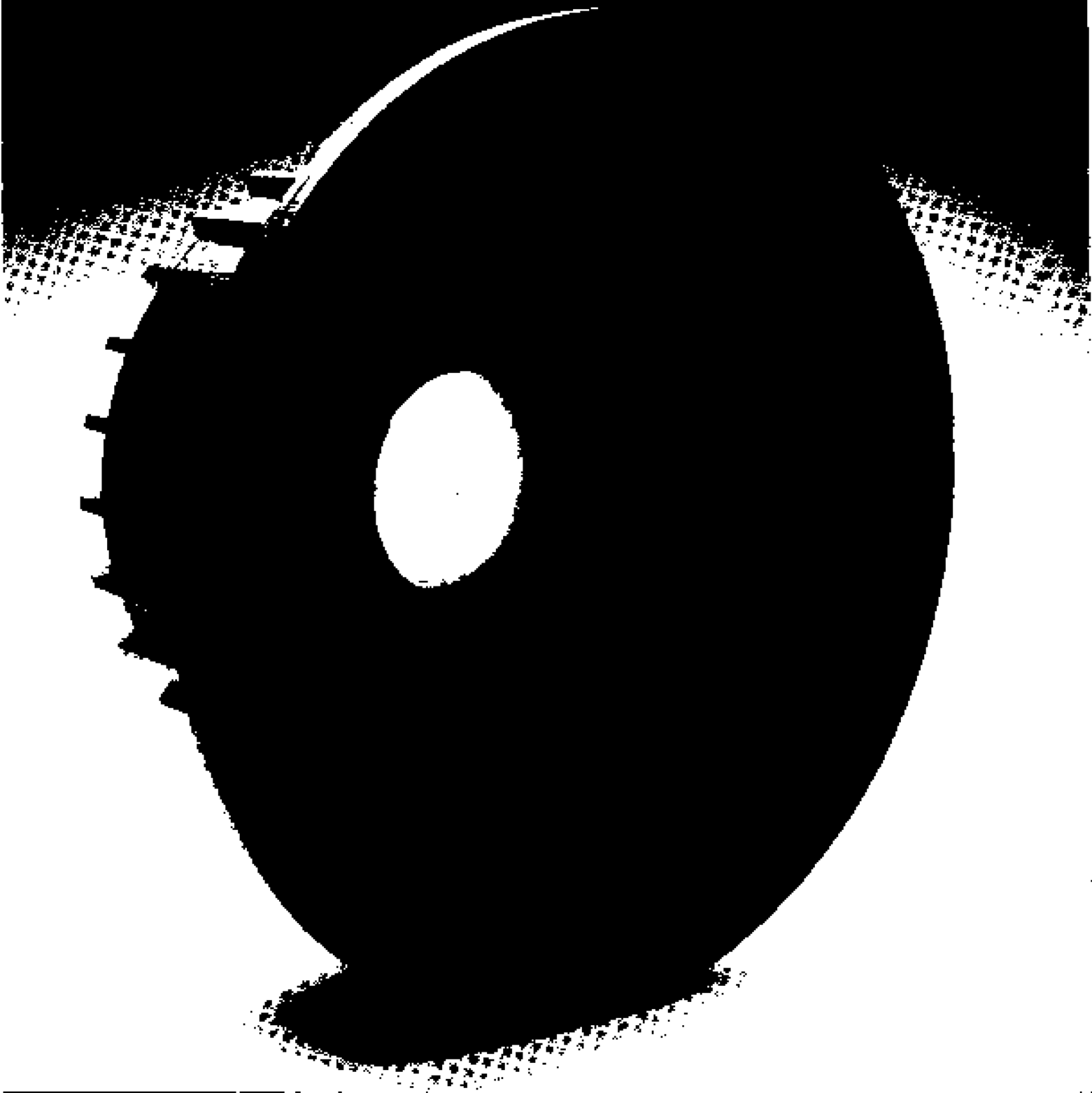
Just the neck and the bridge. The body is a basic Gibson body — kind of an SG Standard body. But it's different — I like the double-horn aesthetics much better. The weight factor of my bass is very good — it's not a very thick piece of wood. About half the thickness of a Les Paul — only about an inch and a half.

Is that for practical reasons?

Yes. You're talking about someone who is running around on stage, raising the bass over his head and all. For me, the point of playing an instrument on stage is not to play the perfect instrument designed for everybody, because everybody plays differently. There are guys that stand still on stage and guys that run around. My bass is designed for someone who runs around. An instrument should also visually fit the image of the group's music.

Also, on the slides, I've got telephone clasps to hold the strap on. The guitar will never come off. My strings are round-wound, extra long Rotosound strings. The round-wound give me a lot more highs than the flat-wound strings, they give me a more metallic sound. So, if I push the mids on the amp, usually past seven, with the bass and strings designed for the highs and mid-range, I get a "buzz saw" effect, which is what I want.

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Gene Simmons



Is that how you would characterize your sound?

Yeah. I don't want a pretty sounding bass. I don't want to sound like a Motown bassist. If you're 15 years old, and in the audience, you don't care about that. You want to hear a bass that can slice your face in half.

I notice there's only one pickup on it. Why is that?

Because, if you're talking about playing huge stadiums, you're just playing with your pud if you think you're going to get a lot of different sounds. So, therefore, I have only one DiMarzio bass pickup on there.

Why DiMarzio?

I find it the best — simple and straightforward. It's funny about Larry DiMarzio — he and I went to school together. We were in the same art class. In fact, we were in the same band for a week. Back then, in 1972, I told him about my concept for a band and he said "Yeah, yeah, sure, sure" and he told me about his pickup-making prowess and I said "Yeah, yeah, sure, sure". I told him, "That's not the way to make it, come and be in a famous rock and roll band" and he said, "That's not the way to make it, come and make pickups." Well, we both went our own ways and have done pretty good.

Do you use any effects?

Generally, no. In one song I use a digital delay with a harmonic equalizer by Eventide which is controlled from the board. Again, that's because you cannot determine, from the stage, what the bass is going to sound like to 50,000 people. So, your best bet is to get a good sound on stage and let the soundman make adjustments.

What amps are you using?

A series of Perkins cabinets. They're not all 18" speakers, as most people use, but also 12" speakers designed to push the highs and mids. The amps are Marshall Majors and Ampeg SVT 360s. Marshall, interestingly enough, realized a long time back that there was really no distinction between a guitar and a bass amp once you get into the high wattage area. The Marshall Major, which is a 200 RMS amp, is just called a "Major". It can be used for guitar or for bass and isn't limited to either group. It will give you a lot of highs and mids.

If your live concept is to "cut through" by using mids and highs, how does that fit in with the rest of the band's playing? For example, if everybody played in the mids, it would hardly cut through the other instruments?

Everybody plays in the midrange. You must understand that different bands have different levels of subtleties. Our purpose is to go out there and, when we do a riff, it sounds like a bulldozer. The bulldozer effect is everybody playing a riff in unison and in the same tone range. When you hear a bulldozer coming over a hill, you don't hear a lot of highs and a lot of lows, it's all midrange and it hits you. And when we hit a chord together, it absolutely punches you in the chest. My bass has only two switches — volume and tone. I put them both on ten and then work on getting a good amp sound. I set the amps generally at volume four, treble eight, midrange about seven and the bass at about four. The result is I get an absolute buzz-saw sound. With that setting, I can also play chords which sound like a low-ended guitar.

What do you do for a set-up in the studio?

Almost the same set-up. I get my buzz-saw

sound live through the amp using two or three Perkins cabinets and SVT amps. I may put some Marshalls in for some extra highs. Then I'll also go direct with the bass. I combine the buzz-saw sound with the cleaner direct sound.

But, on the solo album, it's much different. First of all, I don't play bass at all. Secondly, I'm going for a high fidelity sound. That's one reason why Mike Stone is involved in the project. His records with Queen are the absolute state of the art, as far as I'm concerned.

When you first started playing bass, who did you listen to?

I always liked the early Kinks and groups with a solid bass riff throughout their songs. If you hear the notes and can hum them, then it's your basic rock and roll chord. The concept of jazz chording is so beyond me, and so beyond most people. That's because you can't hum it — it's very airy and nebulous. But my favourite people were the ones who always used that simpler concept — the Stones, the Who, especially the Who. When they went into an A chord it was only the A and D strings hit together and that had more power than anything else.

It's been done so many times but it's wonderful. Rock and roll has never been the place where people said, "Watch how far we can go," but rather, "Watch how much fun we can have" — making people dance, getting their adrenalin up. The live situation with most musicians is always something which intrigues and repels me. Most musicians will get up on stage and say, "Watch what my fingers will do." That's not the type of attitude for a live show. That's for a studio album.

Like a solo album?

Right. See, I'm not touring with this album. It's only for listening. But when you record music you intend to do live on stage, it's got to be music you can do well live. Certainly, one couldn't go out and play "Sergeant Pepper" live because it's highly honed music.

Concert tickets today cost, six, seven dollars and if someone pays that money, you've got to give them a show worth it. I don't mean putting on make-up necessarily — but anybody who gets on stage, from Liberace to Elton John to the Stones, owes the audience a show. For me, it's not enough to have short hair and ripped clothes and get onstage in little clubs and stand still while I play.

Is there any particular stadium which feels right to you?

Madison Square Garden is home. It's home because I used to go there and see bands. You really can't get any high-fidelity out of the large halls. Given that, the Spectrum in Philadelphia is nice. It's a large hall, yet it always sounds so bright. Maybe it's the padding on the seats or something.

I don't think everyone can sound good in Madison Square Garden, which is another reason I like it. I would love to see a high-fidelity band get up on stage there and sound like total garbage, twenty rows back. I'd love to see Weather Report at Madison Square Garden and see what they could do there.

Is there any way to sound good there?

Sure, if you know what you're doing. If you simplify the music enough so that you're going for impact as opposed to subtlety. In huge halls, again, there is no room for subtlety because you've got to push so much air out there. If you play a quick "do-do-doop", it will

get lost. And nobody really cares to hear a "do-do-doop" there. It's when the entire group goes "DHA-DHA-DHAAM" that people go "Wow!"

It seems the live show is really geared towards the audience then?

That's right. I'm not anybody to dictate to the audience what to like. Even more importantly, we are the slaves of the audience. They dictate to you what they want, and it's up to you to play it. A person can be an asshole and say, "No, I'm not going to play the songs you came to hear, paid your money for and obviously deserve. I'm going to play you a completely new album you've never heard before, and I'm going to teach you to like this album." That man will be assassinated by the audience.

Have you adjusted your stage style as well as the bass to the frenetic stage show?

Yes, I play with a lot of power in mind to make full use of the hall I'm playing in. For example, if I hit an "A" note and put my arms up, I want to know the bass will still put out the "A" note to end the song with. It will sustain itself because there is one pickup, nice and close to the strings and the level is high.

On one of the Kiss albums it said "Kiss Uses Gibson equipment." What was that about?

When we were first coming up in the world, Gibson saw something there, so they gave us the equipment to use. No contracts were signed. They just thought we'd like to use the equipment because we were buying them anyway — we've always been Gibson fans and Ludwig was always one of Peter's favourites — so we put on the back of the album "Kiss uses Gibson guitars and Ludwig drums because they wanted the very best", a little saying I wrote. Since then, there have been so many other guitars. One doesn't always stay with the same guitar. You live and learn. The Les Paul is still Ace's favourite guitar. Peter now plays Pearl drums because they have the sound he wants. Before I made my own bass, my favourite bass was the Epiphone bass from the early fifties. It had a small body. Paul plays the Ibanez guitar because it's a combination of a lot of things he likes. They now have come out with a Paul Stanley model.

They've done that with a lot of guitarists recently, Bob Weir, George Benson. . .

Except you have to be old to play the George Benson guitar because it's so fat. . .

But it's quite light actually.

But you'd look like a grandfather playing it because there's no sex in it. For rock, you need a thin guitar that you can grind and groan with. I think there's much more to playing a guitar on stage than just playing. There's aesthetics. If I played a Fender Precision, I don't think it would look as powerful as this two-horned black thing I play.

Who are some of the other musicians on the album?

Bob Seger, Skunk Baxter of the Doobies, Joe Perry of Aerosmith, Helen Reddy, Donna Summer, Rick Nielsen of Cheap Trick, Janis Ian, the Los Angeles Philharmonic, Lassie, the Radio City Music Hall Rockettes. . .

God, it sounds like. . .

Yes, God is on it too! Also, Grace Slick, Cher talks on it but doesn't sing on it. Dinah Shore and Sammy Davis agreed to appear on it but I decided they would be too alien to the concept. Once you put the needle on the record, it doesn't stop until the end of the side.

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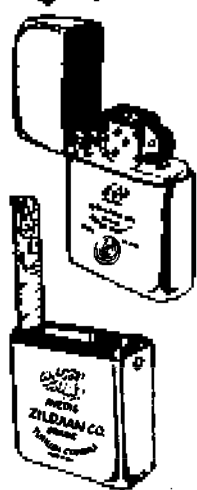
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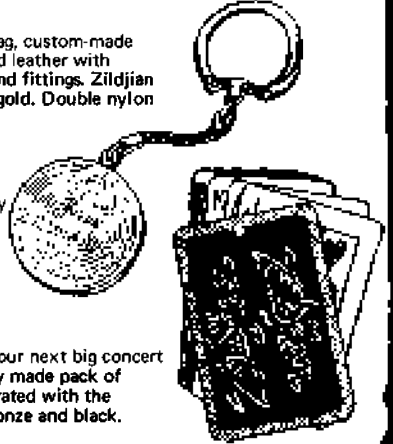
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The 750B amplifier has been designed to deliver 720 watts of continuous power into an 8 ohms load when working in mono mode over the bandwidth of 20Hz to 20KHz. The total harmonic distortion content claimed at this level is 0.1%. Working in a dual channel mode the amplifier can deliver over 400 watts rms per channel into 4 ohms and over 250 watts rms per channel into an 8 ohms load. In each case the total harmonic distortion content is claimed to be no greater than 0.2%. Our tests revealed a slightly improved figure, in fact.

Construction

The amplifier is contained in a steel cabinet approximately 19" x 7" x 12" and is intended for mounting in standard 19" racks. Two sturdy handles and four fixing holes for rack mounting are supplied on the front panel. The front panel controls have been kept to the functional minimum with two gain controls, an on/off mains rocker switch and a twin display of LED's indicating decibels below the rated power level up to the maximum level (clip point). The rear panel houses both the input sockets and the output terminal. The inputs are unbalanced and a pair of ¼" jacks and XLR cannons are provided which is an extremely practical feature. The output terminal is the standard 4mm twin banana type. A two and a half metres fixed mains lead (3 core variety) is also supplied with the unit.

Access to the amplifier circuitry is easily made by removing the cabinet cover. Doing this reveals the massive power stage with no less than twenty four Motorola power transistors (type SJ7407 and SJ7394) mounted on large black anodised heat sinks.

In addition the rear panel carries a miniature two speed cooling fan (Torin TA 450) which blows air through a



removable foam filter into the power sections. During tests on the maximum power output level when the amp was driving 4 ohms resistive loads, and when the specific work temperature on the channel's heatsink was increased to above 60°C, the secondary speed level of the fan system was triggered by two thermal trip switches (Elmwood sensors) which are mounted directly on the output devices — so providing efficient cooling and preventing any over heating. Each of the power amp's modules can be replaced in a couple of seconds and no soldering work is necessary; this is done by just unplugging an 11 pin connector incorporated with its socket soldered directly to the channel's PCB. The maximum 1 KHz power level from the 750B is approx. 800 W. rms into 8 ohms load when working in a mono fashion. This can be selected via the rear panel using the small DPDT slide switch and here the manufacturer always recommends the use of speaker fuses in order to afford the maximum speaker protection. For those travelling abroad, it is useful that the line voltage is interchangeable for either 100/120 volts, 200/220 volts or 240 volts AC 50-60 Hz operations.

Measurements of the specific power output levels and distortions are presented in the specification table and generally match up very well to what the manufacturer has quoted. Each of the 750B's come with their own test report prepared by the Hawthorne Factory Test Technicians. This report just goes to prove how confident the manufacturer feels about the product and will be undoubtedly welcomed by the user and service engineer.

Measurements of the amp's hum and noise (true rms) related to 250 W. rms power output into 8 ohms are given

for both types of professional weighting i.e. DIN "audio band" with the noise bandwidth of 23 KHz as well as the IEC "Curve A" and these show nearly identical results with only a slight difference on the DIN "audio band" weighting in the left channel. Whereas both IEC "Curve A" measurements are virtually identical at both power outputs.

The amp is also equipped with all possible forms of protection which is an indication of their high level of reliability and long life expectancy; perhaps 'work-horse' is the right word. The mains on/off switch acts as an overload surge trip rated for 7.5A of nominal current with trip adjusted at 9.38 amps, Ref. 250 V. rms of the line supply.

Conclusion

This amplifier delivers an extraordinarily high power level with excellent noise/distortion performance all packed into a compact robust unit. One thing slightly less enticing is the price which seems high compared with some amplifiers available at present on the market. However, from the technical point of view the amp has much to offer and is strongly recommended for PA and studio use. I was not happy about the cooling fan's foam filter, which in the unit under test, was inserted a few millimetres too deeply and completely blocked the fan rotor, consequently stopping the fan from operating. I suspect, naturally, that this probably happened during packing or transportation, as the filter forming is made from an extremely delicate plastic material. The amplifier is also a little on the heavy side weighing in at 55lbs, although the sturdy handles on the front panel enable one to transport the unit quite satisfactorily. A comprehensive manual is supplied with the amplifier.



PARAMETER	RESULT	TEST CONDITION	COMMENTS
Specific Power O/P Watts (RMS) Ref. 1.0 KHz	506.25 W. RMS 285.60 W. RMS 192.51 W. RMS 501.76 W. RMS 278.48 W. RMS 191.70 W. RMS	Onset of clipping into 4 ohms Onset of clipping into 8 ohms Onset of clipping into 16 ohms (Ref. Right Channel) Onset of clipping into 4 ohms Onset of clipping into 8 ohms Onset of clipping into 16 ohms (Ref. Left Channel)	Manufacturer Claims: Right Ch: 266 W. RMS/8 ohms) Ref. 0.1% THD 420 W. RMS/4 ohms) Left Ch: 266 W. RMS/8 ohms) Ref. 0.1% THD 420 W. RMS/4 ohms) Although in a mono configuration the total O/P level is claimed as 820 W. RMS.
Input Sensitivity in Volts RMS Ref. 1.0 KHz	Right Ch. 2.46 V. RMS 2.35 V. RMS Left Ch. 2.44 V. RMS 2.33 V. RMS	Ref. 260 W. RMS (45.60 V. RMS) output into 8 ohms Ref. 450 W. RMS (42.42 V. RMS) output into 4 ohms. Ref. 260 W. RMS (45.60 V. RMS) output into 8 ohms. Ref. 450 W. RMS (42.42 V. RMS) output into 4 ohms.	Quite low here in Europe, however typical for US made equipment. This very often leads to misunderstanding and if not considered earlier, problems. Be sure to provide at least 2.5 Volts RMS input to drive this amplifier to its rated power O/P level.
Total Harmonic Distortion THD (%) Ref. 8 ohms dummy load	Right Ch. 0.0058% 0.057% Left Ch: 0.0051% 0.073%	@ 225 W. RMS Ref. 20 Hz @ 225 W. RMS Ref. 20 KHz @ 225 W. RMS Ref. 20 Hz @ 225 W. RMS Ref. 20 KHz	Manufacturer claims for the same test conditions: Right Ch: 0.045% THD Ref. 20 Hz 0.040% THD Ref. 20 KHz Left Ch: 0.045% THD Ref. 20 Hz 0.047% THD Ref. 20 KHz typically: 0.008% THD Ref. 1 KHz
Intermodulation Distortions ID (%) Ref. 8 ohms dummy load	Less than 0.018%	Ref. 225 W. RMS (42.42 V. RMS)	Very good. Manufacturer claims less than 0.02% from 250 milliwatts to rated power level
Input Impedance	Greater than 6 Kohms		Satisfactory
Signal/Noise* Ratio	Right Ch. 109.02 dB 110.96 dB Left Ch: 101.67 dB 109.75 dB	DIN "audio band" weighting characteristic IEC "Curve A" weighting DIN "audio band" weighting characteristic IEC "Curve A" weighting	DIN "audio band" weighting characteristic is based on the DIN specification no.45,500 (April '75) which is a maximally flat band pass filter for the audio band with an effective noise bandwidth of 23 KHz. IEC "Curve A" corres- ponds to + 0.5 dB REF. IEC recommendation. Although both channels signal to noise performance is good the left channel needs a bit more edge to fit.
Damping Factor	Greater than 500:1	Ref. 8 ohms load	Acceptable.
Capacitance Load Test	OK	2 uF non-electrolytic capacitor and 8 ohms dummy load	Very good.
Open Circuit Stability Test	OK	Dummy load removed, both left and right gain controls set on maximum.	Excellent.
Short Circuit Test	60 seconds	-	No ill effects, worked perfectly when short was removed from the o/p terminals of the amplifier.

(*) True RMS reading with ANM2 RADFORD Noisemeter



sawicki's SOUNDCHECK

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

TEST ON: Acoustic 230 lead amplifier

DATE: September 1978

PRICE: £280 (+ VAT) \$560

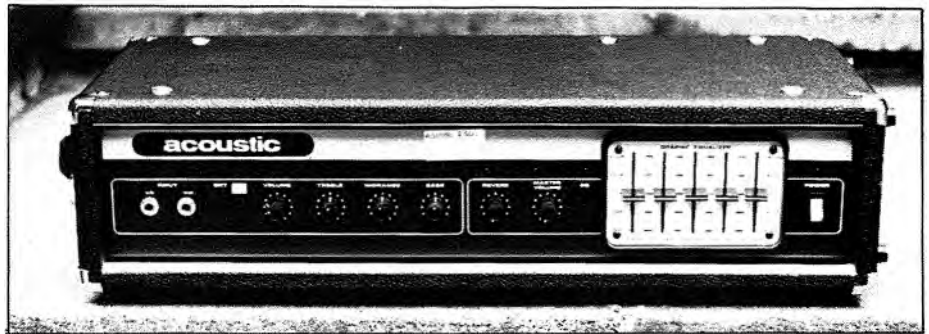
Introduction

The Acoustic Control Corporation of Van Nuys, California has been a powerful force in professional group amplification for many years in the United States. Acoustic manufacture a wide range of musical instrument amplifiers, loud-speakers and PA products although only a few models are well known in the UK. For years bass guitarists revered the Acoustic 371 bass stack which was a powerful combination of the 370 bass amp with the 301 powerhouse speaker. Now the new 320/408 Concert Bass System is being just as well received by bass players. The Acoustic range starts with their 100 Series of combination amplifiers and goes on through to the 220 Bass Amp, 230 Lead Amp, 320 Bass Amp and so on into a wide range of mixers and PA cabinets.

The last time we carried out a 'Soundcheck' on an Acoustic amp was way back in March 1976, so we were very interested to lay our hand on one of their more recent models. Considering the general popularity of Acoustic bass amplifiers and speaker set-ups in the UK, we decided to check out a less well known model, the 230 lead amplifier, for the review. The 230 amplifier falls into the middle of the Acoustic range and is a fairly powerful unit incorporating many practical features such as a five band graphic EQ, reverb, good tone controls and a footswitch control for the master volume, reverb and graphic equaliser.

The Acoustic Control Corporation do not have a wholesale distribution company within the UK and in fact export their amplification direct to UK dealers. Because of this we were able to obtain a standard 'off the shelf' amplifier and we would like to thank the Carlsbro Sound Centre in Sheffield for kindly loaning the amplifier to us for the review.

Before commencing my tests on the 230 amp I carefully read the 14 page owner's manual supplied with the unit. I must say that I was quite impressed with the amount of information, including drawings and specification tables contained in the manual but I was somewhat surprised to read that the 'Protection Contract' only applied to the United States! Hopefully Acoustic Control will work out a guarantee system that will cover musicians buying their equipment from dealers in the UK, otherwise it will be entirely down to the dealer to sort out any service problems that may arise on new gear.



Construction

The Acoustic 230 is not a bulky amplifier nor is it an ultra slim line unit. Its overall size is, length 26", depth 11½", height 6½" and its net weight comes out at 36lbs which makes it reasonably convenient to hump around. A handle has been fitted at one end for ease of transportation. The overall finish on the amplifier cabinet and front panel is exceptionally good and the front panel graphics follow the strong black, blue and white colour scheme used throughout most of Acoustic's product range. The front panel controls are well spaced allowing plenty of finger room for knob twiddlers and the effective arrangement of the controls enables you to familiarise yourself with all the controls almost at a glance.

Looking across the front panel from left to right the controls range as follows; Channel Volume, Treble, Midrange, Bass, a Bright switch and two ¼" input jacks (high and low level inputs). In the centre of the panel are two further pots, one for the Master Volume and the other for Reverb level. On the right hand side of the panel there is a built-in five band graphic equaliser with five functional flattened white fader knobs on each band for ease of operation. An on/off white plastic mains switch and four small (5mm) LED indicators complete the panel controls. The LED's are indicators for the Master Volume, Reverb, EQ and Mains. The graphic equaliser bands are designed at five specific frequencies, 70 Hz, 125 Hz, 350 Hz, 820 Hz and 2 KHz. The bands are each marked +20, 0, -20 (see specification table for figures).

The rear panel is very straightforward with four ¼" jacks, two for speaker outputs and two giving a power amp input and a pre-amp output facility. A wired-in mains lead of a couple of metres or so is housed on a couple of brackets attached to the rear panel, and the brackets are well recessed to prevent damage in transit. A six-way connector is also fitted to the centre of the rear panel for the footswitch control unit which can remotely control the Master

Volume, Graphic Equaliser and Reverb circuits.

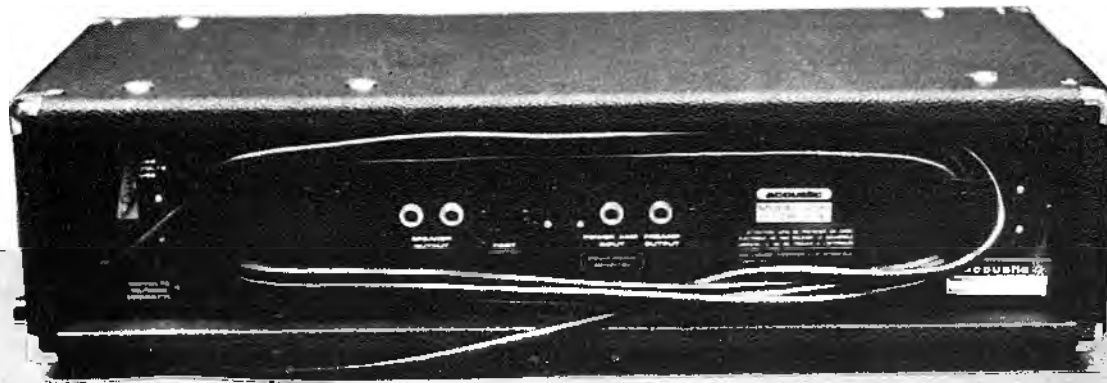
Access to the amplifier circuitry has been made quite easy through efficient design as the chassis is formed from one piece of sheet metal sprayed on the outside and anodised on the inside. The chassis unit is housed in a strong smart wooden cabinet finished in black vinyl material, and five countersunk heavy duty bolts are fixed through the top of the cabinet to retain the chassis section.

The circuitry is laid out neatly on three medium sized PCB's and the cable looms are fastened with white nylon clips. Good quality components have been used in the construction of the amplifier such as the RCA TO3 power transistors, super large smoothing capacitors, Mepco/Electra 7,800 uF/100 V DC electrolytics, and the five band RCL EQ filter for example. I also noticed a slide type voltage selector fitted internally for either 120/125 V or 240 V AC operation. This is a good feature and saves the time rewiring the mains transformer should you wish to travel across the Atlantic.

The Reverb unit is the popular Accutronics type well known for reliability and sound quality as our listening tests confirmed.

Measuring the power capability of the 230 amp into two, four and eight ohms loads proved Acoustic's figures almost to the watt, and the amplifier does not seem to mind operating down into two ohms. This is a good point as many speaker cabinets rated as nominally eight ohms often drop as low as four or five ohms impedance and when paralleled up present the amplifier with something as low as a two or three ohms loading. Some amplifiers will not operate into such low impedances and their protection circuits limit the amplifier performance.

The protection circuit on the 230 amp works fast against short circuits and upon removing the short the amp's recovery time is virtually instantaneous which is a very good feature. I thought that the signal to noise figures were average and that for studio use an improvement could be made; however,



PARAMETER	RESULT	TEST CONDITION	COMMENTS
Specific Power O/P Watts (RMS) Ref. 1.0 KHz	160.13 W. RMS 124.32 W. RMS 67.85 W. RMS	Onset of clipping into 2 ohms Onset of clipping into 4 ohms Onset of clipping into 8 ohms	Manufacturer claims power output: 125 W. RMS @ 5% THD, 160 W. RMS into 2 ohms @ 5% THD. This specification is nominal and rated at 120 volts AC operation.
Input Sensitivity in mV. RMS for 124 W. RMS (22.27 V. RMS) into 4 ohms output	33.7 mV. RMS 122.8 mV. RMS	Refs. 1KHz and 4 ohms load Instrument input (0dB) ref. 100 kohms Instrument input (-10dB) ref. 65 Kohms	According to the manufacturer the i/p level required for full output is 30 mV/100 Kohms @ Normal and 115 mV./65 Kohms @ High level. The Acoustic 230 Amp is also equipped with Bright switch providing a high frequency boost.
Total Harmonic Distortion THD (%) Ref. 4.0 Ohms dummy load	0.26% 0.27% 0.28% 0.29% 0.32% 0.38% 0.48%	@ 120 W. RMS ref. 1.0KHz @ 100 W. RMS Master Volume control - OFF @ 70 W. RMS @ 30 W. RMS @ 10 W. RMS @ 5 W. RMS @ 1 W. RMS	A footswitch control adjusts the level of signal allowed to pass to the power stage. Operation of the channel volume control and Master volume controls can provide variable distortion at practically any volume level. An initial volume distortion set up might be with the front volume control set approx. 3 o'clock and master volume control at 9 o'clock (ref. manual)
Tone Controls Range	29.2 dB swing 38.9 dB swing 23.5 dB swing	Treble @ 5 KHz, Midrange and Bass flat Midrange @ 600 Hz, Treble/Bass - flat Bass @ 100 Hz, Treble/midrange - flat	Manufacturer claims: Treble @ 5KHz, 20dB swing Midrange @ 600 Hz, 40dB swing Bass @ 100 Hz, 25 dB swing
5 Band Graphic EQ	33.1 dB swing 29.7 dB swing 27.5 dB swing 32.2 dB swing 34.5 dB swing	@ 70 Hz Tone controls flat @ 125 Hz Reverb/Master Volume - Off @ 350 Hz - Off @ 820 Hz Bright switch - Off @ 2 KHz	Nice and symmetrical. A set of five tone controls that act on 5 specific frequencies. When centered the slider is inactive or flat. Also a red LED is provided to indicate whether Graphic EQ is active.
Signal/Noise Ratio	72.97 dB 78.99 dB	DIN "Audio Band" weighting characteristic. IEC "Curve A" weighting characteristic.	Could be better. Manufacturer claims: HUM and Noise of - 71 dB below rated output. Ref: volume at max, master volume - off, T/C - flat, Reverb/Bright switch - off.
Pre-amp Output level Slave Input level	approx. 300 mV. RMS approx. 300 mV. RMS	Ref. 10 Kohms @ 1 KHz Ref. 50 Kohms @ 1 KHz	Satisfactory Quite sensitive for US made equipment. Always welcomed in Europe.
Capacitance load test	OK	2 uF non-electrolytic capacitor on 4 ohms dummy load	Good stability margin.
Open Circuit Stability Test	OK	Dummy load removed. Volume/Treble/Midrange/Bass - Max	No problems
Short Circuit Test	60 seconds	-	No ill effects, worked when short was removed.

the hum and noise level for practical purposes on stage is very acceptable and much the same as many instrument amplifiers on the market today.

Conclusion

Considering the quality of finish, facilities and prestige that the Acoustic Control Corporation products enjoy in the States I don't feel that the amplifier is too heavy on price. The graphic

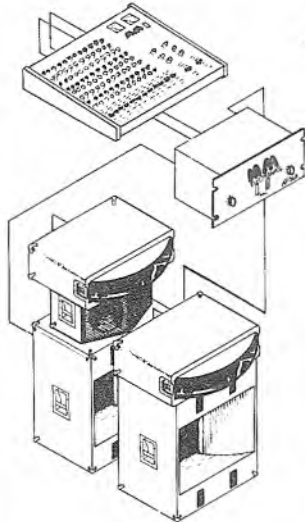
equaliser works very effectively and one must consider the added value of this when comparing the unit to UK amplifiers. The graphic equaliser has been a favourite tool of American guitarists for years but has only recently caught on in the UK. Obviously I am not referring to PA applications when I say this. Basically this is a very good amplifier and should be seriously considered if you like a strong solid-state sound with loads of

tone controls. I have one niggle and that is the mains cable. The amplifier came with the green, black and white centre core cable. This is not a safe feature and really ought to be changed before the amps are sent over to the UK, otherwise some hapless musician could easily end up twelve feet up in the air stuck to an electric guitar. It is something that I feel sure Acoustic would change if dealers stress the importance of this.

soundwave

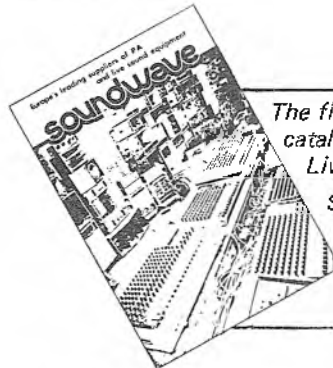
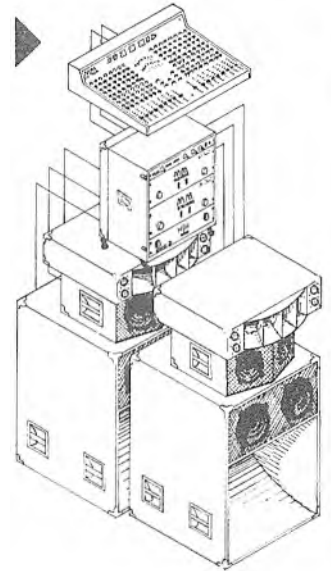
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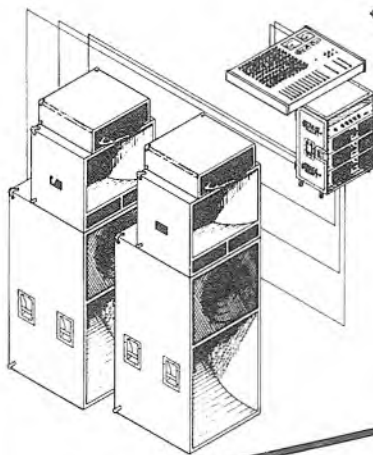


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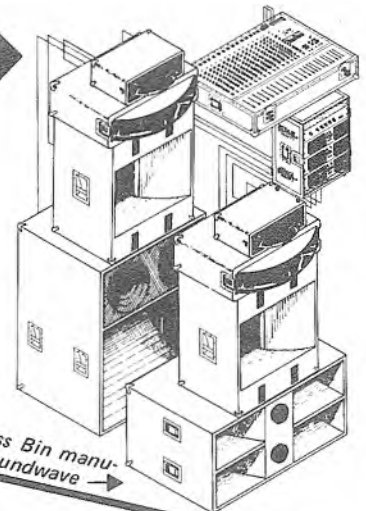
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sawicki's SOUNDCHECK

TEST ON: RSD 800 C Stereo power amp

DATE: September, 1978

PRICE: £503 (ex. VAT) \$100C

Introduction

RSD of Northall, Dunstable, Beds, manufacture a range of quality audio and PA products. This month I am reviewing a new product being launched by RSD; their 800 C Stereo Power Slave Amplifier. It is a twin-channel unit, delivering approximately 400 watts RMS per channel into 4 ohms, or 225 watts RMS into 8 ohms. The maximum power output claimed by RSD should be in the region of approximately 600 w RMS per channel when as little as 2 ohms speaker load is applied.

Because of the high power range of the 800 C amplifier, a forced cooling system is used in the form of two high-efficiency Centaur fans (12/14 watts); Rotron BV - Dutch made), with large black heatsinks containing ten output transistors per channel (i.e. eight 2N 3773 and a pair of drivers - RCA 7808).

Construction

The main "body" is formed from steel and aluminium sheets into a standard box, provided with holes for mounting into 483mm (19") rack systems. All the metalwork is sprayed a matt black and the cabinet front has two carrying handles, screwed directly into the front panel. Except for the mains lead, all the in/out connector-sockets are provided on the front panel and the panel is designed

as a symmetrical entity with two (Right/Left) areas incorporating the following: rotary gain control (calibrated 0-10) with two LED indicators (green LED - 10% drive red LED - 100% drive). XLR Cansons are used as input and output connectors i.e. two male sockets on the output side and one male, one female on the input side. The control part of the front panel contains the red illuminated rectangular R/S power switch with T8A/250v mains fuse and four T8 Amps fuses - a pair on each channel's DC supply side respectively. Above the mains on/off switch, there is a cut-out (100°C) orange LED indicator, as both heatsinks are directly controlled by a pair of Elmwood thermal safety switches designed to protect components from damage due to overheating. The contact opens when the 100°C temperature is reached, removing the supply and automatically resets when the temperature falls to the closing level at approximately 85°C (+5°C).

All the 800 C's electronics are situated on four rectangular PCBs - two channel's pre-amps and power stage cards. Good quality glass fibre printed boards are used, but no component identifications are provided. The inter-board connections are made by means of a 31-pin edge connector. The input part of each channel's pre-amp circuit is covered by black potting modules but no information about this part was available. Alan Pound, the designer of this Slave Power Amplifier, told me that no integrated circuits are

used, only straightforward differential input stages with selected low noise transistors. As he said it was a closely guarded secret, nothing I could do or say would uncover the secrets of Pandora's box of polyurethane epoxy potting compound - really hard stuff.

The amplifier's general quality of electronic components is good and soldering work is superb. Access for servicing, assuming naturally you remove the top/bottom covers and unscrew the front panel, is easy and all the wiring is colour-coded and tidy.

As far as performance is concerned, the power levels were better than the manufacturer's test report, supported by low levels of total harmonic distortions (see table). Frequency response of 5Hz-30KHz within a 3dB band can be regarded as absolutely sufficient for most studio/PA applications and the low noise figures and overall system protection were very impressive. The measurements of the slew rate give figures greater than the minimum of 15v/us which is fast enough and tally entirely with the manufacturer's specification.

Conclusion

The 800 C is a very good amplifier with a lot of output power to offer, a reliable circuit and professional class components. It seems absolutely reasonable to consider this amplifier for quality PA use and studio monitoring which is what the manufacturer intended it for.



PARAMETER	RESULT	TEST CONDITION	COMMENTS
Specific Power Output Watts (RMS) R - Right Channel L - Left Channel	426.42 W.RMS 453.69 W.RMS 236.53 W.RMS 242.08 W.RMS 145.20 W.RMS 153.14 W.RMS	R. 4 ohms Ref. 1 KHz L. 4 ohms Ref. 1 KHz R. 8 ohms Ref. 1 KHz L. 8 ohms Ref. 1 KHz R. 16 ohms Ref. 1 KHz L. 16 ohms Ref. 1 KHz	The power level measured into 4 & 8 ohms load are better than specified. Manufacturer claims the maximum power output at 1 KHz: 225 W.RMS into 8 ohms 400 W.RMS into 4 ohms 600 W.RMS into 2 ohms Each channel's output stage employs eight 2N3773 silicone power transistors and two RCA 7808 drivers. There is also short/open circuit protection and thermal cut-out (100°C). Slightly more gain in the left channel.
Total Harmonic Distortions THD (%) Ref. 1 KHz	0.02% 0.018% 0.016% 0.016% 0.017%	@400 W.RMS @300 W.RMS @200 W.RMS @100 W.RMS @ 10 W.RMS	Manufacturer claims Total Harmonic Distortion at 1 KHz at 200 W RMS. better than 0.005% Ref. 8 ohms better than 0.001% Ref. 4 ohms better than 0.01% Ref. 2 ohms My measurements are slightly higher than specified.
Input Sensitivity in V. RMS for 400 W.RMS (40V RMS output signal Ref. 1 KHz)	R - 1.15 V.RMS L - 1.12 V.RMS	Ref. 1 KHz Channel gain set at 10 in both left and right channels. 4 ohms load applied.	Ample sensitivity for most applications. Input impedance on both left and right channels is greater than 10 K ohms.
Input Impedance	Greater than 10 K ohms		Satisfactory - each channel Input Sockets are two XLR cannons (one male, one female for stacking additional amps and greater flexibility).
Frequency response	Approx. +0-3dB Ref. 5 Hz-30 Hz		Agrees with manufacturer's test report.
Signal/Noise Ratio in dB	Better than 100 dB	Ref. 200 Watts output into 4 ohms	Very good. Unweighted RMS reading with ref. to approximate nominal power output into 8 ohms dummy load.
Slew Rate	Greater than 15v/us		Fast, and more than adequate for all standard applications.
Capacitance Load Test	OK	2 uf non-electrolytic capacitor and 4 ohms dummy load	Satisfactory although a small overshoot observed.
Open Circuit Stability Test	OK	Dummy load removed both gain controls set at 10	Very good stability margin.
Short Circuit Test	45 seconds		Very good output protection. No ill effects with short removed.

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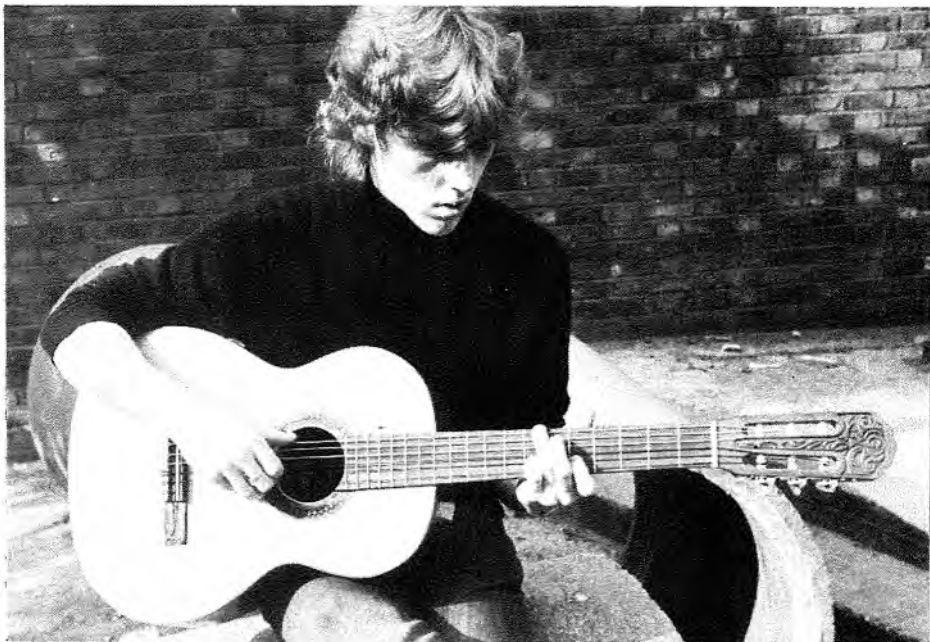
DATE: September 1978

PRICE: £62.10 incl. VAT

This is an interesting and slightly unusual guitar and its price places it in healthy competition with a large number of Korean and Japanese classics. I am sure that a fair proportion of our readers have at some time been trained in one of the 'correct and approved' ways of holding and playing a classical guitar. It may be that one or two of these readers will look at heading photograph, and consider that it shows, amongst other things, rather a poor example of classical technique. In fact the photograph was chosen very carefully, and the guitarist in the picture was specifically asked to play something requiring an American-style folk guitar technique.

The point which I wished to make is that, in addition to the usual classical guitar repertoire, this instrument can also be used successfully for folk and jazz instrumental pieces. I am well aware that an excellent performer with an excellent classical guitar can successfully play almost anything; there have been several records issued in the last two or three years which prove this point admirably. However, in the case of less than expert performers, and particularly in the case of low- and moderately-priced guitars, it is often necessary to choose between a classical guitar for classical music or a steel string guitar for instrumental-folk-guitar pieces. In particular, most classical guitar teachers are distinctly unhappy about the idea of their students practicing on steel-strung guitars with relatively narrow necks, and on the other hand, I have found that the cheaper classical guitars do not function very well with a contemporary folk-guitar technique. The treble strings usually are not bright enough in tone, and have either insufficient sustain, or the wrong sort of sustain, for music written on steel string instruments.

I think it is a reasonable assumption that there are at this moment quite a few guitarists who are at the stage of wanting to learn a bit more about playing, and at the same time are looking for a better instrument to replace their beginner's model. Some of these will know precisely which sort of music interests them most, and what sort of instrument they should look for. Others may, for instance, have come to acoustic guitar through folk clubs and concerts, and although they intend to have at least a few classical guitar lessons to give them a sensible grounding, are not sure in which direction they will eventually go.



I have in front of me two reputable tutors; one "Classical" and one "Folk". One states that it is impossible for a beginner to learn properly on a steel-strung instrument, and the other states that nylon strung instruments are unsuitable for American-style folk guitar. This is fine if your ambitions as a guitarist lie in a fairly limited field, or if you have enough money for two guitars. It is not much use to the rest of the guitar playing population. Obviously it would be most unusual if one instrument were ideally suited to such different musical styles and techniques, but a reasonable compromise is possible. If one considers the mixture of traditions which has gone to make up Brazil's musical heritage, it is not so surprising that one of the successful compromises between classical and folk guitar comes from that country.

According to the box in which this sample arrived, Giannini guitars have been in business since 1900. Although my experience of the company's products does not go back quite as far as this, I can remember seeing samples of Giannini guitars at the London Music Trade Show over something like five or six years. In past years, the finish and accuracy of some of these samples left rather a lot to be desired, and they did not compete very well with the (then) cheap Japanese Classics. However, most Japanese guitars are no longer cheap, and the overall standards of fitting and finishing of this year's Giannini guitars is so markedly improved on instruments made a couple of years earlier that they should be given serious consideration.

I selected this particular model for review because it is loud and sensitive and its tone has a distinct and (to me) pleasant

character, in a price range where many guitars from Japan and adjacent countries, sound indifferent or anonymous. There are cheaper, and more expensive, models available from the same maker. Some pleased me more than others, but this particular model seemed to offer something different from the fairly uniform collection of classical guitars of other makes in the same price range. (This should not imply criticism of the others just because they are mostly rather similar, but it is difficult to say anything useful about them which would in some way distinguish one from another. In many cases I would expect batch variations within one model of one brand, to be greater than any apparent differences in quality between closely competitive instruments carrying different labels).

This particular Giannini guitar, which is probably listed as model M4, has a solid Spruce soundboard, laminated back and sides, Rosewood fingerboard and bridge (Brazil Rosewood, naturally) and a neck which might be "Spanish" Cedar but is probably Mahogany. The back and sides are particularly resonant and 'alive' considering that they are laminated wood, not solid. The timber used is a light coloured hardwood, presumably from Brazil. It looks rather like African Muninga, which is also sometimes used for musical instruments. I usually expect guitar bodies of laminated construction to be relatively 'dead' from an acoustic point of view. This is not the case with this sample, and I feel this factor probably contributes towards its lively and complex tone.

The choice of timbers throughout this guitar certainly contributes towards my enthusiasm for it. Firstly, it looks



right (with the exception of the tinted front, which I will deal with later) and secondly, it smells right. Each time I sit down to play this guitar, after the first few notes I am aware of a faint, sweet, flowery perfume. This guitar actually smells of wood. Particularly, it smells of Rosewood and Cedar – and I must admit also a little of synthetic glue, but then nobody is perfect. I don't know whether you have ever inhaled deeply close to the soundhole of a new factory-made guitar, but it is usually not the sort of experience you would want to repeat. If you are lucky, the maker has used a Brown Cedar soundboard, and the smell of Cedar drowns everything else. If you are not so lucky, your guitar probably smells like a chemical factory. I know this does not directly affect an instrument's performance capabilities, but it does subtly affect my approach to playing an instrument, and I don't really enjoy playing such instruments until I have forgotten about the initial foul smell on opening the case. Making beautiful music is intrinsically a subjective process and it is not extravagant to consider whether an instrument smells particularly pleasant or particularly unpleasant.

In addition to looking and smelling right, this sample also sounds right. To put this more accurately, I find it a rewarding instrument to play. In the case of a modestly priced instrument, it is unlikely to sound magnificent, but if it sounds pleasant, and I am reluctant to put it down after 10 or 15 minutes, I think that represents an honourable standard of performance. It is good of its kind. You should easily be able to decide for yourself, whether you like *its kind*, or whether you prefer a tone nearer the typical 'Spanish' sound.

When I am in doubt the tone of a guitar and I do not have enough time to "play it in" significantly, I take it somewhere that is reasonably peaceful, but *outside* with no adjacent reflecting surfaces such as walls or windows. If it sounds good in a small room and still sounds like a guitar outside, not like a pale and insipid shadow of a guitar, it is probably worth buying (even if it smells like a chemical factory!). I have only tried one sample of this Giannini, but it sounds magnificent out of doors and seems to have a carrying power out of all proportion to its apparent loudness. It is worth keeping this in mind if you are in the habit of playing to the goats first thing in the morning. In a small room one can more easily tell that this is not a master-class instrument, but it puts in a creditable performance, and should improve fairly quickly with continued playing.

I have not mentioned what is probably

the most obvious distinguishing feature of this guitar, the carved head facing. You may like it or you may not: I have no strong feelings either way, but it is certainly distinctive. The decorated head is a little longer than usual, and you should bear this in mind when selecting a case for the instrument. Some of the smaller cases may not be long enough.

Although the finishing of this sample is much better than on samples from a few years ago, there are still some points which require attention. The bridge is made from beautiful-looking wood but the ends of the raised central part are very roughly finished. The nut and saddle appear to be some sort of plastic (which is acceptable on a guitar in this price range) and are not well finished. The saddle has an irregular top surface, and bits of fuzz attached to each end. Most of this brushes off, but the rough top surface suggests that probably not all samples will sound as good as this one on all their strings. The nut seems to have been *melted* to size at one end by determined application of file and polishing mop. Again, this is not really important, but the fact that all three bass strings 'creak' in the nut when tuned, is certainly important, and should have been noticed and corrected at the quality control stage, or better still at the production stage. Plastic nuts *can* work well, but one needs the *right* sort of plastic. The usual sorts of plastic nuts require significantly more skill in cutting the string slots, than one needs for Bone or Ivory nuts.

The machine heads appear to be standard Japanese 'cheapies' and seem to do a perfectly adequate job of adjusting the string tension. As such machines vary quite a lot, check each one carefully. If they are good, they are very good value. If they are not good, don't buy them. The young man who appears in the heading photograph swears that the fingerboard on this sample looks 'bent'! He is a knowledgeable fellow (he ought to be – he has been in and out of my workshop since he was big enough to reach the doorknob), and he is not usually wrong. There is something odd about the fingerboard, but I think it may be an insignificant bend, magnified by some sort of optical illusion. I cannot find any undesirable effect in the playing properties of the instrument, and I think this is more important in a modestly priced instrument than what the neck may, or may not, look like. The frets are quite well finished and have smooth tops and ends. I suspect

that after a few months, the ends may need trimming flush with the edges of the fingerboard and rounding over again. This is not ideal, but it is quite common in guitars at all quality levels.

There is one point about this guitar which I think is unfortunate, and which would cost nothing to correct at the production stage. The soundboard is sprayed with a yellow tint, and has acquired a sort of luminous egg-yolk colour. It seems to be the only guitar in the Giannini range which has suffered this fate, and I can only think that it is an experiment to gauge public reaction. They can have my reaction now, and entirely without charge. *Please stop painting your guitars yellow.* Any decent Spruce soundboard will turn itself a nice shade of gold or brown just with a little time and little daylight.

Conclusion

I think this is a useful addition to the range of moderately-priced classical guitars available in the UK. Apart from its obvious relevance to lovers of South American guitar music, it would be particularly useful to anyone intending to buy a classical guitar and have classical lessons, who also wants to be able to use the same guitar for playing a bit of folk or blues. It needs some work on the nut and saddle and there appears to be an intonation problem on this sample, but with these corrected, would be good value for money even if considered *only* as a classical guitar. The other possibilities are a bonus. It has a deep and complex and very Brazilian tone – like good coffee.

Measurements on Giannini guitar model Awn M4 Ser.3 1978

Scale length 645mm

String spacing at bridge 58mm

String spacing at nut 42mm

Fingerboard width at nut 50mm

Depth of neck at 1st fret 22mm

Depth of neck at 9th fret 24mm

Action as supplied 3.5mm treble/4.3mm bass

Intonation (with strings as supplied), comparing 12th fret note with true octave –

1st string flat (slightly faulty string)

4, 5, 6 noticeably sharp when fretted

There is something odd about the nut, 12th fret, and bridge-saddle spacing on the bass side of this sample. I would suggest that the matter requires immediate attention on the part of the manufacturer. This sample carries a very low serial number, and the fault may not appear on later production, but it is a point to check carefully before purchase, on any make or model of guitar which has a fixed bridge. Old, worn or faulty strings may give misleading results.



delft's GUITARCHECK

Stephen Delft is a luthier and instrument repairer. He is also a solo performer and a member of the Institute of Musical Instrument Technology.

TEST ON: Franconia F.013

DATE: September 1978

PRICE: £140 incl. hard case

I am frequently asked to review instruments costing many hundreds of pounds, and in most cases it is relatively easy to make interesting and relevant comments about them. It is usually not so easy to do so with less expensive instruments. This does not necessarily mean that they are bad instruments, or even that they are adequate but dull. It means that it is more difficult to write sparkling and attention-grabbing phrases about them. However, I am well aware that for many guitar players, several hundred pounds is simply not a realistic proposition, and that what money is available must be spent as wisely as possible. It is therefore particularly important that I try to pick out those of the cheaper instruments which seem to offer the best practical value for money in the ranges below £50, below £100 and below £150. They are, if you like, the "Utility Models". Within these price ranges, I am not particularly interested in instruments where a large proportion of the cost has gone on decoration. (If you want one of these, look for a cheap, over-decorated guitar, or for one which has all the decorative features of a famous original, but at a fourth of the price).

I must reluctantly accept that amongst steel-string guitars costing less than £150, there are often considerable batch variations between different samples of the same model. It is quite possible, for example, that not all necks of model "XYZ" guitars will be as straight (or as twisted) as the one on my review sample. Because of the way guitars are produced and shipped in batches, even if I took a very large sample for review, it would still not solve this problem. So you must not consider a good or bad review of a product as outright praise or condemnation of every example of that particular model. I hope that such a review *can* describe what kind of instrument it is, and what standard of performance you can probably expect for your money. It is no substitute for careful examination of goods before purchase.

I must also reluctantly accept that guitars in the price ranges mentioned sometimes have intonation and/or action faults which could easily be adjusted by the average repairman, but which if left uncorrected, make the instrument unsuitable for serious use. (They could also, of course, be corrected by the manufacturers before the instruments leave the factory, but I don't particularly want to take on half the world's guitar manufacturers



single-handed, just at the moment. Perhaps next week...)

This month's review guitar, made by Yuval, in Israel, illustrates these points perfectly. It is large, and yet relatively light. It is loud, even for a big guitar, it is quite sensitive, and it has a pleasant tone. The neck is fairly slim and dead straight, and the frets and fingerboard are nicely finished. The fittings are of good quality for a guitar in its price range. When one considers that the price of £140 provides a good-sounding guitar with a solid Spruce soundboard and a good prospect of sounding better still with a little playing, and that this price *includes* a hard case, it should be obvious why I have selected it for review. I have seen samples of other Yuval guitars, which were in a much higher price and quality range, but this one would seem to be intended as a straightforward, no-frills, working instrument. The neck, bridge, machines and other fittings appear to be imported from one of the Far Eastern countries, probably Japan or Korea, but this is in no way unusual for a moderately-priced steel string guitar. What is unusual is that most of the rest of the guitar comes from Israel. It doesn't look like a copy of a Martin or a Gibson, but you get unusually good quantity and quality of tone for your money. On these grounds, it should be on the short list for anyone looking for a steel-string jumbo *and case* for under £150.

Unfortunately, this particular sample also illustrates another of the points made in the introduction to this review. With the manufacturer's fitted strings, the intonation of this guitar is really not what I would consider adequate for serious use. In an effort to be fair, I fitted some alternative strings, and discovered that some of the better American extra-light 'bronze' strings produce an almost acceptable result. I would not call it ideal,

but it is a marginal case, and I have played many guitars which were worse in this respect, although costing twice as much. However, not everyone likes extra-light acoustic strings, and for the more common light-gauge strings, some adjustments to the position of the saddle in the bridge may be necessary. This would entail filling the existing slot with a slip of Rosewood, and cutting a new slot a little further from the nut and the 12th fret.

I don't mind doing this on a guitar, and there are at least two "famous name" guitars, which you can see played by a famous person on your favourite television rock show, on which I have had to do the same sort of work. However, not all shops are going to feel the same way about this, and I think some fast and thorough checks by maker and importer might save a lot of inconvenience later. As I said, I may have the only sample of a Yuval guitar which has even had intonation problems. Also they are a new company, and I think they ought to given a decent chance.

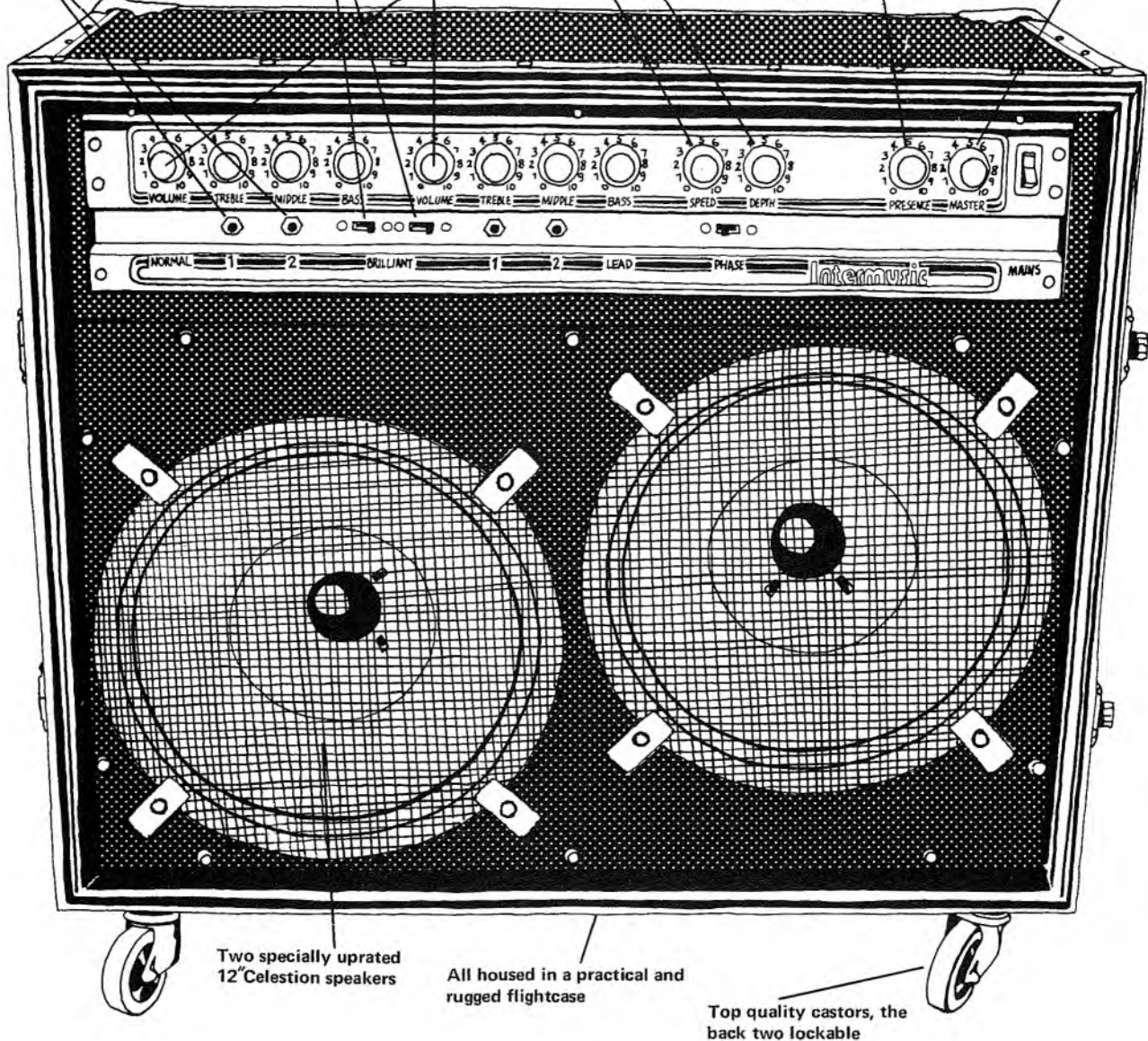
So my conclusion would be: strongly recommended in its price range if you want a useful guitar, rather than a copy of something you can't afford. BUT check neck, action and intonation very carefully before buying; or go to the sort of dealer who checks his stock and would rather give good service than big discounts. I would give the same advice to anyone about to buy a middle-range steel-string acoustic.

Measurements on Franconia F 013 guitar. Serial No. 36-40.

Scale length 628mm
String spacing at bridge 54mm
String spacing at nut 36mm
Fingerboard width at nut 42mm
Depth of neck at 1st fret 21mm
Depth of neck at 10th fret 23mm
Action as supplied 2.2 treble/2.5 bass

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simmons' SYNTHCHECK

Dave Simmons is an expert on synthesizers. He understands them both musically and technically and his background has made him uniquely qualified to be I.M.'s Synthesizer Consultant.

Dave's a musician and a technician. He studied classical piano and organ as a child later developing into synthesizer and rock. His musical achievements include playing the massive synthesizer part in David Bedford's "Odyssey" and his technical background included a thorough training in practical and theoretical electronics. For two and a half years he was UK Service Manager for ARP Synthesizers and today he's a partner in a highly specialised company called Music Aid in St. Albans, Hertfordshire where he undertakes all types of synthesizer modification and servicing.

TEST ON: Roland JP 4

DATE: September 1978

PRICE: £1,332.46/\$2,600 (ex. VAT)

The JP 4 is the latest keyboard synthesizer to come from the Roland Corporation. It is a four-voice instrument and offers the player a choice of pre-set sounds and user-programmable sounds. It is a full four-voice synthesizer i.e. each oscillator has its own filter and envelope shapers (unlike some 'polyphonic' synthesizers where all the oscillators are routed to the same filter) and thus has a very rich sound. My first impressions of the instrument were of an easy to understand, well laid-out synthesizer, and apart from the Key Assign modes, I had no difficulty in understanding and operating the machine. As with the Oberheim OBI, reviewed last month, the JP 4 can memorise up to eight different sounds which can be programmed by the operator.

Pre-Sets

Along the front of the instrument are 10 pre-set buttons, most of which are useful to a certain degree, but all of which could be improved upon by using the front panel controls (a case of 'adjust to taste'). They are as follows: Bass - a hard staccato bass sound; Funky Clavinet - a clavinet-like sound fed through the filters with a certain amount of resonance and being modulated by the LFO on slow sine wave; Piano - an electronic piano sound rather like an Instapiano (an excellent Fender Rhodes sound could be achieved using the variable controls); Strings - a rather thin sound but useful if used whilst playing large intervals; Voice - a mellow, slow attack sound with

heavy vibrato; Trombone - one of the better pre-sets to my mind, especially if used with a slight amount of portamento; Saxophone - I've yet to hear a really good saxophone imitation, but this one is a useful texture all the same; Trumpet - a reasonably bright, brassy sound; Synth - a heavy sound with a long ADSR decay and heavy filter resonance; The Force - a weird sound for Sooty and Sweep impersonations.

The variable controls for the synthesizer are fairly conventional and laid out across the top of the instrument from left to right. The controls are as follows:

LFO

LFO waveform (sine square, positive and negative ramp), LFO Rate (speed) and LED speed indicator.

VCO

(Voltage controlled oscillator) Pitch - a four position switch marked 2', 4', 8', 16' and sub octave switch which switches in a square wave, sounding one octave below that of the VCO pitch; LFO Modulation slider for vibrato, trills etc., depending upon the waveform selected on the LFO; VCO waveform (ramp, square wave and variable pulse - the pulse is variable in four stages from square to about 1/4 pulse or can be modulated by the LFO); Noise ON/OFF switch feeds white noise into the filter for wind and surf effects.

Filter

As with the VCO's there are four, although there is only one set of controls which is common to them all. The Filter is a 24 dB/octave low pass type with

cut-off variable from 16 Hz to about 16 KHz and resonance at that cut-off point variable from off to self-oscillate. There is also a static high pass filter which has a four-position switch; this adds increasing amounts of bass roll-off. Modulation of the filter can be by the waveform produced by the LFO (tremolo or filter sweeping etc., depending upon the waveform selected on the LFO) and by the envelope voltage produced by the filter ADSR - (Attack, Decay, Sustain, Release) generator. The attack and decay times are variable from zero to around 10 seconds. One can also feed a negative ADSR envelope voltage into the filter, which produces some very interesting effects, especially on long release times, because the filter opens as the sound dies away instead of closes as it would normally.

VCA

The final controls are another ADSR generator which is fed to the VCA which controls the final attack and decay characteristics of the sound, and a Programme Level control which allows you to pre-set the levels of the stored sounds. This is useful because of the difference in loudness between a harsh and a mellow sound.

Memory

All the above variable controls can be memorised and recalled at the press of a button. Up to eight different settings can be stored. The compu-memory (as it is called) buttons, marked one to eight, are along the front of the instrument next to the pre-set buttons, along with the memory 'write' and manual buttons. The memory is loaded as follows: press the Manual button - this switches in the front panel controls - and set up the desired sound on those controls. Press one of the eight 'compu-memory' buttons and then the 'write' button. The front panel controls are then stored in the memory and can be recalled by pressing the compu-memory button when required.



Arpeggio

An interesting feature included on the JP 4 is an arpeggio arrangement. (This is probably familiar to home organists who have been using similar aids to playing along with rhythm boxes etc., for some years). You have a choice of up only, down only, up and down or random arpeggios. All you do to achieve these keyboard gymnastics is to hold a chord (up to four notes of course) and set the speed of the arpeggio, and the machine plays four octaves, in sequence, of the notes being held down – astounding! This may sound a bit of a gimmick, but used in the right way, i.e. as backing ‘textural’ arpeggios ‘a la Yes’ with lots of echo and phasing, it can sound impressive. It is different to use the arpeggio feature as a sequencer i.e. play along in time with the runs, as the arpeggios have a different ‘feel’ or timing depending on the chord you play or the number of notes in the chord.

Other Controls

Other controls along the front panel are Hold, which puts infinite sustain on the sounds; Ensemble, which is the famous Roland Chorus, is useful in fattening the sound especially if used in the stereo mode; Assign Mode – which links the four oscillators together in

various combinations as one plays e.g. ‘unison’ locks them all together making the instrument monophonic, ‘poly’ in which all the oscillators sound the first note, when two notes are played one oscillator follows that, three stay on the original note etc.

Manual Controls

There are various controls whose positions cannot be stored in the memory – these are the ones which add flexibility to the sounds and are varied whilst playing. They are:–

Bender – a centre-spring lever which can be switched to control the VCO's (bend sharp and flat), VCF (open and close), VCA (loud and soft) or mixtures of all three. There is a sensitivity control for the Bender thus allowing the interval of bend (i.e. semi-tone, tone or fifth) to be pre-set.

Portamento – (or glide) which is variable from zero to three or four seconds. The portamento was great especially on chords played alternately at each end of the keyboard.

Tune – variable + or – a semitone.

LFO Bend – allows for adjustment of the LFO speed that has been pre-set in the memories. It has a centre click-position, making it easy to return to the pre-set LFO speed setting. The LFO bend control has two settings, normal and wide.

In the normal setting it speeds the LFO up by only a few cycles per second. In the wide setting it speeds the LFO up considerably and, when fed into the VCO's, produces bell-like sounds and ring modulation type distortion.

Conclusion

As with most of the review instruments I receive, the JP 4 is in great demand. I had the only one in the country and consequently I had only a few hours to play with it but, even in that short time, the potential of the machine was obvious.

Some beautiful sounds can be obtained by switching the keyboard control voltage into the filters, adding a lot of resonance to the filters and tuning them to different harmonics of the oscillators. Because there is a filter per oscillator, each filter ‘tracks’ its own individual oscillator thus the top note will always sing above a lower three-note chord.

The above settings with a hard attack produced great Fender-type piano sounds along with celeste and vibes, and of course all these sounds can be stored indefinitely in the memory to be erased when you're bored with them. Bearing in mind the cost of some single-voice non-memory synthesizers, the JP 4 is amazing value at less than £1 500.

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mattacks' DRUMCHECK

Dave Mattacks is a freelance drummer whose numerous credits include five years with Fairport Convention.

TEST ON: Tama Superstar Outfit (9040)

DATE: September, 1978

PRICE: £801.90 including VAT \$1600

Tama Seisaku Sho Inc. have been making drums for the last 13 years, but only in the last four or five has the present range of Tama drums emerged and developed. In common with other Japanese drum manufacturers, they initially made a name for themselves through their hardware, but in the last couple of years have been successful in making a concerted effort to get their drums accepted on a par with the hardware. The 9040 outfit comprises 14" x 5" metal snare drum; 22" x 14" bass drum; 12" x 8", 13" x 9" and 16" x 16" toms; two cymbal stands; snare drum stand; hi-hat and bass drum pedal.

Sound

I first heard this particular outfit being played by someone else in the shop where I went to review it and thought it sounded pretty awful: rattling snares, clanky toms, etc. On examination it was apparent that the kit hadn't been touched since it entered the shop some six months back (the strap on the bass drum pedal had been hooked over the square-headed screw that attaches it to the beater hub). Without being too fastidious, I managed to obtain a very good sound. The bass drum was very solid-sounding — both heads on, felt strip on the back head — and the toms were versatile enough to sound "right" tuned high or low. Toms and bass drum all had that almost indefinable "something" that you get from a good wood shell — cut without clang, warmth without soginess, that sort of thing.

The reason for the rattling snares I'd heard earlier was simple. On the butt end of the snare mechanism, a small metal bush which fits around the rod that passes through the shell (and lowers both sides of the mechanism simultaneously) had slipped loose. When the snare mechanism was switched off, only one side was dropping properly; the other side (with the slipped bush) was pulled downwards a mere fraction by momentum. With the snare release up/on, the other side wasn't rising parallel, so one side of the snares was lying just off the head and causing the rattle. Tightening an Allen screw in the bush so it gripped the rod solved all that and, lo and behold, a great snare drum sound. I tuned the drum high and it gave an excellent crisp sound without being too "clanky". With a slightly slacker head, I didn't find it necessary to employ the damper as much as I normally would — the drum seemed to be auto-



matically cutting the high overtones a little. This is a result of the cast (as opposed to triple flange) counter hoops. For me, this "plus" tends to be negated by the very boxy rim shots produced by this type of counter hoop. Despite reservations, I have to concede this is a snare drum with a very good sound and is well matched to the rest of the kit.

Snare Drum

Aside from the cast hoops mentioned, the parallel snare action drum has 10 double-ended lugs, square-headed tension rods (also fitted to the toms), adjustable damper, 20-strand snares and a seamless shell with 45 degree inverse flanges and 2mm bearing edges. The mechanism is similar to the Ludwig Super Sensitive: a 1/4" diameter rod through the shell which operates the cast bosses (each with snare tension and head pressure adjustment) with nylon bearings at each end. The feel of the release was fine, but the problem encountered earlier with the slipping bosses could happen to any drum with an action of this type — there's more to go wrong than breaking a string. However, in

fairness, I should say that, set up and looked after properly, this drum should be as trouble-free as the next parallel action snare. The drum is fitted with Remo/Tama ruff-coated Ambassador heads which are also fitted to the toms and bass drum.

Toms

The toms (and bass drum) birch shells have laminated glue rings and are extremely well finished inside and out. The lugs (12 each for the 12" and 13", 16 for the 16") are the beaver-tail shape not dissimilar to the Rogers lug, and the standard 7/32" Whitworth threaded insert is retained by a nylon bushing which effectively prevents rattling. (A larger version of this lug is fitted to the bass drum). Triple flange hoops are fitted and the dampers (one is also fitted to the snare drum) on the toms are the screw-up type with a difference. They each have a cam-operated twist release which can return the felt damper to the same pressure on the batter head each time, so once an optimum amount of damping has been found, the damper can be quickly

turned on or off without repeating the "searching" process. The brackets fitted for the legs and tom holder are the eye ring/wing nut type and although the wing nut tightens at the front (unlike the Ludwig which tightens at the side), it doesn't protrude from the drum as much as the Premier model, for example. The wide-angle tom legs - the tops are knurled to assist the grip - have either lockable rubber or metal spiked ends.

Bass Drum

The 10 lug per head bass drum had matching wooden hoops and the usual 20 "T"-shaped tuners and pressed steel claws. Incidentally, the shape of the "T" part of the tuners is used in various sizes throughout the set as the basic shape of practically all the wing nuts. I found these aesthetically pleasing and effective. The spurs bear a slight resemblance to the pre-out-rider type from Premier. They're the disappearing type with the lockable rubber/metal tip and are kept in place by a substantial wing nut which passes through a replaceable nut inside the bracket and tightens directly onto the rod. The brackets are mounted so the spur is pointing directly forward as well as down - as they should be - and this makes for maximum efficiency.

The double tom holder is also strong and efficient, but unfortunately it's mounted in the middle of the bass drum, so you either have your toms apart or have them together and hanging right over the back of your bass drum. If neither worries you, fine. The large cask block bolted to the bass drum is physically not a million miles removed from the Ludwig one. A large wing nut set at an angle in the casting tightens to push a piece of curved spring steel against the centre tube. This tube has a drum key operated moveable collar with two small protrusions which locate into corresponding "steps" in the casting to give you preset height and angle and prevent turning. At the top of the tube is a large "T"-shaped casting. At each end of the "T" is a wing nut locked ratchet, each in turn holding an "L"-shaped splined rod. These rods locate into the corresponding eye ring/wing nut brackets on the hanging toms. Although the kit I saw wasn't fitted with them, there is now a small collar-with-protrusion which fits around each "L"-shaped rod and locates into a corresponding small step in the bottom of the eye ring/wing nut bracket on each hanging tom. This is the same principle as employed on the central stem, so with the collars on the "L" arms as well, the whole tom holder can be "memoried" for ease of setting up. Marvellous! Now, if they'll just mount the main bracket at the front of the bass drum . . .

Hardware

The 9040 Superstar kit has the new range of Spartan stands included. Unfortunately, the kit I saw didn't have these, but in respect of the upper sections of the snare, cymbal and hi-hat stands, the stands I saw are similar.

I can't really comment on the efficiency of the Spartan basses, but appearance-wise, the tripod-based legs are "U"-shaped aluminium (a little like the new Premier Trilok) with either rubber feet or spikes. Aesthetically, I'm not keen on the "office furniture" aluminium look (Premier's are chromed), but that's just a personal preference. The bass drum pedal I saw, the Hi-beat (the new King Beat is supplied with the 9040 kit), has a cast two-piece footplate with an effective, comfortable toe-stop, a cast frame and adjustable beater height and stroke; the adjustable beater stroke device is not dissimilar to the Rogers Swiv-o-matic. The pedal also has twin spurs (rather superfluous in conjunction with Tama's bass drum spurs) and conventional wing nut/clamp type fixing to the bass drum hoop. This is a method I find preferable to the cam-operated lever method on the new King Beat, also found on the new Rogers pedal. In my experience, this clamp invariably slips. The hi-hat I saw was an earlier version of the Mercury model with large solid rod-based legs. It had a cast two-piece footplate, an adjustable spur beneath the saddle unit and a metal link to its direct pull mechanism.

The spring tension which has an effective range is adjustable by a disc-shaped knurled knob above the saddle unit. The top tube has a large bottom cymbal cup and tilter, and the top cymbal clutch seemed very efficient with its nylon bottom locking nut. It was made clear to me when I saw this kit that these were not the stands supplied with the new 9040 kits, and I was expecting something a bit substandard. On the contrary, I found I quite liked the hardware (the pedals in particular), so if the new Spartan hardware is better - and I don't just mean twice the weight and size - then Tama definitely have some good hardware on their hands. The snare drum stand (the Mercury) is basically the Buck Rogers style with a single leg, wide-angle tripod base. The height adjustment method also employed on the cymbal stand and hi-hat stand consists of a cast boss in which sits a nylon bush. A wing nut tightens through the boss and squeezes the bush around the inner tube. It's very effective.

The angle adjustment for the snare drum is different. Tama call it a "brake drum" method and that is the basis of the

principle employed. A disc-shaped casting with a recess sits at the top of the stem and mates with a corresponding disc attached to the bottom of the central stem of the basket. Between the two discs is a rubber ring, and a coach bolt and wing nut fit through the centre of the two discs and ring and lock the whole thing together. I did, however, find one weakness in the stand. The threaded section of the central stem of the basket is secured to the disc-shaped casting by a metal pin. This had slipped/worked loose and the central stem/basket was turning and the stand wasn't. The three-tier, single-leg tripod base cymbal stand (the Mercury) has a wing nut locked ratchet tilter at its top with a long stem. Unfortunately, like the snare stand, it had a weak point. Where the tilter joined the upper tube, a similar small metal pin had worked loose and the tilter was wobbling slightly. If the new Spartan stands have solved the problem on the snare stand and cymbal tilter by employing a better retention method than the metal pin, then Tama have themselves a quality product.

Summary/Appearance

This outfit is available in three finishes: Natural Maple; Natural (stained) Walnut - both with a matt finish; and Platina. The kit I saw was Maple and was dusty, but despite the latter, looked OK. Both the wood finishes do have to be well treated as they can easily mar - a trait all wood matt finishes have in common. I haven't seen the Walnut kit, but it looks good in the catalogue. As for Platina and the other plastic finishes available to the other series ('Fibresiar' and 'Imperialsiar'), I'm afraid I don't like any of them, least of all Metallic Gold. Although I didn't examine the Spartan ("U"-shaped aluminium legs) or Titan (double steel legs) stands when I saw this kit (neither were available), judging by perusals in other drum shops, the Titan series seems preferable from an efficiency and aesthetic viewpoint.

Two points in appearance that I must make clear are personal; I don't like the black metal badge on the drums - I think it's cheap looking - and I wouldn't be too sure about playing a kit with "Superstar" written on the bass drum head! In conclusion, I'd say that if you don't buy a standard kit, but pick and mix your Tama drums and hardware carefully, you'll get an efficient, good-looking kit that sounds good because basically the drums are good. However, I have to be honest and say that in my opinion, even with the Spartan hardware and taking the quality of the kit into consideration, I think this particular outfit - the 9040 - is just slightly overpriced.



Lumley's KEYBOARD CHECK

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.



TEST ON: Hammond C3 Organ

DATE: September 1978

PRICE: Not available (see text)

This essay is a review in a more literal sense than usual, in that it is indeed, truly a re-view of an instrument that surely has been accepted over the years as the "top of the tree". Inspiring and resulting in many, many attempts to both copy and improve it by other manufacturers, the Hammond organ, of which the C3 is but one variant, has stayed supreme in its type, and inevitably has become the name to which all other organs are compared, at least in the field of rock and jazz music. So this is not a review in the usual sense, checking out features and facilities and criticising them in turn, but rather a labour of respect and re-appraisal of the role that an instrument, designed many years ago, fulfils these days in the light of technological advancements in the keyboards family.

Of all the Hammond models to choose to discuss, we might as well use the epitome of all of them as a talking point; the C3 model. Briefly running through its features, it has two 61-note manuals, with 9 pre-set sounds on each manual. These pre-sets are activated by pressing the piano-type keys to the left of each keyboard. These pre-set keys look like an extension of the normal keyboard, except that they are coloured in reverse i.e. the black notes are white, and vice versa. There are two full sets of drawbars, comprising nine separate bars for each manual, and footages run thus: 16', 5 1/3', 8', 4', 2 2/3', 2', 1 3/5', 1 1/3', and 1' respectively. The famed and inimitable Hammond percussion sound is applicable only to the second set of drawbars on the upper manual, and operates on the second and third harmonic either as soft or normal, or fast and slow.

Select tabs govern the types of percussion, and whether it is on or off. The vibrato is achieved by a mechanical scanner system, as is the chorus, and these can be turned on separately for

each manual. There are three different chorus and/or vibrato positions. For volume, there is a switch with Normal/Soft positions, as well as an overall volume pedal built into the cabinet just above and to the right of the foot-pedals. Incidentally, the C3 has a 25-note pedalboard, and 16' and 8' drawbar selections for the same.

Well, that briefly sums up the knobs and buttons, but really tells you nothing about what a Hammond is like to play or listen to. But I presume that almost everyone reading this will have heard, unwittingly or not, a Hammond organ on record. And just for the record, Hammonds were first used in Britain by the late Graham Bond back in the early Sixties, in an embryo line-up of the Graham Bond Organisation, which featured Graham, Jack Bruce and Ginger Baker amongst others. Graham Bond was a little akin to John Mayall in that his groups were breeding grounds for many star musicians. But he was also the first musician to appreciate the biting sound, the distinctive timbre, the supreme reliability and the further possibilities of

the Hammond in rock music. Perhaps influenced by listening to American keyboardists like Jimmy Smith, he began to use Hammonds on the road and in the studio. And so he, in turn, influenced a whole new breed of English players, who soon realised that they now had the possibility of being not just audible, but forceful musically within the small group format. Prior to this, keyboard players had only acoustic pianos to work with, and all the difficulties of on-stage amplification that went with them. And against electric guitars and drums, this often meant not being heard at all.

So the Hammond began to dominate the pre-synthesizer keyboard scene in Britain, right through the blues boom of the late Sixties, and into the "progressive" scene at the turn of the decade. So how does the Hammond shape up today, against the vast range of keyboard instruments, including the dreaded synths and electric pianos, not to mention (but I will anyway) other types of electronic organs? Well, a C3 was never the most portable of instruments, being, as it is, a very large and weighty piece of furniture, let alone a musical instrument. So I guess it has always been a roadie's nightmare, and therefore prone to being dropped and maltreated, not necessarily on purpose, but because accidents happen at two in the morning when breaking a gig down and loading a truck, often with tired and exhausted road crew members. Nevertheless, a better record of reliability has not often been achieved because, battered around or not, a C3 just keeps on working and staying playable under the most extreme conditions of poor maintainance and care. (You can even stick knives into them, jump over them, tip them over and kick them, Mr. E., but they'll work for you tomorrow night).

I suppose this reliability factor stems from the note-production principle designed and patented for the Hammond. The system is electro-mechanical, and without going into boring techno-waffle, it consists of tone-wheels, as they are called, which constantly spin to supply each note with its harmonic necessities. When you switch a C3 on, you can't just play it straight away. You literally have to start it up, rather like an engine. To do this, there are two little levers, with sprung returns. Pull the first one to "Start", and a quiet whine, ever increasing in pitch, can be heard, as the motors get the tone wheels spinning up to speed. After a few seconds, the "Run" lever is engaged, and it's ready to play.

But this system of note production was revolutionary (pardon the pun), because it meant absolute stability of tuning. Providing the mains power supply was OK, the tone wheels would



always spin at the correct speed and theoretically, the instrument could never go out of tune, once set. And any amount of rough handling would not cause any deviation either. This overall reliability of the Hammond organ still holds good today, even against the more modern keyboard instruments of any description or manufacture. Speaking to several different owners and keyboard shops about the C3, or indeed any of the various Hammond models they all, without exception, stated that these organs were the one instrument that was a rare sight in their maintainance and repair departments.

The C3 has been out of production for a few years, so there is no way you can pop out and buy one with your saved-up pocket or paper-round pennies. But you can fairly easily obtain secondhand models with a bit of wandering around the music shops. As for the price; well, good condition C3 organs can go for around £1,500, but even thrashed-out, battered ruins can cost you £1,200, simply because their owners know that they'll hold their price.

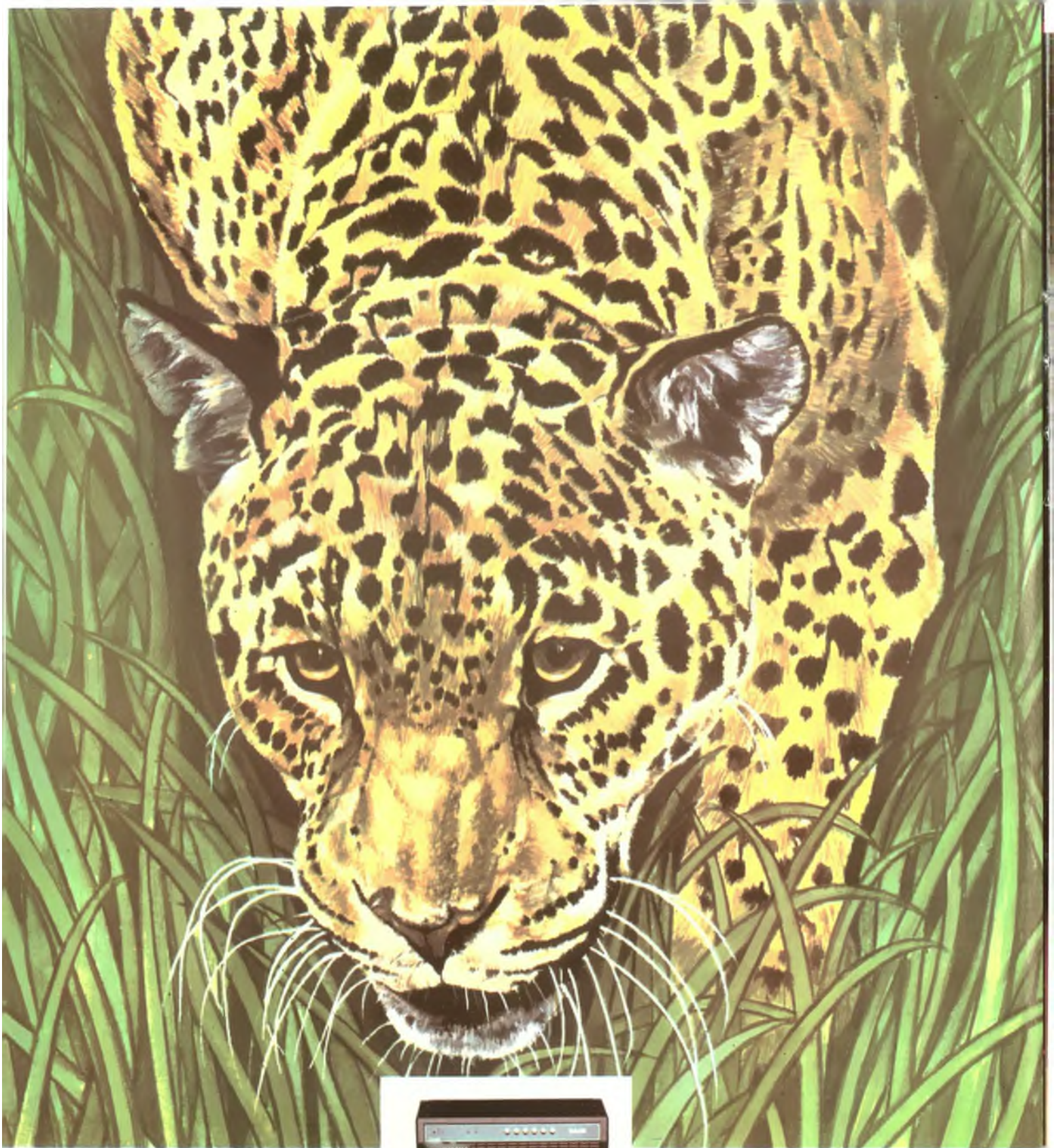
The C3 is often combined with Leslie tone cabinets for amplification, rather than just being plugged into a stack. The Leslie cabinets provide that familiar "round and round" sound, this swirly effect complementing the Hammond sound so well that the two have become linked in the minds of most players. Also, the C3 has a built-in control panel for altering the Leslie cabinet speed at will.

Many bands still use Hammonds on the road and on record, but invariably as part of a complex, multi-keyboard set-up. And this is the point to which Hammond usage appears to have evolved at the present time; from being the only key-

board instrument on stage in an era of discovery-of-role for keyboard players, to being part of a many-boarded arrangement as instrument technology has evolved along with the kinds of sounds demanded by today's players. Yet the instrument has not been surpassed in its ilk, and stands today under the spotlights of stages worldwide in the hands of many respected and talented musicians; not outdated or old-fashioned, even though its basic sound is years old. Almost every other instrument in a rock band line-up these days has undergone constant change, and certain sounds are now considered "old-hat" and are not used. But the Hammond, in the shape particularly of its best model, the C3, is still the same sounding as ever, although its musical job as an instrument may have passed through varying phases at the hands of players.

But aside from the rock music usage, C3 Hammonds crop up in almost every other musical field. The pub duo, trio or even soloist, would not be complete (especially the soloist!) without its Hammond, and many jazz greats have included Hammond organs as complete sections (e.g. Wes Montgomery's trio: the organist played not just chordally, but supplied the bass part as well). Hammond organs have often been bought by churches, and used for wedding marches and hymns rather than "Satin Doll" or "Tarkus"! Well set-up recording studios invariably possess a Hammond as well as an acoustic piano as part of their fittings.

The Hammond company are at present marketing a new range of organs, which I would very much like to try when possible, and report back to you. But the C3 stands supreme, the super Hammond Organ, and will be a hard one to follow; to follow, but surely never replace.



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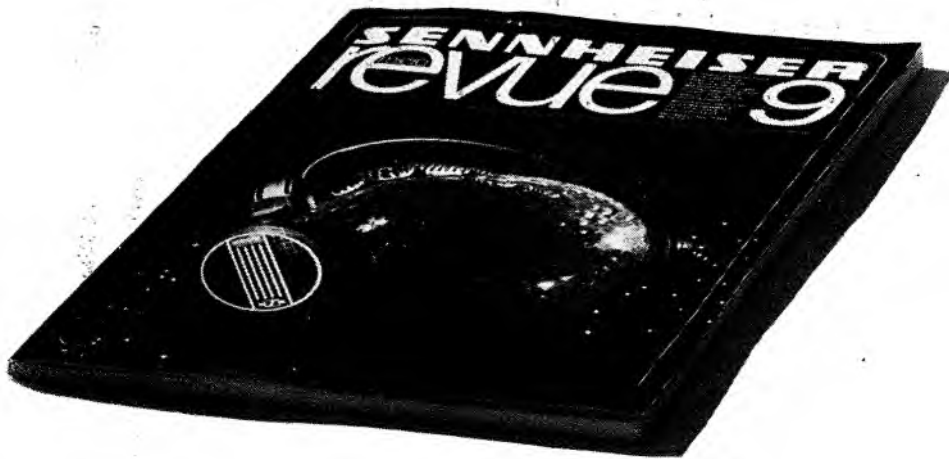
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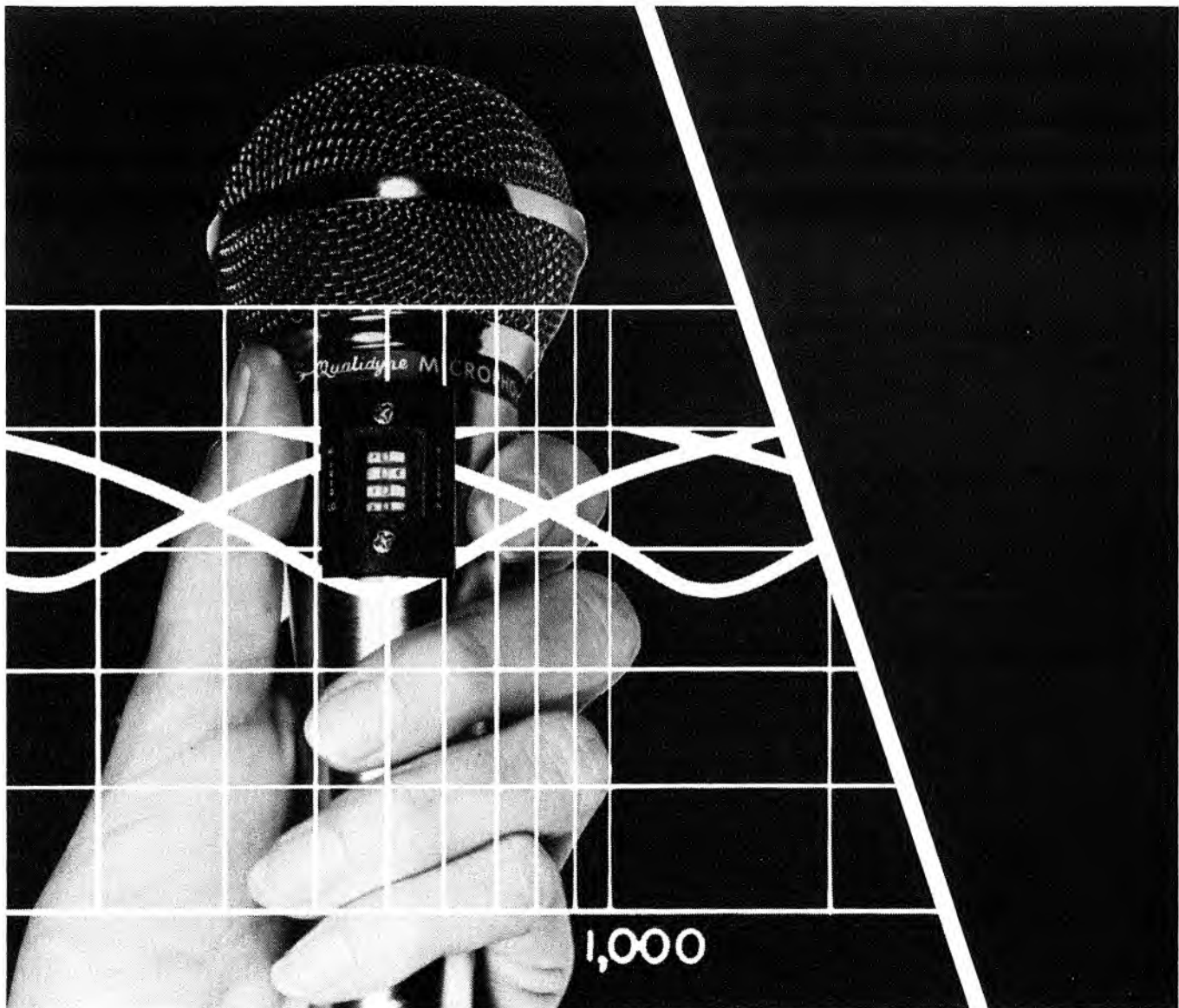


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Nick Gravenites is probably known best for his fine song writing and production abilities, having written such classic blues as "Born in Chicago", "East-West" and "Buried Alive In The Blues", as well as producing such albums as the Quicksilver Messenger Service's first album, Brewer and Shipley's numero uno, Top 40 hit, "One Toke Over the Line", and Otis Rush's recent Grammy nominee, "Right Place, Wrong Time". In the last few years though, Nick has emerged from the shadow of his peer group, where for many years he was the "Invisible Man", and has been evolving into an exceptional electric lead guitarist of outstanding abilities and taste.

After playing folk and rhythm electric guitar in the streets, saloons, clubs, studios, concert halls and rock festivals of Chicago, San Francisco, New York and Los Angeles for the past twenty years, with such people as Michael Bloomfield, Paul Butterfield, Janis Joplin, Big Brother and the Holding Company, David Crosby, Kris Kristofferson, Muddy Waters, Lightning Hopkins, Buddy Guy and others too numerous to mention, he finally decided to step out in front with a power blues trio of his own. For the past two years, he and his group, with a friend or two occasionally sitting in, have been playing clubs throughout Northern California, building on to his already distinctive reputation as a blues musician par excellence.

It was during his first year at the University of Chicago that he met Paul Butterfield, then an aspiring young blues harmonicist and guitarist, who was hanging out at the University. Nick and Paul took an instant liking to each other, and they promptly formed an acoustic folkblues duo, similar to that of Sonny Terry and Brownie McGee.

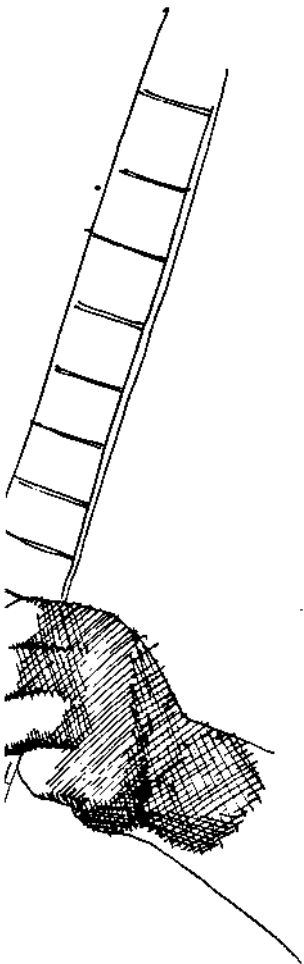
Elvin Bishop and Michael Bloomfield became close friends of Nick's at this time, as well. Elvin arrived at the University during Nick's second year there, on an academic scholarship, from Tulsa, Oklahoma, and was already well into playing blues. Michael Bloomfield was a young, hotshot guitarist, from the Northside of Chicago, who was managing a coffeehouse at the time, and who was a thorough Blues Fanatic as well.

It was during these early formative, musical years that he learned his basic chops and chords; singing and playing his folk songs and folk blues, on a variety of Gibsons and Martins, in and out of the various coffeehouses and folk clubs that could be found in Chicago then.

His music then, as now, was rough and unpolished, in the best blues tradition. "I wasn't that much of a formal musician. I was a bluesman," Nick states. "The professionalism wasn't that important.



The Gravenites Blues



What was important was that I still had my poet's clothes on, in a certain kind of way, and I felt that blues was a vehicle for getting out your own feelings."

"I've always admired the primitive players," Nick readily admits. "I'm not a B.B. King-influenced guitar player, or a modern or off-beat player. I'm a pretty straight ahead player. That's why I've always admired the old, one chord blues; the drone, played by people like Lightning Hopkins and most particularly, John Lee Hooker.

"It's a style that has a whole wealth of rhythmical nuances, and melodic potential. A master of that style of single-chord blues playing was Jimi Hendrix. He could take a single-chord, drone-type blues, and turn it into a twenty minute masterpiece."

Nick is a self-taught guitarist; with little or no formal musical training, learning all of his techniques by ear, and by watching other guitarists. He also has a strong feeling towards the rawness of the blues, and feels that a strong musical education is a detriment. "I'm part of the 'unschooled tradition'. You know, just picking up the guitar and making it make music. You know, like watching somebody's fingers, and then following them. Not really formal training, but very informal training. Folk training.

"As a matter of fact, I resisted learning how to get fancy. I liked the fact that I was a primitive player, because it all fits in with the idea of being a songwriter, and a blues improviser. If you're going to be improvising lyrics and such, it's hard to be stretching out there too, musically. So I give great respect to the simple, fundamental blues, because they give you the vehicle with which to improvise lyrically. The beauty of the blues to me, is its simplicity, and the fact that it is an improvisational form."

1967 found Nick living in Mill Valley, California, where he still lives today, hanging out with the Quicksilver Messenger Service, and not doing a whole lot of anything else. One day he received a call from Michael Bloomfield, who wanted Nick to join his then unnamed band that he was in the process of forming. "The Electric Flag", as the group came to be called - though its manager, Albert Grossman, wanted to call it "The Band" - stayed together for about a year, and made an impressive reputation for itself during its lifetime.

He played rhythm guitar and sang with "Big Brother and the Holding Company" for a year or so, after Janis Joplin had left them, and Kathi McDonald had replaced her as lead singer. During his time with them he also produced two albums for them, "Be a Brother" (Columbia CS-30222) and "How Hard It Is" (Columbia CS-30738).

It was also during this time that he scored three more movies, which included "Medium Cool" and Julia and Michael Phillips' first movie, "Steelyard Blues",

starring Jane Fonda, Donald Sutherland and Peter Boyle. The Phillips' are perhaps more closely connected with their recent box office extravaganza, "Close Encounters of the Third Kind".

Nick's next group was a quintet called "Blue Gravy", which he formed in 1972. This group lasted about 2 years and consisted of Nick on second guitar, Fred Burton on lead, Doug Kilmer on bass, Steve Funk on keyboards and Tony Day on percussion. They can be heard on an album entitled "Mill Valley Bunch, Casting Pearls" (Verve V6-8825). This was another one of those albums that reflected the looseness of the San Francisco music scene of the late '60s and early '70s. Most of the musicians that recorded on the album were tied by contracts to other labels, hence the credits given are all aliases, and it is left up to the listener's knowledge and imagination as to their actual identities.

Early in 1974, Michael Bloomfield put together a band, consisting of himself on lead guitar and vocals, Nick on second guitar and vocals, studio bassist Roger "Jellyroll" Troy, bass and vocals, ex-Butterfield keyboardist Mark Naftalin and percussionist and vocalist Bob Jones. This particular aggregation last about 2½ years, and though they never recorded an album, they can be heard on a cut each from Michael Bloomfield's two solo albums, "If You Like These Blues" (Guitar Player Records 3002), and "Analine" (Takoma B-1059).

Nick also appeared on "The Electric Flag's" reunion album, "The Band Kept Playing" (Atlantic SD-18112). He sang as well as played second guitar, along with Michael Bloomfield on guitar, Roger Troy on bass plus "Electric Flag" alumni, Barry Goldberg on keyboards and Buddy Miles on percussion.

It was during this period that Nick became more and more dissatisfied and frustrated with himself as a musician. He felt that he should be stepping out in front of a band, instead of remaining in the background and being the invisible man, as he had for the past decade. So with the demise of that particular Bloomfield band, in 1976, Nick began playing electric lead guitar.

This personal growth as a musician is what he regards as a highwater mark in his career, or as he states it, "At the age of 37, I became a lead guitarist. It was a whole new trip for me. I'm really proud, now, of my musicianship. I've really worked at it and, consequently, my playing has got a whole lot better as well.

"I did it the hard way. Playing four or five sets a night, in joints that I despised, for owners that I hated. Keeping my mouth shut. Because I remembered that the only way you get good with an instrument is by playing it all of the time. Gig chops are worth ten times the practice chops you do at home.

"So I was doing four or five sets a night, at some of the sleazier joints in San



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The Gravenites Blues

(Continued from previous page)

Francisco, working for owners that consider musicians one step lower than the person who mops the floor in the morning, and keeping my mouth shut so I got the gigs because I had to play five sets a night, because I knew that's what I needed. You know it didn't come easy. It took a lot of hard work, and a lot of pain. So now, I feel really confident."

Today Nick is fronting a power blues trio, consisting of Doug Kilmer on bass, from his "Blue Gravy" days, and Marcus David, percussion. They have been playing the northern California club circuit, from California to Lake Tahoe. Filling them with Nick's own particular style of Chicago Blues, much to the critical delight of his audiences, as the packed houses and roaring applause seem to indicate.

Nick also has been playing with another group, though not as frequently, known locally as the Seven Deadly Sins (SDS). This particular group is one of those throw-back bands to those nostalgic days of yore and is made up of Nick, John Cippolina (ex-Quicksilver), Peter Sears, bass and keyboards (ex-Rod Stewart and current Jefferson Starship), Joey Covington (ex-Jefferson Airplane), Jarret Cussion and vocals, Spencer Dryden, percussion (ex-Jefferson Airplane), Jarret Washington, keyboards (Nashville session genius) and Billy Roberts, twelve string guitar, harmonica and vocals (best known as composer of "Hey Joe"). Unfortunately, this is one of those basement closet bands, and their performances are few and far between.

Nick's choice of equipment has been pretty consistent through the years. During his early folk music days, he played a variety of Martin acoustic guitars, mostly D-18's and D-28's. But a friend of his gave him an old Gibson, pre-1950, LG-1, which he has used to write his best songs on, such as "Born in Chicago", "East-West" and "Buried Alive in the Blues". But due to its advancing age, he has retired it, with all honours, to a wall of his Marin County Home, and it is only brought out on special occasions.

"I never got into electric guitar until I decided I really needed one. I went to Don Wehr's Music in San Francisco in 1971, and talked to a friend of mine who worked there. I told him I wanted a Stratocaster, and he told me, "You don't want a Stratocaster." So he gave me a stratocaster, and I played it for two or three days and I hated it. So he said, "Here, take this one," and he gave me a Fender Telecaster Custom, which was a lot better than the Stratocaster, and I played that for a few years, but it didn't interest me. It didn't get me hot, or anything.

"I didn't really start playing until I got this 1958 Les Paul Junior. And the reason that I got it is, if you compared the necks of my Les Paul Junior and my LG-1, you'd find they're almost identical. They have wider than normal necks, and because of that they lend themselves more to single note playing, and string bending.

"Another reason I like the Les Paul Junior is because it only has two pots on it, one pick-up, a lot of guts to it, and a neck that won't quit. I can go all the way up the fretboard without any problems. It's also got a very strong neck that won't warp.

"Now I'm not totally satisfied with the Junior, because it's a little light in weight. A Les Paul would be better, in terms of weight, because it's a lot heavier. I do a hell of a lot of string bending, and weight is critical when you're playing rock and roll, and constantly bending strings.

"When you're bending those strings, you don't want the guitar to go up with you. You want the guitar to stay there. You just want the strings to bend. With a light guitar you bend the strings and the guitar goes up with them."

Nick strings his guitar with Fender Light gauge, Rock and Roll strings. "Since I do a lot of bending, and I don't like the real thin ones. Mainly because they don't stay in tune well enough. I use the lights. The best string to use, to stay in tune, is a super heavy set, but then you can't bend the damned things." Nick's set of strings runs from .010, .013, .015, .026, .032 and .038 (light to heavy), and are changed approximately every ten days, with two weeks being the maximum amount of time between changes.

Nick uses no special effects or pedals. "I try to do everything with my fingers, and then I use a flatpick almost exclusively." Occasionally, Nick admits, he will fingerpick, a throwback to his folk days, but that will happen only on the once-in-awhile country blues number.

Nick's flatpicks are Fender mediums that he buys by the box. "I never break picks. I think I break one every six months, and I pick hard too. They just wear out. Their edges fray, so I end up usually just throwing them away. After one night of playing, they're generally useless."

Nick's amplification system is fairly well defined, as well. Depending upon the situation, whether it's a small club, such as Mill Valley's 'Old Mill Tavern', or a large hall, such as San Francisco's "Winterland", he uses either a Fender Super Reverb, with four 10-inch speakers, or a deluxe Mesa Boogie, 100 watt model.

"I got one of the first Boogies made. One of the snakeskin Boogies, and it was a piece of shit. It kept breaking on me, every time I plugged it in. One day, I finally went beserk, and threatened Randy Smith (designer/owner/manufacture of the Mesa Boogie) with death, if he didn't fix it," Nick laughs. "So what I finally did was trade it in on a newer model of the deluxe Boogie. And I've never had a bit of trouble with my new amp. It's my mainstay, gig amp. It's the amp that I use that is totally versatile. First of all, I can use both wattages on it, either 60 or 100, and then I can play either loud or soft through it, and not lose any of its tones. I also have an extension speaker cabinet, with two 12 inch speakers for really large halls, that I can use with it. It's my bread and butter amp.

"I also have a Fender Super Reverb, with four 10-inch speakers. If I play small clubs, I prefer to use my Super Reverb. But something else about that Super Reverb, it taught me something about playing.

"Like I had trouble with my Boogie when I first got it. I didn't quite know how to get the tone I wanted out of it. So I started playing the Super Reverb, and it was the exact tone that I wanted. It all boiled down to pick response.

"I'd hit the string with the pick, and it would come out the Boogie sounding kind of weird. It wasn't coming out the way I wanted it to sound. But with the Super Reverb, it would come out sounding exactly the way I wanted it to sound.

"Eventually I figured out that anything I was doing with my hands would come out of the amp. But then I learned, that was just the way that amp was set up, and that I could get that kind of pick response out of my Boogie. What that Super Reverb did was train me to work with the amp. Then I went back to the Boogie, and got that same sort of pick response."

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STEEL WORKS

PART TWO

by Dave Hayward

Choosing a pedal steel guitar

Once you've decided to take up playing pedal steel, there's one obvious thing that has to be decided at the start, and that's which instrument to buy. I use the word "buy" because I don't believe there's any other way. If you're going to learn to play seriously, you'll need the use of a steel at all possible times, and borrowing one hardly seems appropriate even if you are in the unlikely position of having a friend who owns a pedal steel and is also foolishly generous!

Some people have constructed their own instruments, presumably as a cheaper alternative to buying. I've seen one or two home-made steels which are apparently excellent both in appearance and sound, but I've also seen and heard plenty of bad ones. The pitfalls are numerous. It's not unheard of for someone to spend considerable time building an instrument only to find that it just won't do the job properly for a variety of reasons and then they either give up or start again.

Let's remember that we're talking about playing and, unless you're a designer, precision engineer, woodworker, metalworker, and several other things all rolled into one, the quickest way to play is to obtain a working steel and "get stuck in". So, we are left with what the majority of people will do when starting out and that is buying a steel. There is only a handful of well-known manufacturers who produce instruments in large quantities. There are also one or two smaller makers who only produce a few instruments. So you can see the choice is not as great as with many other instruments.

Some of the manufacturers include a "student" model in their range and as the name implies, these are intended for use by the beginner. A good student steel should have ten strings and the basic co-pedant, which I mentioned in the last article. If you are considering buying a steel with less than ten strings or the basic three floor pedals plus one knee-lever then it's not worth bothering with. Suitable student guitars are produced by several of the reputable manufacturers and, although the general finish and appearance of these instruments are inferior compared to their more expensive counterparts, they do have the advantage that they will do everything required by the beginner at the cheapest possible price and are thus an excellent proposition.

Now a word about non-pedal steel guitars. I have always been of the opinion that if you want to play pedal steel then you should learn pedal steel techniques from the start on an instrument with pedals. Many people have asked me if they should start playing on a lap steel and then progress to a pedal steel later. My answer is always that this is not a good idea. These non-pedal steels invariably have only six or eight strings and are

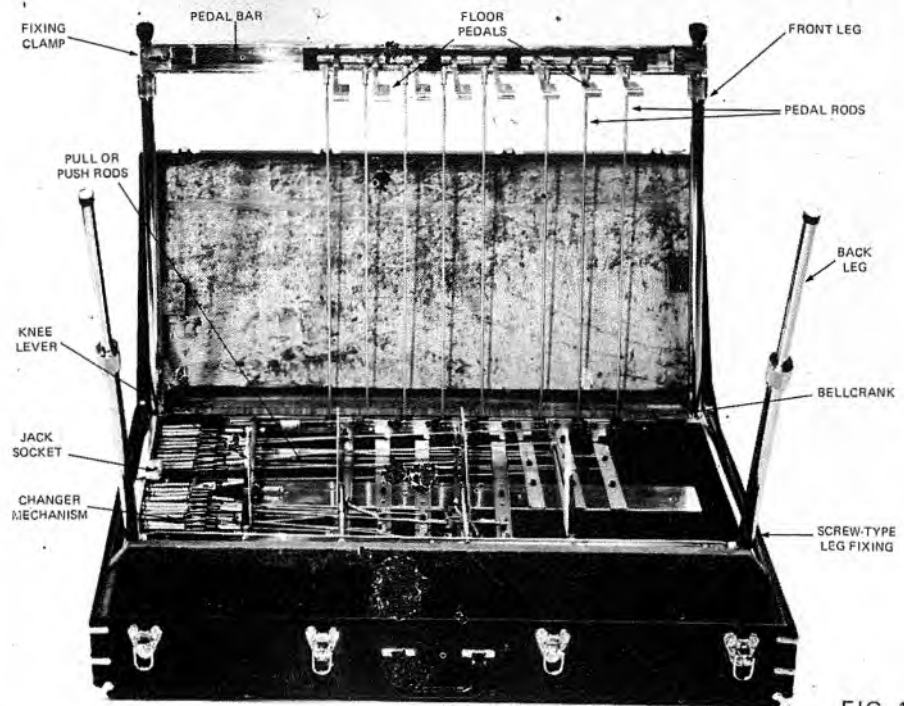


FIG. 1

tuned differently. Although perfectly acceptable for what they are intended, they are a world apart from a modern pedal steel. Having learnt to play without pedals, it *could* mean almost starting from scratch when changing to a pedal steel, so it's probably a waste of time. I'm not knocking these lap steels by the way; if you decide you want to play one, then do so, but it's not necessarily a cheap short cut to playing with pedals.

Now, back to actually choosing a steel. I'm not going to try to compare the different makes or to recommend any particular model. So much of the sound of pedal steel depends on personal technique, hearing, taste, etc., that I think it would be wrong and possibly confusing to give what would only be my personal opinion. My advice is to go to the specialist dealers (there are only two in Britain, unfortunately) and get all the information you can about what is available. There, you should be able to try out various instruments. Take your time comparing different models and preferably make several visits. Don't be hurried into making a purchase. It's going to cost you a considerable amount of loot and you should be allowed plenty of time to make your choice.

Probably the most difficult factor to sort out is the sound. Listen to as many different steels as you can and go for the one which sounds best to you. If you are a beginner, and are lucky enough to know an experienced player, then try to get him to test out your prospective purchase. Talk to as many steel players as you can about their various steels and you'll hear many differing opinions. After all this, it's your own ear which must decide in the end.

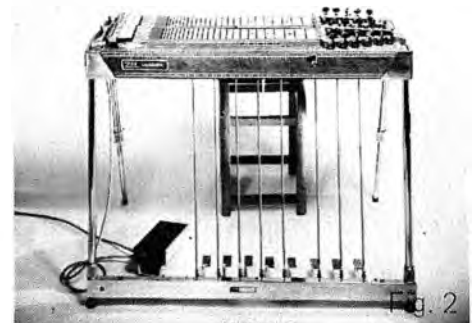


FIG. 2

Of course, another important factor in your choice of steel will be the price. You'll find student models range from about £350 to £500. Other more sophisticated instruments then cover a price range up to £1,500. Bear in mind that whatever model you buy, when you later wish to change your instrument for a more advanced one, it will have a better resale value if it is a good reputable make. Secondhand models are worth considering although they are not exactly in plentiful supply and it's important to check them out thoroughly.

The Equipment

There are certain other items which you will need besides the actual instrument. Most important by far is the amplifier. Auxilliary equipment includes a foot volume pedal and two leads, a short one from the guitar and a longer one to the amplifier. The basic gear is then completed by a steel bar, two finger picks and a thumb pick. I propose to say a little about all these accessories in a future article but, for the present, let's get set up and see about making some noises!



Fig. 3

Assembly

Most steels are assembled in the same way. When you open the case you'll see the underneath of the body of the steel and all the other parts packed in a separate compartment. With the guitar still upside down in its case, the legs are attached first, by either screwing them in or by some sort of clamping device. If two legs have some sort of hole through them near the feet then these are the front legs and they go in the side of the body, furthest away from you. Sometimes the legs and the locating holes are numbered. The pedal bar is then attached to the base of the front legs, usually by some sort of screw-clamp at each end. Lastly, the pedal rods are attached. Each one is connected at the guitar end probably by hooking through a hole in the bellcrank and then at the pedal end by a ball and socket swivel joint with a spring-loaded retaining collar. Every rod is numbered so that they always go on the same pedal.

Figure 1 has many of the parts labelled and shows how the instrument will look at this point.

The steel must now be lifted out of its case. The best way is to grasp one front and one back leg near the body, then lift and swing the legs down away from you placing the guitar on the floor. All that remains is to place the volume pedal in position on the floor under the right-hand end of the guitar (or attach it to the pedal bar if it has a fitting), connect the leads to an amplifier and you're O.K..

The height of the chair or stool you use will have to be determined by each individual player. As you progress and start to operate the lever and pedals, you'll soon find out what suits you best. Use whatever is most comfortable, but not a chair with armrests.

Figure 2 shows the complete set-up ready for playing. I've used my own steel for the photographs. It has rather more to it than the student models I've referred to previously, but the principle is the same and all the parts are similar on most makes.

Tablature

Various systems of tablature exist for conveying on paper how to play melodies, chords and licks on pedal steel. They are all basically very similar and show exactly which strings to pick, where to position the bar, and with which pedal or pedals in operation, if any. You don't have to be able to read music.

Some examples follow of one particular method which I have found useful and which we will stick with for this series. Verbal descriptions follow of what you should be doing for each example. You should be wearing one thumb pick and finger picks on the first and second fingers. The steel bar should be held lightly on the strings with the first finger flat along its top, thumb and second finger either side to guide it, and third and fourth fingers muting the strings to the left of the bar. Figure 3 will help you to see how both hands should be used.

First check that your instrument is in tune, if necessary referring to my last article and using a piano, tuning fork, or pitch pipe to achieve the right pitch. I will go into more detail about tuning later. Now have a look at the tablature examples, then try playing them one at a time with reference to the verbal descriptions which follow.

Example 1

The bar is placed at the eighth fret and strings 6, 8 and 10 are picked simultaneously by the thumb on string 10, first finger on string 8 and second finger on string 6.

Example 2

As example 1, but after picking the strings the bar is slid down to the third fret at the same time as pressing both pedals A and B, letting the strings ring. The strings are picked only once and the volume pedal used to compensate for the decay in level.

Example 3

The bar is at the eighth fret and strings 5, 6 and 8 are picked simultaneously with the thumb on string 8, first finger on string 6 and second finger on string 5.

Example 4

As example 3, but the bar is again immediately slid to the third fret and pedals A and B depressed.

Example 5

The bar is at the eighth fret. The thumb picks string 5, the first finger string 4 and the second finger string 3, simultaneously.

Example 6

As example 5, then the bar is slid to the third fret with pedals A and B being depressed.

You will have noticed that each pair of examples follows the same pattern except that different groups of strings or "grips" are used. It's also easy to see and hear that each starting and finishing chord is a different inversion of C; in fact, in this set of examples, there is a total of six different C triad chords.

I hope this little group of exercises has begun to make you realise the possibilities of the instrument. You may think I have jumped ahead a little and missed out a lot of points, but I do intend to deal with all this as we go along. I feel that anyone who is playing as well as reading my articles should be given something to do rather than too much theory all at once. The intention is to make sure you have enough relevant information at any one point in time to enable you to play each exercise as it comes up. Next month, we'll bring in some more chords and start linking sequences together.

STRING NUMBER	EXAMPLE (I)	EXAMPLE (II)	EXAMPLE (III)	EXAMPLE (IV)	EXAMPLE (V)	EXAMPLE (VI)
1						
2						
3					8	8 ——— 3B
4					8	8 ——— 3
5			8	8 ——— 3A	8	8 ——— 3A
6	8	8 ——— 3B	8	8 ——— 3B		
7						
8	8	8 ——— 3	8	8 ——— 3		
9						
10	8	8 ——— 3A				

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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	\$ 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

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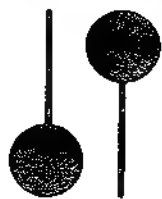
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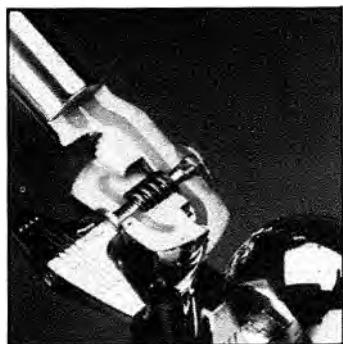
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PERCUSSION

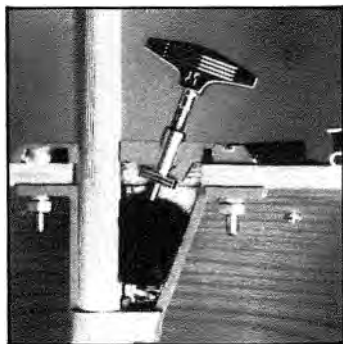
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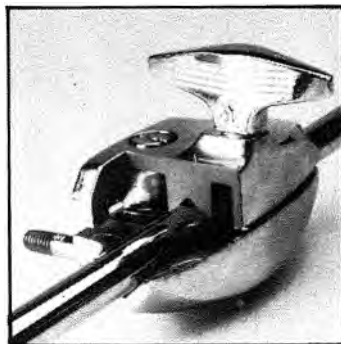
Here are 8 good reasons why they all agree on Sonor



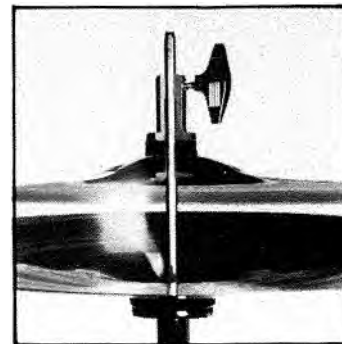
All filters on cymbal stands, bongo stands, tom tom holders and boom arms have a steel skeleton over which a strong alloy is cast.



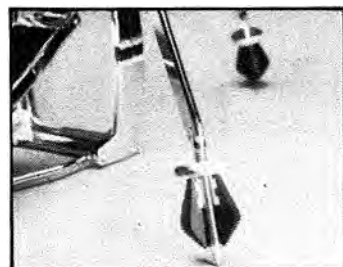
Wedge-shaped locking device with steel plate ensures reliable positioning of shell mounted tom tom.



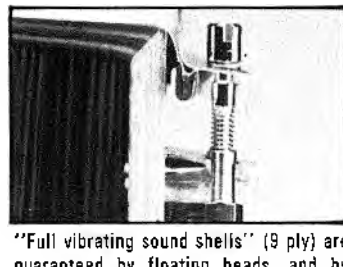
Prism clamping device ensures reliable positioning of tom-tom legs.



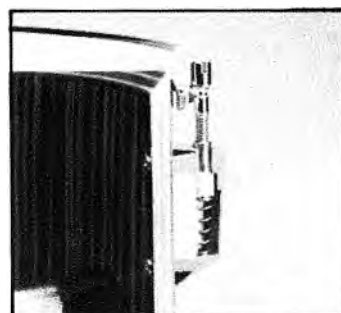
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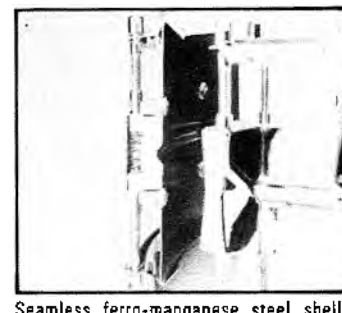
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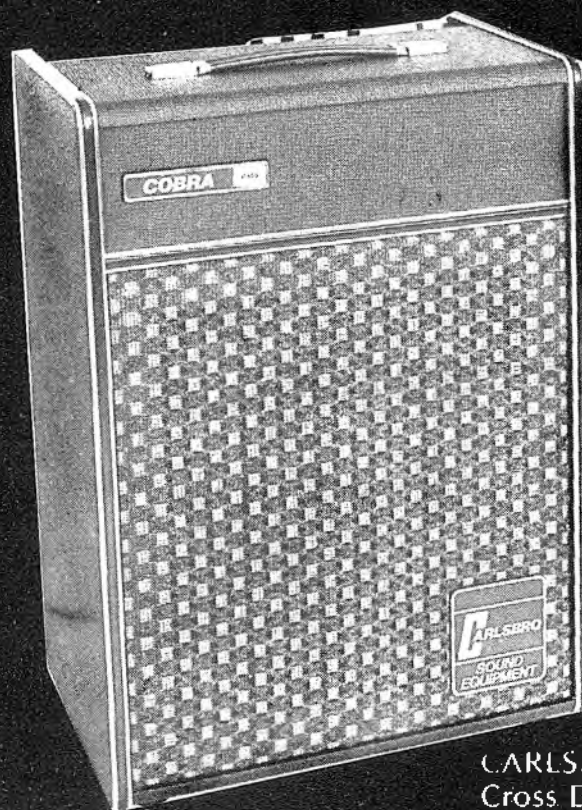
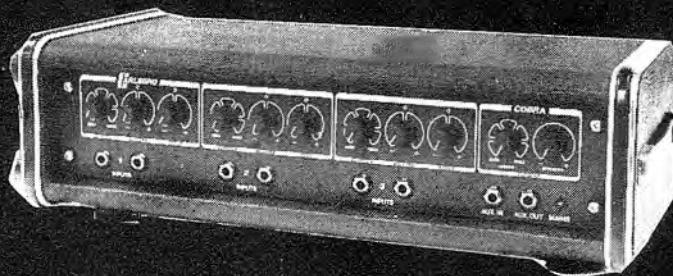
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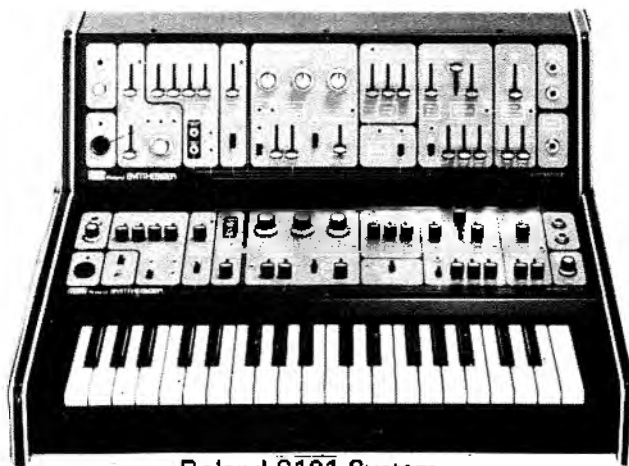
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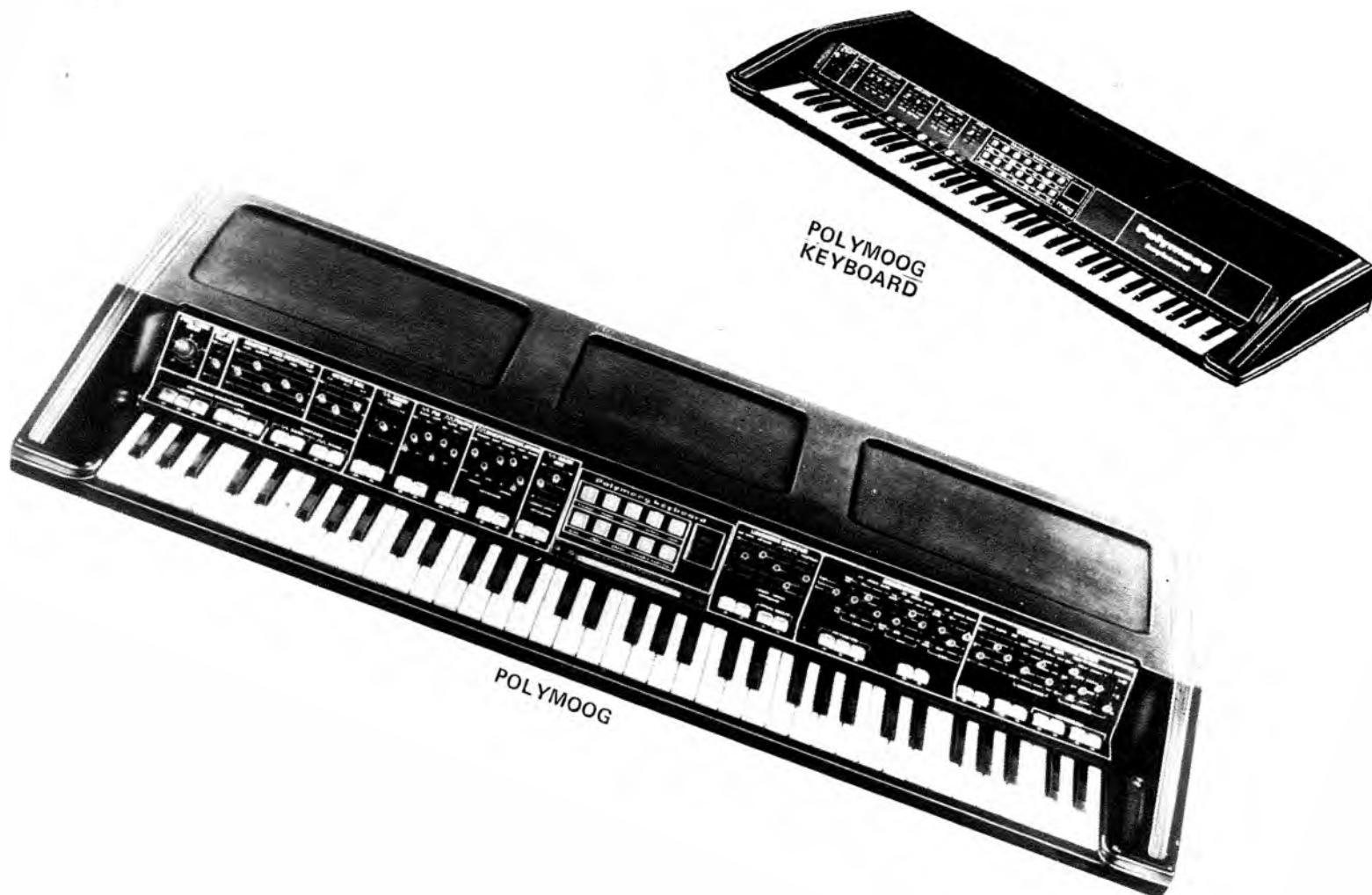
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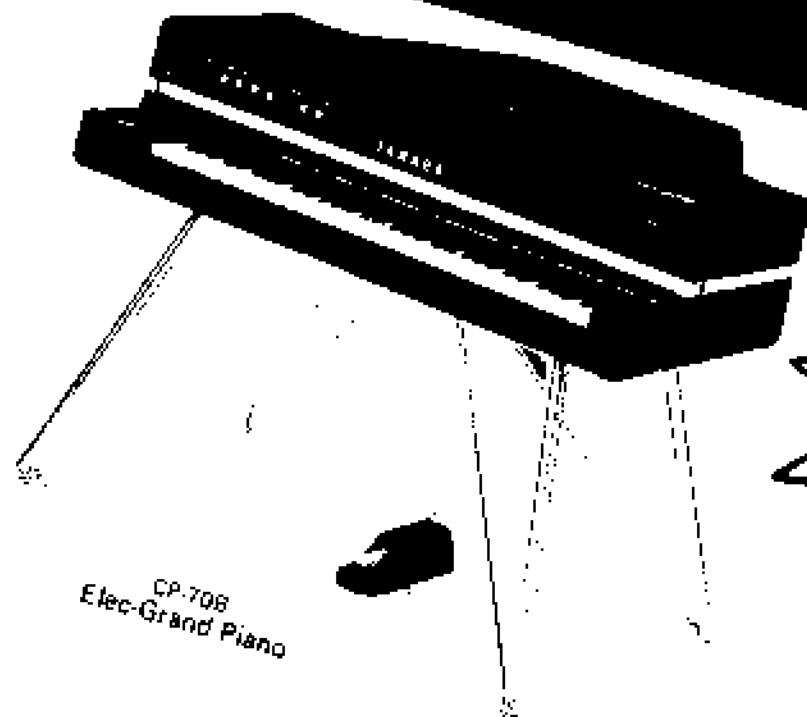
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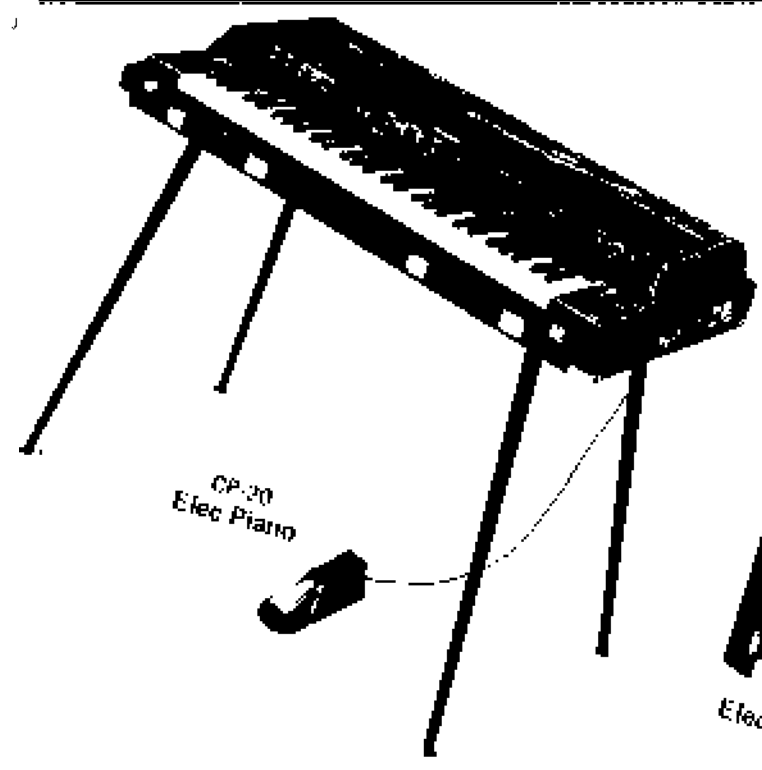
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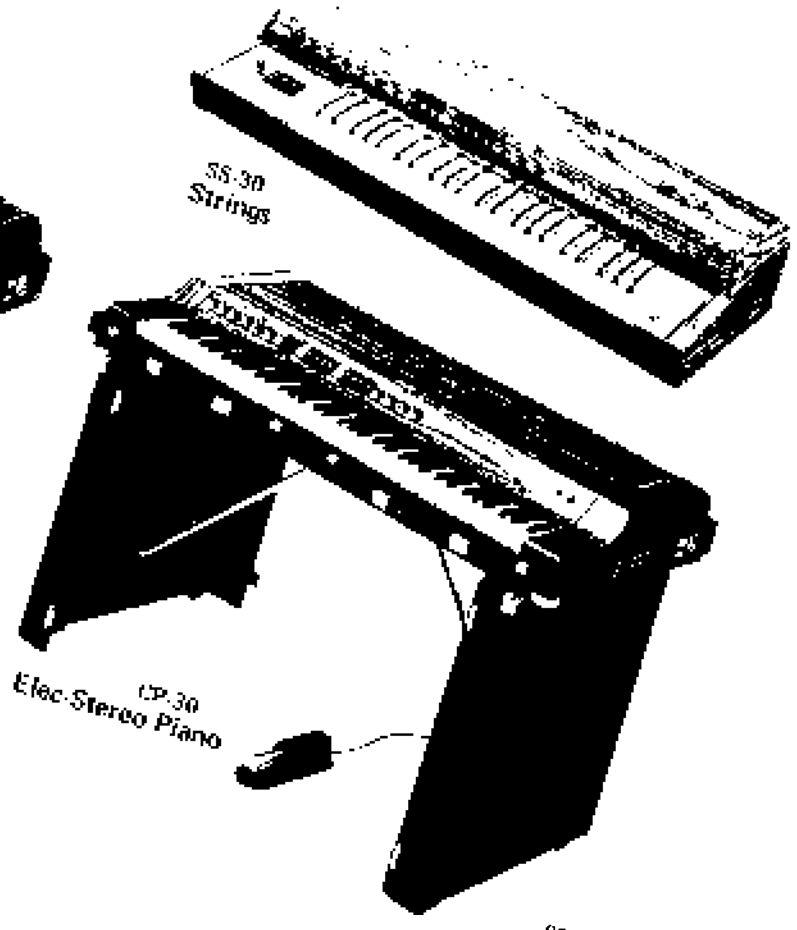
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SIMON PHILLIPS

by Bill Stephen

A Man for All Sessions

Session musicians are not usually household names but rather personalities to other working musicians. Simon Phillips, whose versatile and enthusiastic approach to drumming allows him to keep an individual style spanning a wide range of music, has proven that in the studio or on the road, he is one of today's best rock drummers.

Versatility is the key to any session musician's survival and Simon has displayed an uncanny knack for quickly adapting to any type of music. His work has included sessions with Edwin Starr, Max Middleton, Chris Rainbow and various reggae groups. Currently he is back in the studio with the Jack Bruce Band working on a new effort after the Bruce Band's last success, "How's Tricks". And, to round out his wealth of experience, there is the Dixieland jazz music that started him on the road and played such a key part in the development of his style and work.

Unlike most of us, there was never any question of what Simon's life work was going to be. "My father was very musical," he said. "He was a clarinet player and played with a Dixieland dance band. He had been playing all of his life so when I came along it was natural to get into a bit of music."

By the age of three, Simon was well on his way on the pots, pans and dustbins, but it wasn't long before he quickly progressed to a small snare and cymbal. Following that, Simon's musical talent developed quickly and by age 12 he was on the road with his father's band.

"I travelled up and down the M1 with my father, playing halls and other gigs. I thought it was great. But it wasn't the music I was into. Obviously, later on, I got into rock and my father wasn't, nor were the gigs. But it was great experience for four years. When I was 16, I started doing some session work and then some shows like Jesus Christ Superstar."

Despite the later move into rock, Simon felt that the Dixieland jazz style of music that marked his early training was very important to the development of his basic technique. At the time he was listening to Buddy Rich and many other big band drummers.

"They're the guys I really used to listen to and really dig," he said. "After that I started getting into people like Don Ellis who, at the time, the 60s, was doing a lot of weird times and really strange mixtures."

Simon's rock days were also influenced by Blood Sweat and Tears, Chicago and, like almost every emerging drummer in that era, Billy Cobham. "When Mahavishnu came out, it was the first band that became popular and really got the jazz rock scene together," said Simon.

Although Simon presently spends a good deal of time with the Bruce Band, both in the studio and on the road, he manages to fit in some sessions. Recently he completed an album with the Olympic Runners, providing a totally different

tangent to the work he does with Jack Bruce. But that is often the lot of the studio musician.

"The basic thing about being a studio musician," said Simon, "is versatility because I get booked to do all kinds of music. From the Olympic Runners to the Jack Bruce Band; from a reggae session to working for Judas Priest. So basically, I feel that as long as your time is steady you can play in any kind of field."

But Simon doesn't necessarily feel that doing studio work is more rewarding than being on the road, or vice versa.

"I find doing live gigs just as enjoyable as working in the studio," said Simon. "But it really depends, too much studio is too much and it's the same with live work, it's just a matter of finding the right balance. Nowadays, though, it's very hard to do live gigs. I mean it's not as often you get the chance to do them. So, nine times out of 10, I'm in the studio although I love playing live."

Simon does, however, sometimes find himself getting into the session syndrome. "You turn up, you do a couple of numbers and you go. I did some things where I didn't even know who the artists were. I would just come in and do my gig and then the other guys would come in and do theirs. It's all very systematic."

"But in the last few years I've been concentrating more on albums . . . like staying through the backing tracks and staying on through some of the overdubs. It's great because you obviously get more involved with it."

Although Simon feels that doing albums makes him more involved, he doesn't believe that it reflects on his playing. "Rather than just playing and forgetting about what you've done and going on to something else," he said, "you're concentrating on this thing and you're following it through until it gets released and you get a greater sense of completion."

What makes any drummer good at his work is his style and approach and Simon finds that it's all down to basics. "My basic technique doesn't change much but my approach changes according to the kind of music you're doing," he said.

With the continual change of approach and style so necessary to a session player, varying times become intrinsic to the basics. "For me, time has got to be correct," said Simon, "so when I play a track it has got to be the same tempo at the end as it was when I started it. But the actual approach to time and the feeling of it depends on the music you are playing. Sometimes I'll be doing a piece that will be very "in" time and the fills won't cut across the beat too much. Some things go right across the beat and make the beat suddenly turn into a pulse so you're never actually playing the beat, but a different time."

Being able to play varying kinds of music depends on a variety of things and one of those things that makes a difference is four way co-ordination which Simon

feels is an added plus to his style.

"I used to play right-handed up until I was about 18," said Simon, "then I started teaching myself to play left-handed and now I play left-handed all the time, occasionally switching to the right. I just find playing left-handed is a lot more comfortable."



"When I started playing a two-bass drum kit and a lot of tom-toms, playing one-sided limited me too much because the big kits go two-sided. They go right around you so it just opens everything out a bit more.

"I hadn't played left-handed much so I came back to basics to teach myself and it started to sound alright after a while and I started to get used to it. Now I can sit and play and my hands don't cross. I'm sitting straight and I've got the kit on both sides so now I can ride with one hand and the other is really free."

In a choice of kits, Simon likes to keep his options open trying out all of the latest developments and newest gear and, although at times he uses the Staccato Fibreglass kits, for the last couple of years he has used the Ludwig Octaplus as his standard drumkit.

"My Octaplus kit has a double bass drum with multi tom-toms," said Simon. Although he uses a standard manufactured kit, he has done quite a bit of modification to it.

"I have eight concert toms and I have slightly different plates on the bass drums. The pedals are Gretsch with chain action. I have an Orange hi-hat which is made in France . . . it's just amazing . . . it's made

of very thick steel. I use all Ludwig stands and have various snare drums for various things. I use a Slingerland which is a 1940 model. It's 7", really deep - with steel cable snare so it gives me a really hefty sound. I also have a Ludwig snare, a Rogers and a Gretsch concert wooden snare.

"Up until recently I was using a comprehensive range of Zildjians, but lately I acquired some Paiste. But I never mix them together. I either use the Paiste or the Zildjian because I find that the volume of the different cymbals and the range they cover doesn't let them mix too well. Sometimes, though, I may use just all Zildjian crashes with Paiste ride, or vice versa."

With the wealth of drumkits and new products on the market Simon still uses a wooden kit primarily but does continue experimenting with other kits. "At the moment I'm using the Fibreglass Staccato kit," said Simon, "and they're really incredible because in a small place they really don't need miking . . . they just amplify the sound. And because they're Fibreglass they are more precise but less mellow. For some things, they're incredible."

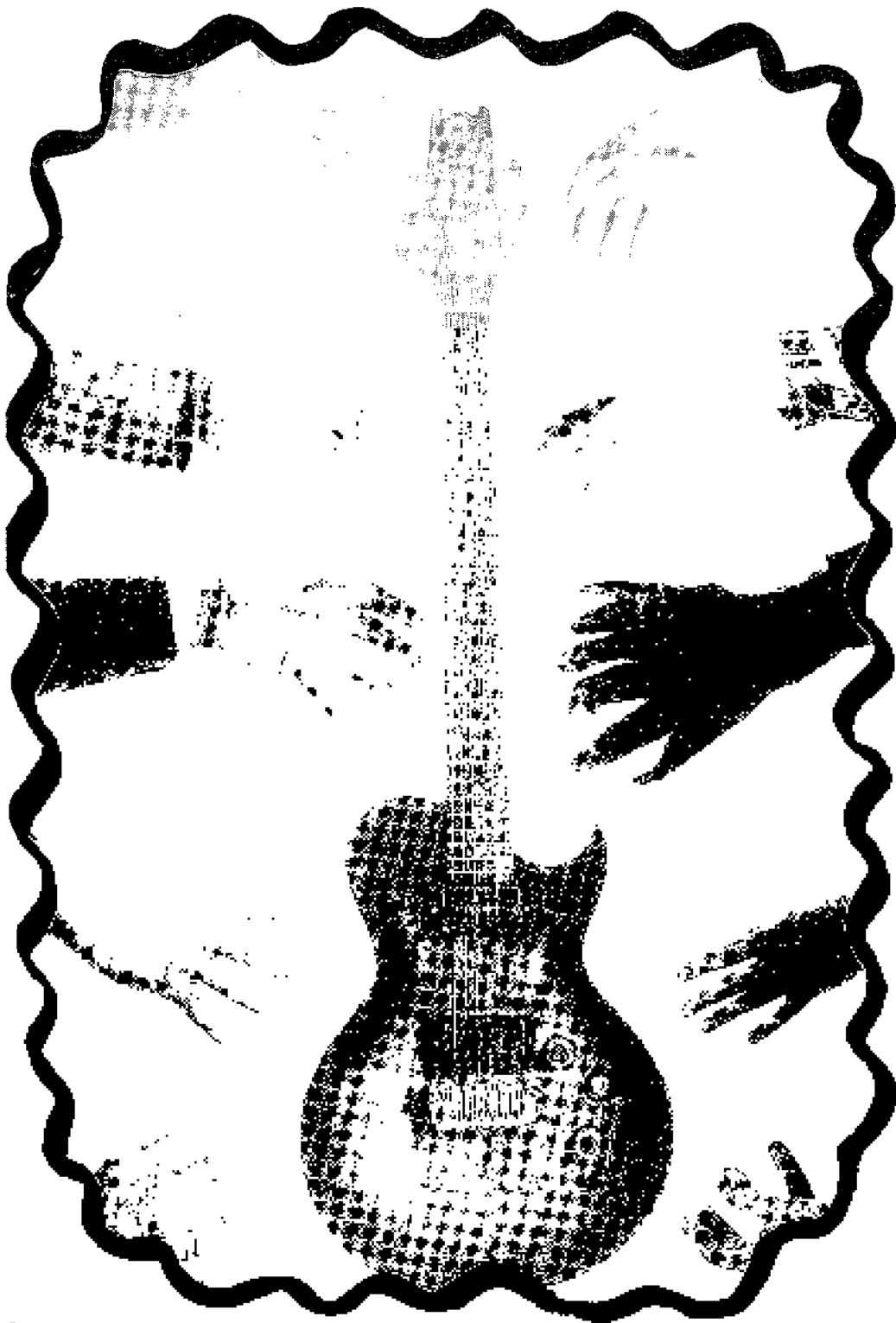
Over the years, as rock music has become louder and the drummer's sound seemed to sink further into obscurity, the necessity of miking up a kit became as important as the type of drumkit itself. Simon has an extensive miking system for his kit which he has developed over the years through experience.

"In the studio I generally like to mike the kit up myself," he explained. "Some engineers like using dynamics and some condensor mikes. And usually they're adverse to using anything else. So if somebody's really into using condensers there's no way I'm going to talk them into using dynamics so then we have to work together to get a really good sound."

"But on stage I use all dynamics and Shure SM 57s. For the bass drums, I use Electrovoice RE 20s or AKG D12s. For the snare drum and the hi-hat, I'd probably use AKG 224s and, for the overheads, it varies on the availability but I would normally use Shure SM 7s or AKG 224s. Because of the monitors behind you on stage, I have to use dynamics because, unless they're very sensitive, they'll just pick up the sound that's coming out of the monitor and they'll get really messy."

"I use my mikes up very close, all up inside the drums, and I put them through a 15-channel mixer and a Roland Space Echo with a DeArmand pedal on it with just a few modifications. It's got transformers so that you can plug it straight into the desk."

Whether it's in the studio or on stage, Simon Phillips pays a great deal of attention to his sound and his style. Combined with his enthusiastic approach to drumming there is little doubt that the popular word around the studios, "If you want to talk to a great drummer, talk to Simon," is in no way exaggerated.



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by David Lawrenson

Crossing the Borders

Every once in a while you come across a band playing in some small club or pub who restores your faith in rock music's ability to throw up something fresh and exciting. Landscape – a five piece London-based outfit – are such a band.

To call them unique, is to use this well worn word in its true context. Landscape fit the bill in more than one way. To begin with they are a purely instrumental band, relying on neither vocals nor even a lead guitar. To categorise their music would be the most difficult task of all, terms like jazz/rock, experimental rock, fusion music have all been used to describe what they play, but each has been inaccurate.

What can you say about a group whose basic jazz training is used to play anything from avant garde through to soul, funk, dance music and catchy three minute pop tunes? You are just as likely to find them playing in a jazz cellar or a punk venue, so the best way to approach Landscape is with an open mind and a keen ear.

The line up itself is one which you are not likely to see very often at an average gig; drums, bass and electric piano fronted by electric trombone and electric soprano sax/alto flute. They are one of the few bands who really use their whole whole battery of effects to the limit, and are constantly searching and experimenting with new sounds and ideas.

Landscape had its beginnings at a music summer school in 1973. Drummer Richard Burgess and pianist Christopher Heaton met up with composer/sax and flute player John Walters. Six months and many musicians later, Andy Pask joined on bass guitar, Peter Thoms added his electric trombone and the line up was eventually honed down to a five-piece.

The individual history of each member of the band goes some way to explaining the music and approach of Landscape. Richard Burgess has been playing drums for 12 years, and although born in Britain, has lived most of his life in New Zealand.

He said: "I came to England about five years ago, shortly before we formed Landscape. I came over here with the intention of succeeding in the English music scene. In New Zealand I'd got fairly high up in the music scene and was doing all the things I'd wanted to do like all the good session work. It was a fairly small scene, so I thought I'd better plunge into a bigger one. It was obvious that it had to be either Britain or America and I had more chance of getting into Britain so I tried it. Also, at that time there were some interesting things happening on the British music scene."

Richard is one of those very rare drummers who actually projects on stage through his image and his playing. If you don't see him then you'll certainly hear him because he attacks his mammoth kit with drive and energy, in such a dynamic style.

"Basically, I play a Pearl Dyna-family

kit which has the eight brother concert tom toms, but I change it about a little bit to suit my own needs," he explained. "I don't use the top one and I've missed out a couple along the way, so I have eight, 10, 12, 14, 16, and 18" tom toms, the 18" is just a normal floor tom with the bottom head taken off so it matches the concert toms.

"I've got two 22" bass drums, a Pearl 6½" brush or snare drum and I use an assortment of cymbals – Tosco, Avedis Zildjian and Paiste – because I like the mixture of tone colours. I have all Pearl stands and Pearl pedals and I'm pretty happy with the set-up which I've been using for a while now."

Since coming to England, he has carried on doing session work, although naturally Landscape takes up most of his time. "If someone books me for a session because I play in Landscape, then they often want me to use the stage kit which I do, but it's pretty loud and I don't re-tune that kit so if someone wants it they get it as it stands. I have a very small studio kit which is also Pearl and another Pearl kit which I use at home for practising.

"Obviously, I like Pearl, they give me what I want. The type of shells they provide, the synthetic shells, give me a brighter sound which is what I look for. I don't go for the wooden, more warmer laid back type sound, I like a bright type of sound, not as bright as Fibreglass but that kind of twangy sound."

Bass player Andy Pask has been playing for eight years and uses both fretted and fretless Fender Precision basses on stage. As with the rest of the band Andy is constantly looking to improve his sound and his equipment, and is currently having a bass custom built.

Andy said: "I haven't found anything better than Fenders, but I'm having a guitar built which I hope will be the ultimate. Its being made by a guy called Roger Giffin whose other work I've seen and it's excellent. It will be a very standard guitar but I might put a small electronic circuit in it, to send the output down a low impedance line which would reduce losses. It will have just one pick-up, I was thinking of getting a DiMarzio but I'm not sure about that any more. I'm having a two octave neck and hopefully with the combination of woods I've chosen, which is a mahogany body and maple neck, I should get the sound I want."

Andy has a Zoot Horn amplifier with a nine band graphic equaliser which is about 300 watts. This goes through a 15" Gauss bin and two 12" Gauss speakers and two eight inch JBL's on a frequency divider. He also uses Rotosound Superwound strings.

Hearing keyboards player Christopher Heaton on stage, it is hard to believe that he only uses a Fender Rhodes electric piano. Chris believes in getting as much out of an instrument as possible instead of investing in banks of keyboards, none of which are used to anything like their potential. By using the Fender with a



Richard Burgess



variety of effects, he can build up an incredible "wall of sound" which most keyboards players would need a synthesizer to reproduce.

Chris said: "The Fender Rhodes is a 1972 model and I put it through an HH MA100 PA amp with two doctored channels and two JBL speakers. I use the reverb switch on the amp, and I have a volume pedal which I use for imitation echo with the reverb on. I also have a Hornby Skewes fuzz box with a treble booster, an Ibanez phaser and a Maestro ring modulator.

"Having the Fender on stage is enough because the combinations of the pedals and the ring modulator means I can get quite a lot of different sounds. The only thing you can't do is put the sound you have created with the original Fender sound, but I've never been interested in playing an instrument just straight. I think you owe it to yourself to do as much as you can with one instrument, only that way will you see what the next progression is, and what instrument you'll need."

"I consider myself a piano player and as such I've never been interested in synthesizers until polyphonic ones came out. I think they are the only ones that

would interest me mainly because I would have the facility to play more than one note at once.

"I've been looking at certain poly synths recently, but they are still very much in their infancy at the moment. I've been trying out the Yamaha - but a lot of people just plug them in and play them, anybody could do that and it does a lot of very nice things. Something like the Oberheim is a much harder instrument to play and you have to know what you're doing first before you can get a decent sound out of it, much more is thrown back on the player. I'm more interested in instruments you have to play rather than instruments that play you."

Completing the front line is Peter Thoms on electric trombone and John Walters on electric soprano sax and alto flute. Peter comes from Melbourne, Australia, and has been in Britain for five years; like Richard he worked through the whole music scene Down Under from cabaret shows, through studio work, rock bands, jazz etc. before moving to broaden his musical horizons.

He plays a King 3B standard trombone and prefers its light, bright sound to something like a Conn or a Martin. Peter uses Bach 11C mouthpieces, one of which



Andy Pask



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Due to the fact that there is a natural rivalry between the two branches of Free 'n' Easy Music, we have managed to talk Den and Stu into writing our own bit, in order to tell the world how great we are (well, our mum's like us).

For those who think that the music scene is either "clubland" somewhere up "North" or the "London Scene" you might like to know that down here in the wilderness of Oxford we too have a number of good venues being catered for by lots of local bands.

John has been practising in front of the mirror lately (no, not the Daily Mirror), and has been able to add to his impressive list of impersonations (well he does a good Elvis Presley anyway) and now can imitate Norman Wisdom, Frank Spencer and Tower Bridge. We have great hopes that his talents will be spotted by a theatrical agent preferably one who has venues in Siberia, Afghanistan and Bikini Atoll.

Roger has now gone two whole months without denting his or anyone else's car, and if this continues he says that he is going to enter for the "driver of

the year" award, and for those who like a little flutter on the stock exchange it might at last be safe to invest in car insurance companies.

We have recently found that a great deal of local interest has been shown in Maine amplification. A number of local bands have bought the P.A. setup which although compact, has a very loud and clean sound and in our experience rivals anybody for reliability. Just lately too, we have been finding that the 100 watt combo has been a consistent seller, and when you think that all Maine amps have a five year guarantee we reckon that its great value for money.

On the guitar front, we have been impressed with both the sound and quality of Guild Electrics especially those with Di Marzio pickups, we usually have some in stock and if you haven't yet tried one, they're here for you to have a go.

Den and Stu have managed to link up with a credit company that specialise in Musicians, you've probably been through the usual hassles of needing guarentors, having to be a house owner, massive deposits etc.,

and so the good news is that finance can be arranged far easier now, why not come in and see us and we'll tell you all about it.

Another area where we intend to extend our activities is that of Hire, and at present a quantity of cabs and amps are being earmarked for Hire. Many people will know that our Hemel Hempstead branch already provide quite a lot of help this way to local bands and so we are pleased to offer this often neglected service, (here endith the first lesson). All we do ask is, where possible to give us as much notice as you can in order to make sure we have everything needed on the days it's needed, (here endith the second lesson).

For those interested we've been here for 6 months now and it could be said that any resemblance between us and a music shop must be pure conjecture. After all where else can you find Elvis Presley impersonations, coffee machines, pinball machines, Fender guitars, idiot sellsmen and carwreckers under the same roof. For those who are still not put off you will see our mail order coupon below, why not send it off and get Reg to call.

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is drilled for a Barcus-Berry pick-up, which goes into a Barcus-Berry pre-amp and then into the effects pedals.

John has a Selmer Mark Six soprano sax with a Selmer F mouthpiece and Rico Number Three reeds, plus an Armstrong alto flute in addition to his original Embassy concert flute. Once again John uses a Barcus-Berry transducer stuck on to the reed and a Barcus-Berry pre-amp.

Both have come up against problems with effects and projecting their sound because electronics and horns is still very much of an experimental area. Peter said: "I use a Pearl combo amp top through a Gauss 12" cabinet which has a good wide range. I used the combo amp speakers for a while, but really for a trombone you need speakers with a wider range. I'm quite pleased with the sound I'm getting out of the Gauss, but the main problem is that most of these things are not built for horn instruments - this is a really big problem.

"John and I are in the process of working out a whole new set-up with an MM mixer, quad amp and Gauss speakers. We'll both go into it and both be able to hear ourselves through our own amps which will be a big advantage." Peter uses a CSL wah-wah pedal, because it is the only one he's found that has any real effect, and also an MXR Blue Box which gives him a distorted, synthesized sound and has a switch which enables him to blend in two octaves below the sound. He is also considering an MXR Phase 100 and will probably invest in a flanger in the near future.

John is one of the main writers in the band and carted his manuscripts of instrumental music around for years before he found the right vehicle for his work. He uses a Roland pedal which is both a fuzz box and a treble booster which is employed basically to boost the sound of the sax when playing a solo. He also has a Cry Baby wah-wah, and all this is put through a Concorde 50 watt Sound City amplifier at the moment, but this

will disappear when the new system is ready.

The band are very aware of the need for a good live sound and this places great emphasis on the PA, particularly in view of the instrumentation of the band and the difficulty in miking up the horns. The system they use is by Vitavox, and so good was their live sound that it earned them the company's live sound award. The band are tremendously impressed with their Vitavox set-up, and their excellent live sound is one of the band's features.

Playing completely original music which isn't easily labelled does present problems in the rock business because everyone from journalists to club and pub owners like to put artists in convenient categories. Landscape have had their share of problems in this direction and have worked out their own solutions, without having to compromise.

Richard explained: "The band was formed just in order to play, to do some things that we just wanted to do. Then we started to become conscious of the fact that the band was fairly popular and if we did a gig we'd get good audience reaction so it seemed stupid not to get out and do something with it.

"We were looking for something new musically and we suddenly found that people would try to keep lumping us in different bags all the time. We discovered that the only way to put the music across effectively was to create a new organisational situation because if we went through the existing organisational outlets like the standard record company/management type outlet we'd be changed into something that we weren't. We've reached the stage now where we are so firmly established as what we are that I doubt if anyone could change us anyway.

"At the time the Average White Band were making it big a lot of people would make suggestions along the lines of 'if we added a guitarist and dropped the less funky tunes we might cash in on some of their success'. Although there are aspects

of that kind of music which we can appreciate, we don't want to become like anyone else."

The band decided that the only way around this problem was to set up their own company, and this they did in the shape of Event Horizon. Event Horizon deals with all aspects of the Landscape band from agency, management and publicity to their own record label.

Richard: "It started out where the five of us were doing all the work because we got to the stage where we were so committed to the band that we were determined to make it work. The more you get knocked back by record companies and managements and agencies alike, the more determined it makes you to succeed. We were getting bored with the alternatives so we started Event Horizon up as a facade so we could phone people up and say 'We've got this great band Landscape' but it snowballed fairly quickly and now we've got a manager, Steve Hilton, who is an equal partner with us in Event Horizon. He is actually managing director of the company, so we tend to leave most of the decisions up to him."

The band also benefited from a Greater London Arts Council Award which helped them a great deal as far as gigs were concerned. The Arts Council usually make awards to classical musicians and other branches of the arts but one year they decided to make an award in the contemporary music field. After competing with a host of other bands, Landscape were given the award by which many of their gigs for two years were given some financial sponsorship. Therefore, they were able to take a lot of bookings which otherwise would have been too uneconomic to even consider and this period did much to establish them as a name on the club and pub circuit.

The band have released two singles, the first of which, "U2XME1X2MUCH", made the New Wave charts, and the latest of which is "Workers' Playtime". Both have been on Event Horizon, with their own publicity and promotion, and there are plans afoot for an album, although once again Landscape refuse to compromise in order to get a big record company deal.

Landscape deserve to be successful if only for their uncompromising attitude towards their music and their refusal to bow to pressure from the music business. Not only that, but instead of sitting around and bemoaning the fact that no-one was willing to take on their music as it stood, they actually went out and formed their own label to get their music across.

From many aspects the group are to be congratulated for their efforts because they have shown just what musicians can do if they have enough faith and determination in their music to succeed.



Left to right: John Walters, Christopher Heaton and Peter Thoms

The last thing a key is to get his fingers

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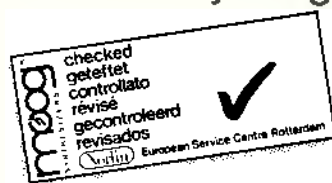
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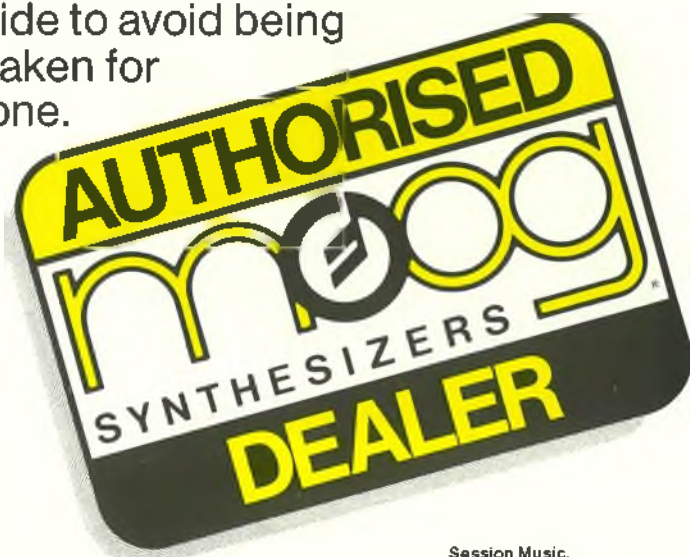
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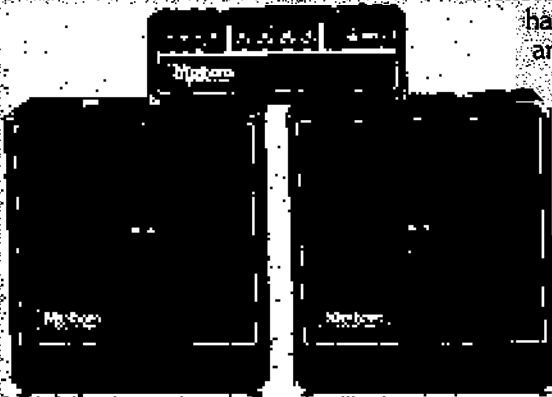
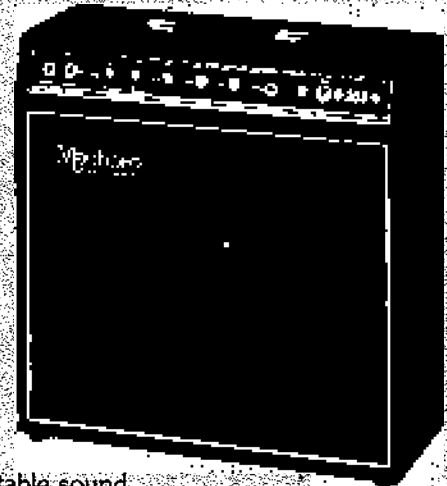
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★ NEW PRODUCTS ★

The new Jeremy Lord **Skywave** synthesizer is now in production at a London factory. The Skywave was first shown in public last year, when it aroused considerable interest with its unique three-dimensional joystick.

The **Korg VC-10** is the first commercially available, totally self-contained vocoder. The VC-10 can "code" not only the human voice, but any external electronic source, and also has its own built-in Polyphonic keyboard.

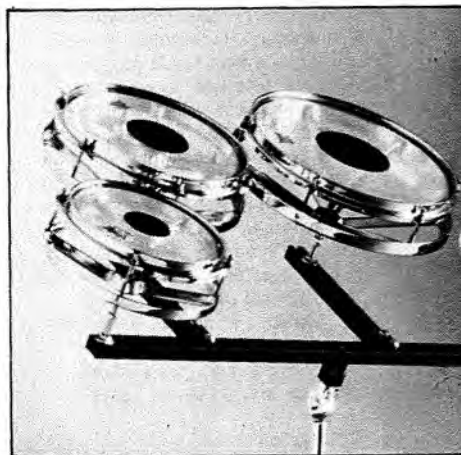
Electro-Voice have announced their AC24 phantom power system. It consists of two separate modules, and is designed for the band who want to use condenser microphones but lack phantom powering facilities at their mixing board.

More from Electro-Voice: the Michigan company have introduced three new speaker systems. The S18-3 has been designed specifically for the wide frequency range produced by synthesizers and other keyboard Instruments.

The PI 12-2 and PI 15-3 systems are both intended for permanent installation in theatres, clubs and discos: they provide full range response without the need to modify existing touring systems.



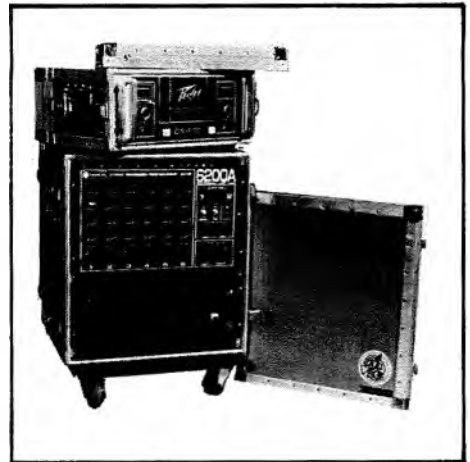
Ramo Inc.'s Roto-Trac system consists of four sections of track for mounting the company's line of RotoTom percussion instruments, either on floor stands or marching harnesses. The system's tilt adaptor allows individual toms to be tilted and swivelled to any angle.



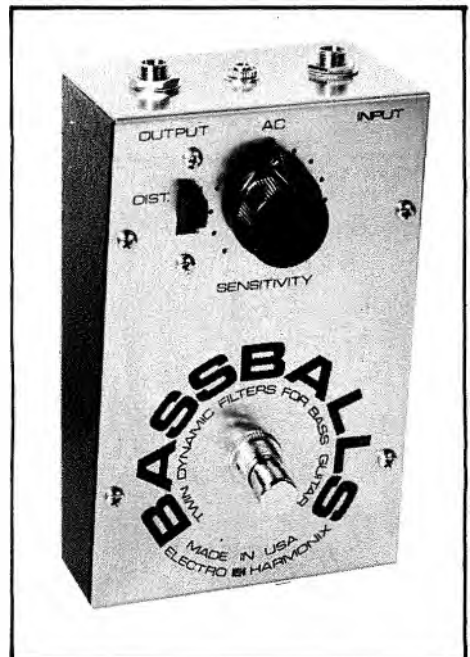
Ace of New York announce their Pro-Tuner, a precision-tuned set of pitch pipes. The Pro-Tuner is smartly styled, and can be carried conveniently on a neck chain. The Pro-Tuner is also included in Ace's Guitarist Gift Pack, along with an Ace Hootenanny Guitar Strap, a fully adjustable capo and a range of quality guitar picks.



Overlend have introduced EMG pick-ups for guitar and bass. These incorporate the EMG-11P pre-amp, which means the pick-ups provide high output, and a high Signal/Noise ratio. Low impedance output allows extended cable lengths to be used without high frequencies being lost. The pick-ups are powered by a standard 9-volt battery.



Anvil of California announce their range of rack mount cases. They offer efficient transport for instruments coupled with easy access to controls, as well as protection during transit. The Anvil cases are available in various designs, e.g. clamp-on lids, case-within-a-case, and pull-over clamp lids.



New effects units from **Electro-Harmonix**: the "Hot Tubes" Tube Amp Overdrive Simulator, claim the manufacturers, gives guitarists that sought-after valve sound from transistor amps. The "Bassballs" Twin Dynamic Filter for bass guitar has been designed to give bassists a broad range of harmonic power hitherto unknown.

The range of **Multivox** keyboards and effects units, first shown by Professional Keyboard Products are the Trade Show, are soon to be launched throughout the UK. The range includes touch sensitive Electronic Pianos, Preset Duo-sonic and String & Brass Ensemble Synthesizers, Tape and Digital Echo and Reverb units. Multivox products attracting particular attention have been the MX-2 'Full Rotor' Doppler unit, and the MX-3000 Polyphonic Synthesizer with quadrophonic capability.

Ian Matthews Stealin' Home

Ian Matthews has had a long and varied musical career beginning with a Deram band called Pyramid who had just one single released, "Summer Of Last Year". In late 1967, he joined Fairport Convention and stayed with them for three albums but left when the material was tending towards English traditional and away from what he wanted to do. His first solo album, "Matthews Southern Comfort", was released in 1970 and he went about forming a band of the same name. With Southern Comfort, they released two further albums that year, "Second Spring" and "Later That Same Year". The band had a huge hit with a single, Joni Mitchell's "Woodstock", which took Ian by surprise. Unprepared for success on such a scale, he left the band and once more embarked on a solo career.

After two more solo albums, Ian teamed up with Andy Roberts and formed Plainsong who recorded two albums under Sandy Robertson's production. The first was the excellent "In Search Of Amelia Earhart", but the second was never released. Presumably disillusioned, Ian left Plainsong and moved to the States, recording his next album with Michael Nesmith producing. Four more solo albums followed, which brings us up-to-date with the release of "Stealin' Home" on Rockburgh Records with Sandy Robertson again producing. I.M. spoke to Ian two days before the start of his recent British tour.



Although Ian came to prominence with Fairport Convention, it wasn't folk or traditional music that "turned him on" but, would you believe, The Big Three?

"I've never really been into folk music at all," he maintains, "When I first started singing, I was singing stuff like "Zip A Dee Doo Dah". That was from listening to The Big Three. They came out at the beginning of the Liverpool explosion and they

were a trio who used to play at the Cavern a lot. If you can imagine a band using AC30s and playing power trio stuff, that's what The Big Three were. They were also very R&B influenced but they wrote their own material as well which was fairly unusual for a band at that time — around 1962. I was really impressed with that band. I've never really been a 'folkie'.

"When I joined Fairport Con-

vention they weren't a folk band, not by any stretch of the imagination. They were doing their own interpretation of mainly American material. Nobody in the band was writing at that time — they were doing songs by The Byrds and Tim Hardin. That's the nearest we came to folk music at that time."

In fact, Ian maintains that it was when the late Sandy Denny joined the band that they veered

towards traditional folk music. Not surprising as she came from a fairly purist folk music background.

"That was when I really became a bit disillusioned with the band. As I said, I wasn't that interested in traditional music and it was when we were doing a song called "A Sailor's Life" that I left the band, I suppose that was really the straw that broke the camel's back."

Considering Ian's musical direction now and the fact that he lives in the States, was he drawn to a slightly heavier, American sound?

"Well, I guess you may want to call it American folk, but I think it's American contemporary music, or it was at the time. I used to like The Beach Boys a lot, but I was also into The Impressions. I could never pinpoint one particular type of music I was into but I really feel completely at home in America. For me, there's so much more of an acceptance for every possible type of music in the States whereas, in England, it seems like, if something's happening, everybody suddenly zeroes in on it — like the New Wave thing right now. I think that's a product of the BBC having a monopoly for such a long time; that's the only thing I can think of that could have possibly caused such narrow vision."

Not that Ian dislikes New Wave music. He listens to a lot and has been impressed by some of the music that's come out recently. Then again, that's what you might expect from a man who describes The Who as part of his Bible.

"I thought the Pistols were real good, such a lot of energy and the whole thing. And The Jam — I think their new single is really incredible."

Ian Matthews' name has appeared on a remarkable number of different labels, a sample of which includes Deram, Island, Polydor, Vertigo, Elektra and CBS. His new album appears on Sandy Robertson's Rockburgh label; was he happy with the latest arrangement?

"Yeah, I mean it's still a little early to tell. The album's only been out a couple of weeks. I have a really good relationship with Sandy because we worked together about six years ago with Plainsong. Rockburgh is really only a one-man operation and so it's easy to relate to one person, to shout and scream at one person — and to be shouted and screamed at! Much easier than when you have a whole record company and you're handed from person to person. I'm sure that being with such a small company must have its drawbacks but, so far, I haven't seen any.

"Sandy has already sold more albums for me in two weeks in this country than I've sold here in the last six or seven years. In

America, I usually sell between 50,000 and 70,000 albums whereas, in England, the Plainsong album would sell something like 4,000, the Southern Comfort album would sell 50,000 and my solo albums would sell between 15,000 and 20,000. It was going up and down and up and down whereas, in the States, I have a definite record-buying following."

While with Fairport Convention, Ian's role was that of a singer although he used to tap about on a pair of congas as well, and it wasn't until after Fairport that he got into guitar.

"I didn't get into playing until after I left Fairport. I was just singing and not playing congas very well! I'd always sung though - way back when I was living in Lincolnshire, just doing weekend things."

On the subject of instruments and equipment now, Ian is quick to recommend Epiphone acoustic guitars. He has experimented with electric guitars for stage but is still looking for the right sound.

"I really do favour Epiphone acoustics, I'd really like to get a whole range of those early Sixties Epiphones. Right now, I have a Texan acoustic, my fourth one in fact - I just love 'em. I also have an Epiphone Cortez that I'm going to use on the road. It's got two Barcus-Berry Hot Dots built into the bridge and that goes through a standard Fender Twin.

"I did use a Les Paul before this tour but I thought I'd get back into using an acoustic on stage. It was a real bastardised Les Paul - I've been told it was a Special that originally had no binding on it so somebody had put binding around the outside. I don't know if the pick-ups were the originals but it felt good and sounded good.

"I had two Telecasters for a while as well. They were like the two extremes; one was a real flashy custom Tele that I had put together in Los Angeles, the other was just a real funky worthless Tele. I didn't really care for either of them.

"I had a beautiful Guild Bluesbird that I liked a lot but it got broken on tour so that was that. I used to have a couple of nice Martins. I had a really nice D-28 which recorded really well. I still can't decide whether I like playing an electric or an acoustic on stage or which sounds better."

For recording, Ian favours his Texan acoustic using a very close-miking technique that gives him the sound he wants. He has tried Ovation guitars as well but hasn't found them very satisfactory to say the least.

"I hate them. The sound is there - the sound you buy is the sound you end up with but there's no room for maturity or anything and you're stuck with this fibre-glass sound. Bryn Haworth uses

one but he electrifies it and gets a good sound."

Although the band Ian is using for his British tour contains two musicians who played on his new album, Ian emphasised that this was strictly a temporary tour band which had only been together for a couple of weeks before the tour began. The line-up is Jim Russell (drums), Phil Palmer (guitar), Joel Tepp (guitar), Mark Griffiths (bass) and Mick Weaver (keyboards). Russell and Palmer were both on the new album, along with Bryn Haworth (guitar), Rick Kemp (bass) and Pete Wingfield (keyboards). How had these players been brought together?

"Sandy put me and Bryn together and we worked out the basic stuff and then Sandy got the rest of the guys. This album was really important for me because I haven't had a good vocal producer for a long time. Apart from the fact that it's Sandy's label, he was the best vocal producer I'd ever worked with and I think we produce well together. We don't hold anything back. We say what we think but we end up with exactly what we want. I don't know a desk but I know when something sounds wrong. Sandy's more into the technical side of it. I was more like "What should go where?", more the arranging side. Bryn and I worked out most of the arrangements.



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REDMERE Soloist

Tomorrow's amp today

The Redmere Soloist is an amp of very advanced design and concept. It has been produced only after the most extensive liaison between musicians and research engineers. The aim of Redmere in producing the amp was to give musicians all the advantages of transistor amplifiers and valve amps in one solid-state package. Now at last the great Valve or Transistor debate is over. Redmere have proved that correctly designed transistor amps can actually sound better than valves.

Now, after months of continual testing, redesigning, and rebuilding, the Soloist Superamp has arrived. Here is a list of features it contains: sustain/compressor with colour control, flanger, chorus, reverb, graphic equaliser, touch switches, direct injection socket, noise gate, foot switch, three independent channels.

Channel One of the Soloist simulates a familiar American valve amp usually bought in a "twin reverb" form. This amp is ideal for country music and keyboard instruments; the Soloist simulates the clean sound with controls for treble, bass and middle.

The second channel gives you the sound of the top British rock valve amp used by practically any big rock band you can think of. This channel gives the Soloist's rock sound. The sound is clean up until 25 watts and then distorts more and more. Once you reach a certain volume, the sound changes and distorts dramatically to give a familiar raunchy blues sound which you'll recognise as soon as you hear it.

If you were a fan of the Beatles, and who wasn't, you'll be familiar with the 30-watt combos they used. The Redmere Soloist gives you the sound of the Sixties Beat Boom with Channel Three. At low volume you get a lively sound with lots of top and bass but high volume increases the distortion giving amazing treble projection and powerful bass.

Having chosen your sound, you can modify it extensively with the collection of effects built into the amp. The Sustain/Compressor allows you to control the amount of distortion you get when you pick your guitar.

A special Colour Control acts like a manual wah-wah pedal and works by boosting certain frequencies before they reach the sustain circuit. You can adjust the level control which allows you

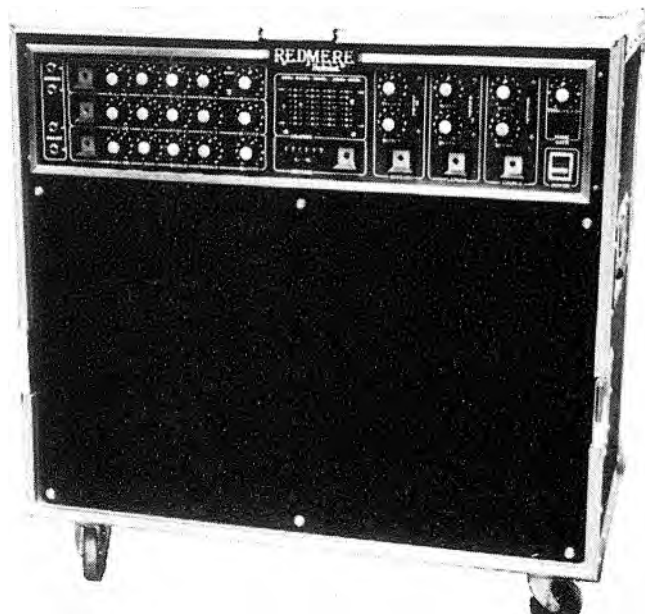
to get any sound you want at either high or low volume. These controls all give you any sound from a gentle distortion to an indefinite fuzz.

Flanging has become a very popular effect recently, and the Soloist gives you flanging at the touch of a switch with full control for speed and depth. If you combine a slow speed with a high depth setting you'll get the familiar "skying" effect. Different settings will give a rotating Leslie speaker effect.

The Soloist can also change a six-string guitar into a 12-string with a touch of the chorus control. This adds three extra signals to slightly different pitch and delay to create the sound of more than one instrument playing together. The Chorus can be modified for speed and depth. You can even hook up a slave amplifier via a stereo output on the Soloist and get the sound of two instruments from two sources even though you are only playing one guitar.

Reverb is a familiar enough effect. Naturally the Soloist's reverb will give you everything from slight depth to a big empty hall type of reverb.

Once you have selected your sound, the five-band graphic equaliser covers your final adjustment of sound by offering 15dB cut and boost which can change your Fender into a Gibson or vice versa. This means that your control of sound is practically infinite. You can go from clean country, rock and roll, or heavy-metal at the touch of a control.



In fact the Redmere Soloist is practically a studio built in to an amplifier. What other amp do you know has studio-type facilities like a 600 ohm direct injection socket and noise gate? The Noise Gate in particular is a useful feature. It cuts off the effect units when no signal is present and so removes hiss and noise generated by effects circuits. This means that if you have your flanger and chorus on there will be no unwanted white noise whilst not playing.

The switches alone are something out of the 21st century. Gone are clumsy mechanical buttons and knobs. To operate a function on the Soloist you merely touch the appropriate control section. There is nothing to wear out or get damaged so your Soloist switches will operate indefinitely.

We're living in the Space Age. Redmere are the first makers of music amplification equipment to really bring musicians into the 1980's with the Soloist.

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BLOWING IN THE WIND... METAL ALTO SAX

by Alan Holmes

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BORE SIZE

LENGTH OF LAY

INTONATION KORG METER

PROJECTION

EDGE

STONE

PRICE

	80/2/M	80/0/M	80/1/M	80/1/SMS	E	7	E	5
TIP OPENING	78	78	82	83	72	80	72	85
STAR	6*	6*	6*	6*	5*+	6*	5*+	7
BORE SIZE	.617 .575	.628 .590	.630 .592	.627 .591	.630	.630	.630	.625
LENGTH OF LAY	1.000	1.050	1.150	1.000	.800	.900	.800	.900
INTONATION KORG METER	●●●●	●●●	●●●	●●●	●●●●●	●●●●●	●●●●	●●●●
PROJECTION	●●●	●●●●	●●●	●●●	●●	●●●●	●●●●	●●●●
EDGE	●●●●	●●●●●	●●●●	●●●●	●●	●●●●	●●●●	●●●●●
STONE	Round Full	Thin	Bright	Bright Nasal	Round Hollow	Bright Full	Hard Round	Thin Full
PRICE	£18.75					£25.92	£35.00	N/A

BERG LARSEN

Made of stainless steel, the Larsen comes with two interior designs, the 0 & 1 and the 2. The 0 varies from the 1 in having a higher baffle behind the rim tip producing a brighter sound. The 2 has a different interior and does not constrict the air and has a straight step instead of the double tone chamber of the 0 & 1. The 2 seemed to suit the characteristics of the alto more than the other chamber as the alto can soon start to sound thin and screechy if the same sort of brightness which would suit the tenor is applied. The SMS and M lay offers yet another variable tone, the SMS having a slightly more nasal effect compared to the M. Very reasonably priced and worth trying in the 80/2/M version.

SELMER CLASSIC

As its name suggests, this is a classical design which Marcel Mule of the Paris Conservatoire helped popularise. The tone has a beautiful flute-like quality, the intonation is perfect and, apart from its rather high cost, it is difficult to see why Selmer have discontinued this very effective mouth piece. There will still be stock in shops, however, and this is a nice mouth piece if you want a very smooth round tone.

LAWTON

Made from brass and beautifully finished, this is in some ways similar in design to the Selmer but has a much more edgy cutting tone, with excellent intonation and projection. Popular amongst lead alto players and used by Johnny Dankworth, this is a very easy blowing and less widely successful mouth piece. The cut throat corresponds with the crook tone of the instrument which would seem to make sense, and is probably why the tuning is so good. It is also made in a 'B' model which gives even greater edge and cut to the tone. Hand up! played, recommended to improve your playing.

SELMER JAZZ

This is luckily still in production and produces a hard, biting jazz tone. Like the classic, it is made from a white metal alloy, heavily silver plated. It has a flat entry into the bore with a tiny step and its complex interior is very well made. The shortish lay means good tuning. I use one so I have to recommend it.

BRILHART LEVEL AIR

This is a rather un-conventional design in stainless steel and is unusual in that the roof of the chamber is horizontal and the rest table is tilted much more. The main criticism is the same as for the tenor, the tube does not have enough angle and there is a tendency to slide up and take too much into the mouth. A simple replace ment of the plastic insert would cure this. Generally, a very cutting tone and this is the one used by David Sanborn so it's worth trying if you want to get a similar tone. Not available in England, obtainable from some American shops.



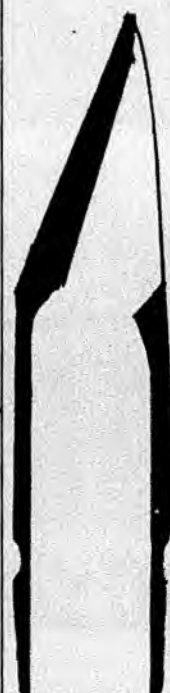
BERG LARSEN



SELMER CLASSIC



LAWTON (Dotted line represents "B" model)

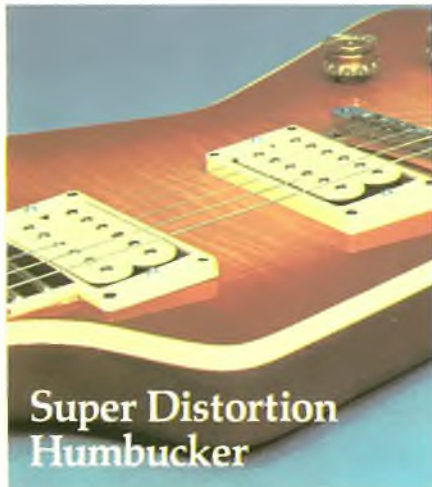


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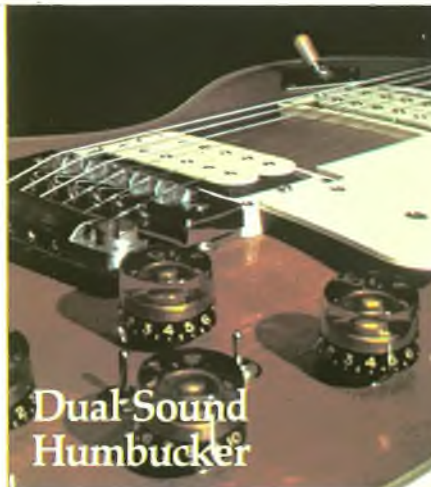


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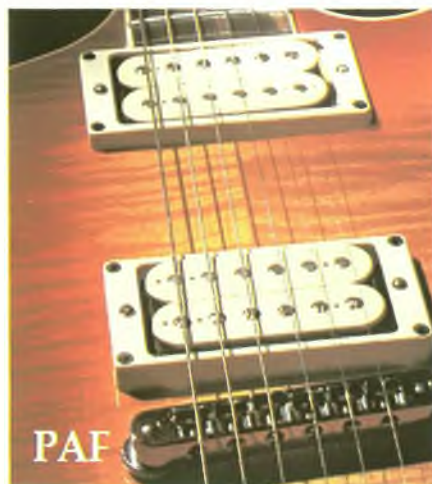
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Dual Sound
Humbucker



Super II

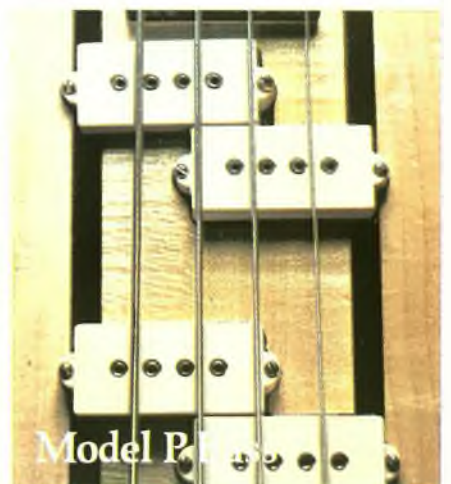


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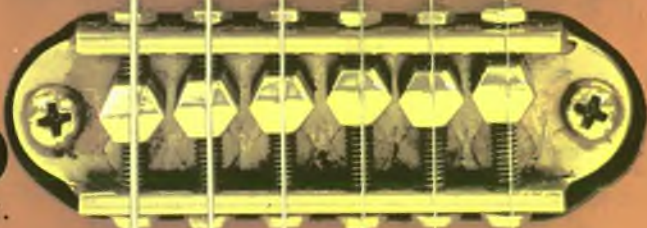


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On Test: Bird Brothers Spirit of '56 guitar flightcase. Price £45 inc. VAT

The flightcase comes from a relatively new company who manufacture the Bird Brothers combo we reviewed recently plus a range of amplifier and guitar cases. In fact, their recent clients have included The Buzzcocks and The Halle Orchestral!

There are various companies now manufacturing flightcases but with a price tag of only £45, it's certainly worth looking at Bird Brothers cases. The case we looked at is designed specifically for a Stratocaster-shaped instrument although they are soon to bring out their range of Mark III cases with a choice of foam inners - with the same case you are offered the choice of SG, Les Paul or Strat inners.

The cases are designed and built by Admiralty-trained engineers and professional case-makers and the quality and durability of the case reflects this.

The case is constructed from two sheets of 4-ply and heavy-gauge high-grade aluminium with eight steel corner caps plus the aforementioned foam insert cut to shape. There is also an extra area cut out for straps, strings etc.

Each case from Bird Brothers is guaranteed for one year from the purchase date and further to that, the company also offer a refurbishing service whereby they will replace any parts as new for cost price.

Bird Brothers really are custom flightcase specialists and, if you have a particularly weird-shaped guitar, they can supply a flightcase for it for a similarly reasonable price.

Eamonn Percival

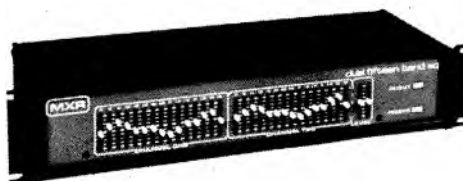
On Test: MXR Dual Fifteen Band Equaliser. Price £275 + VAT

How can you double the power of your PA or monitor system for considerably less than the expense of the extra amps and speakers this would normally entail? If feedback is the problem that stops you using full power, then this new product from MXR will solve it for you. At £200 less than the cost of similar products by other manufacturers, this represents the breaking of a price barrier to bring sophisticated studio quality equalisation within the reach of all musicians and is also the first dual stereo 15-band graphic equaliser.

Graphic means visual and, by looking at the shape made by the controls, each representing a frequency, you can set a modified frequency response curve and see at a glance how much lift or cut you have applied to the low, high or middle sections of the audible sound spectrum. This means that you can compensate for the acoustic peculiarities of the hall when setting the PA and, by the use of a Real Time Analyser (which is nothing to do with clocks, but is a measuring device for room acoustics), very accurately eliminate boominess and over-prominent highs, boost weak voice audibility, as well as being able to "dip out" mains or lighting hum. The use of 15 bands means that the gap between each slider is almost impossible to hear so that if you have the 63 Hz cycles control in the cut position for a

hum which can cut to 12 dB below the normal setting, then the slider before is 50 Hz and the one after is 80 Hz so that only a very small segment of the audible frequencies are missing.

Ringing or feedback can be similarly suppressed by locating the offending frequency and dipping it out on the sliders and of course the vast majority of users will just be using the flaps on the sides of their heads to check the results. In a PA rig that suffers from the horns "barking" and drowning out the bass bins and speakers when driven to high levels, the use of the graphic equaliser can perfectly balance this out by depressing the sliders at the appropriate frequencies until the rig sounds smooth. More bottom or top in general can be applied selectively to the whole rig to compensate for the way a band plays.



For studio use, the signal-to-noise level of -95 dB with all the sliders set in the central position is more than acceptable and the unit will not produce any noise of itself. Its main use in the studio is for the headphone monitoring system or the setting up of the playback monitors to get a flat response in the control room. It can also be used as an effect to produce megaphone-like vocals or to get rid of annoying hissing from vocalists on the "s" consonant as well as bolstering up a weak voice or making any instrument sound completely different. The balance of an already mixed track can be altered too. Affluent rock stars may well use the Dual Fifteen to give guitars and basses amazing boosts for solos etc., so it is a very versatile and sophisticated tone modifier.

MXR also has a mono 31-band equaliser in the studio series for £293 (plus VAT) and a digital delay for £783 (plus VAT) which all fit into a special rack incorporating a power supply. Otherwise, they all fit standard 19 inch racks or can be fitted into special MXR road cases. To sum up, a high quality product at the right price from the company which put phasing within the reach of the gigging musician.

Alan Holmes

On Test: Roland GA 50 combo. Price £214.27 + VAT

In a relatively short time, Roland have established themselves as manufacturers on high-quality professional equipment and it's safe to assume that anything bearing the Roland name will adhere to the same high standards. Their new range of GA combination amplifiers is no exception. The GA 50 is part of the new Roland range which includes 30 watt, 60 watt and 120 watt versions. From 60 watts upwards, the combos feature built-in overdrive, compressor and graphic equaliser and the 60 watt and 120 watt versions also offer the option of Pioneer speakers.

IN BRIEF IN BRIEF



The GA 50, as its title implies, is a 50 watt amp with a 12" speaker and an amazingly wide range of controls. There are two inputs (high and low) and rotary controls for Volume, Treble, Bass, Reverb and Distortion. Sounds simple enough, but there's a lot more to it. For instance if, like me, you like a nice, cutting treble sound, then check this little monster out! Next to the inputs, there is a Bright switch which, when activated, boosts the treble to glass-shattering proportions! Not content with that, the Volume control can be pulled out which puts even more boost on the highs and less on the mids. I tried the GA 50 with a Telecaster, not a bassy instrument to say the least, and the amount of top obtained sounded lethal! At the same time, the tone was clean and clear, unlike some "treble boost situations" where the sound breaks up at the merest suggestion of high frequencies.

The reverb, too, is excellent. In fact there is more than enough reverb; I never had to turn it up past 2 to get all I needed. The distortion control is good, although it sounded a bit too compressed for my taste. Roland have thoughtfully provided an "Off" position for the distortion control which takes the tone back to normal.

There are also four extra jack sockets situated to the right of the front panel for adding footswitch control to Booster, Reverb and Distortion. The fourth is a headphones socket which cuts out the speaker and directs the sound to a pair of ordinary headphones for practicing. This is particularly useful if you need to tune up onstage without disturbing the rest of the band or perhaps an interval disco. Single, double or triple footswitches are also available from Roland so you could have one FS-3 triple footswitch to control Booster, Reverb and Distortion.

Last but certainly not least - the size and weight of the GA 50 scores ten out of 10. For a high-quality and very powerful combo, it is extremely light and compact. It measures just 20"(W) x 20"(H) x 9"(D) and weighs only 35lbs. In other words, you can carry it in one hand with no trouble. Check the GA 50 out - it's light, compact, powerful and Roland!
Eamonn Percival

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Trucker cab



Trucker PA 100 watt amplifier



Trucker monitor

The aim of the Trucker range is to provide top class gear for the small band or for artists working in relatively small venues, such as pubs and small clubs. All Trucker gear has been built to deliver maximum performance at minimum cost.

At the heart of the Trucker PA system is the Trucker PA 100 watt amplifier. This is a four channel amp with eight inputs. Each channel has separate controls for Volume, Bass and Treble. There is a built-in 15" reverb unit with master reverb control. Send and Return facilities are also provided for use with external effects such as echo. Master Volume and Master Presence controls ensure that the sound produced is infinitely variable. The Trucker PA 100 is an excellent basic PA amp supplied with a full Custom Sound warranty and guaranteed back-up service. The PA 100 is also available without the built-in reverb.

Designed especially for use with the Trucker PA amplifiers is the Trucker Cab loudspeaker cabinet. This is a 60 watt enclosure, with a 12 inch speaker and horn. Both of these compo-

nents have been matched to provide a broad range of frequency response at all volumes.

The Trucker Cab has been built to a compact specification, and is therefore especially valuable for use in locations where space is limited. Many pubs, for example, provide only a small stage in a corner for a band's equipment. The Trucker Cab fits easily into cars or small vans, so you don't have to hire a lorry to bring your audience that Custom Sound. Similarly, storage of the equipment is no problem.

An item of equipment which increases the versatility of the Trucker PA system still further is the STI stand. The Trucker Cab can be mounted on the stand to enhance greatly the speakers' sound projection.

The Trucker Monitor can handle 60 watts through its 12 inch speaker, and its compact wedge shape means that it can be easily situated to avoid feedback and to project its signal precisely where needed.

The Trucker Monitor can be powered either from a separate monitor amplifier, or in line with the main speaker system; link-in and

link-out sockets are provided for this purpose. The monitor can also be operated on a separate speaker line from the main power source.

The Trucker range contains much more than the PA system. There are now four Trucker combos available from Custom Sound, including a model designed specifically for bass.

The Trucker Standard exemplifies the basic virtues of the Trucker range. Compact, hard-wearing and powerful, it has a 45 watt amplifier driving its own 12 inch speaker. The enclosure, amplifier and speaker have been carefully matched to realise performance specifications which are astounding from such a small piece of equipment. Nickel-plated corner pieces and a tough carrying handle make the Trucker an ideal combo for the hard gigging musician.

The Trucker Duo is a 2 x 12 inch version of the Standard. The extra loudspeaker provides a broader and deeper tonal response as well as increasing volume substantially.

The Trucker Reverb is similar in specification to the Duo, but has been fitted with some tasty extra features. As its name implies, the Reverb has a built-in reverb unit. This is, of course, fully variable, and can also be operated by a remote footswitch. An Overtone circuit has been added, to introduce rich harmonic distortion and sustain; this feature is a real must for guitarists and makes the Trucker reverb a competitor to be reckoned with by other guitar combos.

The Trucker Bass is the last in the Trucker range of combos. This unit has been specifically designed around the basic Trucker 45 watt format, but incorporates circuitry weighted towards the needs of bass instruments. The 12 inch speakers used in the other Truckers have been replaced by a 15 inch unit in order to handle bass frequencies. Add to this the compact size of the unit and the result is a bass combo which is ideal for use in the studio or the small venue.

To complete the Trucker range, Custom Sound have introduced a series of low-cost effects units. There are four pedals in the Trucker Side-FX range. The Wah-Wah pedal produces the familiar wah-wah sound; this unit has the additional advantage that it can be left in any position to act as a variable treble-boosting pedal.

The Trucker Wah-Swell does all that Wah-Wah can do, plus, when the wah-wah is switched off it acts as both a swell pedal and a foot volume control.

The Wah-Fuzz-Swell is an amazingly versatile piece of equipment, in that it gives Wah-Wah, Swell and Fuzz effects separately, as well as Fuzz/Wah and Fuzz/Swell. The fourth pedal in the Side-FX series is the Phaser. A foot pedal controls the speed of oscillation of a notch sweep filter by means of a lower frequency oscillator. Rocking the foot pedal to either left or right selects either of the two available bands of phase colouration.

The Trucker Side-FX offer high quality performance at low cost. And that can't be bad.

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The final test is the sound

Custom Sound know that the final test of any amplifier is in the sound that comes out of it, regardless of how much electronic wizardry went in. That is why their gear is built through the highly successful combination of a thoroughly knowledgeable staff assisted by the helpful experience of working musicians.

Through the years Custom Sound has developed a modular design that encompasses the best of solid state amplification providing any kind of sound a musician may want. Custom Sound's concept was not to provide an amp with one unique sound but rather a unique amplifier that would provide a versatility of sound combined with the rugged reliability that musicians need.

Basing their research upon the needs of working musicians, Custom Sound realised that to maintain the standard of their high-quality components rugged chassis were necessary to eliminate transport problems and ensure long life to their amplifiers. Combining this with rigorous quality controls and demanding standards, Custom Sound have produced a range of amplifiers that are providing just what musicians want and need.

But the music scene changes as do the needs of musicians so Custom Sound are continually developing the circuitry used in their equipment. But that doesn't mean that Custom Sound believes in change simply for its own sake; if a product is doing its job and musicians like it the way it is, why change it? But still, Custom Sound likes to have something up their sleeve.

Custom Sound's range of equipment means that there is a Custom Sound product for every musical environment; club or cabaret, studio or dance hall. The breadth of the company's range is emphasised by comparing say, the Trucker 100 watt PA amp with the new PA 12-2 mixer. The Trucker is a high quality, low-cost amp with a high technical specification. It is built for the small band who want quality gear without frills that can take the knocks.

The P 12-2, on the other hand, is professional, studio quality equipment with a wealth of standards remaining competitively priced.

A major element in Custom Sound's success and popularity has been its 700 Series equipment. It includes PA systems and monitoring equipment, both loudspeakers and amplifiers, as well as amplification for keyboards, bass and guitars. Particularly popular have been the 700K Keyboard Amplifier and Mixer and the 705 2 x 12" combo.

The 700K provides in excess of 150 watts RMS into 4 ohms, and is in many ways the answer to every keyboard player's dream. The 700K has a five-band graphic equaliser, with which any player can shape the amplifier's response to suit any keyboard instrument and any playing venue. For example, a Fender Rhodes has mellow tonal characteristics which need boosting at the upper end of the sound spectrum in order to compete with the penetrating power of the electric guitarist. On the other hand, synthesizers need a clean, powerful

amplifier that can handle all frequencies. The 700K was designed to meet these needs, and musicians have made it clear that in their opinion, it certainly does. The amp has a built-in reverb unit; any of the amp's four input channels can be routed through the reverb unit, or alternatively they can be fed to an external effects unit, for example an echo device.

The 700K has its own phasing circuit, which is infinitely variable thanks to its depth and speed controls. The signal from any of the amp's four channels can be run through the phasing circuit, and in addition, any degree of blend between phased and unphased signals is possible, and amongst the range of phasing effects is the "rotosound" type of phasing.

The amplifier's four channels each have their own bass and treble active control networks, and the channels mix down to a master stage carrying the graphics and a master volume control. Outputs to PA mixer/studio equipment and to a headset are also provided; so the amplifier can be used for practising without shaking the foundations.

But the most remarkable feature of the 700K is that you get all these features for an amazingly low price.

The Model 705 2 x 12" combo which is the amp Gerry Cott of the Boomtown Rats chose for their current European tour, boasts features which can't be found on other combos designed for guitarists. These are the tone networks which offer a wide range of tonal control. Also featured are Custom Sound's own Overtone

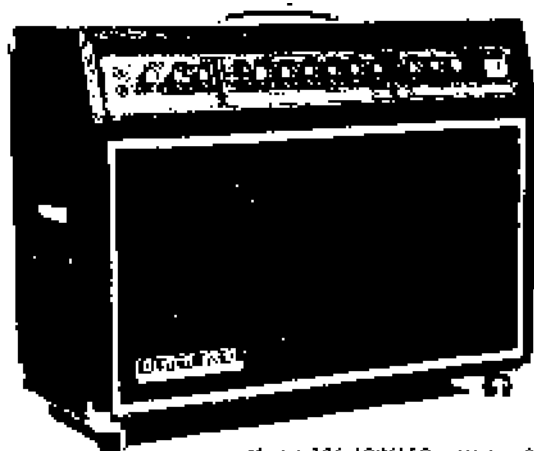
circuits for control of harmonics.

The tone controls on the 705 fall into four carefully thought out bands; labelled Bass, Lo-Mid, Hi-Mid and Treble. With these controls, the player can achieve a degree of control over his sound normally possible only with a full graphic equaliser. These controls give the 705 a marked edge over practically any other guitar amplifier.

Custom Sound's Overtone circuitry is where the valve-versus-transistor argument reaches the end of the line. Because Custom Sound have built a guitar amp which is versatile enough to give guitarists straight-ahead overdriven distortion at one end of the scale, while at the other, the Overtone control can be brought into operation to give a resonant tone rich in harmonics, which is fully variable, not just a preset effect. This degree of control over the sound produced is also possible at any volume, because the 705 has a master volume as well as a gain control.

The 705 has a reverb control which can be mixed in varying proportions with the normal signal; this is possible because the reverb unit by-passes the master volume control. Thus by balancing master volume and gain controls, the player can achieve a futuristic spacey sound or a nostalgic "Shadows" tone.

These two pieces of equipment are at the heart of Custom Sound's impressive range of amplification equipment. Where else can the musician find this unique quality and these features at an unusually reasonable price?



Model 705 100W 50 watt guitar

700K amplifier with 705 and TRAP enclosures



Model 700K keyboard mixer amplifier

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The people behind the product



Barry Phillips

As with any company there is always a person who supplies the drive, experience and direction for success. With Custom Sound, Managing and Technical Director Barry Phillips is the cornerstone of a company whose foundation is firmly set for producing electronic gear ideally suited for today's musician.

Barry's boyhood interest in electronics has served him well through the years. Although sidetracked slightly with a job working on prototypes for British Leyland and a sales career which spanned such projects as photocopiers and washing machines, he managed to keep up-to-date by closely studying all the latest developments in the electronics field.

His experience and knowledge of electronics eventually linked up with his musical background. Playing sousaphone with a jazz band acquainted him with many musicians who quickly became aware of his expertise in the technical. Soon he was being asked to modify and improve amplifiers for fellow musicians. Working and modifying some of the best name amplifiers in the market, Barry soon became familiar with their problems and realised he could make better equipment and set about doing so.

Handbuilt amplifiers being a rarity, Barry's equipment soon proved popular amongst friends and other musicians. Demand began to grow in both the folk and rock fields and the early Custom Sound amps were being sold to John Renbourn, Mike Raven and Trapeze. In 1973 popular demand nudged Barry into a full-time business with his amplifiers making it necessary to move into a small hut once used by the RAF.

Demand continued to blossom and so Barry took on staff bringing the strength of the company to six. Further growth meant larger premises were needed and so Custom Sound moved to its present location in Oswestry. Shortly after this the operation was formed



David Gutteridge

into a limited company and Custom Sound had come to stay.

Barry Phillips' great interest in and knowledge of electronics has obviously been at the root of Custom Sound's development; in addition to this, Barry's strictly practical approach to design has made Custom Sound's products highly desirable to musicians, owing largely to their functional modular design which makes servicing and maintenance very straightforward.

Nowadays, Barry is the head of a highly successful and well-respected company, both among musicians and dealers. He is consulted by such top-ranking artists as Jerry Cott of the Boomtown Rats through to Max Boyce. Barry's own musical tastes are broad, encompassing both folk music and Pink Floyd.

When Barry wanted to recruit someone to handle the business aspects of his blossoming amplification business, he couldn't have found a better candidate than David Gutteridge. David, Commercial Director, is a qualified accountant as well as being a keen musician. He has had experience in business with Rolls Royce and British Aluminium, and he met Barry via a mutual friend in a local band. David joined Barry full-time after working about a year in his spare time and allied with Barry's designing flair his business acumen has given Custom Sound a potent combination of talents.

Sales and Marketing Manager Richard Jefferies joined Custom Sound in 1976.



Richard Jefferies

Richard's musical background includes singing and playing harmonica in a group while at Birmingham University. He later became friendly with members of Hawkwind, the Sutherland Brothers and many of the leading lights of the New Wave. Some concert promotion with the "Greasy Truckers" and managing of various artists kept Richard in the music business as did his work for Frenz, the British offshoot of Rolling Stone.

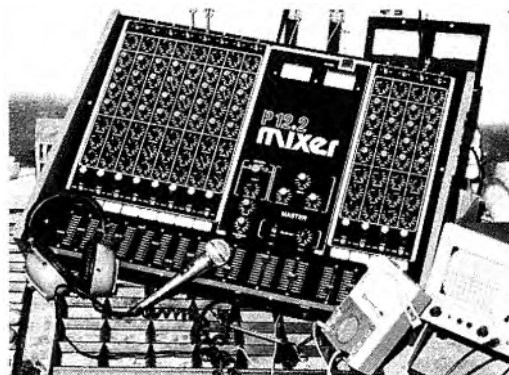
Northern Field Sales Manager Phil Beaumont is a former professional drummer who has worked both in bands and as a session musician. He is a man of varied interests who has been trained as an interior designer and who managed a music shop in North Wales for two years.

As Service and Quality Control Manager, John Lee-Trowell is the man responsible for maintaining and improving, where possible, Custom Sound's renowned high standards of quality and reliability. It is John's responsibility for the repairs on the small number of the company's products that are returned with faults. Like the other members of the Custom Sound staff, he has an intense interest in music and runs a disco in his spare time.

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Mixing the Custom Sound way



The P 12-2 is Custom Sound's brand new 12 channel Stereo mixer desk. It has inherited the Custom Sound tradition of high quality and great features at very competitive prices. This is a studio-quality piece of equipment with a wealth of functions; the company's basic concept when designing the P 12-2 was to offer as standard on a single piece of equipment all the various options that both engineers and musicians look for, while keeping to a compact practical size.

For example, a Pre-Fade-Listen/Main/Mute Switch is fitted on all channels so it is possible to separate individual channels, and listen to just the bass drum of a kit, then to the snare, and so on, and every combination of channels can be headset monitored as required. Also, individual channels can be set up and then omitted until required.

The P 12-2 is visually subgrouped; there is eight and four channel banking as well as a master bank. In other words, the engineer using this equipment can group at a glance one particular section of a band's equipment, such as vocal microphones or back-line amplification.

The input channels have a pan control for positioning of the overall stereo image. Fold-back, Echo, studio quality channel fading and a Hi-Lo Impedance Selector are all standard fittings. Each input channel features four band tone equalisation on Bass, Lo-Mid, Hi-Mid and Treble. A master echo send level control is provided as well as left and right echo return so that the echo signal can be positioned within the overall stereo sound picture.

The master control bank has a headset monitor routing selector. Low noise circuitry, specially developed by Custom Sound, has been fitted throughout the P 12-2. Electronically balanced line inputs (stereo jacks) are standard and cannon and XLR type connectors are available as an option. Two important factors are the provision of master equalisation for the foldback signal, as it is very rare that the on-stage equalisation required is the same as that required for the main PA. Also provided is the talkback circuit enabling the engineer to talk directly to the stage via the foldback system. Without these Custom Sound reckon you've hardly got a professional mixer. And the whole unit is built into a typically solid Custom Sound body casing.

This is a compact mixer crammed with ideas yet sells for an unbelievably low price. If you're looking for a mixer, you can't overlook this one.

The Custom Sound P 12-2 is the ideal mixer for use with Custom Sound's PPA 2-channel power amplifiers. These are further extensions of Custom Sound's highly successful 700 Series range. Two PPAs are available, the PPA/1 and PPA/2. Both are two channel units providing wide band flat response.

The PPA/1 delivers 500 watts through each channel; it can drive effectively across a range down to two ohms. The two channels can be used in a stereo mode, or can be linked for mono operation. Visual monitoring of the signal is no problem with Custom Sound's easy-to-read VU meters, while excellent signal-to-noise ratio guarantees a professional performance that any band can rely on. And 500 watts per channel means that the PPA/1 packs a real wallop.

The PPA/2 is a fundamentally similar unit to the PPA/1, but with a power output of 250 watts per channel. Both amps are designed to be mounted in standard 19 inch rack format. Like all Custom Sound equipment, these amplifiers have been tested for many hours at maximum output with a variety of signals, and have been subjected to the company's own test signals. So their performance is guaranteed Custom Sound standard.

The PPA amplifiers have been built to work with Custom Sound's PA loudspeakers to provide bands with a truly professional quality PA system. Whether you play Country & Western or Rhythm & Blues, there's a Custom Sound PA system which can handle it all.

Custom Sound also produce the 700C and 708 amplifiers. The 700C amplifier offers a low noise power amplifier giving a conservatively rated 150 watts RMS into 4 ohms. The 708 is a graphic monitor amplifier which is basically a 700C with built-in 5-band equaliser. Any standard slave application it will handle, with the additional advantage of independent final stage equalisation where required.

If you're a singer, take a look at the 7212H 2 x 12" cabinet. Fitted with two 12" high performance driver units, the 7212H really scores as a vocal unit with its single High Frequency horn; this has wide dispersion characteristics and a top range performance

which is ideal for giving vocals real penetration. The 7212H can handle 130 watts, with an impedance of eight ohms.

The Sigma 150 watt PA enclosure, on the other hand, has been designed to handle the full sound spectrum. Bass and mid-range response is amply taken care of by twin-coned 12" driver units. Bass response is given extra thrust by an exclusive Custom Sound development; bass frequencies are projected via a bass loaded port, also incorporating what the company have termed a "Pressure Throat". Upper frequencies are handled by a wide-dispersion horn and two High Frequency tweeters, incorporating crossover. This impressive piece of equipment is finished in hard wearing vynide, with metal protective corner pieces to avoid damage in transit.

Custom Sound cater for those performers requiring very high quality in a compact package. The 7212 ST Super Twin enclosure contains two 12" twin cone speakers and can handle 150 watts at eight ohms. The appeal of this equipment is that it gives high performance sound projection at all frequencies, but is of small size compared with many competing units.

Also, designed with the disco in mind, Moon Bin is a compact cabinet with superb bass response; twin horns ensure clean, penetrating upper, middle and top frequencies. Though nominally a 100 watt unit, the Moon Bin's design has been researched so efficiently that it produces a volume and quality of sound normally found only in higher rated equipment.

Monitoring is another field in which Custom Sound have produced more than a viable alternative which has made musicians sit up and take notice. This is the Model 7 PSM stage monitor. This unit comprises a pair of wedge-shaped monitors which each house a 12" full-range speaker and a high frequency horn. The units can be linked directly to a PA amplifier, or can be run from power slaves such as the 708 Graphic Monitor Amp or 700C Low Noise 150w Power Amp. There are controls for overall sound level on each monitor as well as for the horns, and the two wedges fit together to form a conveniently portable cube. So when you want to hear what you really sound like, come to Custom Sound.

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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.

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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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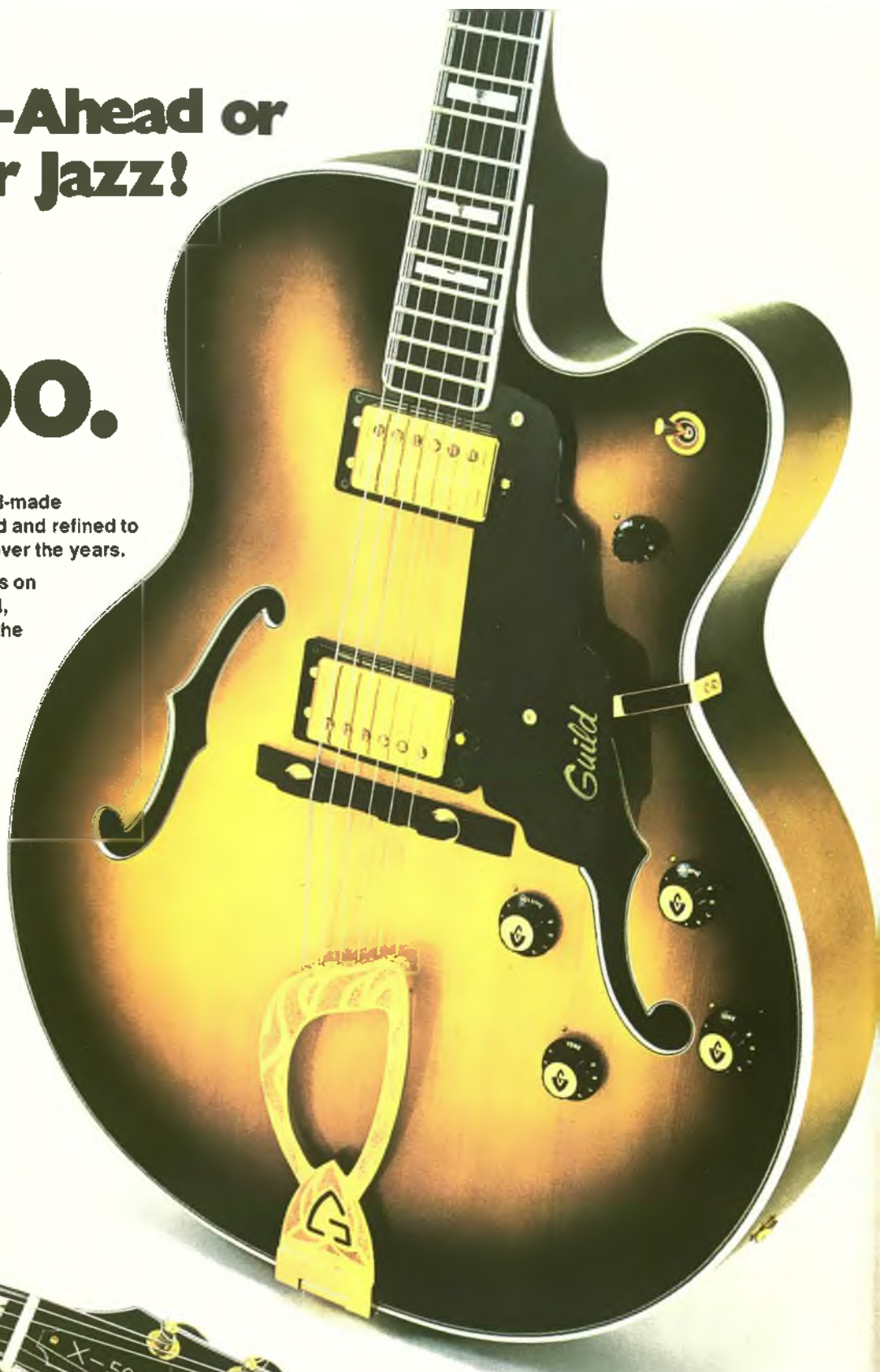
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A Drummer's Eye View of the Trade Fair

boom stands using the new Tri-lok method of clamping.

Premier's spacious display exhibited all their different kits: the Elite which is the name given to their regular single- or double-headed drums; Resonator, with the separate resonator shell inside the toms and bass drums; Soundwave, fitted with triple flange hoops and separate lugs; and finally, the lower priced Olympic kits. There is a new glockenspiel available and also a small device for attaching a cowbell onto the hoop of marching timp-toms. This also has practical applications on a regular drum set if you like your cowbell just to the side of your floor tom or just in front of the hanging tom. Premier have brought out their own version of the Remo CS head and have called it "Black Spot". These differ in appearance from CS by having a small hole in the centre of the spot itself. These heads are fitted standard to Resonator and Soundwave kits. Both **Beverley** and **Hamma** drums had new hardware and kits on show, a lot of which was not a million miles removed from some of the Premier equipment.

Sonor drums have some new finishes available — a black and white swirl/striped one was particularly effective — and a few minor modifications and improvements to their fine drums and accessories. At the bottom of the tripod bases on the cymbal stands, the threaded insert in the "U" clamp that fixes the legs of the base at the desired spread has been extended. This decreases the likelihood of the thread being stripped on that clamp. The threaded inserts on all the nut boxes (or lugs) now have a small spring clip at the top which helps grip the tension rod a little tighter and prevents slipping, and the centre tube of the tom holder on the bass drum now has a large collar which acts as a height maker. **Hohner** plan to have a more plentiful stock of **K. Zildjians** in the near future, so for those of you who've been after them, you should be able to choose from more than the usual three or four in your local music shop fairly soon.

Kemble had a small but effective display for **Yamaha** drums. Drums from the 5000, 7000 and 9000 series were combined to comprise one kit and, at the same time, show the versatility and interchangeability of their excellent hardware. The recently-introduced 5000 series gives very good value for money and the 9000 series includes some of the best made drums available today.

The **Summerfield Tama** display had the Octabans set alongside one of their kits. These are eight long-shelled drums mounted close together and they are all 6" in diameter. A diatonic scale can be obtained by employing a similar tension to all the heads and the slight difference in shell length — a gradual progression — gives you the different notes. **Tama** also have a range of excellent small boom and gooseneck microphone holders which clamp onto drum hardware. This prevents the edge of your stage drum riser looking like a microphone stand showroom.

The **Rose-Morris** stand had the **Synare**, the electronic drum. I hope soon to review **Synare** alongside the **Syndrum** and **Dave Simmons' SDS III**. **Ludwig** had a couple of rooms to themselves and were showing off their new 6-ply shells. These are very well finished inside and out and give every indication of making for fine sounding drums. New from **Ludwig**: double-headed 6", 8" and 10" tom-toms, longer shelled bass drums, three completely new ranges of heads and the "Combo" economy line. Unfortunately, neither the heads nor the "Combo" line will be available here until later this year. We eagerly await!

The **LP** stand proved very informative. There were percussion instruments I hadn't seen before and whose names I could hardly pronounce, but two in particular caught my eye. The first, the **Bata** drums from West Africa, come in sets of three and the biggest of these, the **Iya**, has a really beautiful sound — rich, deep and resonant — and is played horizontally on the drummer's lap. The other instrument I'm more familiar with, but not the version I saw at the fair. One end of the **Vibraslap** has a threaded rod and as well as the usual metal end, there is also an interchangeable wooded cylindrical one with nylon insert. A spring clip with one tambourine-type jingle can easily be clipped onto the cylinder. Seeing the entire **LP** range in one go is quite an education as well as being an over-dubber's Nirvana!

Musicaid, as well as being the **ASBA** importers (they've changed that terrible tom holder, apparently), also have brought over the low-priced **Camber** cymbals, and an interesting little device which I picked up a few years ago in the States: the **T Top** cymbal top. If you don't play your cymbals: a) clamped down tight with felt and metal washers; b) at severe/perpendicular angles, this is the thing for you. It's a small metal top that screws on cymbal stands (and stays there) and unlike its **Zildjian** counterpart, has no moving parts. The cymbal can't fall off, but you just lift and tilt it to remove it from the stand. **Musicaid** also have the **SDS III** drum synth which has several excellent features its US counterpart doesn't. As I said, I'll be doing a review of the three major drum synths soon.

Perc Serv had the full range of the **Remo** heads on display including the excellent **Pinstripe**. This is a double thickness, heavy-duty head (no oil, petrol or anything else between the layers) and from the outer edge to approximately 1/5th of the way in, the two layers are glued. The large clear area in the middle is unglued. Glueing the outer section has a damping effect, similar to putting masking tape around the edge of the head. These are ideal for single-headed drums as they thicken the sound considerably. I'm using them on the toms of one of my double-headed kits with regular **Remo Ambassadors** on the bottom, tensioned just a little higher. I think the sound is excellent, but I'm biased. An impressive display of **Roto-toms** had been erected on a frame surrounding a kit. **Perc Serv** can make frames to hold all sorts of percussion instruments, cymbals — in fact, just about anything you need that you can't get at the local music shop — as long as you're prepared to pay.

Over at **Langham Place**, **CBS** were conducting their own exhibition. **Rogers** drums were on display with the much copied **Memriloc** tom featured — there is now a set of **Memriloc** tom legs to match in with the rest of the hardware. Also on show, a new **Rogers** natural wood finish, one of the best I've seen — not a plastic covering like their "Butcher Block" finish. **Arbiter** were showing the new wood shell **Autotune** kits, which have a warmer sound than the earlier fibreglass shells. **CBS** were also displaying some of the excellent new **Dark** series cymbals from **Paiste**.

In retrospect, I have to disagree with some acquaintances who found the show boring. Admittedly, the majority of equipment was "variations on a theme", but I personally feel that that is how the drum world progresses — a stand here, a shell type there . . . Also, the electronic drums and things like the **Roto toms**/drums, there is innovation. Drummers can be set in their ways (I realise that I'm as much a culprit as anyone); witness the initial public reaction to **Autotune** — negative mainly because of the appearance, viz, it didn't look like anything else. Not too many drummers conceded that the tuning principle was a breakthrough. Enough of this . . . I think the fair had something for everyone, and anyway, I enjoyed it.

by Dave Mattacks

For the first time, this year's trade fair gave me the opportunity to mix "business" with personal curiosity. I've been to one or two trade fairs in the past and invariably find something that interests me as a musician. Reports on trade fairs often consist of a name check for each manufacturer and no more than a couple of lines on one of their products. This brief article is for the drummers who couldn't get to the fair and want a little more than a list of drum kits. It isn't meant to be a detailed appraisal of any of the products/equipment — it's merely to tell you about some of the things I saw and liked. My apologies to the importers of **Slingerland**, **Hoshino** and **Gretsch** drums whose displays I unfortunately didn't get around to seeing, and to any other manufacturers/importers unintentionally omitted.

The **Pearl** stand had a set of **roto-tom** drums as the obvious centre of attraction. These have the basic **roto-tom** frame bolted inside a phenolic shell, combining the advantages of quick tuning and a single-headed drum. Like **Autotune** drums, the shell size is larger than the head diameter. There was also a **snare drum version** — the bottom half (or snare side) of a regular snare drum attach to a **roto-tom** frame for the batter head. Looking at it, I realised just how far the snare drum has developed over the last one hundred years or so. This was a very unconventional drum. These drums were brought over here at the last minute which precluded **Norlin** getting all the information they (and I) would have liked, but there are plans to bring in sizes other than those I saw, and prices and availability will be known soon. **Pearl** also have a new hi-hat out which looks excellent; heavy-duty base with spurs on each leg, twin springs, a very comfortable footplate with a very smooth action and a retail price of approximately £43. I hope to look at this in detail sometime soon. There are some new finishes available (a smart bottle green looked good) and there are new cymbals and cymbal-

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If anyone has lost a well built bass guitarist with big feet, black hair and blue eyes could you give Kev a ring at the shop because we found this bloke downstairs who answers to the above description, and from what we can make out, he came here with his band but they must have left without him. Surely, someone must notice that their bass player isn't where he should be?

For those who have noticed the football season is now with us and we would like to mention that we intend to ignore the whole thing completely. This is because Den's team Q.P.R. are not doing that well, and he only gets upset at about 5 o'clock on Saturday when the results come in, and he's a --- when they lose.

The news here is that Ed has just come back from a 3 week tour of Watford where his band played support to a local street busker, and we understand that the gig on the A41 roundabout went a bomb, while the night they played at the High Street traffic lights they completely stole the show, the traffic lights, a newspaper stand and the rep from Carlsbro who happened to be passing. (Perhaps he's the bloke we found in the shop).

Meanwhile Andy Coupar fresh from teaching John Otway to play guitar has been approached by the Malaysian Light Orchestra in order to pass on any tips to the string section.

Kev has finally told our drum expert Don and Ellis that Scotland might not win the World Cup and has spent much of the last few weeks looking for a lawyer to defend him in the case of Rex V. Beautista (a small matter of this dog that tried to bite him).

We thought we had better mention some of the gear thats selling well at present, and tell you about our idea for next months issue. Well, we all know how valuable the various instrument reviews are, and so as from the next issue, we intend to take one item per month, and let a local musician put it through its paces in our shop and we'll tell you his views on it.

As to gear thats doing well in our shop at the moment, Flame PA bins have proved good value for many local bands, and we are particularly pleased with the Traynor 300 watt Slave Amp. Like Oxford Maine and Guild do well here as does Carlsbro (their full range Flare is a knockout).

The Free 'n' Easy on wheels van is on the road still with new driver Reg FittipauldiHuntLauda at the wheel. He will come to your home by appointment and bring the gear of your choice for you to "try before you buy". For details of this telephone Margaret on (0296) 86913.

Its sad to say farewell to Andy Nye our former keyboards man who has left to join Les Paynes' band who we understand have a single out soon. This has got to be brilliant cos Les is great and we all know that Andy is a star.

Just thought we'd like to mention how good things turn up when you least expect them. During the end of July this chap named Tony Crooks telephoned us and said his company, J & C Sound Systems were making amazing Speaker Cabinets and that he would 'kindly' give us the opportunity to hear them. Well, we're not proud! So the aforesaid T.C. together with his side-kick Steve Jones, a bass player of repute, turned up here with their van

loaded with speaker cabinets of all shapes and sizes. The said equipment was put through its paces and proved so good that we were pleased to become areas stockists.

In the name dropping department Stu and Den went back to The Rock Garden to see the Dogers who are really a great band. The lead singer and bass player John Wilson was one of our first customers and we've been friends since, so it is good to see their single "Don't let me be wrong" doing well, while we hear that their album "Love on the rebound" is due out in October. It's great when you see customers who once came in for the odd replacement string move up the ladder of success as these guys are doing. (Hows about a Kramer bass, John?).

Lastly we promised Don that we would mention the Drum Department as the poor bloke is getting an inferiority complex what with Scotland in the World Cup etc, and so we'd like to mention that as well as stocking Premier drums we are pleased that we have been appointed Ludwig 'A' for Hertfordshire and Oxfordshire, which means we usually have at least 2 of these great kits in stock. We were particularly impressed with a chrome kit which we had in recently. Don is now arranging stocks of many of the 'bits and pieces' that all drummers seem to need, and he says that given time most drummers requirements will be stocked off the shelf.

Thats about it for this month, as the lovely Andrea of International Musician fame (where do you find them, Rick?) has just phoned me for the umpteenth time asking for our "copy".

Synthesizer Show Spectacular

The name Chase Musicians has become synonymous with the world of synthesizers. As advances in electronic keyboards have swamped the music scene over the last few years, so the London Synthesiser Centre has been in the vanguard of the movement to bring these exciting developments within the reach of all musicians.

But Chase Musicians is much more than simply a retail outlet for buying the best value-for-money instruments around. At Chase they understand synthesizers and know what the working musician expects and needs from the instruments and therefore can offer the best service possible. As part of this comprehensive service, The London Synthesiser Centre have organised a series of monthly demonstration evenings.

Synthesizers are expensive and complex instruments and can be a very daunting prospect to the musician approaching them for the first time. All the staff at The London Synthesiser Centre are experts on the instruments, but the demonstration evenings take things one step further. The first in a series of monthly demonstrations kicked off in September, and as with everything connected with Chase, it turned out to be a huge success.

The idea behind the events is that every month throughout the year, top musicians demonstrate their talent on the newest products available. This means products by all top manufacturers such as ARP, Moog, Roland and Yamaha being put through their paces by prime exponents Alan Townsend, Val Podlasinski, Adrian Lee and Pat Archer.

All the shows are being held in the Society Suite of the New Ambassador Hotel in Upper Woburn Place, London WC1, which is just two minutes walk from Euston station. Although the formal show only starts at 7.30, the doors are open from 1 pm to allow anyone to look around the general display of products.

September's series of demonstrations spanned four days, with a different product range featured on each occasion. The first session featured Alan Townsend on the ARP instruments and he really brought the best out of such favourites as the Axse, the Odyssey and the popular 2600, which is used by artists of the stature of Joe Zawinul and Stevie Wonder.

Whenever there is talk of synthesizers, mention of the Moog is inevitable, after all it was the first such instrument. Val Podlasinski showed that the company have not stood still since their first innovations with an exciting display of the latest Moog hardware. This proved of particular interest in view of the special reduced prices of Moog products at the The London Synthesiser Centre.

Adrian Lee is one of the most popular musicians/demonstrators around, and his exhibitions on Roland keyboards and guitar synthesizer really have to be seen to be believed. His demonstration at the New Ambassador proved no exception, with his talent matched only by the superbly professional Roland equipment.

Yamaha are one of the world's top musical instrument companies who are really pushing ahead in the field of synthesizer technology. After Pat Archer's demonstration of their products, few of the audience were left in any doubt of their position among the leaders. After Pat's performance the instruments were

surrounded by fascinated onlookers eager to learn some of the tricks of the equipment.

Amrik Singh-Luther, Director of Chase Musicians, and the man behind the demonstration evenings, feels that the shows are important because they give everyday musicians the opportunity to see and hear the synthesizers in action and used to their full potential. Such experience is vital with equipment as complex as a synthesizer, so the demonstrations help to educate and inform the musicians.

Further demonstrations are planned for the next six months, with Moog featured on October 11 and Yamaha the following day. The demonstrations are open to anyone and admission is free.



Alan Townsend



Adrian Lee

★ ALBUMS ★

VARIOUS ARTISTS: Sgt. Pepper's Lonely Hearts Club Band (A&M AMLZ 66000)

OK, so we all know this album is the soundtrack for the upcoming Bee Gees/Frampton cinematic extravaganza, but any album, soundtrack or whatever should be able to stand up in its own right. Having said that, let me further add that I like both The Bee Gees and Frampton BUT I also liked the Beatles. It'll be interesting to see how these performances fit into the film but it's pretty difficult to see the point of George Burns singing (!) "Fixing A Hole" or Frankie Howerd doing "Mean Mr. Mustard"!

With few exceptions, the arrangements are pretty faithful to The Beatles' originals, although the playing is, on the whole, a lot funkier – not surprising as backing musicians include Max Middleton, Robert Ahwai, Wilbur Bascomb, Bernard Purdie and the Tower of Power horn section.

There are some nice moments on the album, however. Sandy Farina sings "Here Comes The Sun", "Strawberry Fields Forever" and duets with Frankie Howerd on "When I'm Sixty-Four" and actually manages to inject a fair amount of soul into these numbers. Particularly interesting is the Bee Gees' vocoded vocals throughout "She's Leaving Home" and their perfect acapella intro to "Nowhere Man". Frampton, too, doesn't fare too badly and is particularly good on "The Long And Winding Road" which also features a nice jazzy guitar solo from The Face Of '68.

With the exception of two "one-off" performances from Earth, Wind And Fire ("Got To Get You Into My Life") and Aerosmith ("Come Together"), the rest of the double set is performed by various permutations of The Bee Gees, Frampton, Paul Nicholas, Sandy Farina, Alice Cooper, Billy Preston, Dianne Steinberg, Stargard, Donald Pleasance, George Burns and Frankie Howerd.

My feelings about the album are mixed – some of the performances are good, some great and others ridiculously bad. The musicianship throughout is excellent but I can't help feeling suspicious about the general concept of the album.

Eamonn Percival

Arranged and produced by George Martin, engineered by Geoff Emerick, recorded at Cherokee Studios, Los Angeles.



Bee Gees

LEO KOTTKE: Burnt Lips (Chrysalis CHR 1191)

Leo Kottke is a fine acoustic country/blues guitar player with an authentic, gravelly singing style. He works to strictly defined limits on this album, within which he is able to achieve a considerable range of expression.

His basic stance is established with the opening track, "Endless Sleep", a weary and resigned blues. Kottke alternates a droning effect on his guitar with muted twelve-bar strumming, and right away there's no doubt that Kottke means what he sings.

Other songs on the first side of the record include "Sonora's Death Row", one of two songs here that Kottke didn't write, which is about gambling, women and murder in a Mexican town; it's not easy to sing a song like this without sounding corny, but Kottke can do it.

"Everybody Lies" is a slightly more up-tempo number than the rest of the side, and the guitarist establishes a fluent ripple-picking effect. "I Called Back" has a chugging rhythm underpinning slide work on the upper strings.

"Frank Forgets" is the most immediately striking song on the album, largely because of its bizarre lyrics like "He walked on one leg naturally/And watched the bipeds pass." The simple chord progression and Kottke's deep, deadpan singing, though, make the line "And love's run out of gas" a serious proposition.

The second side is dominated by guitar instrumentals. Most impressive of these is "The Credits. Out-takes from Terry's Movie", where Kottke alternates suspended chords over repeating bass notes with emotive high-register picking. The gloriously rich open chording contrasts with quieter passages, where the player throws in strange off-key harmonics.

Side Two's opener, "A Low Thud", uses a basic blues progression, but again Kottke adopts this for his own purposes by playing in a ragged, slightly out of tune style. "Orange Room" follows, a similar-sounding piece on which Kottke uses a rich, resonant guitar tone.

The overall first-take feel of the album is particularly noticeable in "Voluntary Target" a slow, tortured song with a beautiful chord sequence. It's something like the original Crazy Horse version of "I Don't Wanna Talk About It", Kottke's vocal sharing something of the aching quality of Danny Whitten's.

Altogether, "Burnt Lips" is an impressive album. Leo Kottke has deliberately chosen to work within a narrow format, and is an artist capable of using the traditional blues and country idioms to create his own style.

Adam Sweeting

Engineered by Jeff Roberts, Tom Mudge and Scott Rivard. Recorded with Sound 80's remote.

THE WHO: Who Are You (Polydor WHOD 5004)

A new Who album is always a big event and the release of this one coincides with their reported decision not to tour again. It's a different album from The Who in the same way as "Quadrophenia" was different from "Tommy". Their last album, "Who By Numbers", didn't really stand the test of time. After first hearing, it began to pale somewhat, rather than grow on you. The opposite is true of "Who Are You" – it just gets better and better. I think it's true to say that "Quadrophenia" was an album you either loved or loathed – with such emphasis placed on the use of synthesizers on that album, it was a marked change in what people have come to expect from The Who. The same, maybe even more so, is true of this album. The lyrics of some of the songs are riddled with references to Townshend's reluctance to "go through the motions" and it is this line of thought, more than any other, that has brought about The New Who.

Two of the best tracks, "New Song" and "Music Must Change", are perfect examples. The first would make an ideal single with its ultra-powerful wall of sound and imaginative chord sequences. Halfway through the song, a familiar sounding synth line appears, mixed in with that swelling guitar sound Townshend used to great effect on "Slip Kid". "Music Must Change" is a strangely jazzy-sounding number with a great performance from Daltrey, superlative lyrics and startling brass interjections. After an amazing almost-Benson-esque solo from Townshend, there's a beautiful, majestic build-up on the last chorus.

Entwistle's "Trick Of The Light" is one of the best songs he has ever written. This track, more than any other, sounds like the powerchord Who at their best and would be the more immediately obvious choice for a single.

Townshend's opera influences are very evident on "Guitar And Pen". On first hearing, the track sounds very "bitty" with lots of time changes and different sections but with repeated listening, it all makes sense. The verse is very dramatic with Daltrey spitting out very vitriolic lyrics over a chord sequence that just builds up and up . . . and up. The operatic-sounding choral answering phrases on the chorus are really effective and the whole thing has a certain majestic quality to it.

The only track that doesn't do anything for me at all is Entwistle's "905" – a song about test tube babies. It's reminiscent of many Entwistle numbers and doesn't have a lot going for it except interesting synth lines and imaginative use of feedback sustain.

The title track we all know by now – suffice to say that it's a very representative song and just about sums up the album.

Eamonn Percival

*Produced by Glyn Johns and Jon Astl
Engineering assistance, Judy Szekely.*

IAN MATTHEWS: Stealin' Home (Rockburgh RCO 106)

Ian Matthews fans will not be disappointed with his latest venture. Displaying the usual style and sophistication that has marked earlier albums, "Stealin' Home" comes across as clean and pleasing as the album cover design.

Some may find the California, "Eagles" sound, which seeps into some of the tracks, a bit objectionable but Matthews, through the benefit of a superb backing band, manages to remain light without falling into the syrup.

From the opening track on Side One, Bryn Haworth shows that a tasty guitar arrangement can be both effectively back-up while remaining on the front of the sound. Throughout the album he brings in some beautiful licks without being showy and distracting.

Doing remakes of successful originals is a bit like trying to make a movie out of a "classic" novel; it very rarely works. Matthews, with the remake of Robert Palmer's "Gimme an Inch Girl", while having a good arrangement, doesn't convey the feel of the original.

On "Man in the Station" some good, inventive harmonica work is superbly set off by a string arrangement that keeps the number from becoming another "train" song. In fact, Robert Kirby has done well with all string arrangements used. Rather than using them for a sympathetic type of approach, he builds a base with them giving a good theme and feel to various tracks.

Side One seems to slip right out nicely with "Let There Be Blues", setting us up for a B side that brings in beautiful harmonies that so many of us like to hear but are sadly lacking these days. The short intro "Carefully Taught" is a good acapella number of a great Rodgers & Hammerstein song.

The B side is as pleasant as the first. Leaving room on various cuts the backing group shows through with keyboards by Pete Wingfield that continue the subtle, almost subduing effect of the album.

Throughout the album Matthews' arrangements are superbly fashioned to convey a sound both as clean and direct as his vocals. It is a good album, embellished by superb musicians who have honed the art of back-up to a sharply defined edge.

Bill Stephen

Produced by Sandy Robertson and Ian Matthews. Engineer Barry Hammond. Recorded at Chipping Norton Studios.



Ian Matthews

THE REZILLOS: Can't Stand The Rezillos (Sire K56530)

In the two years since Punk turned the music world upside down, its effects have been wide and varied. Despite all the claims that "Punk is dead", there are probably more bands around today who could be put under the Punk/New Wave banner than at any time.

This has obviously led to much bandwagon jumping, and quantity has rarely given way to quality. The Rezillos, however, come as a welcome relief and this, their debut album, is a rare gem. The band hail from Scotland and the line up is guitar, bass and drums with two lead vocalists.

"Can't Stand The Rezillos" is a great pop album in every sense of the word, harking back to the days of the early Sixties, and it even boasts 13 tracks. The band have taken the energy of the New Wave and fused it to a host of good songs, the result being an album which fairly jumps off the turntable.

From the opening track "Flying Saucer Attack" the pace, drive and energy of the band never lets up. Fay Fife's vocals are outstanding, adding a raw Scottish edge to the numbers which makes a welcome change from the usual mid-Atlantic tones that most British vocalists drop into. "Top Of The Pops" is probably the best cut on the album, and deservedly gained chart success.

Even when they slip in a couple of oldies as in The Dave Clark Five's "Glad All Over" and Gerry and the Pacemakers' "I Like It", the Rezillos approach and energy transform them into good Seventies rockers. The playing is good throughout, particularly the guitar work of Jo Callis whose frantic cutting style impressed me the first time I saw him.

The songs are all well thought out, and although they are mainly straight ahead rockers, there is much subtlety and change contained in many of them. The only criticism I have, and this is one of many New Wave albums, is that there is no change of pace on the album, and the constant up-tempo assault could possibly be a little wearing after a number of plays. However, this cannot detract from a thoroughly enjoyable debut from a band who can really play and generate real excitement both on and off the record.

David Lawrenson

Produced by Bob Clearmountain, Tony Bongiovi and The Rezillos. Engineered by Bob Clearmountain. Recorded and mixed at the Power Station, NYC.

TALKING HEADS: More Songs About Buildings and Food (Sire K56531)

Talking Heads are one of the more interesting bands to have come out of America over the last year. They could loosely be called New Wave, although in the USA this seems to mean something different from its English counterpart.

The Heads can be compared to Tom Verlaine's Television, they are an innovative band who use the basic format of drums, bass, guitar and keyboards and attempt to come up with music which can lay some claims to being original.

The line up is David Byrne, vocals, guitar and synthesized percussion, Chris Frenetz, drums and percussion, Jerry Harrison, piano, organs, synthesizer and background vocals and Tina Weymouth, bass guitar. Brian Eno is also featured on synthesizers and piano, and his influence is strong throughout the album which he produced in conjunction with the group.

The playing is tight but sparse, the result being a quirky type of number in which a particular instrumentalist can experiment. My favourite cut is "The Good Thing" which by contrast to the rest of the album is a light poppy number, which contains a catchy chorus which could easily become infectious after several plays.

Much use is made of effects both on guitars, keyboards and drums as well as on the production end such as speeded up or backward tapes. "Take Me To The River" sounds like the Beatles' "Get Back" done at half speed, while many of the tracks have distinct overtones of Captain Beefheart and The Magic Band and singer David Byrne sounding not unlike Bryan Ferry in places.

Eno manages to get some interesting drum sounds, while Tina Weymouth's moody, solid bass is a feature throughout. This album is only likely to appeal to a certain type of listener, criticism of the band's live work has been that they seem too cold and detached, and they are definitely an acquired taste. Still, what they do is interesting, and if you want to check out some of rock's more avant garde sounds, then "More Songs About Buildings and Food" might well be worth investigating.

David Lawrenson

Produced by Brian Eno and Talking Heads, engineer Rhett Davies, assistant engineer, Beji Ambrister. Recorded and mixed at Compass Point Studio, New Providence, The Bahamas.



Talking Heads



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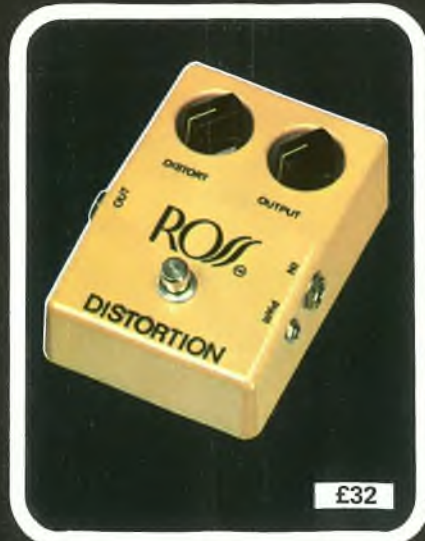
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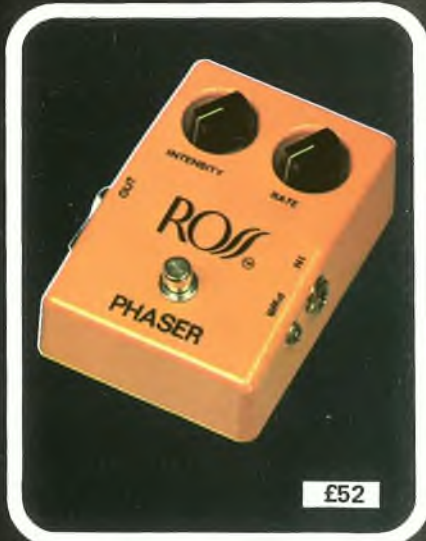
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MIX DOWN



Recording Studio Design
Studiomaster

AN ENGINEER EXPLAINS WHY THE CONTROL DESK MATTERS

Everybody walks into the studio wanting to make a hit. The musicians, the producer, hanger-ons and the engineer. Jokes are cracked, the musicians get set up and the engineer and assistant start getting the sounds up. The desk in front of the engineer immediately colours his mood.

"I must avoid channel 8, the treble lift's not working between ten and twelve thousand, I don't think the pan of channel 12 is working properly and I hope the producer's not going to ask for anything clever that requires patching." These are the all too common thoughts of engineers with ordinary desks at the start of the session. This feeling affects his enthusiasm, his balance judgement and the "vibe" throughout the studio. If a hit is produced from that session it's despite the console, not because of it.

RSD design desks to make engineers feel good. They also design desks which don't get in the way of the music.

The perfect recording studio would be a flat microphone fed directly to a cutting head recording directly onto disc. Unfortunately this isn't possible and every item placed in the chain is an obstacle rather than a help to artistic truth. Despite the fact that the rock music business has turned out "manufactured hits", the vast majority of recording artists rely on their art to provide the hit and therefore they need the recording of their art to be as accurate as possible. This is one base point that RSD work from when designing mixers.

When an engineer sits at a control board he needs constant visual reminders of the control available. That's why RSD so carefully colour-code the groups of sound controls — even the colours are carefully selected to suit the psychology of the recording approach. Good recording seems easy, but like most other things in life it's only a lot of experience that produces that illusion.

More and more bands are today keen to record as naturally as possible. This means reducing over-dubbing to a minimum and almost taking a "live" sound. At this point the ergonomics of the studio console become vital. Controlling sixteen incoming channels with four effects patches (limiting, compressing for example) is a difficult task for an engineer and his ability to work well within that type of session is directly limited by the problems posed by the control desk in

front of him. Control desk is an apt name; the precise degree of control over the recording by the engineer and the producer is governed directly by the desk. Take a close look at just why RSD give total and relaxed control.

On the product desks the modules run from input to fade as follows: input attenuator with overload LED (this removes a lot of VUitis), 3 band EQ with continuously variable frequencies. Bass variable 30Hz to 300Hz, with ± 16 dB boost and cut. Midrange variable 400Hz to 8KHz, with ± 16 dB boost and cut. Treble fixed at 10KHz with ± 16 dB boost and cut (reducing need for patching to parametrics etc.), two postfade echo sends, a prefade foldback send, pan control routing switches, pre-fade listen and fader. Each control has finger space but it's close enough to tap his head and rub his stomach at the same time. You'll

see from the above run-down that the most logical order of functions has been followed and the engineer should never have to reach or lean for anything. The padded armrest below the faders has been placed at a carefully measured interval perfect for comfort through the hours.

Only sessions with the "vibe" produce the hits. The "vibe" is one of the most delicate things in music and the destruction of that by a desk which causes constant irritation to a studio engineer will kill that hit before the session even starts. Everything has to be right, but if the principal means of controlling technical functions of the studio is unreliable or poorly designed the effect becomes a chain reaction. RSD know this and work hardest at making desks engineers can live with, hour after, hour after hour. Imagine the following scenario:

It is quarter past five in the morning



JUST WHY THE RIGHT RECORDING A FE

and the session started at two the afternoon before. The engineer throws yet another empty plastic cup into the wastebasket and tries to re-focus his aching eyes on the bank of VU meters in front of him. It is at this familiar point that RSD started to consider the problems of designing studio consoles better than anything else available.

As the engineer lifts the bass drum fader just enough to shut the producer up but not enough to make any material difference to the balance, there's a crackle. The engineer groans inwardly and tries the fader again; it crackles.

Maybe the engineer will ignore it and complete the session; maybe he'll start re-patching to bring the mike up on another channel, maybe everybody will cry-off and let the maintenance crew sort it out. But two things have happened, the engineer hates the desk and the client is

unhappy, RSD to the rescue.

Building reliability into RSD desks is more of a human problem than a technical one. The rapid advance of integrated electronics has made reliable components available to the entire industry and with careful selection these components can be welded together to form a unit as reliable as the weakest component in the chain. This is not good enough for RSD. They know that the take that did not happen because of a duff channel occurring at five in the morning was probably the "hit" that will now never be created. So how do RSD build desks better than the lowest common denominator of the components available?

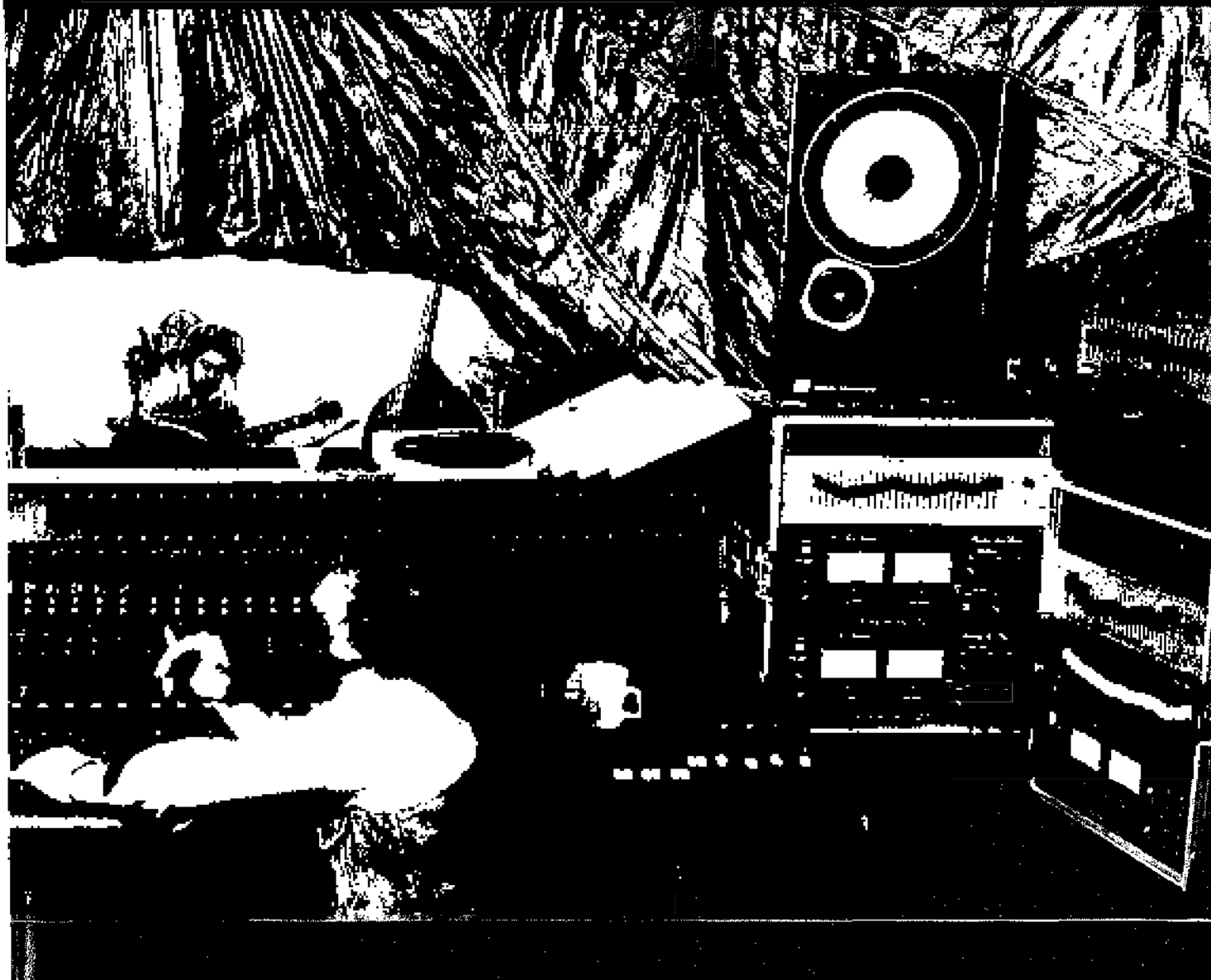
The designers at Recording Studio Design strive to by-pass the problems of component failure during design. RSD stands for RECORDING STUDIO DESIGN and this is the perfect summation

of the company's ethic.

At its most basic design by-pass offers the tired engineer the easiest re-patching system available. At its most sophisticated the design produces the crackle, distortion, hum or whatever lies in a circuit which is almost self-correcting. The design automatically reduces the intrusion of the fault to a minimum that will often allow the completion of a job before maintenance becomes necessary.

RSD have been designing out problems for X years. They want their desks to be silent, co-operative and non-contributory to the music. Listen to the recordings that don't make it, you'll be surprised how often you can "hear the desk".

RSD makes desks that are never heard, require the minimum maintenance and are a joy to work with. That's why they make hits.



MIX DOWN

SEMI PROFESSIONAL STUDIOS

It must be every musician's dream to own and operate his own small studio. Only the permanent availability of efficient multi-track recording ensures that he can explore the medium properly and record when he wants rather than when studio time is made available. But recording can be an expensive business.

In all semi-professional studios (here the term is used to describe those designed for private use more than for third party hired use) equipment cost is a critical factor and RSD have taken this as fundamental law when designing their Studiomaster range of mixing consoles.

The most useful and flexible format for home recording is the 4-channel tape machine. Technological breakthroughs have brought the price of this type of machine right down and many brands are available: Teac, Otari, Itam, Brenell and Dokkorder for example. Realising this RSD designed a mixer especially for use with such machines; it's called the Studiomaster 16 into 4 Mixing Console.

With a few mikes, the RSD desk and a recorder, quite sophisticated recordings are possible and the addition of a few effects like echo, reverb and modifiers like limiters and compressors enable the small studio to compete with many larger fully professional set-ups. Already several hits have been made on such equipment and the future for the low-budget high quality semi-professional recording studio seems very rosy.

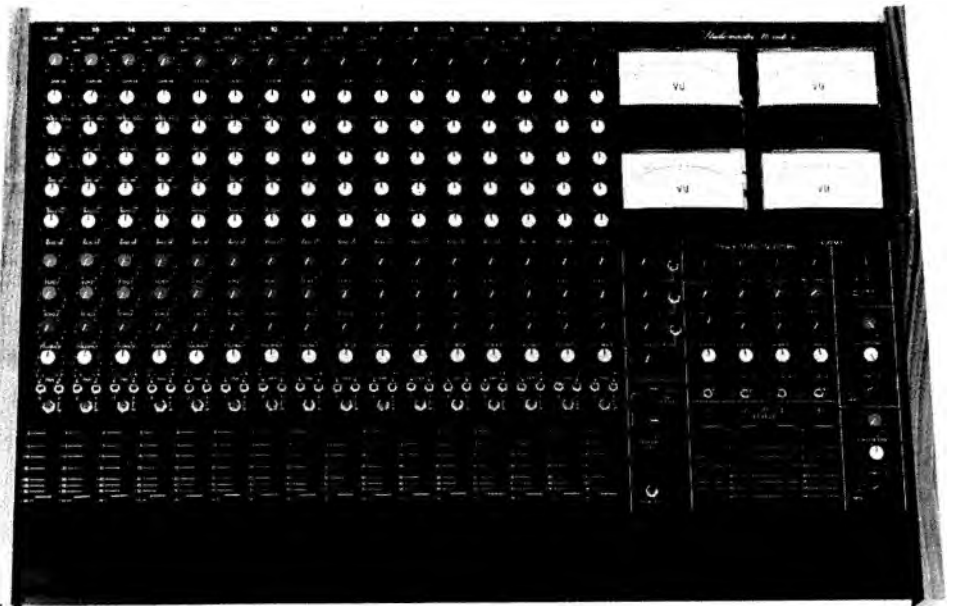
The Studiomaster 16/4 is inexpensive. There are no compromises however. It's a false economy to build a noisy mixer or a mixer that isn't flexible enough to work in a multi-channel format. Given these parameters the Studiomaster offers the best value for money mixing console available.

The outline design for the 16/4 is simple. Sixteen inputs are provided via electrically balanced sockets. Each input then travels through a chain of control. Its journey is as follows.

First stop is the "gain" control. This speaks for itself and it allows you to match almost any microphone up with the board. An LED (light emitting diode) will light if you've cranked the gain up too much and there's a risk of distortion entering the control console. After the gain the signal is fed through a sophisti-

cated quasi-parametric equalisation circuit. This circuit has five controls which boost or cut the signal at various frequencies from 30Hz (deeper than anything you could cut on a record) to the highest point of human hearing (between 16kHz and 18kHz). Thus the ultimate control over tone can be achieved. As well as being used creatively this section allows you to eliminate the problems that occur when recording in an uncontrolled environment. In permanent

track selection for that signal. It is this ergonomically designed section that the many Studiomaster users find particularly important. Being able to sit at the mixing desk and direct the input to any one of four channels on the tape machine at the flick of a switch saves a lot of time and temper and this thoughtful routing is typical of the Studiomaster approach. After routing there's a pre-fade listen button which allows you to hear the



professional recording locations a lot of money and care is spent in correcting the acoustics of the room in which the recording is to take place. Obviously this is not possible in some semi-professional situations (although desirable) and for this reason RSD have taken particular care in building the equalisation section of the Studiomaster mixer. This eq section is powerful enough to take care of nearly all of the problems that may occur due to problematic acoustics and it's not something that will be found elsewhere.

After the eq section the input signal travels via a routing section that allows it to be sent directly to your echo or reverb unit, allows you to send back the signal to headphones or speaker (foldback), allows you to talk through the headphones to the people you're recording (it's amazing how often you talk to yourself), decides where you want the signal to be in a stereo image (if you're recording in stereo) and then offers you the choice of

signal raw as it's coming in so you can compare it to the modifications you are making down the mix-chain and it also allows you to hear that signal in isolation whilst muting all the other incoming channels. The fader naturally governs the volume of that particular channel in relationship to the others.

More ergonomic thinking is revealed in the main group controls. Here switches are provided which allow the tracks on the tape machine to be automatically routed during mix-downs. Another set of controls allows you to place the sounds where you wish for monitoring (independently), pan controls allow a simulation of stereo image on the monitor mix and naturally four faders provide the master group volume controls.

There are many other features provided on the Studiomaster 16/4 which have been built especially to facilitate semi-professional recording. Only your trial of the mixer will show you just how many.

STUDIOMASTER IN AMERICA

Studiomaster is now firmly established as a major company in the USA. There is an enormous market for semi-professional recording equipment in the States, as would be expected in a country which is so music-orientated and which has itself produced much of the world's finest studio recording equipment. Studiomaster has found a ready market in America for its semi-professional range of equipment, and has quickly grown into a strong contender against even the biggest names in the international music scene.

Studiomaster has two main bases in the USA. The company's headquarters is in Rowlett, Texas. This is where Eric Johnson controls the company's American operations. In addition, the company has set up a centre in Vermont, California. Distribution of Studiomaster's products throughout the States is handled from these two locations through two wholesale companies; these make sure that Studiomaster's equipment is supplied to the major retail chains throughout the USA. Naturally, full back-up facilities are also available.

Studiomaster's customers in the States are varied, and reflect the flexibility of the company's products. Songwriters use the equipment for making demonstration tapes of their material. Musicians who are already established in the music business use Studiomaster to work on new material and to develop their ideas without having to use a full-scale recording studio.

But studios, too, use the company's products, as they do in the UK. The high quality of Studiomaster has made the gear much sought-after by small recording studios because, although it is designated as semi-professional equipment, professional quality results can be obtained from it by operators who know how to use it to its full potential. Studiomaster mixers are popular, too, with bands who use them for monitor-mixing.

The American market could almost have been created for Studiomaster. The equipment offers a wide range of facilities, and indeed is better equipped technically than most of the existing competition. Pricewise, Studiomaster cannot be matched in the USA: there is simply no competition in its price-bracket.

Studiomaster have paid particular attention to what Americans look for in recording equipment, and have analysed the particular demands of the Stateside market very carefully. The 16 into 4 mixer, in particular, is very American in its conception. Its functions and appearance have all been designed after a long, hard look at the prevailing trends in design of American recording machinery.

Studiomaster attends both the NAMM and Chicago trade fairs in the USA. The company has a stand at each of these shows, so that musicians and people from all branches of the music business can examine and assess the company's products. Similarly, of course, this means that Studiomaster can keep abreast of all the latest developments in the American market.

Contact between the company and market demand is further maintained by a team of



Studiomaster representatives who travel throughout the States. The team handles sales and servicing of all the company's products, and also sets up demonstrations of the equipment for interested customers.

In addition to providing this range of customer services, the team is an invaluable line of communication between Studiomaster and its customers. The nature of their work means that they see all kinds of equipment from all manufacturers and they are able to assess the market position of Studiomaster products. Furthermore, they can analyse in what direction the company should move to satisfy customer demand. For example, Studiomaster are now developing a 20 into 8 desk for the semi-professional market in response to the new 8-track recorders which are beginning to appear on the American market.

The Studiomaster organisation in the USA has been set up as a fully self-sufficient enterprise. All equipment is held in stock in the company's own warehouse, which has 5,000 square feet of space, so retailers can buy direct

from the company without having to wait for equipment to be shipped out from the UK.

Both the California and Texas offices have demonstration facilities for all Studiomaster equipment. The facilities in Vermont are particularly spectacular. The room is 70 feet square; all the company's sound equipment can be tested through virtually all major brands of American loudspeakers.

In addition to this, Studiomaster have installed mixer units and power amplifiers by other leading manufacturers, so they can be heard side by side with the Studiomaster range. Customers are able to make a really thorough survey of the range of sounds and options available before making a choice, since the Studiomaster equipment can be heard in a direct A-B comparison with the other brands.

It goes without saying that a company has to have real faith in itself and its products to subject their products to such rigorous testing; Studiomaster knows that its equipment can easily hold its own against any competition.



MIX DOWN

STUDIOMASTER

The Studiomaster range of equipment enables the semi-professional to make professional-sounding recordings. It also allows the small studio to produce a professional quality result without having to find a benevolent millionaire to pay the bills.

The aim which the design team kept clearly in mind at all times during the conception and testing of the Studiomaster range was, in outline, simple; to produce recording equipment which offered a stunning level of technical achievement at the lowest possible cost. As any designer of electronic equipment will tell you, that's a target that everybody involved in the manufacture and marketing of musical equipment has in mind at some time. He will also tell you that it's impossible to achieve. Studiomaster, who have never said no to a challenge, went ahead and did exactly what they started out to do. And a large number of songwriters, bands, musicians and engineers are very grateful to them for that.

The Studiomaster 16/4 Mixing Console was designed because there is now a sizeable number of 4-track tape recorders widely available intended for use by the semi-professional. To obtain the most polished, fully-realised results from these machines, a mixing desk designed specifically for 4-track equipment is vital. The 16/4 is built to serve this ever-increasing need; the machine offers a flexible and versatile performance, and its facilities are laid out for ease of operation. Also its logical layout makes it easy for even an inexperienced operator to become familiar with it in a short time.

The 16/4 is already in use in nume-



rous small studios. It has also proved to be very valuable to bands playing onstage as a monitor mixer; with the ever-increasing sophistication of equipment available to bands at even the semi-professional level, it is crucial that monitoring should be subject to the same demanding technical standards that are now applicable to back-line amplification and PA systems.

In the studio environment, the 16/4 has a number of invaluable features. Overload lights make it easy to spot an input which is driving too hard and causing distortion. Cut and boost of up to 16dB each way on treble, bass and midrange controls, plus variable frequency ranges on midrange and bass controls, gives the 16/4 a remarkable degree of tonal control and equalisation capacity.

A low cost multicore system is available from Studiomaster for the 16/4, utilising 25 pin connectors and 25-way cable with an overall screen. The practical value of this in the studio lies in the fact that the engineer operating the mixer can use headphones to set levels etc. in one

room, while the musicians can play together in another room: this allows the engineer to make objective changes to the mixer settings without being completely surrounded with a barrage of instrument noise.

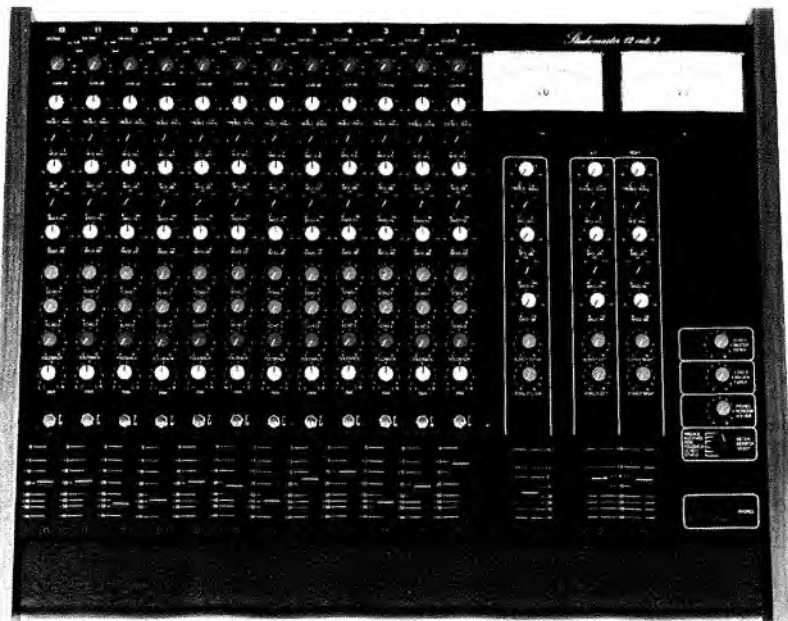
In addition to these features, the 16/4 has been set up to allow the fitting of extra blocks of channels at the microphone input end. These can be fitted in blocks of four; this facility is also available for Studiomaster's 12/2B Mixer.

The 12/2B is another versatile mixer from Studiomaster; like the 16/4, it can be used effectively in a recording studio. In the case of the 12/2B, Studiomaster have placed emphasis on building a practical and robust mixer which, while offering studio-quality stereo capability, is also practical and sufficiently robust to withstand the rigours of life on the road. Again, this mixer has been designed to realise its performance without sending the bank manager's blood pressure into overload.

Professional cannon-type connectors are standard for the 12/2B's inputs, with a multicore socket also fitted as an alternative. Even very long microphone cables or multicores can be used with this unit without unwanted crosstalk or electrical interference.

A pad switch enables input gain to be reduced by 30 dB to handle any unusually high outputs from microphones or the high level signals from tape recorders. The gain control allows the level of the signal in the channel to be adjusted to achieve the optimum signal-to-noise ratio, avoiding overload distortion. Monitoring of the signal is either by means of the LED (Light Emitting Diode), which lights up when overload is imminent, or by linking the channel to the VU meters via the Pre Fade Monitor button.

The tone controls are similar in design to those of the 16/4 Mixer. 16 dB of cut or boost is provided for on treble,





midrange and bass controls. The treble control operates at a fixed frequency of 10 KHz. The midrange has a variable frequency within a range of between 400 Hz and 8 KHz; the bass control, similarly, has a variable frequency, the range this time being between 30 Hz and 300 Hz. The variable frequency range allows for a broad degree of equalisation to be achieved; in other words, instruments can be made to produce their optimum sound by allotting them precisely to their effective sound spectrum.

If external effects are desired, such as echo, reverb or phasing, the 12/2B has two echo sends which provide two separate mono mixes from the microphone channels which can be routed via these effects. The echo sends are post-fade, so as gain from the channels is controlled in the final stereo mix by movement of the channel fader, the amount of echo, reverb etc. applied to the signal will remain in the required proportion.

For use as an onstage mixer, the 12/2B is fitted with a foldback send which provides a mono mix which remains unaffected by the channel faders; this send will drive a monitor system effectively.

The 12/2B has a foldback master output control, equipped with its own equalisation facilities similar to that fitted to the input channels. This means that the sound engineer can exert fine control over sound from the stage monitors entirely separately from the main PA, and this allows him to attain volume levels

from the monitors exactly as the band requires them, without any danger of feedback. Return level controls from both echo channels allow for echo to be added to the onstage monitor sound.

The 12/2B's pan-pot facility enables the channel signal to be accurately positioned in the overall stereo picture. Studiomaster's design wizards have designed the pan-pot so that a constant apparent loudness is maintained across the whole stereo stage while adjustments are being made to the stereo spectrum.

Complete equalisation facilities have also been fitted to the main output master controls. This is a major advantage when an act is performing at a venue which possesses less than ideal acoustic properties. As all bands have found at some time, the sound system can be set up perfectly at the pre-gig soundcheck, only to sound completely wrong once the audience is in the hall. Output equalisation, as fitted to the 12/2B, gives the sound engineer the ability to make the necessary corrections to the sound in such cases without having to update the equalisation on each separate input channel.

Separate echo returns for each output are another standard feature of this unit; these may be used for replaying special introductory tapes or special effects. The headphone socket will operate effectively with either 600 ohm or 8 ohm headphones.

Add-on Units of four microphone channels each are available for attachment to the 12/2B, enabling the mixer to be

expanded up to a maximum of 20 channels. These add-on units are easily fitted, with screws provided. Other extra facilities available for the 12/2B include flight cases, made in both fibre-covered ply and aluminium, with heavy duty corners and catches.

Electronic crossovers, in both three- and five-way versions, offer several advantages. Distortion is reduced, since each speaker component handles only the frequencies for which it was designed; this also means greater control over the balance between high, midrange and low range speaker components. Simultaneously, more efficient use of amplifier power is attained for the same reasons.

Studiomaster were recently proud to announce the introduction of the 800C Power Amplifier. The high performance specifications of this unit exceed those of most of the competing amplifiers in its price range. A twin-channel unit, the 800C will deliver about 400 watts RMS per channel into 4 ohms, or 225 watts into 8 ohms. The unit can handle loads of between 2 and 16 ohms.

A particular use for this amplifier is in studio recording, when low noise performance is vital but when a high power output is desired. The 800C fulfills all requirements on both these counts. The fine quality of circuitry and components used in the unit make it an ideal choice for high quality PA systems and studio monitoring. A frequency response across a range of from 5 Hz to 30 KHz within a 3 dB band means that the 800C is a unit of great power which can handle anything required of it.

In terms of utility, the 800C is a winner across the board. It has been fitted with a forced cooling system, so its high power output can be utilised without fear of overheating and resulting component failure. It is made for mounting into a standard rack format. And it's been built to a modular system, to enable it to be easily dismantled for servicing and maintenance.

Studiomaster have also thoughtfully installed a protective power cut-out system. In the event of a short circuit, a relay on the amplifier's output section shuts the unit off completely until the short circuit is rectified. This is invaluable for safeguarding expensive loudspeakers. A further safety measure is the LED thermal cut-out indicator, which comes into operation in the event of overheating.

The 800C is a fine addition to Studiomaster's range of semi-professional sound equipment. All of the items in the Studiomaster range enable the musician or engineer to attain a high degree of technical perfection within the obvious preset limits which apply to these products. Studiomaster have brought professional sound at an affordable price.

16-4 Sound Check



sawicki's SOUND CHECK

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

TEST ON: Studio Master Mixer

DATE: July 1978

PRICE: £852 (+ VAT)

Introduction

Studio Master Ltd. of Northall, Dunstable, Beds. manufacture a range of quality audio and P.A. products which includes the 12/2, 24/2 and 16/4 mixing consoles and the stereo high power Slave amplifiers. Their products have been established both in the US/Canadian and European markets for sometime and the company's future looks quite bright.

The 16/4 Studio Master mixing console is the company's answer to the increased availability of 4-track tape recorders intended for semi-professional use. Their 16/4 desk is explicitly designed for 4-track recording which enables the full potential of such a recorder to be realised. The company claims that the 16/4 mixer provides facilities designed for convenience and ease of operation without compromising flexibility or performance.

Construction

The object of multi-track recording is to provide the capability of making a recording in a number of parts, (not necessarily all recorded at the same time), and subsequently remixing these components into a final stereo program. The Studio Master 4-track console is designed for just this type of application and consists basically of 5 system subassemblies i.e.:

1. Input Channels
2. Outputs
3. Monitoring
4. Track Status switches
5. Sundry

The whole system — designed as a semi-modular construction, consists on the input side of the 16 input channels which will accept both balanced or unbalanced inputs in a range of -60 dBm to +15 dBm with an input impedance greater than 5 Kohms and is basically optimised for low impedance dynamic 200 ohms microphones or similar.

Each input's tone control circuit employs a 3-band equalisation network with +16 dB shelving on Treble (10 kHz), +16 dB on Middle (400 Hz-8kHz) and finally +16 dB shelving on both Middle and Bass equaliser bands are additionally equipped with individual frequency adjustments in the form of rotary controls covering 400 Hz-8kHz (Middle) and 30 Hz-300Hz (Bass) respectively.

There are separate level controls for



Photograph: Rick Cordell

SENDS to foldback (pre-fade) and Echo 1 and Echo 2 (post-fade) and the routing to the system's 4 output groups is selected via two sub-miniature toggle switches with a biased centre OFF position. This arrangement is extremely simple and allows the first switch to feed the signal from the left side of the pan-pot routes to the output groups No. 1 or 3 whilst the second routes to No. 2 or 4.

In both cases the content and level of processed material can be examined at anytime by a PFM push button switch localised at the top of each channel's fader potentiometer. The channel fader potentiometers (67mm length) are logarithmically calibrated with the usual -50, -40, -30, -20, -10, -5, ZERO markings and for the overload indication

one red LED is provided with a firing point adjusted to approximately 4 dB below the clipping point. I noticed a wide use of knobs with colour coded functions i.e. Red for Gain, Gray/Black for Equalisation, Blue for Echo, Green for Foldback and Yellow for Pan.

As for the Master area of the console, each output group has its own slide fader potentiometer calibrated -40, -30, -20, -10, Zero, +5, +10, followed by a line amplifier with a 10 dB gain, feeding the line out (LO) 1/4" jack sockets on the rear panel of the console. In addition there are two echo (Effects) Send/Return 1/4" jacks, the foldback Send which may be used to drive alternatively a Slave Amp or up to ten pairs of 600 ohms headphones directly and finally the Monitor

Studiomaster's 16/4 Mixing Console is a high performance piece of equipment designed for 4-track recording. The ever increasing availability of 4-track recording equipment on the market has meant that fine quality multi-track recording has been brought within the reach of many at a reasonable cost. The 16/4 makes it

simple for even inexperienced-recording artists to produce a finished product with a really professional polish.

Studiomaster make a range of equipment specifically for the semi-professional market. The 16/4 mixer provides all the facilities necessary for achieving a good

quality stereo programme; these include tonal equalisation, monitoring and remix facilities and a special line-up oscillator. For the recording aficionado who must keep to a relatively low budget, the Studiomaster 16/4 could well prove to be a necessity.

Send.

The Monitoring is generally an independent four channel type with channel selection to a stereo loudspeaker mix based obviously on these four monitor channels. The selection will include either the group Line Out or the sync/ playback returns from the four track of the Live In sockets. Both the loudspeakers mix and the foldback mix can be derived from either track being recorded or tracks previously recorded as the foldback send is also provided from each monitor channel.

Functions

The Track Status switches perform a variety of functions as the 16/4 operators manual claims. The main functions are: 1) recording 2) remixing (when the line input returns from the 4 track are rerouted through mic channels (1-4). In such cases both group outputs are converted to remix groups and therefore are sent to

two separate outputs provided for Stereo Tape units to record the final remixed stereo sound material.

The Sundry facilities of the Studio Master 16/4 include the echo returns (Effects returns) and a specially provided line up oscillator which simultaneously feeds a sinusoidal 1.0 kHz signal to all output groups for lining up purposes. This feature allows you to control the readings of all 4 VU meters on the console and compare these with those on 4 track recorders. Obviously if they read different levels - for example, too low - then this will result in a poor signal/noise ratio; too high - then this will cause distortions of various types. Personally I found this feature extremely useful and important for a good quality recording. All 4 VU meters are professionally calibrated (-20, 0, +3) VU with a percentage scale 0-100% included and they are mounted on the top righthand side of the console's control panel.

Conclusion

This desk made a good overall impression on me because of its functional features, careful design, quality finish and reasonable price of approximately £800. There is one small point - it could be worthwhile to incorporate in this console slightly higher teak side pieces, enough to cover the highest level of the operating controls i.e. knobs, switches and so protect them against accidental damage during transportation, etc. One other thing - a small handle, for example on the front of the console would also be a good idea. Apart from this the table will tell you more about the specification - which in my opinion is rather conservatively rated as confirmed on my tests. If you are looking for a 4 track semi-professional mixer with as many as 16 channels, this one is really worth considering. Its quality of components and high level of workmanship should stand you in good stead for a long time.

PARAMETER	RESULT	TEST CONDITION	COMMENTS
Input Impedance	Greater than 5.0 Kohms	Ref. 1.0 kHz	Manufacturer claim is that optimum source impedance for dynamic microphones is approx. 200 ohms.
Nominal Operating Level	±4.0 dBm (1.2 V r.m.s.)	Ref. 1.0 kHz	The 16/4 operates basically at the studio line level of +4dBm (1.2 V r.m.s.). However the majority of 4 track (semi-prof.) recorders operate at a lower level of -10dBm (250 mV), hence certain facilities are included to allow operation of inputs/outputs at either level.
Maximum Gain	±70 dB	Ref. 1.0 kHz into 600 ohms	Agrees with manufacturer test report.
Maximum Input Level	±35 dBm	Measurement at onset of clipping Ref. 1.0 kHz into 600 ohms	Acceptable
Total Harmonic Distortion	better than 0.02% better than 0.018%	@20 dBm Ref. 1.0 KHz @ 4 dBm into 600 ohms	Slightly higher than specified: less than 0.015% @ 4 dBm 1 kHz less than 0.015% @ 20 dBm Still very good.
Tone Control Range	34.2 dB - swing 31.8 dB - swing 31.7 dB - swing	Treble @ 10 kHz Middle from 400 Hz-8 kHz Bass from 30 Hz-300Hz	Manufacturer claims: Treble: + 16 dB at 10 kHz Middle: + 16 dB from 400 Hz-8 kHz Bass: + 16 dB from 30 Hz-300 Hz Continuously variable.
Frequency Response	± better than ± 1.8 dB	Ref. 20 Hz-20 kHz	Very good and not only for semi-professional use.
Equivalent Input Noise	Less than -120 dBm (-128 dBm - typically)	Unweighted, 20 kHz - bandwidth Input termination is 200 ohms	Very good.
Signal/Noise Ratio	92.30 dB 87.17 dB 86.05 dB 78.11 dB 70.48 dB	Line o/p fader - down Line o/p fader - nominal, channel faders - down One microphone channel at 40 dB - gain Four microphone channels at 40 dB - gain Sixteen microphone channels at 40 dB - gain	Almost identical with a manufacturer specification
V.U. - Meters	OVU = approx 0 dBm	Calibrated on (-20 0; +3) VU instrument scale; Ref. 1.0 kHz	All four VU meters are professionally scaled, rectified and accurately balanced.
Multi Input Priority	Satisfactory on actual experiments.	16-channel test and variations	Very good.
Headphones Output Level	approx. 0.5 w r.m.s.	Ref. 1.0 kHz with less than 0.5% T.H.D.	The manufacturer claims: 1) Minimum 8 ohms Impedance Ref. "Foldback" o/p 2) Minimum 600 ohms Impedance Ref. "Monitor" o/p.
Line Up Oscillator Frequency	1.0 kHz (sinusoidal)	Line up oscillator switch states 1.0 kHz to all groups.	Present in all output groups simultaneously for lining up purposes. Very useful.

MIX DOWN

THE HIRE COMPANY

A lot of factors go into the success of a hire company — and RSD know all the secrets. First and foremost, good equipment is essential. As RSD manufacture their own mixers, power amps and bins, they know that whatever goes out won't break down. A good knowledge of the musicians' needs is also important. With this in mind, RSD's crew "keep their ear to the ground" by talking to their customers and finding out what's needed. This goes hand in hand with research and development — RSD are not a company who just send a working PA rig out and wait for the money to come in. They are constantly planning ahead with future developments in mind. Last but not least, dedication and professionalism are of major importance. The RSD crew have been in the business at all levels and actually enjoy their work and this shows in the professional organisation of RSD Hire.

RSD Hire started with the development of a PA system for hire to Gentle Giant, one of RSD's earliest and most faithful customers. The rig at that time was a three-way system comprising a folded horn cab for bass, a 2482 JBL radial horn for midrange and the treble was handled by a .075 high frequency tweeter. The three-way crossover was switchable with attenuation on each band. It included bass frequency selection on five bands, midrange on five bands and treble on 4 bands.

Improvements were made on the full range cabinets with the use of passive crossovers, but the midrange was tending to be very harsh due to using compression drivers, making the vocals harsh and piercing with a lack of mellowness. A highly effective mid cone unit with the ability to produce a mellow vocal sound above 500Hz and below 1500Hz was incorporated by using the EVM 15" infinite baffle. This was a major improvement in that it produced a clear, warm sound to carry the vocals over the instruments. At the same time, the drum sound became "richer," augmented by the use of JBL 2420 drivers rolled in above the 2482 radials. Thus, the ideal sound was reaching both bands and audiences; clear vocals, a rich drum sound plus the versatility required for different types of music from classical through folk to heavy rock.

The speaker arrangement during the first four years of RSD became thus; Bass — 4 x 15" folded exponential cabinet (800 watts power handling) with response from 30Hz to 500Hz; Low Mid — 2 x 15" infinite baffle (400 watts) with 500Hz to 1200Hz response; Mid — 2 x 12" infinite baffle (400 watts) with 800Hz to 3KHz response; High Mid — 90 degree radial (150 watts) with 800Hz to 4KHz response; Treble — 2420 plus horn JBL 075 super tweeters (200 watts) with 5KHz to 20KHz response.

To complement this system, three new mixers and an amplifier were developed and subsequently introduced. Firstly, a range of modular mixers was brought out. Again, Gentle Giant were the first band to use them. These mixers are fairly complex with special facilities including LED PPMs, ten-band EQ, six

effects controls, EQ cut, routing, 12 sub groups, four master outs, four quad pan pots, and Penny & Giles faders on all 30 channels.

Their range of semi-modular mixers were developed for live broadcasting work and were used subsequently on a wide variety of work from classical Stockhausen to rock tours by The Sex Pistols, Showaddywaddy, Clash, Buzzcocks and Hi Tension. These desks can be expanded by blocks of four microphone modules to the size required and their quasi-parametric EQ is ideal for tailoring individual frequency cut and boost of tones on drums, instruments and vocals. The desks are used in conjunction with multicore cables, three or five-way electronic crossovers, graphic equalisers, echoes and phasers.

The 16/4 semi-modular desk used by the hire department for four-track recording can be expanded in blocks of four to a 24/4 format, making it ideal for both live recording and studio work.

The 800B power amp was underway to meet the high specifications, indestructible qualities and practical layout insisted upon by musicians and engineers hiring the equipment. It is a stereo power amp rated at 500 watts per channel and is force air-cooled. It also has thermal cutout to prevent overheating, short and open circuit protection and a robust, boot-proof steel chassis. The fuses and connectors are all conveniently located on the front panel and so are easily changed or serviced. There is also a meter on the front panel driven from the output to show if the amplifier is OK and to display what level it's being run at.

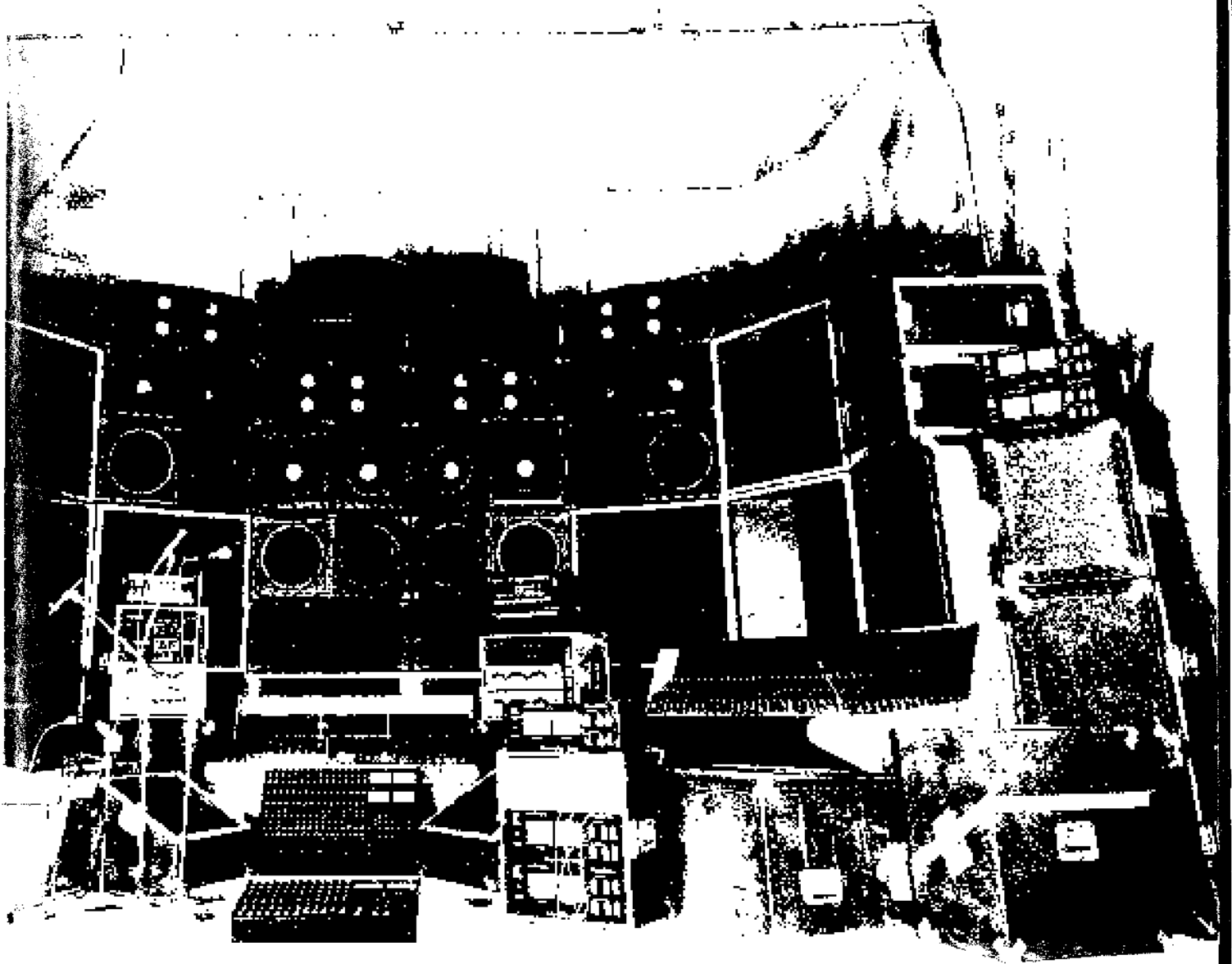
RSD Hire now have 15,000 watts of PA arranged as a five-way system with 800B amplifiers, all of the mixers mentioned, effects racks, microphones (Shure, AKG, EV and Sennheiser), Klark Teknik EQ, Roland Space Echo and boom and straight stands. The stage monitoring has developed alongside the PA, with side fills and 2-way wedge monitors (JBL components) and a 20/8 stage mixer based on the RSD series of semi-modular mixers. Transportation, rehearsal arrangements, carnets and tour management are now a way of life with RSD Hire — all brought about by constant



demands of development and insisted upon by RSD's customers.

The Hire Department is: —
David South
Tony Bower

Thanks to: —
Ian Day — Showaddywaddy
Chas — Taxi
Rodent — Pistols
Bernie & Mickey — Clash
Malcolm Kingsnorth — Status Quo
Peter Stroud — Visitor
John Rushby-Smith — BBC
Dave Zammit — Giant
Ken Jones and Fellers — Kinks



Dave Blaylock -- Hello
 Kerry, Adrian and Dixie -- Alkatraz
 Phil Griggs -- Quatro
 Daug & Tony -- Arrows
 Ken Hollway -- Curly
 Richard Vickers -- Lone Star
 Robbie Williams -- Britannia Row
 Tag & Tim -- Concert Sound
 Roger -- Star Hire
 Ken Giles -- Brid PA Hire
 Mark Hardy & Lads -- Muscle
 Ian Jones -- HHB
 Russ Ballard
 Jim Rodford
 Rod Argent
 Karen Walsh -- Ultravox

Bob Henrit
 Roy Harper
 Pirates
 Darts
 Tom Robinson
 Westmill Audio
 Peter Coggins -- Hammond's
 John Blackburn -- Judas Priest
 Tony -- Three Degrees
 Dave -- Julie Felix
 Pete -- Sha Na Na
 Chris Holland -- Thinktoys Harross
 Jnr. Walker
 Nic Turner -- Sphinx
 Buzzcocks
 High Tension

Sue -- Imperials
 Zircon
 Ken Wheeler -- New Heards
 Sam -- Guercio
 Ray -- Mungo Jerry
 Tam & Stuart Grant -- Gallagher & Civic
 Dave & Jenny -- Jenny Haans Light
 Vangelis
 Iconoclastic
 Bob Douglas & Paul Heave -- Rich Band
 Wil & Chris -- Kellogg Acoustics
 Robin -- Average White Band
 Richard Griffiths -- Lateral Records
 Not to forget all the pro & semi-pro studios.

"We used RSD and they wrecked the Rainbow. That's some PA system." The quote comes from Bernard Rhodes, Manager of The Clash.

RSD is a name long respected in the professional field; the field of 10,000 watt rigs travelling 200 miles each day and pumping it out each night; the field where power amps are switched on for a 2pm soundcheck and not touched again till they're switched off at midnight. In between times they deliver the message and if they're any good, keep their cool. One blown amp, one non-performing rig and you're finished. RSD have been putting on performances in the professional field for years. They know what

must happen and what must never happen. That experience pays dividends right down the line.

When we were putting these few words together about RSD's pro operation we mentioned it to Showaddywaddy and they said: "We'll let you quote us, you can say anything you like, we think RSD's great." And so it goes.

Each time the boys pull out their bikes and begin a six week trek round Britain, Europe or wherever, they put their faith in the RSD lads. Showaddywaddy own their own 12,000 watt RSD rig, but they usually supplement this with a liberal helping from the almost inexhaustible RSD hire supply.

Showaddywaddy's music is fun music, but RSD is there when things get heavier. See if you can corner Floyd's sound man Robbie. He'll tell you all about RSD's power amps. These little gems seem to be popular because of their instant use capability and their reliability. RSD power amps may be racked up, but it's not necessary. Unpack one, lay it on the ground, connect up and go. There's a built-in fan (no need for forced rack cooling), the VUs are coupled to the output so that if they're not working you know you'll get no sound (a situation rarer than smallpox), and straight, easy-to-understand connections. If you make it easy and good, you're bound to win.



RSD IN THE PROFESSIONAL FIELD

If you're passing you might give yourself the brain damage of a Status Quo gig (no offence meant, you're the tightest band in the world, lads). You probably know what a Quo gig is like. Loud, long and very, very heavy with only the humour of Rossi and Parfit to split the decibels. Those decibels come from RSD power and if you were to land a job on Quo's road crew you'd know just how tough their stuff must be. "Again and Again" is exactly what Status Quo do to their RSD's, and the amps come back for more.

Of course you might be more impressed by a bit of class, a bit of establishment class to boot. If so, peer over the shoulder

of John Rushby-Smith as he controls the sounds at a Stokhausen concert with the BBC Symphony Orchestra. When it comes up he's straight on the blower and it's an RSD rig that delivers that superb sound.

It says a lot about RSD that they understand the very nature of touring. Perhaps it's not surprising as RSD boss Paul Dobson was himself a road manager ten or twelve years ago, but supplying equipment to bands on tour is not enough if you're really serious about the tour business.

Two "crew's" go out as a minimum with every RSD rig. Nothing special in that. But the "crew" from RSD can fix anything that needs it. When the lead

guitarist falls off stage and overturns the entire system its these lads who get it working again, and fast. Another important factor is RSD's touring success is that they *understand* life on the road. They know how a musician feels if he's hustled after the gig. If you were desperate to put together a motto for RSD on the road it would probably be: Laid Back Efficiency.

The list of people ready to praise RSD in public looks like a computer read out. Better perhaps just to say you should mumble the initials to people like Judas Priest, Buzzcocks, Hi-Tension, Ultravox, Sphinx, Darts and the other bands that believe in working rather than making sure their Guru gets extra publicity.



Mix Down

RSD ON THE ROAD

When RSD began hiring equipment out to bands on the road, the company had no idea that demand for a service such as they were offering would be so great, nor that their rapid success would lead them to start up a highly successful manufacturing operation of their own. Now, RSD hire equipment has become renowned for its high quality, while the RSD team's long and hard experience of helping bands on the road with their equipment and problems has earned them a great deal of respect in the music business.

RSD make two separate ranges of sound equipment. The Studiomaster range is designed for the semi-professional recording artist (or enthusiast) or for the small studio who want the best results for the least capital expenditure. Equipment bearing the RSD name, on the other hand, has been specifically developed to serve the requirements of live performance. In other words, Studiomaster is aimed at the recording market, RSD means on the road.

What does the touring band look for in the equipment it uses on stage? Primarily, a band needs functional, reliable equipment which will project their music the way they want it to sound. The problems that the touring band faces, as any professional musician or member of a road or sound crew will tell you, are painful and numerous. If a band is doing one-nighters across the country, the sound equipment must be dismantled and packed into a van after every gig and driven, probably overnight, to the next venue.

Deadlines are tight on the road. If the band is a major attraction, there will be a lighting crew as well as a sound crew. Both these separate aspects of the live show must be given adequate attention, so a schedule has to be drawn up and maintained as to who will be doing what and when. If one phase of the operation falls behind schedule, everyone else gets slowed down. Then the band finds that their allotted sound-check time has been overrun because, for example, there's a problem on a microphone channel.

It's not only the band who suffer if there are technical hold-ups, because the road crew have to spend a lot of them after the band have played packing away the equipment and making sure it's going to get to the next gig. It's gruelling, backbreaking work keeping a band on the road, and that's where RSD can help.

RSD's 12/2 Mixer console is the ideal tool for the hard working band who want a versatile high specification mixer at low cost. So what advantages does the 12/2

offer in terms of practical performance?

The 12/2 has a pad switch, which pads down large inputs which may be fed into the mixer. The range of reduction offered by the pad switch is 30 dB, giving a minimum gain of -15dB. Added to the 20dB headroom factor, an absolute maximum input level of +35dB is achieved.

The most common microphone impedance in a concert situation is about 200 ohms. This impedance is ideal for achieving the lowest possible level of noise, and with the pad switch in the out position — 0dB — the microphone is presented directly to the input. With the pad in (-30dB), the pad presents the microphone input with a 200 ohm resistance; again, this means that source impedance is at its optimum level to keep extraneous noise to a minimum with maximum signal quality.

The really revolutionary part of the 12/2, though, is the design of the electronic circuit in its transformerless input. What RSD have done is to find a combination of transistors and circuit configuration that gives very low noise with the low source impedance involved; what's more, owing to the revolutionary design of RSD's circuitry, cost has been kept to a remarkably low figure. This circuitry means that RSD have found an answer to a number of common technical problems that afflict mixers.

At high sound levels, for example, transformers can suffer from what is termed "core saturation", which causes harmonic and intermodulation distortion. In addition, transformers can be affected by hum fields, they can have bad transient response and limited frequency response, and can even be microphonic themselves, picking up all kinds of unwanted outside sounds. With the RSD 12/2, these problems have been eliminated.

The tone controls on the 12/2 are another area in which RSD have really succeeded in giving musicians and engineers close, precise control over a band's sound. These controls are set up to provide Quasi-Parametric Equalisation. The treble control provides boost or cut of about 16dB at 10kHz, with shelving response. The mid-range control offers a similar cut and boost figure, but at any frequency from 400Hz to 8kHz. The 12/2's bass control again provides boost or cut of up to 16dB at any frequency between 30Hz and 300Hz, with shelving response.

What this means in practical terms is that if, say, a miked set up of guitar, bass guitar or organ needs additional treble, while simultaneously amplifier hiss needs

to be reduced, the mid-range control may be used to lift the treble; the frequency on the mid-range control can be set to 7kHz-8kHz for this purpose, while amp hiss can be reduced by turning down the treble control.

Other valuable features of the 12/2 are the Pre Fade Monitor capability. A Monitor Selector Switch selects headphones and VU meters simultaneously to either main outputs or Pre Fade Monitor. A stereo return system has been incorporated into the 12/2 for either using external effects or for tape playback; this is possible because the echo return cannon is wired with pin 2 going to the left return level control, and pin 3 going directly to the right.

A headphone amplifier is fitted, which can be used with either 600 ohm headphones, or with the domestic 8 ohm type. The desk can also be expanded by fitting RSD's 4-channel input modules.

The RSD 12/2 Mixer Console is a low-priced mixer with a wealth of invaluable features. Like all RSD products, it is subjected to rigorous testing and quality control. This is a mixer which guarantees a band will sound good.

The RSD 800B Stereo Power Amplifier has been specifically designed for quality PA use. This is a twin-channel unit; it will deliver 220 watts RMS per channel into 8 ohms, or 340 watts RMS into a 4 ohm resistance. This unit has an excellent signal to noise ratio; crosstalk is better than 60dB below 200 watts into 8 ohms. Finished in industrial black matt enamel with white and pale green silk screening, this unit is both a superb performer and an aesthetically pleasing component in any PA system.



The 800B also offers protection against short circuits and overheating, being fitted with cutout switches for either eventuality. In the event of severe overheating which could damage components, a thermal cutout switch automatically comes into operation, shutting off the unit until it has cooled. In a live concert situation, it's obviously important to have equipment which has such in-built protection, since damage could result which would be difficult to rectify amidst the pressures of a live performance.

Further features which make the 800B such a desirable piece of equipment for on-stage work are its 250 volt cooling fan, which, with the thermal cutout switch, means that overheating is no longer a problem even at very high volume levels. A mono/stereo switch for optional paralleling of inputs, plus a Cannon type mains input socket, all add up to a powerful and functional high performance amplifier. All fuses are fitted via the front panel for swift access; the 800B is designed for standard 19" rack mounting, and its tough steel chassis means that it's really at home on the road, even with the roughest of gig schedules.

RSD's range of high quality sound equipment is rounded off with a variety of accessories for both stage and studio use. Electronic Crossovers are available in three- and five-way versions. The three-way unit splits signals from mixers or other sources into three distinct frequency

bands, designated Bass, Middle and Treble. The frequency of the crossover between bass and middle outputs can be varied anywhere between 200Hz and 800Hz, while the range from middle to treble runs from 800Hz to 3.2kHz. Separate gain controls for each band mean that balance between the three frequency ranges can be finely adjusted.

For more complex speaker arrangements, RSD's five-way crossover unit splits input signals into five separate frequency bands; this allows for still greater separation between instruments of differing frequency spectrums and allows the various components of a loudspeaker system — e.g. bass bins, tweeters and horns — to be used to the greatest efficiency.

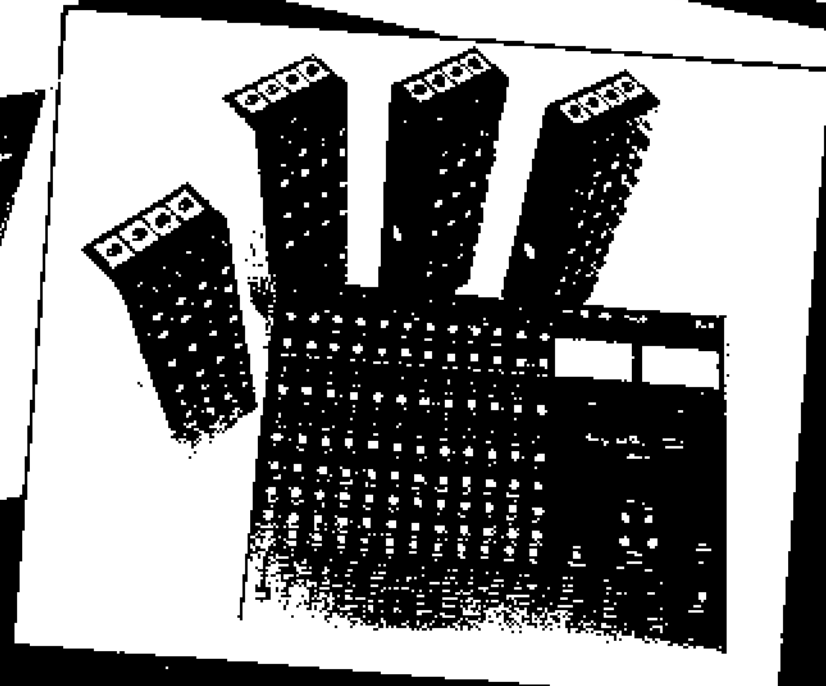
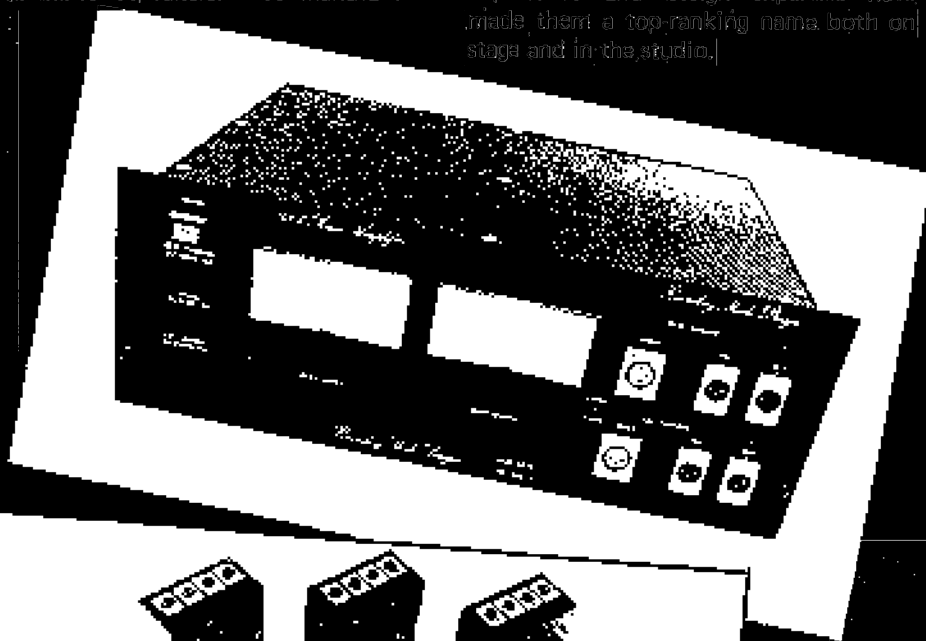
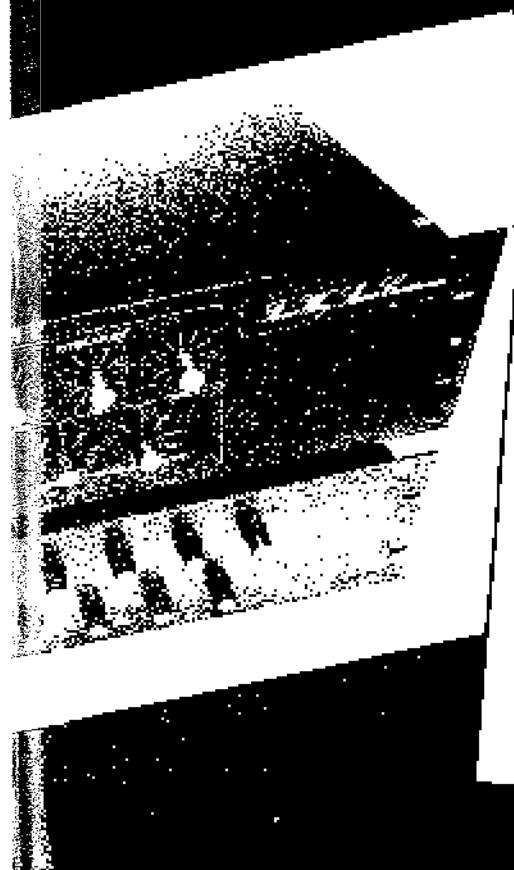
On the back panel of the crossover units, a 25-way connector is fitted to enable the outputs from the crossover to be carried, via a multicore cable and stage box, to the power amplifiers and thence to the loudspeakers. RSD manufacture a

stage box and a multicore cable, for use with both RSD and Studiomaster mixers.

The multicore cable has 25 cores with an overall braided screen, which is both flexible and lightweight without being fragile. Normally supplied in lengths of 150 feet, the multicore cable comes on a high-impact ABS reel with folding handle, fitted at both ends with connectors to mate with a mixer and stage box.

The stage box itself, when used in conjunction with the multicore, provides a link between on-stage microphones and the mixer which, at gigs, is normally situated some distance from the stage. The stage box consists of a black stove enamelled steel case, and is fitted with 12 connectors to accept the microphone cables. A 25 pin socket is also fitted as standard to enable the box to be connected with the multicore cable.

RSD's range of sound equipment and accessories offers a complete service to bands and sound engineers. RSD's experience and design expertise have made them a top-ranking name both on stage and in the studio.

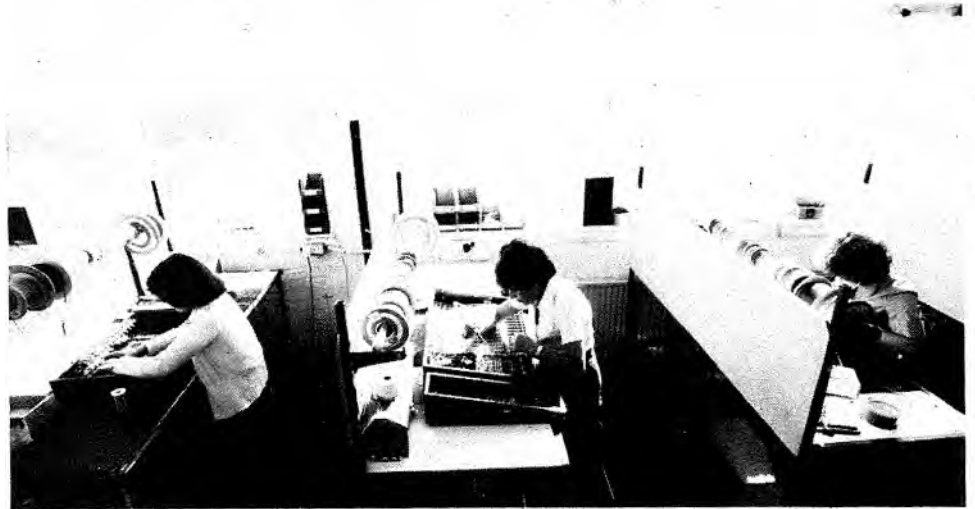


MANUFACTURERS

RSD products are manufactured in the company's Luton factory. After starting in a small room behind Luton's California Ballroom, the company rapidly needed to expand to larger premises. The new factory is now coping well with the ever-increasing demand for the company's products, under the efficient management of Len Slade.

Len Slade is the General Manager and Buyer of the factory, and as such is responsible for a wide variety of duties. He joined RSD to handle the buying of components for the 12/2 mixer and 800B Power Amplifier. He currently looks after the buying of all components, from chassis and circuit boards to wires and connectors. Len's long experience in the electronics industry enables him to buy the finest components while keeping prices down; this is how RSD can bring the musician or the sound engineer unbeatable quality at unbeatable prices.

Len's background is a varied one. When he joined RSD in October 1977, he came directly from working on colour televisions. During fifteen years in the electronics business, Len has worked on aircraft and computers, and has been involved in communications. He has been both a buyer and a works manager, and is the ideal man for his job at RSD. To assist him with running the factory he has two



Mixer Production



Mr. G. Langrish-Smith in Amp Production



Len Slade, General Manager

chief assistants, Godfrey Langrish-Smith and Wally Stephens.

Godfrey Langrish-Smith is the Production Manager in charge of the amplifier section of the factory. Godfrey first joined RSD's hire company 2½ years ago, then transferred to the manufacturing side of the company. His current position involves him, primarily, in ensuring that productivity is kept running smoothly. This means in practice that the RSD staff must be comfortable and confident in their work, and they must also have their talents used to the greatest possible advantage if the factory is to be able to keep up with demand. Sometimes, for example, it may be a good idea to transfer a member of staff from one job to another for which he or she is more suited. Promoting good staff relations, too, is all part of Godfrey's job.

Wally Stephens' department manufactures RSD and Studiomaster mixers. Like Godfrey, he has to ensure the general smooth running of his department, ensuring that production quotas are met

etc.

Both departments also undertake specific customising jobs for customers. Wally, for instance, might be required to put direct outputs into a 12/2 mixer for one particular customer. This is all part of RSD's attention to detail, which is particularly evident in the company's impressive quality control procedures.

At RSD, quality control is of paramount importance at every stage of manufacture. All components are inspected individually when they have been mounted onto boards, before they are actually inserted into a complete amplifier or mixer. This ensures that very few faulty parts get beyond this initial stage of manufacture. For those that do, every individual product is thoroughly checked before it leaves the factory. For a mixer, in particular, the testing process is an arduous job because of the physical nature of the equipment. One faulty slider or pot means that the piece of equipment must be dismantled and the defective part replaced.

This thorough approach to quality control pays many dividends. RSD take a justifiable pride in their work; the equipment is designed to high standards, and needs to be closely inspected to ensure that it will function up to its specifications. There is no point in designing a high quality mixer like, for example, the Studiomaster 16/4 if, when used under demanding recording conditions, it falls down because of a faulty pot. RSD has built a hard-earned reputation for fine sound equipment, and the company knows that it has to maintain its high standards if it is to retain the respect of musicians and sound engineers.

It is in the company's Development Department that these high standards are set. In charge of development is Alan Pound, who lives two floors up in a corner of the RSD factory, surrounded by flashing LEDs and live wires. It is in this room that all RSD's new products and developments are born.

Alan has a Maths degree and has an uncanny understanding of electronics. Alan believes that there are a number of qualities essential for a successful designer in the electronics field. Firstly, an impeccable understanding of mathematics is vital for a theoretical grasp of electronics. It is then necessary to be able to apply this theoretical knowledge to practical projects.

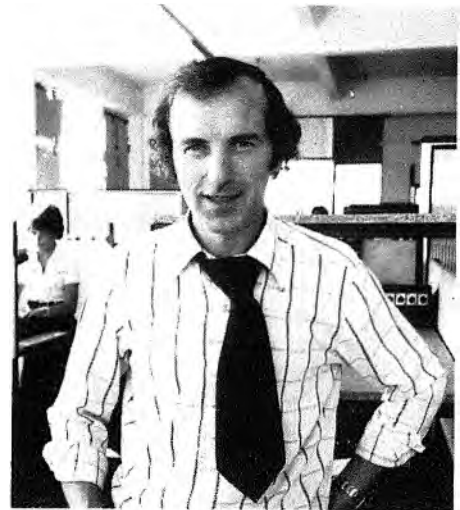
Consistent dedication and hard work

are, of course, basic requirements for any designer who wants to explore fields of electronic research which have not been touched before.

Alan, as an ex-professional musician himself, is well placed to listen to what musicians and people involved in live and recorded music are saying. An awareness of new developments in the component field is also vital; if, for example, a new integrated circuit or digital delay system arrives on the market, a company like RSD must be able to take advantage of this swiftly and effectively.

The ability to design a project with the total concept in mind from the outset is another skill that Alan believes a good designer must have. If a designer can visualise a complete project through from the printed circuit board layout to the metalwork and silk-screen phase, research and development work can be directed efficiently to where it is needed. Time and money will not be wasted in pursuing research up blind alleys.

The struggle to keep ahead of the competition is of paramount importance to a designer like A.P. Developing new ideas which are practically viable in the audio field is a job which goes beyond the 9 to 5. Today, Alan might be putting the finishing touches to a new range of 20 into 8 Studiomaster recording desks for 8 track enthusiasts, requiring impecc-



Wally Stephens

able technical specifications and reliability. Tomorrow he will be putting the finishing touches to the first batch of 20 into 8 stage monitor mixers, with all the features of the standard 12 into 2 mixer.

Many stringent controls are applied to every piece of equipment which is to carry the RSD or Studiomaster name, whether it's a stage or studio mixer or a hundred watt per channel stereo amp.

RSD try at all times to improve their standards of both quality and creativity, while satisfying the ever-growing demand for their products. The company started as a hire company, supplying on-the-road equipment to touring bands. The manufacturing company started when it became obvious that buying imported amplifiers for the hire company was simply not practical; the equipment was expensive, and delivery was unreliable. So RSD started to make their own amplifiers.

Starting with an initial batch of twenty amplifiers, RSD soon found that its own equipment was causing a stir with the bands who were taking it out on the road. High performance and reliability were the keynotes of the units right from the start, and this early equipment proved to be very effective advertising for RSD. The company began to receive requests for more products, and it took very little time for RSD to decide to go into manufacturing in a big way.

So right from the start of the manufacturing company, RSD's own products have had a lot to live up to. Efficient management and a creative Development Department have ensured that the company has enhanced its strong reputation among musicians and sound engineers, both in the studio and on the road.



P.B. in Electronic Test



Riaz in Audio Mixer Test

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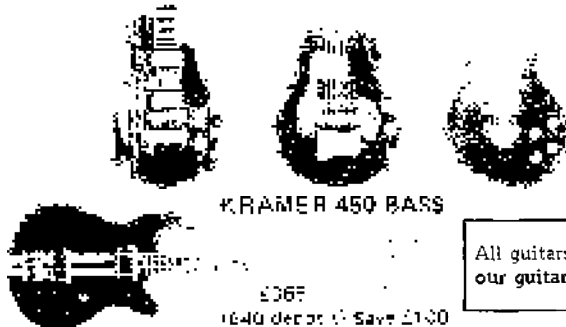
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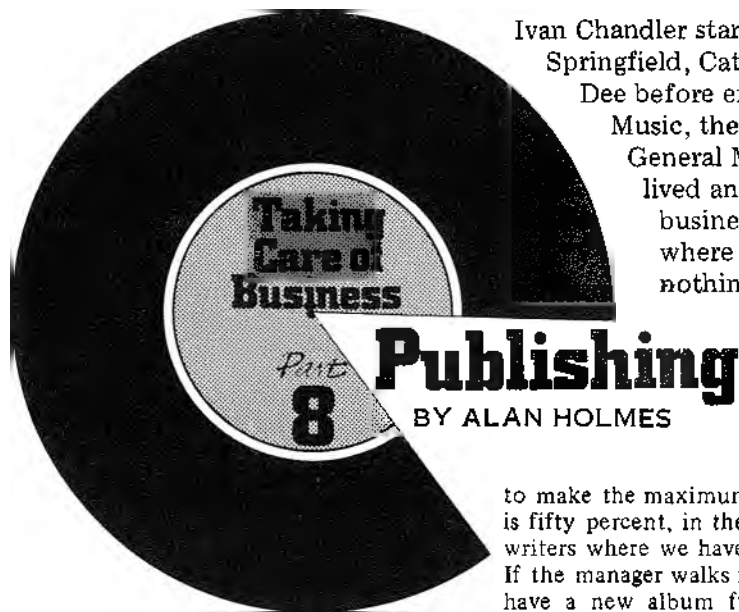
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Ivan Chandler started as a keyboard player working with Dusty Springfield, Cat Stevens and Lulu and was Musical Director for Kiki Dee before entering the publishing business in 1969 with April Music, the publishing part of CBS Records. After becoming General Manager he left to work for Broni. This was short-lived and during the time of being fed up with the music business entered the Melody Maker folk/rock contest where he won the solo performer award. Absolutely nothing came from winning this and he then went back to publishing, looking after all of Elton John's companies at Rocket. He joined Famous Chappell in 1974 and has been General Manager ever since.

WHAT IS PUBLISHING?

It is funny, because before I came into the business, I envisaged publishing as being a few men seated over desks transcribing music, very dusty, with lightshade over their heads. This is how I imagined how a lot of people see it, but obviously it is not like that. Some people have a sneaking suspicion that it is just a legitimate way of someone getting half their writers' royalties. I think publishing is, in one word, promotion, which entails the promotion of the writer's song; that is, a publisher acquires a song and then promotes it by bringing it to the notice of record producers and artists. When that song is hopefully recorded by 'X' artists he then gets together with the record company, and says, "Listen this is our song; we are going to make money out of this; let's get together and promote it on radio and T.V." He sends out the so called 'pluggers' and they go around to the radio stations and with the aid of the record company they hope to get the song played on radio and television and hopefully it sells records. Other things involved in publishing are the printing of music, if the song becomes popular enough to warrant the expense. Publishing is also the registering and contracting of copy rights and is also the collecting of money and making sure the writer gets his due share. But, to me anyway, what it should be initially is promotion because if the publisher isn't exploiting the songs and making people aware not only in the business but in the media, then he is not doing his job.

HOW MUCH DOES THE PUBLISHER TAKE IN A PUBLISHING DEAL?

It used to be very standardized, a straight fifty-fifty deal. The song writer gives the song to the publisher and in return for which hopefully the publisher will work on the song and for every hundred pounds he receives he gives fifty to the writer. Obviously, more established writers, Alan Price for instance, would probably get a lot more than fifty percent. It depends on the status of the writer, what he has actually going for him, and as far as we are concerned we try to do fifty-fifty deals all the time, because we want

to make the maximum and the maximum is fifty percent, in the case of brand new writers where we have to do all the work. If the manager walks in with a group who have a new album full of songs on the market, and he starts asking for sixty percent or, as we come to later, having their own company which we look after for them, then he is in a much stronger position to negotiate and we will probably fall in line with it. The same goes for financial assistance, advances, the cost of making demos etc. With a brand new writer off the street who we feel has got potential, we probably suggest that we pay the cost of the demos because the publisher cannot recoup the cost of making the demos against the writer's royalties, unless the writer agrees to it.

HOW MUCH WOULD YOU ALLOCATE FOR EACH SONG DEMO?

We will probably do three songs in a session and I would estimate that when we go in for a good demo, we would probably spend on average about two hundred pounds. On a session with three songs, it all depends on the writer. If you've got a guy who is so competent that he can put the song over with just voice and piano, then it is a very different situation. You can do twenty songs in a little studio in an hour for only ten pounds, but the normal song that needs to be sent to overseas companies, to American artists, etc. will need to have a full rhythm section demo on sixteen track. You see, you've got to really sell the song to producers, who many times need things put on a plate. *You have got to set it to the right rhythm and arrangement. Really you have got to do all the work for the producer so all he has to do is re-record it.* In fact sometimes, the demo is often better than the master.

WHAT ABOUT NEW ARTISTS WHO ARE COMING TO YOU WITH INITIALLY SIX SONGS ON A DEMO?

In a brand new case we'll say, "Look, here is five hundred pounds now, when your first record comes out either with you as an artist or us recording the song and getting the song recorded by an artist, perhaps we will give you another five hundred." Then we might have an option at the end of the first year to sort of review the situation and see if it was a complete failure; if so, they can go somewhere else. But at the end of that year if it has gone well, we already have something written in the

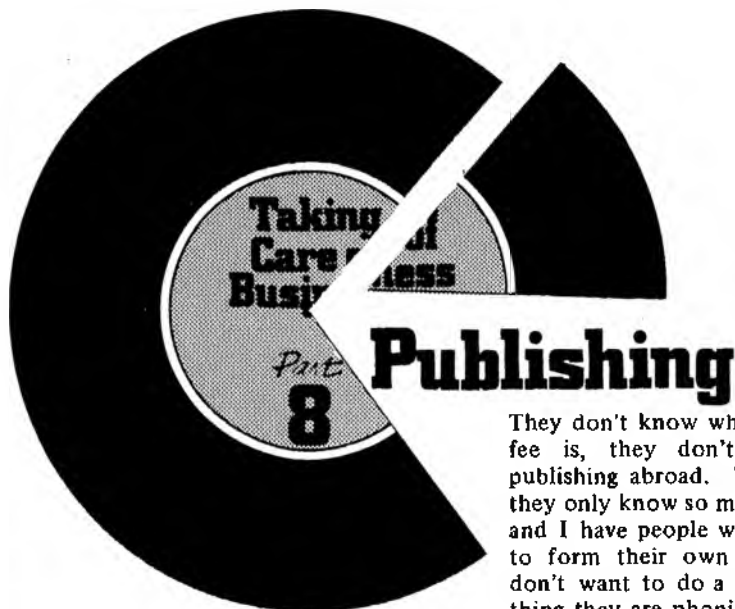
contract that says we have got to pay you a larger amount. It is good for both parties because it helps them to make up their minds. What we do is call it a three year deal in yearly stages. One plus one plus one.

IF, AFTER A YEAR YOU DECIDE THAT A WRITER HASN'T BEEN VERY SUCCESSFUL, WILL THEY IN FACT OWE YOU THAT ADVANCE MONEY?

Their account would actually be in the red but we wouldn't actually ask them to pay it back. We would be delighted if they offered to, but we wouldn't take them to court to get the money back. It's our gamble, it's what we call a non-returnable or recoupable advance. Normally it's a one plus one plus one period, one year each. When it gets to the end of the first year we'll have more money written in and by the third year it escalates in the situation. The financial assistance is part of it. Sometimes we help with other things. Perhaps we help out a guy who is really down and out and apart from his advance he desperately needs some guitar strings, he wants to hire an amp, the little things like that which we just take on as they come. Sometimes we will say "Look, you are taking it too far, sorry we can't do that any further." We sometimes give them records; if they want to get into Carole King or James Taylor, then we get them some albums which they can take away and listen to and see what some of the great people are doing. It really does vary in each case.

HOW DOES THE RETURN OF ROYALTIES WORK?

Basically you have got about four main sources of income. You have got mechanical, which is the publisher's share from the sale of his records, which is actually six and a quarter percent of the net retail selling price. So if the publisher has both sides of a single then it's about 4.5 pence per single so if the writer has both sides and he is on a fifty-fifty deal, then he is going to get 2.2 pence per single. Then you have performance royalties. Every time a song is played on radio and television, in the cinema, concerts, then he can get a performance royalty. Then there is sheet music. Really you make more money out of folios than a single sheet, if the song goes on the charts, then you might sell anything from a thousand to five thousand song copies and the standard fee is ten



percent because the publisher has to take the whole risk of all the cost of printing, twelve and a half if the writer is lucky. He is going to make more on songs out of folios. If you are with a big company like Chappell and you have a hit, they make up compilation books. "A Tribute to Johnny Mathis", "Christmas Songs", etc. and the song will go in there and normally will sell a lot more. Pro-rata you get a lot more. Then the synchronisation fee is when a song is used perhaps on a radio ad or on a film then there are quite large fees which a publisher would negotiate for.

DOES PUBLISHING INVOLVE MORE THAN COLLECTING MONEY FOR THE WRITER?

As I explained before, it should be promotion, promote the copy rights, so it is more than just collecting the money, but sometimes the publisher is there to protect the copy right and to make sure of that. For instance when the song is released in France and someone wants to put a French lyric to it, it might be received by the French performing Right Society with that French title only, and they might not be able to find out who the original publisher is without the English title. So another job of the publisher is to liaise with these overseas people giving them information and continually reminding them and clarifying titles so that no mistakes are made and somebody else wrongly gets your money instead.

IS THERE ANY ADVANTAGE IN A WRITER FORMING HIS OWN COMPANY?

There are advantages but it's something that a publisher tries to avoid. I suppose because more and more writers are realising that if they go and get a record contract or their manager does, then why give their publishing to another company when they could probably form their own company, sign themselves up and get in fact one hundred percent? If the writer or the advisers are business enough minded this would probably be the best thing to do, although the problem is that a lot of them don't realise the full implications of publishing and they get so far and they run into problems.

They don't know what a synchronisation fee is, they don't understand about publishing abroad. The problem is that they only know so much about publishing and I have people who I know are going to form their own companies who we don't want to do a deal with. The next thing they are phoning me up saying that they have a publishing problem and they don't know what to do. In cases like this where somebody feels that they are established enough to set up their own company, the best thing to do is go to a more established company and ask them to administer that catalogue. That would be a split deal where the writer's company contracts the writer to the larger company, for instance Queen have Queen music with EMI, so Queen's writers are getting fifty percent, probably (I'm only guessing), and of the other fifty percent Queen's company gets twenty-five percent and EMI gets twenty-five percent. EMI are not going to argue, because if EMI say we want a fifty-fifty deal then Queen will go to somebody else because there will be plenty of other people who will handle it. Sometimes things get taken to extremes, I know of one major artist whose manager phoned up a major publishing company and said, "Would you like to handle so and so's publishing, the deal is a hundred to us" . . . and the publisher said, "Well what do I get out of it?" The manager said, "Well, if you don't know how to make use of that hundred percent . . ."

During any six month period, the publisher will probably hang on to, from the time he receives the money, to the time he pays it out, six months. The artist is probably grossing about a hundred thousand pounds a year, that manager is saying, "Well you will probably be able to make a percentage with your bankers or whoever your money advisers are." Most times the major publishers tell these people where to get off, although there are one or two people around who would take this deal. The Eagles' deal was about ninety five to a hundred. For a company like ourselves, I wouldn't even entertain it because it would cost us. The cost of administering a major catalogue, the percentage of the gross income is at least ten percent. Whoever that artist is when he gives you the publishing, he expects you to get involved, he expects you to chase up the TV companies and the record companies and spend money on advertising. In our situation we don't sign many people. The people we have we work very hard for and therefore say, "We will give you our all, so we expect a reasonable percentage."

HOW LONG DOES IT TAKE FOR ROYALTIES TO BE PAID?

Let's talk about the UK first. As I mentioned before, mechanicals and performances are really the main sources of income. The Mechanical Copyright Protection Society, MCPS, deal with mechanicals, the Performing Rights Society, PRS, with performances. All performance income is collected by the Performing Rights Society, but with mechanicals all the major publishing companies have agreements with the record companies to collect direct. Every three months the majors pay out mechanicals. The record companies sort out who is going to get what at the end of the three month period and at the end of the next three month period we will probably get our royalty. Performances vary, but for simplicity's sake, every six months. Sometimes there are other payments throughout the year but it's really six monthly intervals.

HOW LONG WOULD IT TAKE FOR THE WRITER TO GET THE BENEFIT FROM THE RECORD GOING INTO THE CHARTS?

Probably about nine months because it's all a process of people receiving money, working out who it is going to be distributed to, and actually putting it through the accounts. The writers contract most of the time is ninety days or at the earliest possible time from the end of June and the end of December. If a record is released now, say it's on EMI, they pay the Chappell copyright department at the end of March and that will not be dealt with by Chappell, who pay the writer, until the end of the June period. By the time it has been into the computer, 'posted' etc. and eventually the cheque's drawn up and sent to the writer, it will probably be about September. Obviously overseas it is much longer. It could two to three years to get money from Germany or America, it all depends on the process.

AS OVERSEAS ROYALTIES ARE DIFFERENT FROM THE BRITISH ROYALTIES, DO YOU HAVE TO EMPLOY FOREIGN PUBLISHERS TO COLLECT YOUR MONEY IN THE DIFFERENT COUNTRIES?

In essence, yes. If you have a 50-50 deal, its 50 percent to the writer and 50 percent to the publisher of what is received. If you sub-publish a song in France you cannot expect the publisher in France to give you a hundred percent because he needs a percentage to make his profit.

YOU ARE SPLITTING THE 50 PERCENT AFTER THE ROYALTIES?

In some companies they do a 50-50 deal with a publisher, but the publisher can't pay two 50 percents. The fifty comes back to England which is grossed up to a hundred, and then that is split 50-50, so probably the writer is getting a half of a half. It all depends, in the case of a new writer he has to be prepared to fall in line with that. With a more established writer, if he has got a wise solicitor, then the solicitor will say "We expect the publisher to take something overseas but if you are going to sign him then the agreement is that he will take no more than 20 percent." Obviously it has got to be less than 50-50 in terms of the final pay off. In some cases with the more established writers they can get the money from the source. They can make a deal with a large publishing company who have a 100 percent, own houses throughout the world, and those publishers each take their little bit off the top, but the money, say from France, goes straight to the writer, the UK company can't touch that. If it is a large company like Chappell or EMI, then its money that is being earned all around the world and they are not too worried.

IS MOST SHEET MUSIC PRINTED BY ONLY ONE OR TWO SPECIALIST COMPANIES?

Generally yes, there is one company called Music Sales which has represented a lot of publishers and some of them quite well established.

Sometimes I see music that is printed which isn't necessary but if a record goes in the charts then you should really print up. Although, by the time you have got the pictures together and you have got approval from the artist and all the information you need, the copyright notice which you check is the same as the record, you print up a thousand copies and you sell five hundred - is it worth it? The fact is that printing music helps to establish the copyright and helps to give it some sort of longevity. With a song like 'Happy Days' on the TV series it's a cheap way of sending the song to all the ballroom band leaders and radio producers saying 'would you like to perform this song', and even if a fifth of those people decide to do the song you eventually start to generate performance income. It is much better if the song is put in folios it's like singles and LPs; it's much better to spend about thirty to forty pence for a piece of single sheet music whereas you can buy a folio from anything from £1 to £2.50.

ARE THERE ANY OTHER THINGS THAT YOU DO TO PROMOTE THE SONG?

When we get a new band, like the band we are interested in at the moment who we'll probably sign, they don't have a record contract, so rather than hawk them around the record companies which sometimes is a thankless task and gets you nowhere, I would probably go to the BBC or Capital Radio and see one of the producers and say 'How would you like to spotlight a new band?' This gives them a show and they are (a) getting a fee for themselves; they are earning whatever the going rate is, (b) their songs are being performed on the radio and so they are earning performance royalties and (c) they are more likely to be heard by record companies who think they have discovered the band. They ring up and say, 'Hey that was a great band, let's get to these guys, let's sign them up.'

Actually there are lots and lots of things we do. When we have got a song which is fairly successful and probably has been on the charts and we think what else can we do, we may go to a company like K-Tel with a concept which would involve two or three of our copyrights. To sell the concept we might have to suggest some other people's material, but by doing so the writer probably gets his material released and put into a channel that he normally wouldn't enter.

In some cases it's done not so much as to promote one song but to promote an act. There is one act at the moment who we have set up. We have got them an agency, we've got them gigs, we have arranged a photo session for them and we have even, which we don't normally do, actually made the record with the group and then sold it to a record company. That is something that publishers are getting more into. They get so disillusioned going around to see A&R guys who get so much material that they get punch drunk. They really just don't know in some of the cases. So we make a deal with the studio and get a little free time in return for a percentage of the record, we work something out. We go in and spend a bit of money and make a record. It's a bit of a gamble, but if it pays off you can actually do very well out of it. You have the artist up with a record deal through the publisher.

ROUGHLY HOW MUCH IS A NUMBER ONE SINGLE WORTH IN TERMS OF RIGHTS AND ROYALTIES?

Well it's really a case of doing a bit of arithmetic. It's easier to think of standard 50-50 deals. We have talked about all the

other possibilities and we tend to come to the more established or proven writers. If you have a single at number one it all depends on how long it's there and what time of year it is. Let's say a single does half a million, so you have 500,000 times 4.2 pence. Something like £21,000 and that is the mechanical royalties and you could probably throw in additionally performance royalties from a big song. Obviously when a song is number one it gets put on to people's albums, it gets put on stage shows; the performance royalties can be phenomenal. You can probably put in another eight to ten thousand in performance royalties and then all the kickbacks.

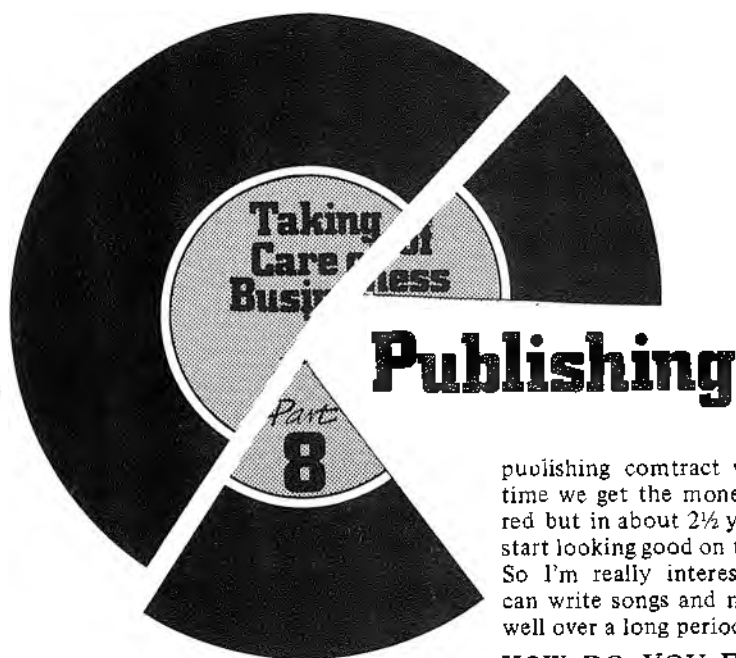
One of our songs, "Right Back Where We Started From", was used in the film "Slap-Shot" with Paul Newman, so we have all the performance royalties and we have got the fact that when the film company wants to actually use the song for a record in the film, we can negotiate for the synchronisation rights and so we will synchronise the song with the film. In fact, we have benefited from that because even though we have given them the rights to use the song in the film, when the advertising company came to advertise the film on the radio, we negotiated yet another fee. So I suppose from a hit song you can earn anything from £5,000-£35,000.

Every now and then you get a standard, you get a "I've Got The Music In Me", "Love Story" or "Alfie", I mean those songs go on for ever. A song writer who has been involved with a few hits, like Paul Anka who wrote "My Way", etc., he probably wouldn't have to do anything for the rest of his life. Some writers don't have chart records and still make a lot of money from B sides, the mechanical royalty is still 2.1 pence. But of course you are not getting the performance royalties, you are not getting the sheet music, and you are not getting any cover records.

In America the mechanical rights are different. It is 2½ cents a track. The overseas situation is much more involved and there are different performing rights societies. If a writer wants to come in and ask us to explain about the system we clarify it for them so they don't have to worry their heads about it.

WHAT IS MEANT BY CREATIVE PUBLISHING?

I could play a song and you could say 'That is good for the Hollies'. So with a bit of initiative you could soon find out who the record producers are and phone them up. Creative publishing is going a bit further than that. For instance



we have a single out, a disco single, it's hard to get instrumentals played over the radio, so we come up with creative ideas to help market the single. We came up with the leaflet, we found out that the artist is actually a doctor of medicine so we said, 'Eddie Henderson is a doctor of music, the prescription is . . .', and we gave the title of the song. So we came out with this leaflet and we sent it out to all the DJs etc.

Sometimes I think it would be coming up with concepts. I don't think it is creating situations . . . possibly using artistic flair to promote the song.

WHAT SORT OF WRITERS WOULD YOU SIGN?

We are in the business of songs, so I am looking for anyone who can write great songs, whether it's another "Release Me" or like the Tom Robinson Band's "Two Four Six Eight" - I think that is a great number. It's catchy. I must admit I do have a weakness for the more classy numbers, like Jack Jones, Thelma Houston, Frankie Valli etc.

I feel a lot more confident going to one of their producers and saying 'this is a great song,' whereas when you are dealing with the more rock orientated it's much harder to get the number away and when you do it tends to have a limited life. But nevertheless sometimes those people are the more interesting people and obviously every publisher's dream is to sign on a writer and in a month he has got a song on the charts.

Most of the people we have are long term artists, Adrian Gurvitz has worked with Ginger Baker, Buddy Miles etc. He is an albums artist who would do well in America. His first album will probably come out in the second year of his

publishing contract with us and by the time we get the money we will be in the red but in about 2½ years time we should start looking good on that . . . really good. So I'm really interested in people who can write songs and material that can sell well over a long period.

HOW DO YOU FIND WRITERS? DO THEY SEND TAPES TO YOU OR ARE THEY RECOMMENDED TO YOU?

It's a funny thing this. I mean everyone's looking for exciting talent all the time. In my experience, of all the material that comes through the post I would say that 10% has actually been worthwhile and only half of that have we achieved any success with. I have just found that all the talented people that we have come across have been through a contact - it's been a manager or a guy in a record company who says 'Hey, I've just seen a new song writer'. It's been situations that I have stumbled on.

I turned up at a party once and I heard this girl say 'I know this great song writer, he's absolutely terrific.' I asked her about him and ended up giving them £100 to do a demo and they sent back an amazing tape that I couldn't believe. We took it from there. We got them a record contract and it so happens that there were problems. But it is normally by chance that the guy that walks in off the street seems not to quite have that final spark and it's the people that don't push themselves and that have somebody mention them to somebody in business at the right time that make it.

Even with the writers we do have, rather than come into the office I would rather go out to their flat and while you are talking they say 'I've got this song, it's very silly you might not like it, I mean I think it is a bit of a joke,' and it's sometimes the most commercial song they have ever written. So again when you have got a writer you have to really delve because some of them are very embarrassed about their really commercial songs. They think you want to hear the classy things.

Obviously we get tapes in with a hand written letter with a cassette which is badly recorded. I do a lot of listening in the car because it is very difficult to listen to a cassette in the office. So I get a chance to really give them a fair hearing. Sometimes the guitar is so predominant with a little voice in the background you

can't understand what is going on and the normal reaction of any publisher is to put it back into the envelope and say 'Send it back'. You don't want to *know*. If it shows the writer cares i.e. he sends you a type written letter, it is well presented, perhaps he has even bothered to have his name set out in Letraset, it is a nice package, you are looking professional. You think, 'Yes this guy means business' and if the guy bothers to ring you up and maybe you are tied up in a meeting or out of the office and he rings again and he rings again, you think 'this guy really wants to get on'. He is bothering to get to me, then I am going to bother too, maybe to ask him into the office and maybe spend an hour with him, listen to all his songs and give it a fair hearing.

I think if somebody does want to come to a record or publishing company they should phone up to make an appointment, they are going to get hard times from secretaries because they have people calling all the time but they should really try and make it known that they mean business. Even in music publishing when we try and sell a song to the record producer they usually say 'send it round'. The producer that you fix the song with, you should usually say, 'Look this song is so good I will not send it round, I am coming around to your office tomorrow and I am going to play it to you'.

So writers should ring up, make an appointment, persevere, and present their material in a proper way; not 50 songs, maybe three songs. You wouldn't want to hear all their songs. In fact if the writer thought about it, would he expect a friend to sit and listen to 25 songs when they came round? I don't want to listen to 25 songs by Elton John in one go. So pick out three that are varied, all different and really strong. If the publisher is interested then he will ask for more. When I get sent a tape of 12 songs I tend to put it to one side as it will take time, but if it is just one song then I'll say 'Right, I'll listen to that now!'

There are cases of writers who just try walking into a record company - or they send their song in and it gets sent back - who get immediately disillusioned. They have to realise that the music business is very competitive, even more so than the car industry, or the clothes industry or any other commercial enterprise and it's only the people who persevere who get on. If I gave up after making one phone call I wouldn't do much business at all.



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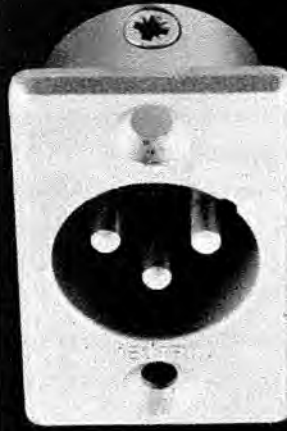
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UNDERSTANDING SYNTHESIZERS

Part 5

by Anthony Horsman
B.A., Ph.D

Introduction

Last month I explained that there are two kinds of oscillators in synthesizers: low frequency oscillators (LFOs) and audio-frequency oscillators which are always voltage-controlled (VCOs). In a VCO, the oscillator frequency (pitch) is governed by a control voltage; the two most common sources of this control voltage are the keyboard module and the LFO, the latter being used to produce the vibrato effect. So, this month, I will start with the keyboard module and then explain how control voltages can be added together before introducing the LFO module.

Synthesizer keyboards

A synthesizer keyboard is really a very straightforward device, producing, in its simplest form, just two outputs. One output is called the "keyboard voltage", which is always connected to the control voltage input of the VCO (see Fig. 1). The other keyboard output is called the "keyboard gate pulse" which is used to tell other modules that a key is pressed down. Why a keyboard gate pulse is necessary will become clear when I introduce voltage-controlled amplifiers (VCAs) next month. For the moment, let's consider the keyboard voltage.

Synthesizer keyboards are designed so that *equal musical intervals on the keyboard produce equal changes in keyboard voltage*. For example, suppose we have a three octave keyboard running from C to the C three octaves above. When we press the lowest note, the keyboard voltage produced will be 0 volts. Press the C one octave above and the keyboard voltage will become 1.00 volt, for the next C, 2 volts, and for the top C, 3 volts. (I have assumed that in this synthesizer the VCOs are such that a 1 volt change in control voltage produces a pitch change of 1 octave as I explained in Part 4.) So when the keyboard voltage is connected to the control voltage input of the VCO is shown in Fig. 1, playing octave jumps on the keyboard produces octave changes in pitch of the VCO.

To most musicians the idea that a keyboard produces octave changes in pitch when you play C to the C above or E to the E above is obvious. So why have I gone to these lengths to explain the internal workings of the keyboard module and the VCO? The answer is that although the *main* use of the synthesizer keyboard is to produce changes in VCO frequency, the

keyboard voltage can be and *is* used in many other ways in the synthesizer, as I will be explaining later in the series. It will be helpful if you can get into the habit of thinking of the keyboard as a synthesizer module with two outputs (keyboard voltage and keyboard gate pulse) and one essential input — the player!

It is an important feature of synthesizer keyboards that the keyboard voltage produced by pressing a key does not change when the key is released, only when another key is depressed. This feature is known as *keyboard memory* and is built into all synthesizer keyboards. If the keyboard voltage were to drop to zero every time a key was released, the effect would be somewhat unmusical!

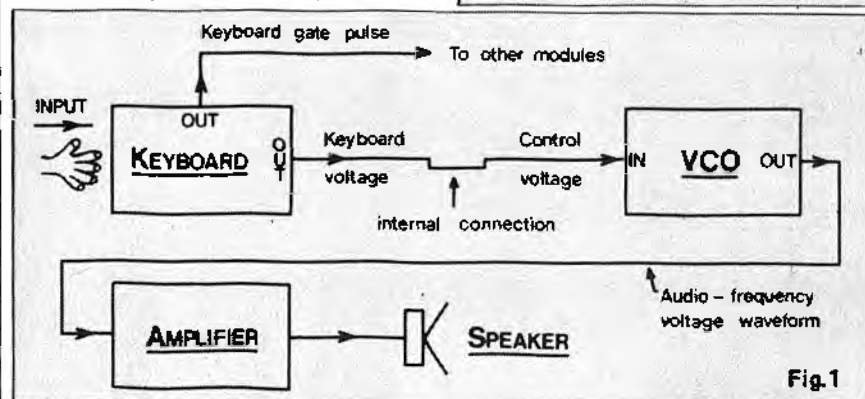
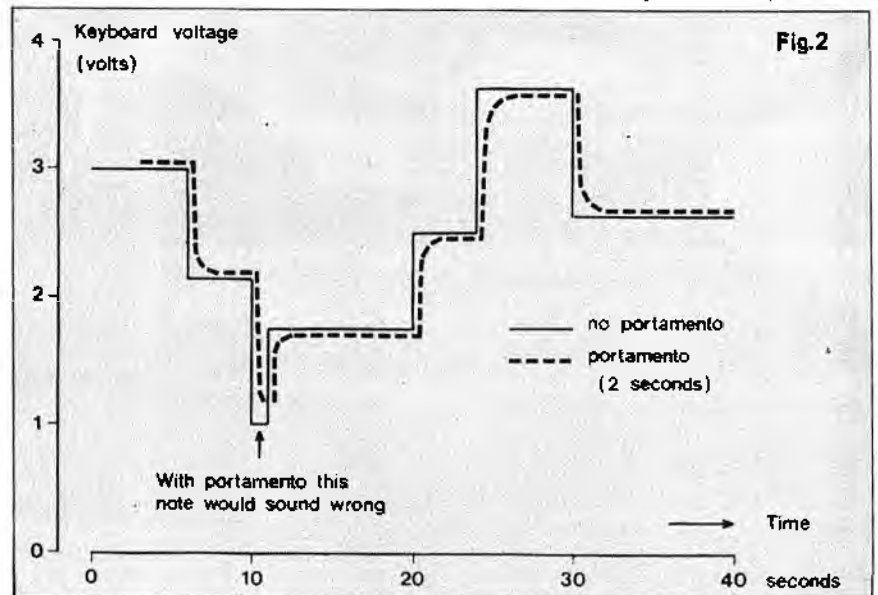
Portamento

When a violinist slides his finger from one position to another while bowing the string, he produces an effect called "portamento"; the pitch changes gradually from one note to the next as the string is progressively shortened or lengthened. The more slowly he moves from one position on the fingerboard to another, the longer the portamento effect. To produce portamento on a synthesizer is very simple, and it is achieved *inside the keyboard module* (not the VCO) by making the keyboard voltage change to its new value gradually, rather than suddenly (see Fig. 2). The length of

time taken to make the change to the new keyboard voltage is controlled by a knob or slider. Unless each key is depressed for longer than the portamento time, the keyboard voltage won't have time to reach the final value it's heading for — so beware of long portamento times in fast passages!

Bend

Guitarists "bend" notes either by pulling the string sideways while pressing the string down on the frets, or by using a (misnamed) "tremelo arm". Both methods are based on the same effect — that increasing the string tension increases the pitch, although the stopped length of the string is virtually unchanged. The bend effect is easily produced on a synthesizer. One way is to slightly displace the tuning or fine frequency control of the VCO (see Part 4); the control must of course be returned exactly to its initial position after it has been displaced. A better way is to modify the keyboard voltage inside the keyboard module using a *bend control*. In its centre position (identified by a click stop or a spring return), this control does nothing; the keyboard voltage emerges unchanged. As the control is displaced or rotated in one direction, the keyboard voltage is slightly increased by an amount which increases as the displacement increases; as the bend control is shifted in the opposite direction, the keyboard voltage is similarly reduced.



The bend effect, illustrated in Fig. 3, is very useful and, from a musical standpoint, is important because it allows the player to vary the pitch of a note *spontaneously* while the note is being played.

Adding control voltages

In Part 3, when I was discussing additive synthesis, I showed a diagram in which a mixer was used to add together the audio output signals of four sine wave oscillators. It is equally possible to mix together control voltages and by this means to control synthesizer modules such as the VCO from two or more sources at the same time.

Many synthesizer modules and all VCOs contain an *input control voltage mixer*, the function of which is to *add* together voltages coming from a number of sources to produce one final control voltage which acts as the overall control voltage for the module. Have a look at the upper part of Fig.4, the part above the dividing line, ignoring what is below for the time being. On the right is the VCO with its control voltage input. The control voltage is provided by the control voltage mixer, and it is the *sum* of the voltages supplied to the inputs marked J, K and L. The voltage at J comes from the tuning control and probably can be varied from -0.5 volts to +0.5 volts. The voltage at K comes from the range switch (see Part 4) which probably supplies 0v, 1v, 2v, etc., depending on the switch position. The voltage at input L is the keyboard voltage which might vary from 0 to 3 volts. Varying *any* of these inputs by 1 volt produces a 1 volt change in control voltage reaching the VCO.

Suppose you played a tune within the bottom octave of the keyboard with the range switch set to 8'. If you changed the range switch to 16' and played the tune an octave higher, it would sound exactly the same. The keyboard would be supplying (to the input control voltage mixer) keyboard voltages which were all 1 volt bigger than before, but the range switch would be supplying 1 volt less — so as far as the VCO itself was concerned, nothing has changed. Because control voltage mixers such as this are an integral part of many synthesizer modules, they are not usually labelled on front panels. However, they really are there, and it is as well to know why!

Low frequency oscillator (LFO)

Low frequency oscillators produce voltage waveforms with frequencies in the sub-audio range, typically 0.1 Hz (1 cycle every 10 seconds) to 10 Hz. They are *not* often voltage-controlled, the frequency being varied only by a knob on the front panel. There is usually an output waveform selector switch, with sine wave and square wave outputs always available, and sawtooth and triangular waves more often than not. (These waveforms were illustrated in Part 4.)

As the output waveform of an LFO is itself inaudible, LFOs are used primarily as sources of control voltage, as shown in the lower part of Fig. 4. Here, the LFO's output is shown connected to input M of the control voltage mixer. This input differs from the other inputs inasmuch as there is a

variable control (usually a slider) between M and the "summing junction" S. This slider is necessary because the voltage waveform output of the LFO itself has a constant amplitude; as far as the input control voltage mixer is concerned, the slider effectively alters the amplitude of the low frequency waveform.

A sine wave output is always necessary on LFOs for the production of vibrato, an effect which was described in detail in Part 2. You can now appreciate how this "frequency modulation" is produced by *adding* to the keyboard voltage (and the other contributions from the range and tuning controls) a slowly varying sine wave from the LFO. The "speed" of the vibrato is determined by the frequency of the LFO, and the "depth" of the vibrato is controlled by the variable slider between the LFO and the input control voltage mixer of the VCO; low settings produce "light" vibrato, and higher settings produce "heavy" vibrato.

The Square wave output of the LFO is used to produce "trills", making the VCO jump rapidly up and down between two notes which can be tuned to any chosen interval apart (eg. a semitone, a fifth or an octave) by adjusting the same input slider.

Pulse width modulation

Last month I described how the mark/space ratio (or "pulse width") of the pulse waveform from a VCO can be altered manually on many synthesizers to tailor the frequency spectrum of the waveform to the required sound. If you were to move the pulse width control backwards and forwards while you were playing, you would produce an effect called "pulse width modulation" (PWM). However, you would soon tire of shifting the control around, despite the great effect it produces! Fortunately, electronics come to the rescue again: it is possible on most synthesizers to make the LFO vary the pulse width (or putting it more carefully, vary the mark/space ratio of the pulse waveform) as indicated at the bottom of Fig. 4. Pulse width modulation by the triangular wave of the LFO in particular produces very pleasing, full-bodied, moving sounds.

In Fig. 5 you can see what actually happens to the pulse waveform as it is modulated by the LFO, the mark/space ratio increasing then decreasing in periodic fashion.

Next month I will be saying more about the keyboard gate pulse, and introducing the ADSR module and its close associate, the voltage-controlled amplifier (VCA).

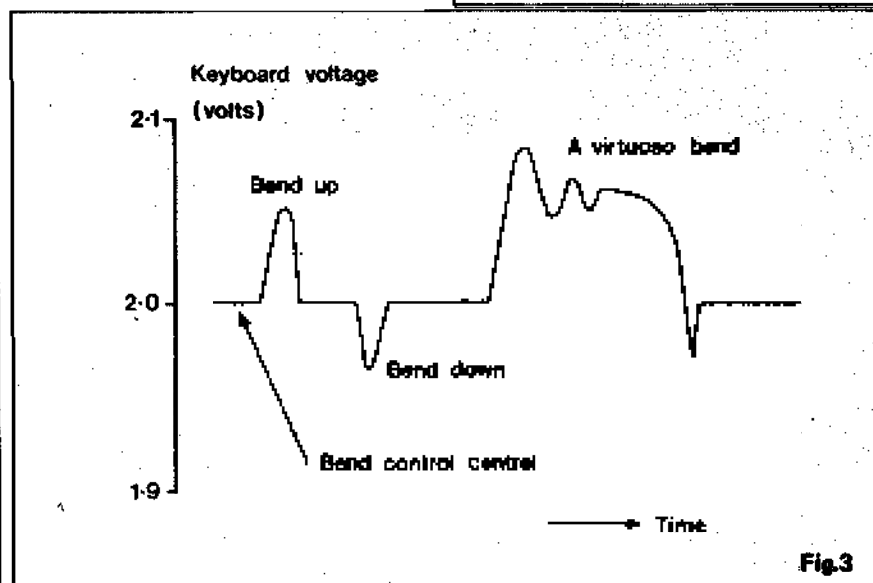
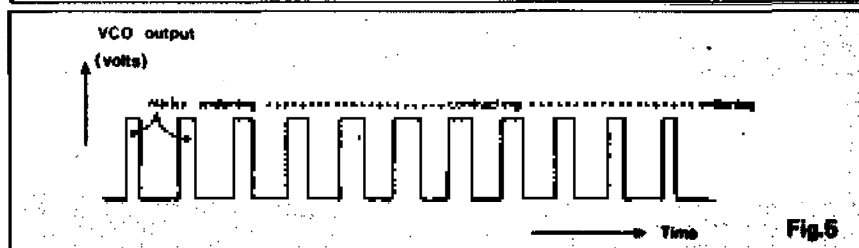
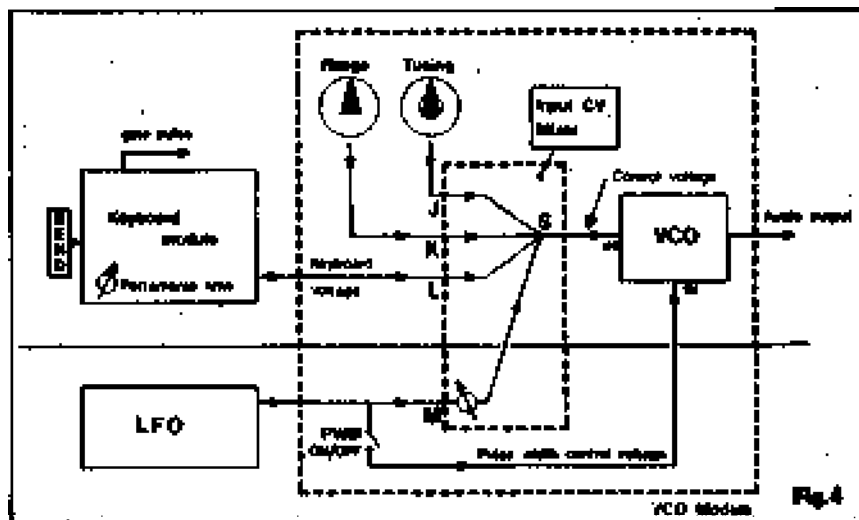


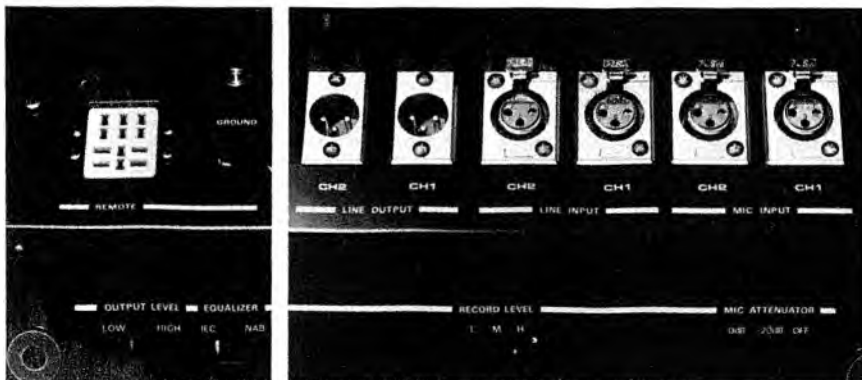
Figure Legends — Part 5

- Fig. 1 The keyboard module produces two outputs, a gate pulse which tells other synthesizer modules that a note is pressed down, and a keyboard voltage which is always internally connected to the control voltage input of the VCO.
- Fig. 2. Keyboard voltages produced while playing seven notes in succession, without portamento (solid line) and with portamento (dotted line). The portamento time is about 2 seconds.
- Fig. 3. Keyboard voltage with "bend" voltage added.
- Fig. 4. Schematic diagram of a VCO module showing the control voltage mixer receiving inputs from range and tuning controls, keyboard module and low frequency oscillator (LFO).
- Fig. 5. Pulse width modulation; the mark/space ratio increases then decreases periodically under the control of the LFO.

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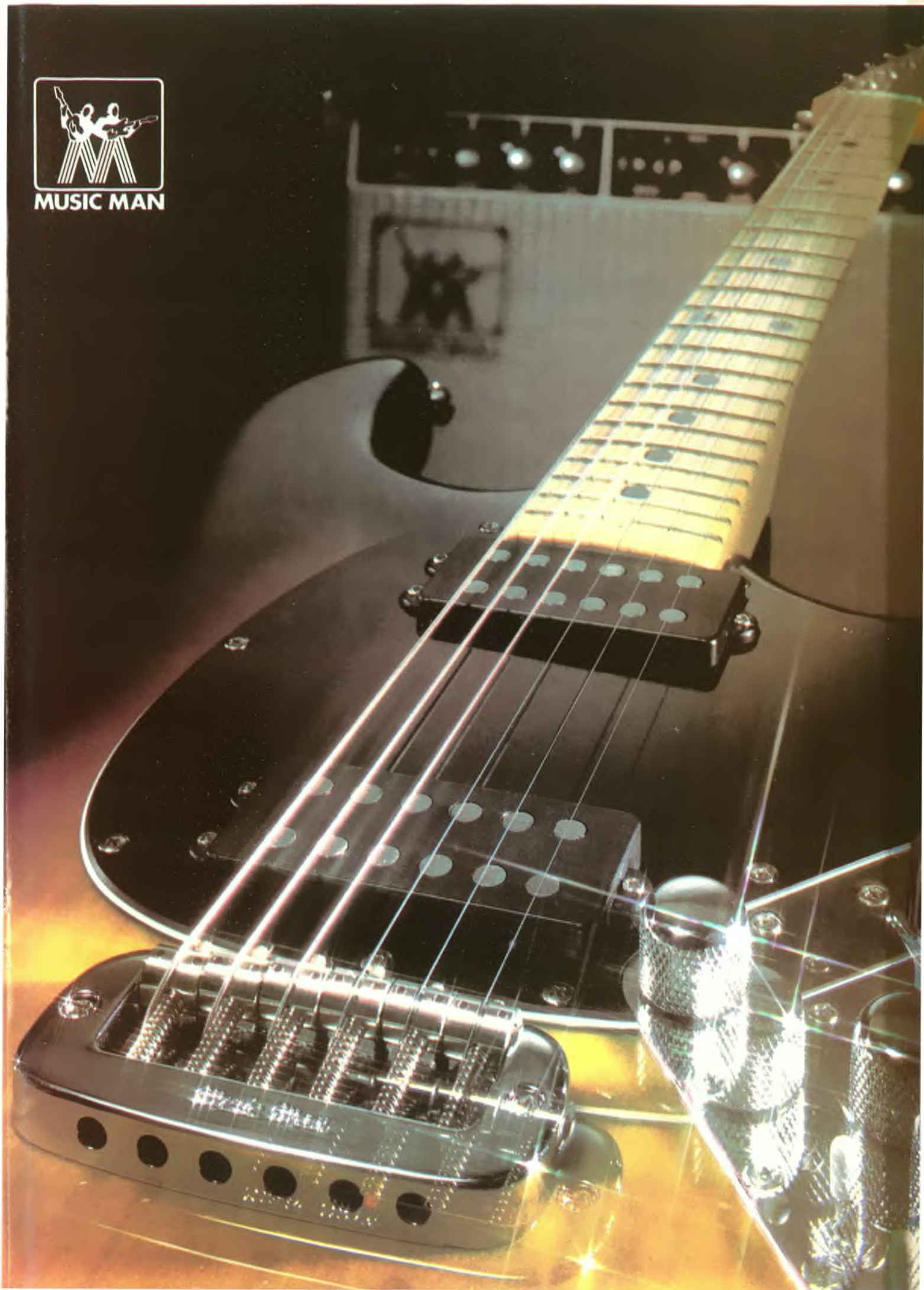
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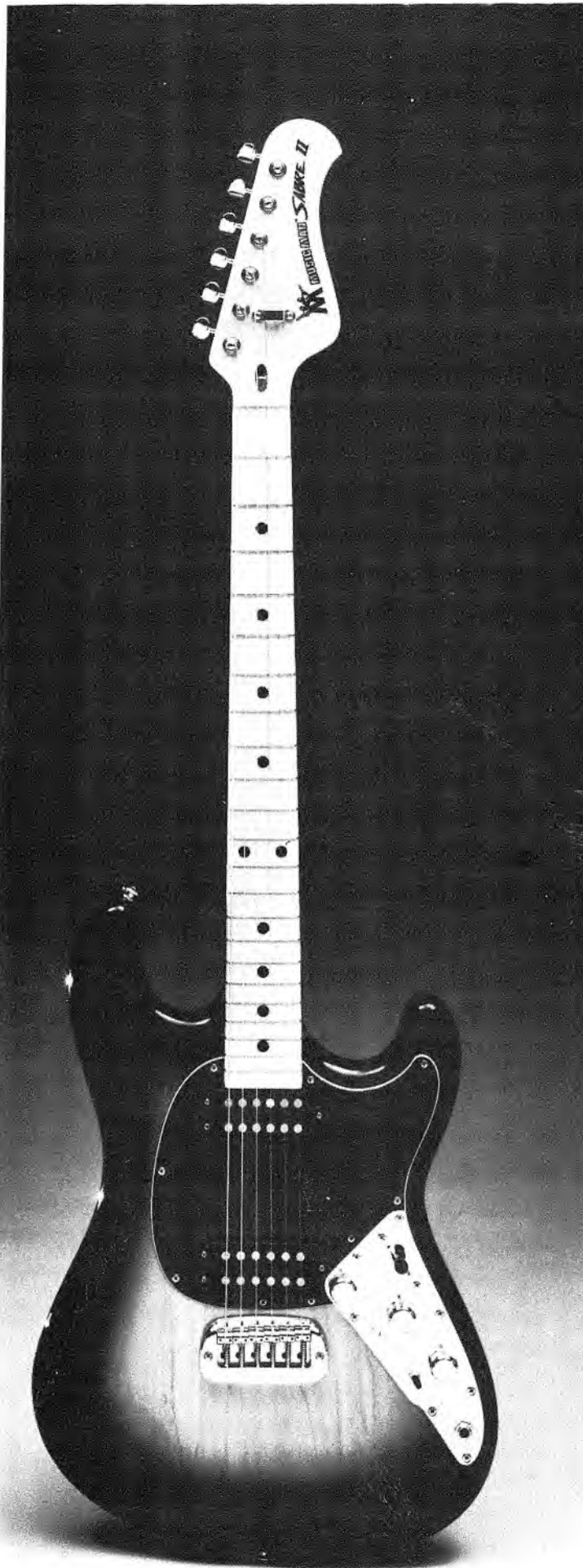
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It is also possible to connect a foot volume control into these

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All models also include a high-low power switch which reduces the undistorted power output to one-half normal (65 watt models become 32 watts, 100 watt models become 50 watts). This is useful when one wishes to overdrive the power tubes to obtain the sound of a small amplifier being overdriven. It also protects the speaker as the maximum square wave output power is more than 100 watts (180 watts on 100 watt models) which exceeds the speaker's power rating. This is a very useful feature when playing distortion.

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 - Built-in phaser has rate control and effects level control. Phasing occurs after the preamplifier and is noiseless, a distinct advantage over phasing pedals that are connected ahead of the amplifier.
 - 65 watt R.M.S. output into 4 or 8 ohms selectable by rear panel impedance switch.
 - Domestic models include a convenient power outlet for effects devices and a three-position ground switch which has a center "off". This feature is useful in preventing hot grounds on the stage when several amplifiers are in use.
- 17" x 22-11/16" x 8-15/16" —47 lbs.



112RP-100-EVM

- All of the features of the 112RP-65 apply except the power rating, which is 100 watts R.M.S. The 112RP-100-EVM is equipped with an Electro-Voice 12" speaker for increased efficiency and trouble-free operation at high power levels.
- 17" x 22-11/16" x 8-15/16" —57 lbs.



115RP-100-EVM

- All of the features of the above models apply except for the 15" Electro-Voice speaker. This model is especially recommended for steel players who will find this heavy duty EVM[®] speaker able to handle the complex chord formations that so easily overload most speakers. Any foot volume pedal can be adapted to work with the line-in/line-out jacks, which require a 10K ohm control and a stereo connector and cable. The steel player will find freedom from hum and noise for the first time—a real benefit in recording studios.
- 20½" x 22-11/16" x 9½" —72 lbs.

112RD-65

- This model is identical to the 112RP-65 except that the phaser is not included. In its place is an additional set of gain and volume controls. One set can be adjusted for clean playing; the other for distortion. Volume can be adjusted to be equal, or either pair of controls can be set louder or lower than the other. The foot switch will switch between these two sets of controls, and, to simplify the set-up, a light in the foot switch indicates which set is in use.
- 17" x 22-11/16" x 8-15/16" —47 lbs.



112RD-100-EVM

- All of the features of the 112RD-65 apply except the power rating, which is 100 watts R.M.S. The 112RD-100-EVM is equipped with a 12" Electro-Voice EVM speaker.
- 17" x 22-11/16" x 8-15/16" —57 lbs.



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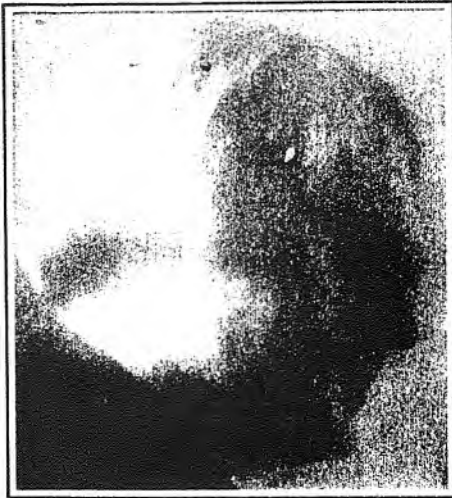
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4
THE
PRODUCERS



Richard Hewson

"After that, I arranged the strings on the James Taylor album, again for Apple. After those two jobs, of course, I got millions of jobs with Welsh folk singers trying to make them sound like Mary Hopkin and lots of jobs putting string quartets on folk/rock albums!"

Producing started accidentally for Richard. Inevitably, he became frustrated just doing arrangements and he used to "mess around at home" recording himself on a small eight-track machine.

"Arranging is fine, but I didn't ever get to be upfront so, as I had some recording equipment at home, I started doing a couple of things I'd written, one of which was "The Crunch". It was really just to make a change from arranging for other people to do something of my own, to give me a change of direction. I never really took it all that seriously but, when it became successful, it sort of opened the doors for me.

"The Crunch" was the first success as far as producing goes but I've recently been producing a guy called Ian Page who has had a fair amount of success in America. I've produced a lot of not-so-well-known artists as well. I co-produced with Clifford T. Ward on his last album and did an album for Nina of Nina and Frederick. The concept behind the Rah Band is really a vehicle for my own ideas and compositions. My definition of it is surrealistic music — I can't really pigeon-hole it and I can't find any kind of parallel form of music anywhere because it's got lots of different things in it. It's very satisfying for me."

The Rah Band is a unique concept in that Richard lays down the basic tracks at home and then transfers to a studio where percussion and any other instruments are added.

"I always record the basic tracks at home on my eight-track. I do all the keyboards here plus guitars, bass and odd bits of percussion. That's all recorded on my Itam eight-track which is portable so I take the machine into a studio and dub it off onto 24-track which then leaves me 16 tracks free for drums and whatever else I need to put on.

"I've also got another project going which I've had more success with in the States. It's under the name of the Richard Hewson Orchestra and is basically aimed at the disco market. I start off the same way doing the basics at home but it's a different sound, more conventional. I

put a lot more strings and girls' voices on whereas with The Rah Band I keep it to a minimum and then add on drums and maybe one sax."

Recording this way, Richard has become very familiar with the "guts" of a studio — the machines and desks. He finds it very valuable for a producer to have a fair knowledge of what is essentially the tools of the trade.

"I started getting involved in the technicalities when I began The Rah Band and it was basically because of the astronomical costs of studio time. I worked out the cheapest way to do it and figured that the most expensive thing is time. My set-up at home is very good for one-man recording. Learning the technical side was very much trial and error and it took me at least six months to really find out how to use the gear properly. Then again, I'm sure it only works the way I use it. If I had a band down here, it probably wouldn't work because I only know how to record myself one track at a time. I can get quite a lot out of the machine that way and it certainly helps if you're a producer. I think more and more producers now are getting small home studios."

Hewson has no set beliefs on what makes a good producer, although he feels one should be active and not just "sit around drinking coffee".

"There are so many different kinds of producers and I've worked with some who really shouldn't be producers because they don't know one end of a recording studio from the other. They'd just sit there and when the record was finished, they'd go and collect their royalties and credits after everyone else had done all the work. On the other hand, there are producers like Richard Perry who used to drive a person mad. He would reduce grown men to tears! He would get a really good session drummer and then try to teach him how to play drums, although he's not as bad now. I think somewhere in the middle would be ideal. Then again, the way I produce is different because I'm the musician as well. It would be difficult for someone else to see it the same as I see a piece of music. I think Gus Dudgeon is one of our best producers."

Hewson's method of multitracking keyboards, guitar and bass on a simple eight-track machine must be somewhat limiting. Didn't he feel the need to upgrade to 16?

Richard Hewson's name has appeared on a wide variety of records in a wide variety of roles — producer, arranger, performer. His first job as arranger was for "Those Were The Days" by Mary Hopkin and his recent work has included string arrangements for the last three Cliff Richard albums. He has also produced a number of albums including "The Crunch And Beyond" by The Rah Band from which a single "The Crunch" was taken, eventually entering the Top Ten. The Rah Band, in fact, is Richard Hewson on keyboards, bass and guitar plus Barry DeSouza (drums), Peter King (sax) and Tony Carr (percussion).

Richard began life as a musician playing jazz guitar in small clubs but decided to further his career by studying orchestration and composition at the Guildhall School of Music.

"I spent about four and a half years there and it proved invaluable for me as a composer and arranger. Soon after completing my studies there, I got into arranging and did "Those Were The Days" for Apple because I knew Peter Asher from a long time back when we used to play together. That was how I got into arranging because, when Apple started, nobody knew how to put a record together in terms of orchestras and things like that. I think, apart from George Martin, I was the only person they knew who actually wrote music on a piece of paper!

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Richard Hewson

"Well, it's limiting in a way only having eight tracks but it's good in a way because you don't over-complicate things. You only have eight tracks so you can only put eight tracks down. I *do* want to expand to 16-track but I don't want to fall into the trap of putting 16 tracks down just because they're there. There are cases when you're doing a piece of music and you find that you need another track but you can't do it. It means I've got to do it in a studio because if I bounce tracks, I'd lose quality. I try to reserve the more mechanical things for the studio — things like a handclap for instance. I wouldn't record a handclap at home because it would be a waste of a track and its only a five minute job in a studio anyway. You can wind it right up and get the maximum on tape the way I do it because you're only doing one track at a time. You only have one VU meter to watch whereas an engineer recording a full group has to watch all the needles at once and has to keep everything down in case there's a sudden loud bit. I can get the levels up all the time and that's the secret — having the maximum on tape."

Richard's "home studio" consists of an Itam eight-track ½-inch machine and an Itam 10/4 mixer. The rest of the equipment includes a Roland SH5 synthesizer, Roland string machine, Roland JC 60 amp and Roland Space Echo. There is also an old Hohner electric piano and an antique harmonium that he used to use as a string machine! On his method of working he says: "I always start off with a drum machine because that sets the

tempo. When everything is finished, I then take it out and add drums in the studio. So it's drum machine to start with and then I put the tune down on whichever instrument I choose. I never write anything down at this stage — it's just whatever comes out. I suppose that's the jazz influence. I like improvisation and it's usually the first ideas that are the best. I don't write anything down until I get to the overdub stage. By then, it's taken shape and it gets a bit more formalised. If I'm producing someone else, I approach it differently and write all the parts out. I can't really trust anyone with improvisation unless I know them so it's wise to have written-out parts in that case. With certain people I know, I know how they will improvise so it's no problem in that case.

"A really good session musician should be able to play a written piece and make it sound as though its improvised. There's nothing worse than listening to a tired old session man who's bored. That's where the good session musicians differ. The other thing is that there are a lot of good session players who can't read music which, for me, is a drag. You only have three hours maybe to do a track and it takes a couple of hours to teach him the song. The most valuable people for me are the good players who can read and there aren't many of them left. That's what we need more of in this country. There are lots of good rock musicians who can't read a note and there are guys who can sight-read but can't put that extra little bit of magic into their part. I wish some of the younger guys would concentrate more on reading because they'd get lots more work that way.

"I work a lot with Alan Parker and he's like an ideal session musician for me because he can read but also inject a bit of himself into it. Unfortunately, there aren't many players left like that. It's a sobering thought, if they all died out, music would change drastically. Parts would have to get simpler and things would take longer to do. I really think someone should start a campaign for people to learn to read. They would be so valuable. I don't mean instant sight-reading — even slow reading would be valuable.

"People would get a lot more enjoyment out of music as well — it's like adding an extra arm. For instance, I'm not a very good sight reader myself now

but, from a guitarist's point of view, it's invaluable to be able to read. I often play through things like Bach violin parts on guitar and it's great reading practice but enjoyable at the same time. The violin parts just sort of lie under the fingers — it's not too difficult and reading does improve your technique. You're forced to stretch your fingers over the strings and maybe play notes that you wouldn't normally think of doing. I think playing normally, not reading, you tend to get very lazy and just do the easy things."

Dali and other surrealist painters are a constant source of inspiration for Hewson and his home music room has numerous prints by such artists.

"It's not really a conscious thing it's just happened that I find the music from The Rah Band just seems to connect with Dali's works. Music, to me, means that when you're listening to it, it conjures up atmospheres and images and they just seem to come out in the same vein as his pictures. Most of The Rah Band material is very basic on the face of it — simple tunes and fairly simple backing — but there's something bizarre about it. There's some element that's a bit strange. The more I do, the more I seem to get into this vein of surrealism. The greatest turn-on for me is when music conjures up an image or an atmosphere."

Although "The Crunch And Beyond" was only released a couple of months ago, Richard is already well into his next album but stresses he's not worried whether it sells or not.

"I really don't care if it's a hit or not. I've become very philosophical about it now. I'm lucky because I've got the arranging side as well. I won't get rich on arranging and producing but I can keep house and home together. I just get so much satisfaction from doing it. A while ago, we were trying to get arrangers on a royalty basis instead of just getting a set fee. It would be nice. I mean, I got £25 for "Those Were The Days" and that was it. It would be nice to get a royalty because of the number of records I've been associated with that have sold well. I did "The Long And Winding Road" and that would be worth a few bob.

"Apart from The Rah Band album, I'll also be doing some more under the name of The Richard Hewson Orchestra, specifically for America. I like to cover the four areas — playing, writing, arranging and producing.

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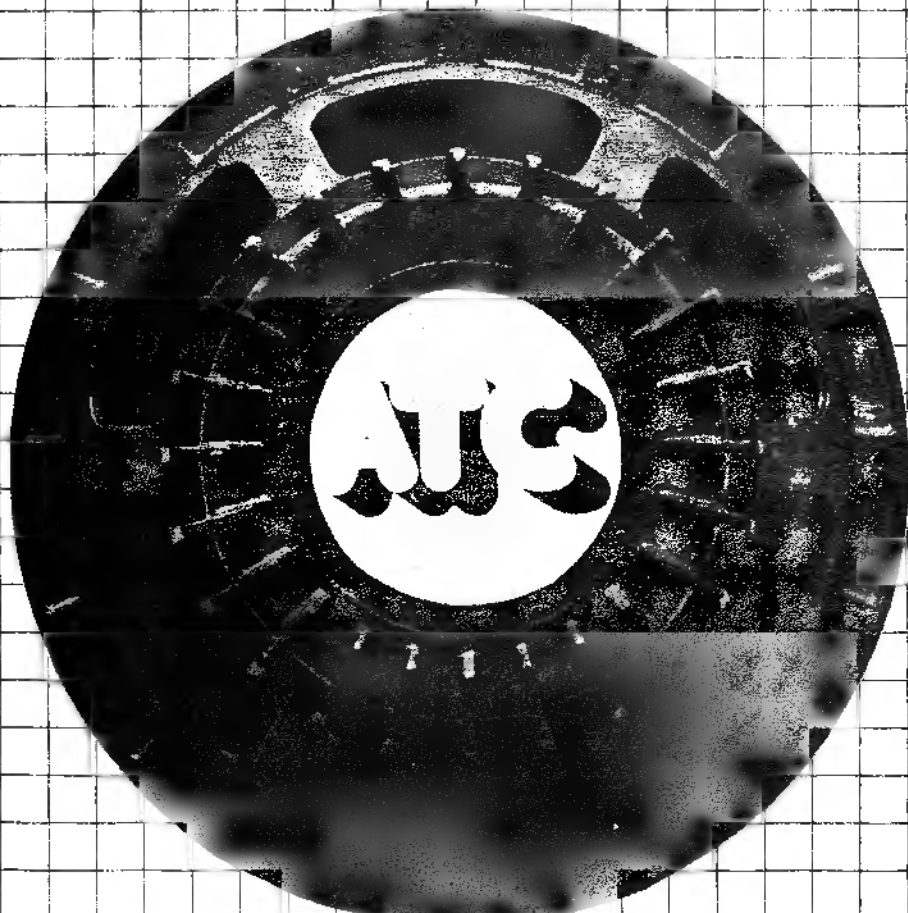
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The Startling Sound

When you are working all hours of the day and night for anything up to a month, then the surrounding and atmosphere of a studio are vitally important. At Startling Studios, deep in the heart of Berkshire, those considerations take on an entirely different meaning.

The studios are very aptly named, being something of an eye-opener to the weary musician used to treading the well-worn paths to the London studios. Startling is housed in a beautiful Georgian mansion surrounded by almost 80 acres of superb gardens, which offer a unique experience for recording musicians.

Mike O'Donnell is the studio manager and he explained the history of the house and studio. He said: "It used to be John Lennon's place many moons ago, he did 'Imagine' here, he had a little eight-track. When he moved out, it was empty for a while then Ringo bought it and he turned it into a 16-track studio for his own private use. When he left the country, we bought it and turned it into a 24-track."

actual studio room takes up just one part of the house, the whole building with its many different rooms and acoustic qualities can be brought into play.

The control room hardware at Startling is as impressive as the surroundings, having been built to the highest standards. The desk is a versatile 36 in, 36 out MCI with quad capability and the equipment includes 16- and 24-track 2" mastering machines; a 3M four-track machine and two B62 stereo mastering machines.

The monitors are JBL driven by Crown DC300's, and other equipment includes 12 Kepex, two LA1176's, two LA 3A levelling amplifiers, four Gain Brains, four DBX 260 limiters, Eventide digital delay, URE1 graphic equaliser, AMS flanger/phase unit plus a live echo chamber.

Instruments available include a Hammond C3 organ, Fender Rhodes 88 stereo electric piano, an ARP 2500 synthesizer and a Yamaha grand piano with all the usual Neumann, AKG and Shure mikes on hand. Mention should also be made of the church organ which is

currently being restored in a separate building and will soon be available to artists.

Dave Tickle is the chief engineer at Startling and has been with the studio virtually since its inception, a fact which has its advantages as Dave explained: "When I came here, the studio wasn't totally built, so I had a lot of scope in actually getting the gear we have now. Also, as it was a new studio, we didn't have the cashflow problems that many studios have so we were able to get very good gear from the start."

Startling is essentially a studio for making albums and so every effort is made to create the right atmosphere for musicians to work in for long periods of time. Accommodation comprises seven double bedrooms plus two singles, there's a heated outdoor swimming pool, TV lounge, a panelled games room and even a two-berth sauna on the first floor.

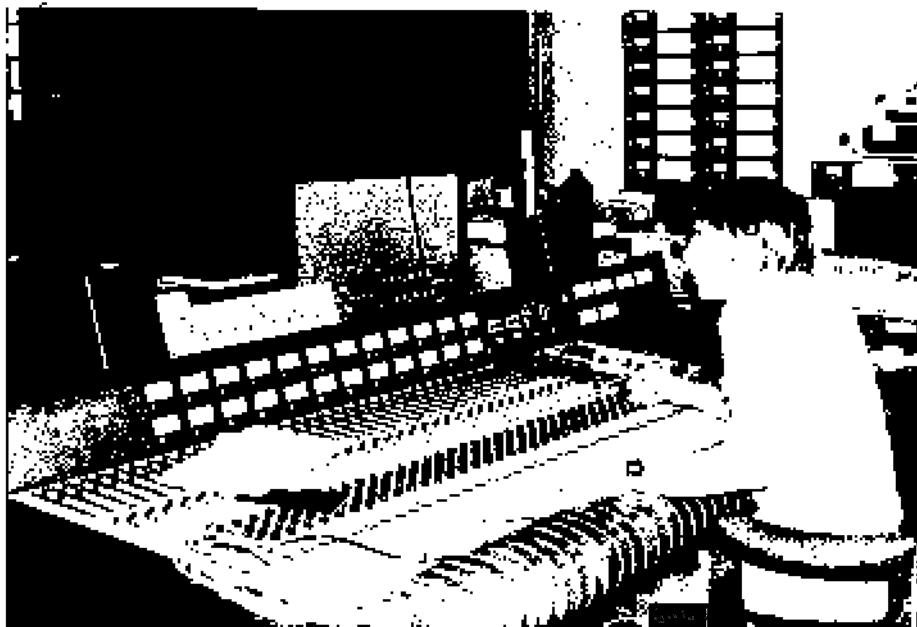
Startling have a resident chef to cater for any taste from home cooking to French Haute Cuisine, and the whole atmosphere is totally informal with schedules arranged to fit in with the artists. The gardens are worth a visit in themselves, boasting one of the finest collections of trees and shrubbery to be found anywhere.

Artists who have recorded there include Rab Noakes, Slade, Sham 69, The Strawbs, Split Enz, Denny Laine and Roger Chapman. The Ascot studio is ideally situated, just an hour's drive from London, and is perfect for the band who really want to "get away from it all" and record in the best possible situation.



Since September, Startling has been fully booked, thanks to the inevitable good word-of-mouth reports about the studios, and already artists are coming back again and again. By comparison with the rest of the house, the actual studio and control room would seem to be modest; however, they can handle up to 25 musicians and, included in the design, are separate booths which can be used for drums or vocals, etc.

The studios do have another feature which, because of the size of the place, would seem unique. It is possible to use any of the rooms in the house to record a particularly instrument to suit the artist. For example, if a keyboard player found he could get a great sound out of his Fender Rhodes in one of the main bedrooms, or the grand piano sounded good in the games room, then that would be set up. So, in effect, although the



Chief engineer Dave Tickle in the control room

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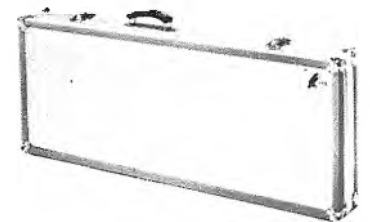
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Nick Griffiths, Britannia Row Recording Studios Ltd.

The Pink Floyd's Britannia Row studios has been in operation for nearly three years now, and Nick Griffiths has been there for two of them. Nick reached his current position via BBC radio, where he worked as a studio manager on John Peel and "In Concert" sessions.

Britannia Row started as a private studio for the Floyd, and though now a commercial studio, the intention is to keep it personal and low-key. Distinguished visitors have included Steve Hillage, Julie Covington and Richard & Linda Thompson, apart from the Floyd themselves.

Britannia Row is equipped with MCI 24-track machines, and the MCI desk has 36 channels into 24. JBL monitors have been fitted.

Roland Kluger, Morgan Studios, Brussels

Morgan Studios in Brussels is one of Europe's major recording locations. Rod Stewart, Jethro Tull, Blondie, Plastic Bertrand, Nana Mouskouri and Jules Dassin are all Morgan veterans.

Roland Kluger is one member of an engineering team that includes Mitzi Boedts and Mike Butcher, among others. The Brussels studio is very similar to Morgan's Studio 4 in London. The 24-track Cadac desk has four foldbacks, four echo sends and eight echo returns, all with equalisation. The studio's 40 microphones include Neumann, Sennheiser and AKG; Dolby noise reduction is used throughout, and monitoring equipment is by Tannoy.

Dick Plant, DJM Studios, London

Dick Plant started his recording career as a tape operator with Pye, after which he moved to De Lane Lea studio. There he got into engineering, and stayed with De Lane Lea for six years.

Equipment at DJM is based around the fully automated MCI 500 desk, which has 42 channels in and 32 out. Neumann, AKG and Sennheiser microphones are among the studio's hardware, with monitoring by Eastlake. DJM boasts a wide range of effects, such as harmonising, flanging and digital delay.

Dave Tickle, Startling Studios, Ascot

Dave Tickle has been an engineer for two years, the second of which he's spent at Startling Studios, the previous year having been spent at Zodiac Studios, TPA and Manchester's Strawberry Studios.

Startling Studios, near Ascot, lives up to its name; a country house formerly owned by John Lennon, the studios stand in a 72-acre botanical garden. Instruments available to musicians include a Yamaha grand piano, a Hammond C3 organ, a Fender Rhodes and an ARP 2500 synth. Control room facilities comprise a 36 in, 36 out MCI desk with quad capability; 16 and 24 track mastering on 2"; two B62 stereo mastering machines and a 3M 4-track machine. Additional facilities include flanging, digital delay, compressors and harmonisers.



John Springate, Rock Star Studios, London

Rock Star Studios is owned by John Springate, former lead singer with the Glitter Band. John learnt about recording during his stint with the band, and handled a lot of their mixing.

He started to build Rock Star in October 1977, and the studio opened in January, 1978. Recording equipment at Rock Star comprises 8 and 16 track equipment made by Scully. The desk is an Allen and Heath 16 into 8 model, and John has installed Tannoy monitoring equipment. Revox reduction and echo facilities are also on hand, and cassette copying is another part of the Rock Star Services.

Musicians who have used the studio include former T-Rex member Steve Curry and Marmalade's Alan Whitehead. A lot of the studio time is booked by publishing companies, who use Rock Star for mastering.

Colin Nicholson, Pan Audio, Edinburgh

Colin Nicholson started off as a freelance film sound recordist, and still works in films when he has time. He is now Managing Director of Pan Audio, spending a lot of his time doing studio engineering work. The Scottish folk duo, the Corries, are co-directors of Pan Audio, and make all their recordings there.

Pan Audio have a lot of equipment manufactured by the Scottish firm, Tweed Audio, based in Kelso, including the main desk, amplification, compressing and limiting equipment. The studio also has an old Studer G37 4-track machine, as well as three Bias/Leavers Rich machines. Microphones are mainly AKG, and monitoring is by KLF.

David Smith, Wizard Sound Studio, Belfast

Wizard Sound Studio was started in its present form in October 1977 by David Smith, who has been a professional musician for eight years.

Equipment at Wizard Sound includes a

16-track Studer machine and a Soundcraft 24 channel desk. Monitors are Tannoy Gold powered by a Crown DC 300 amp; there is limiting by Audio Design Recording, Delta T digital delay and Rebis parametric equalisers. Microphones include Neumann and AKG.

Wizard Sound handles a large number of local artists, and numerous punk bands have used the studio including the Outcasts, the Undertones and Star Jets.

Martin Maynard, Audiogenic, Reading

Company director Martin Maynard originally set up Sun Recording Services with a two-track machine. The Sun studio has now been rebuilt to house Audiogenic, and has a greatly improved physical layout as well as redesigned acoustic properties.

Audiogenic has been fitted with 8-track Otari machines, and the desk is a 16 into 8 model. Other features include full equalisation by Audio & Design; flanging and ADT equipment is by Scamp, and the studio has Tannoy monitoring and mikes by AKG, Beyer and Neumann.

Among artists using the studio for demos have been XTC, the Vibrators and Blonde on Blonde, all of whom subsequently clinched recording deals.

Nigel King & Hugh Shewring, Windrush Studios, Gloucestershire

Windrush Studios are housed in a converted stable in the Cotswolds, and have been in operation for over a year.

Hugh Shewring, who also plays guitar with a band, used to make mobile recordings with his own equipment, and was recording engineer for a local band. Nigel King also is a musician, but has given up playing with bands to devote his energies to Windrush.

Windrush is equipped with a Teac A3340 4-track machine, and a Revox A77 with variable speed. Mixing is done on an ITA 10 into 4 mixer, and Celestion Ditton 66 monitor have been installed. Microphones are AKG and Shure.

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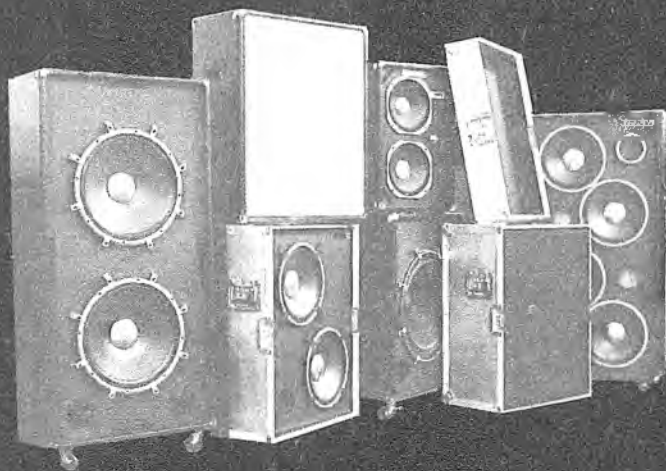
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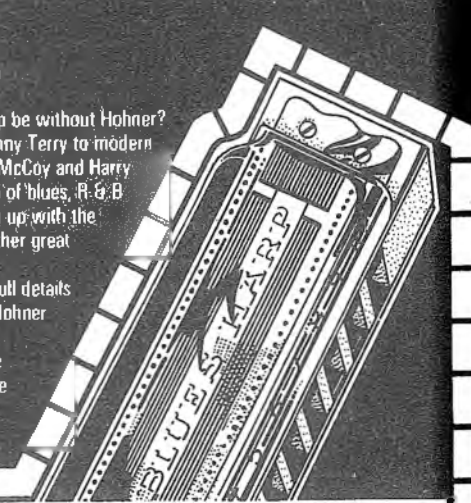
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SPEAKERCHECK

BY KEN DIBBLE

There has always been a certain mystique surrounding the acoustic lens. Even in the trade, and among acousticians, there is considerable uncertainty as to how they should be used, what is their intended application, and how they work. Some have even been known to express doubts as to whether they actually serve any useful purpose at all — in the pages of a leading technical journal! In this month's Speakercheck, we will deviate a little from the normal format and try to explain the principles behind the various types of lens currently available, consider their application, and finish up with a test section in which we will analyse the performance capability of a cross section of the market at prices ranging from around £30 to over £600!

As has been so often stated in these pages, one of the main problems facing loudspeaker system designers is that of adequately dispersing the higher frequencies. Horns offer infinitely more control in this respect than can be achieved with direct radiating cone loudspeakers but, even so, it is rare for dispersion in the horizontal plane to better about 50° off axis at the -6dB points. Some special horns are available with wider dispersion characteristics, but these are usually only effective over a comparatively narrow band of frequencies. The acoustic lens is intended to overcome this design problem by providing wide acoustic dispersion in the horizontal plane. Spreads of up to 70° off axis are claimed by manufacturers — and are, in general, confirmed by our test results.

It should, however, be realised that wide horizontal spread is not always a desirable feature — but when it is necessary, it is often difficult to achieve. It follows that, by spreading the available energy out over a wider area, the energy at the wavefront must be proportionately reduced. Therefore, the lens is primarily used for "short throw" applications, where the audience are seated in close proximity of the loudspeaker array. In this situation, a smooth, even spread of mid and high frequency energy is provided without hard beams of sound energy making listening uncomfortable for those sitting on the axis of the loudspeaker stack, while those sat between the stacks, or at more than about 50° off axis, receive little or no direct sound at these frequencies. This is all too often a major problem — usually apparent when a band has bought a PA rig in anticipation of playing at the larger venues, and find themselves invariably booked at small clubs, with half the audience right under the band's feet!

Whilst in a smaller venue, a lens will be all that is required for reproduction of the middle and lower treble frequencies, it will not have the penetration necessary to reach the back rows in a large auditorium or outdoor festival due to the low wavefront energy. For this application, radial horns will be necessary and these should be selected with an appropriate dispersion angle to suit the particular application. However, there are still front seats, even in a large auditorium, and it is usual to employ a lens as well as a bank of radial horns in this situation, where both short and long throw requirements exist. The photograph shows a typical JBL concert system incorporating bass bins, an acoustic lens, mid range radials and high frequency radials at the top. In this instance, the JBL 2395, 36" slant plate lens (the largest and most expensive unit on the

available, these being the perforated-plate, folded-plate and slant-plate forms. It can be seen that, in essence, the lenses consist of a series of specially-shaped plates placed across the mouth of a conventional horn. The lenses only serve to shape the spread of sound in the horizontal plane while, in the vertical plane, dispersion is controlled entirely by the parameters of the horn behind the lens. A common misconception with a slant-plate lens is the belief that the soundwaves are deflected downwards by the slanting plates, but as Fig. 2 shows, this is not the case. Instead, the sound path is shifted slightly below its original axis, and resumes a normal forward propagation.

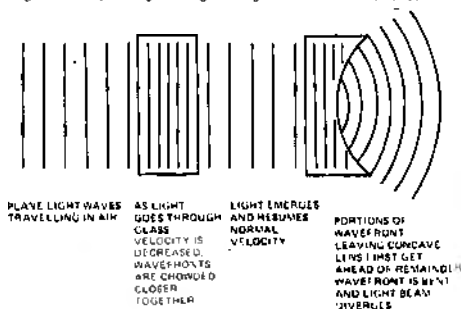
We have taken a sample selection of five acoustic lenses from three manufacturers and put these through our standard 'Speakercheck' test procedure at the GEC-Hirst Research Centre at Wembley in order to find out just how effective these elaborate, and usually expensive, units are in practice. Three of these are from the JBL stable, and this is primarily due to the fact that this is the only manufacturer with more than one lens in their catalogue. In fact, until very recently, JBL were the only makers marketing a lens at all and certainly, they would seem to be the forerunner in the development of the lens and in creating a market for it. The Italian manufacturers, RCF, have recently introduced a lens that is very similar to the JBL slant-plate, and Isophon in West Germany have introduced a much smaller lens that seems to embody a combination of both folded and slant-plate principles. As our tests show, they all work sufficiently well to justify their existence and, in many situations, would make a valuable contribution to the performance of a sound system.

Particularly surprising was the performance of the little Isophon Panorama 2000 which, at £33.50, gave a very good account of itself with wide, uniform horizontal dispersion over a very wide frequency band, the lowest distortion level of any of the five units tested and a near-constant impedance curve. The main benefit with the expensive JBL 2440/2390/2395 combinations is evidently the very high sensitivity figures measured, coupled with the exceptionally smooth frequency and polar response curves. By way of comparison in real terms, the Isophon sensitivity at 1w. is 98dB, while the JBL 2440/2390 measured 10dB.

From these figures, the Isophone unit, although reasonably efficient itself, would require 16 times the input power required by the JBL to produce the same sound pressure level! These are the factors that are so often not appreciated by the average user, and which account for the high cost of some of these loudspeaker units. Despite the fact that we blew up the JBL sample during our power rating and distortion tests, there is little doubt that these are superb transducers indeed — but at the prices, they should be!

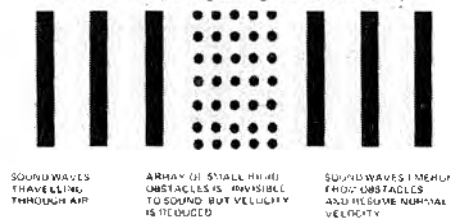
I hope that this discourse has shed some light on the subject and that those of you who are interested have at least some idea as to the principles behind the acoustic lens. Next month, provided we can get it together in time, we shall be looking at another collection of 12" cone units. These are either units that we missed out on earlier in the year or new units that have come onto the market since we took our first look at 12" units in February.

Light waves passing through flat glass and concave lens.



FLAT GLASS: HAVE LIGHT WAVES TRAVELLING IN AIR. AS LIGHT GOES THROUGH GLASS VELOCITY IS DECREASED. WAVEFRONTS ARE CHANGED CLOSER TOGETHER. LIGHT ENERGES AND RESUMES NORMAL VELOCITY. PORTIONS OF WAVEFRONT LEAVING CONCAVE LENS FIRST GET AHEAD OF REMAINDER. WAVEFRONT IS BEHIND AND LIGHT BEAM DIVERGES.

Sound waves passing through an obstacle array



SOUND WAVES TRAVELLING THROUGH AIR. ARRAY OF STABLE HORN OBSTACLES IS IMVISIBLE TO SOUND BUT VELOCITY IS REDUCED. SOUND WAVES EMERGE FROM OBSTACLES AND RESUME NORMAL VELOCITY.

Fig. 1

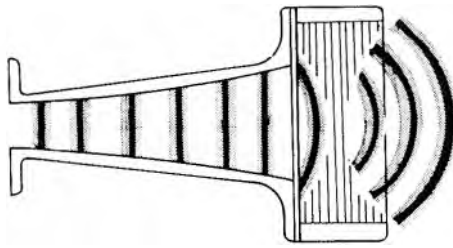
market) is employed but, for more general application, lenses do not have to be of this size or cost, although as our test results show, this large lens does perform remarkably well and would certainly justify its inclusion in a top quality professional sound rig. RCF produce a lens of similar size at about one third of the cost of the JBL item shown, and although this falls short of the JBL performance in some respects, it is nevertheless a useful unit and serves its purpose admirably in less critical applications.

The principle of operation of an acoustic lens is not unlike that of an optical lens — hence its name. The principle itself is not new and dates back to the immediate post-war years, when W.E. Kock and F.K. Harvey were working on microwave transmission research at the Bell Telephone Laboratories in the States. Experiments were carried out to find out whether certain principles of microwave transmission could not also be made to work with sound waves, and the commercial products available on today's market owe their origins to this original work.

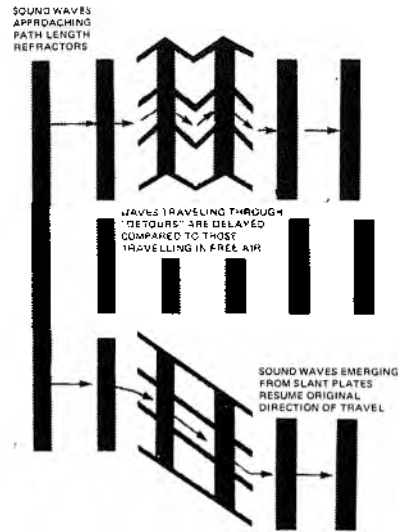
Fig. 1 shows, in simple diagrammatic form, an analogy between light transmission through glass lenses and sound transmission through a series of obstacles. Fig. 2 shows the principle thus established applied to the three basic types of acoustic lenses at present commercially

Fig. 2

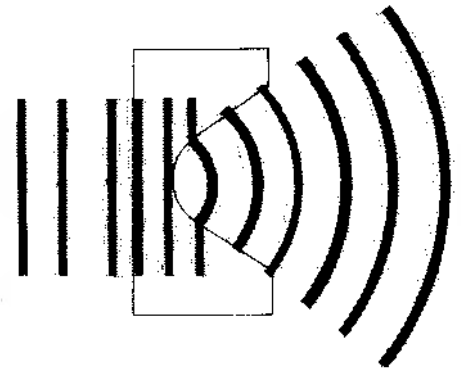
PERFORATED PLATE LENS



FOLDED & SLANT PLATE LENSES – END VIEW



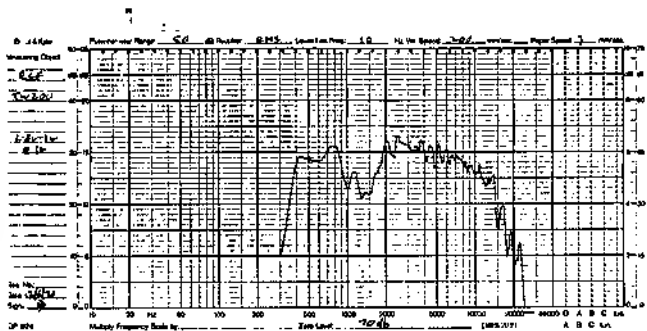
FOLDED & SLANT PLATE LENSES – TOP VIEW



RCF TW/200
 Approx. dimensions:—
 800mm x 350mm external
 overall depth 530mm
 Retail price incl. VAT:—
 around £200



Parameter	Manufacturers' Rating	Test Result
Power	100 w. unqualified	Just confirmed at equivalent sine power of 10 w. RMS above 500 Hz
Distortion	Not stated	6% @ 10 w. as above
Sensitivity	Not stated	100 dB @ 1 w. @ 2 m. (equivalent to 106 dB @ 1 m.) averaged between 2 KHz & 10 KHz
Resonance	Not stated	850 Hz
Impedance	8 ohms nominal	9.5-21.5 ohms
Recommended c/o Frequency	2 KHz	Confirmed
Frequency response	1.5 KHz-20 KHz unqualified	1.5 KHz-15 KHz @ -8 dB — see graph
Polar response	Not stated	66°V x 70°H @ 2 KHz 50°V x 60°H @ 4 KHz 12°V x 63°H @ 8 KHz 8°V x 30°H @ 16 KHz

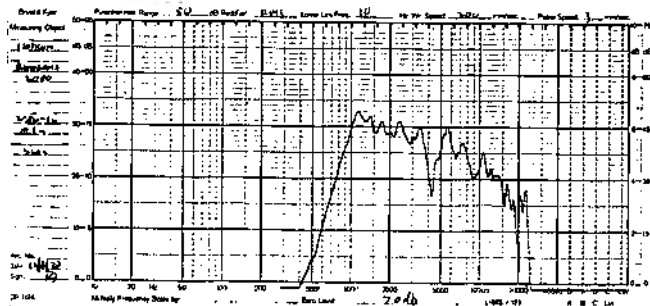
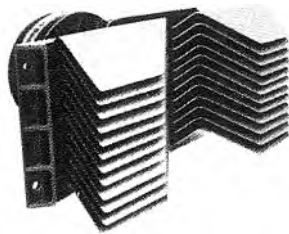


This is a 32" slant-plate horn/lens assembly with an integral pressure unit. It is supplied in two parts, the large, cast alloy, elliptical horn flare and a pressure unit of substantial proportions comes as one sub-assembly, and the slant-plate lens assembly as another. The front flange of the horn flare is specially fitted with mounting holes and a sealing gasket to accommodate the lens assembly. The whole unit is finished in matt black, with a moulded black plastic cover over the pressure unit. The pressure unit can in fact be dis-mounted from the horn flare by means of four bolts, but the throat entry dimensions and bolt spacings are such that neither horn nor pressure unit can reasonably be used with other components without recourse to special, purpose-made

adaptors — which are not commercially available. Although mounting holes are provided in the same flange to which the lens assembly is fitted, care must be taken to ensure that the rear of the unit is also supported by means of a special bracket provided for the purpose. It can be seen from the results table above that the unit gave a good overall account of itself under test, with good sensitivity figures, a wide frequency response and, although distortion was getting towards the high side, the unit did withstand a re-test at 20 w. sine wave without damage — although distortion increased to about 12% at this level. Although the frequency response of the pressure unit extends well up the frequency spectrum, the lens assembly does not seem to

maintain the control over radiation that is evident further down the scale. It can be seen that at 16 KHz, dispersion is down to just 60°H x 16°V (included angle) and one should question the usefulness of the upper registers with a unit whose sole "raison d'être" is to control dispersion. Also, in comparison with other units tested, the wavefront shown on the polar plots from which our figures are taken, is somewhat ragged and irregular, although to all intents and purpose, it fulfils its purpose, and the spread of energy in the horizontal plane is far wider than can be expected from a conventional radial horn over most of its useful frequency range — probably to about 10 KHz. A nicely made unit giving very good overall performance at about one third of the cost of its major competition.

ISOPHON Panorama 2000
 Approx. dimensions:—
 265mm x 100mm
 overall depth 176mm
 Recommended retail price incl.
 VAT:— £33.50



Parameter	Manufacturers' Rating	Test Result
Power	Up to 80 w. DIN above 3 KHz with 12 dB/oct. filter	Confirmed at equivalent sine wave power of 8 w. RMS above 2 KHz
Distortion	Not stated	3% @ 8 w. as above
Sensitivity	98 dB average, unqualified	98 dB @ 1w. @ 1m. averaged between 2 KHz & 10 KHz — see graph
Resonance	Not stated	900 Hz
Impedance	8 ohms nominal	8.5-10 ohms
Recommended c/o frequency	Not stated except as under power rating	2 KHz at 12 dB/oct.
Frequency response	800 Hz-15 KHz unqualified	800 Hz-15 KHz @ -12 dB — see graph
Polar response	120° unqualified	47°V x 70°H @ 2 KHz 60°V x 80°H @ 4 KHz 25°V x 57°H @ 8 KHz 35°V x 63°H @ 16KHz

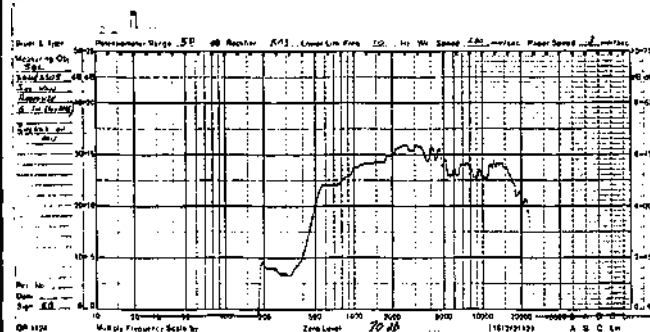
This is a much smaller lens assembly than any of the other items submitted for test. It is a combination of slant plate/folded plate principles and is in two parts which do not directly assemble together in their raw state. The horn/drive unit section comes as an integrated assembly and is of identical appearance to the DKT11/C110/8 high frequency horn from this German manufacturer, reviewed last month. The lens assembly consists of a series of folded, parallel plates mounted in a plastic frame, which is screwed over the horn mouth

after the latter has been mounted to the baffle board. In comparison with the large JBL and RCF lenses reviewed, the Panorama 200 is of miniscule proportions indeed, although very nicely made.

Performance-wise, it was very good, returning by far the lowest distortion figure at just 3% at our equivalent of the makers' power rating, and this increased only by a marginal amount on a re-test at double this rating. It can be seen that the makers' frequency response figures were confirmed, and that good radiation

was maintained right across its useful range, with a "worst" condition of 114° included angle at 8 KHz and a "best" of 160° at 4 KHz. Sensitivity is on the low side when compared with some of the very high figures obtained, but was still creditable for a unit of this size and cost at 98 dB — in confirmation of the makers' figure. A rather excellent unit at a fraction of the price of the other units tested, although probably intended for a rather different market and application.

JBL 2420/2305
 Approx. dimensions:—
 150mm x 150mm
 overall depth 295mm
 Recommended retail price incl.
 VAT:— £248.40



Parameter	Manufacturers' Rating	Test Result
Power (1)	30w. continuous programme	Just confirmed at equivalent sine wave power of 3w. RMS above 500Hz.
Distortion	Not stated	6% @ 3w. as above.
Sensitivity (2)	109 dB @ 1w. @ 1m.	99 dB @ 1w. @ 2m. (equivalent to 105 dB @ 1m.) averaged between 1KHz & 15 KHz
Resonance	Not stated	400 Hz
Impedance (1)	16 ohms nominal	8-14.5 ohms
Recommended c/o frequency (2)	1.2 KHz	Confirmed
Frequency response (1)	800 Hz-20 KHz unqualified	600 Hz-20 KHz @ -8 dB
Polar response (2)	90° conical unqualified	60° @ 2 KHz 28° @ 4 KHz 42° @ 8 KHz 18° @ 16 KHz

(1) figure taken from makers' specification for 2420 driver.
 (2) figure taken from makers' specification for 2305 horn/lens assembly

This is another combination of compression drive unit and horn/lens assembly that is recommended for use together and are here reviewed as if a single unit. That is to say that the results obtained apply to the two units working together, and not necessarily to each as a separate item, although by careful interpretation of the results, a reasonable assessment of the component units could be obtained. This lens is of the perforated plate variety.

The 2420 is a wide band, highly-sensitive compression driver and, from appearance and constructional aspects, is an exact, miniature

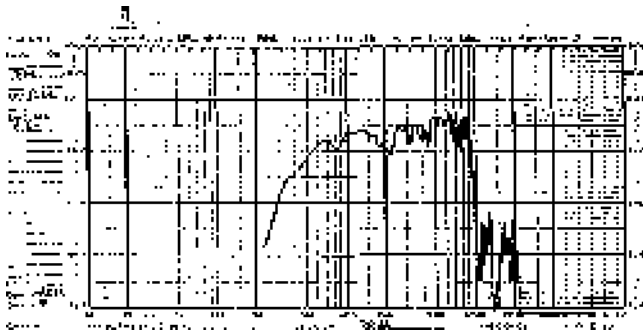
replica of the 2440 fully described in another review in these pages, except that a 2" diaphragm is employed and the unit is designed for mounting to a 1" three bolt flange entry. The 2305 is a small (that is, small by JBL standards!), cast alloy, circular horn flare, to the mouth of which is fitted a circular housing accommodating a series of perforated discs and rings. A substantial cast clamping ring is used to fit the unit to its baffle panel and the finish is to the usual, immaculate JBL standard in grey crackle stove enamel.

As the results table shows, the unit has an

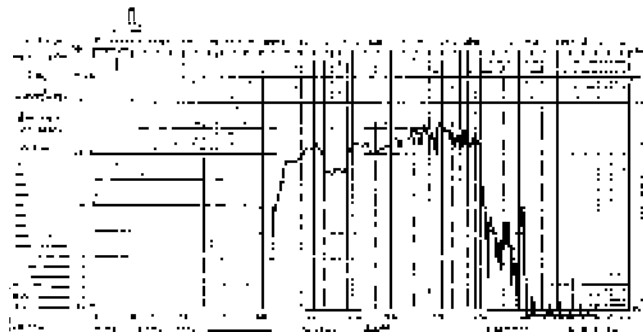
exceptionally wide, smooth frequency response, is highly sensitive at 99 dB @ 2m. as measured, although as with the RCF TW/200, there does not seem to be much dispersion control at the higher frequencies. The polar response plots (not published) show a particularly smooth, and nicely controlled, radiation characteristic, if narrowing somewhat at the higher frequencies. This is a very useful, high performance unit of relatively small dimensions for application on general purpose PA and musical instrument loudspeakers. It is beautifully made and finished, but is very expensive.

JBL 2440/2390

Approx. dimensions:—
 510mm x 190mm
 overall depth 560mm
 Recommended retail price incl.
 VAT:— £487.00

**JBL 2440/2395**

Approx. dimensions:—
 915mm x 380mm
 overall depth 612mm
 Recommended retail price incl.
 VAT:— £610.20



Parameter	Manufacturers' Rating	Test Result
Power (1)	60 w. continuous programme	Not confirmed — see Text.
Distortion	Not stated	10% @ equivalent sine wave power of 6 w. RMS above 500 Hz
Sensitivity (2)	107.5 dB @ 1 w. @ 1m.	104 dB. @ 1 w. @ 2 m. (equivalent to 110 dB @ 1 m.), averaged between 1 KHz and 10 KHz
Resonance	Not stated	480 Hz
Impedance (1)	16 ohms nominal	10-14.5 ohms
Recommended c/o frequency (2)	800 Hz	Confirmed
Frequency response (1)	500 Hz-12 KHz unqualified	600 Hz-9 KHz @ -8 dB
Polar response (2)	100° x 45° unqualified	37°V x 58°H @ 2 KHz 22°V x 45°H @ 4 KHz 16°V x 37°H @ 8 KHz @ -6 dB

Parameter	Manufacturers' Rating	Test Result
Power (1)	60 w. continuous	Not confirmed
Distortion	Not stated	10% @ equivalent sine wave power of 6 w. RMS above 500 Hz
Sensitivity (2)	108.5 dB @ 1 w. @ 1 m.	103 dB @ 1 w. @ 2 m. (equivalent to 109 dB @ 1 m.), averaged between 1 KHz and 10 KHz
Resonance	Not stated	700 Hz
Impedance (1)	16 ohms nominal	10-14.5 ohms
Recommended c/o frequency (2)	800 Hz	Confirmed
Frequency response (1)	500 Hz-12 KHz unqualified	800 Hz-10 KHz @ -8 dB
Polar response (2)	140° x 45° unqualified	37°V x 66°H @ 2 KHz 18°V x 60°H @ 4 KHz 10°V x 50°H @ 8 KHz @ -6 dB

(1) figure taken from makers' specification for 2440 driver
 (2) figure taken from makers' specification for 2390 or 2395 lens as appropriate

Here, we have a pair of horn/lens combinations, one of the folded plate family, the other a very large slant-plate, which have been tested on the same compression drive unit. Not at the same time I hasten to add! All three components are intended for application at the very top end of the professional market as the prices will indicate.

The 2440 is a compression drive unit of massive proportions, the majority of the weight and mass being due to the magnetic structure employed. A 4" diameter aluminium diaphragm is mounted at the back of the unit, the dome of the diaphragm assembly facing into an acoustically damped chamber. The underside of the dome provides the sound output via a phase-corrected throat assembly and a tapered passage through the centre of the magnetic structure. The diaphragm is a separate assembly and the unit is so designed to permit rapid replacement in the field. Mounting is by means of four bolts to a 2" flanged horn throat entry. Termination is by means of two colour coded spring-release terminals. Usual, impeccable, JBL finish in grey crackle stove enamel and is a very impressive piece of equipment indeed.

The 2390 is a 20" folded plate lens assembly, mounted across the mouth aperture of a substantial, cast alloy, rectangular horn flare.

There seems to be no special provision for mounting this unit to a baffle panel, so it must be assumed that the long screws included in the delivery were to allow the baffle to be sandwiched between the horn mouth and the underside of the lens assembly. The 2395 is a 36" slant-plate lens assembly and consists of a substantial cast alloy, elliptical, exponential horn with a standard 2" flanged throat entry. It looks as though the lenses themselves on both horns are fabricated from sheet aluminium, and consist of a series of horizontal, specially-shaped plates, kept apart by a series of spacers. Again, finish and presentation are of a very high order.

From a performance aspect, the 2440 is probably the most sensitive transducer yet reviewed for this Speakercheck series, with average figures of 109/110 dB at 1 meter and 1 watt behind these lenses. Also, it has an amazingly smooth frequency response up to 10 KHz. Against this, however, must be weighed the high order of distortion measured at just 6 w., RMS sine wave, and in an endeavour to find out whether the unit was really under stress at this power level, or if the high second and third harmonic content was inherent in the unit's performance, we re-tested at 12 w. sine wave and promptly blew the unit! At JBL

(UK)'s invitation, we replaced the diaphragm and tried again — and blew the unit for a second time! Inspection of the blown coils showed no sign of overheating however and the breakdown would seem to be of an electro-mechanical nature — in the voice coil termination. From this, and other previous experience with the 2440, I would be loathe to use it without active crossover and adequate protection by means of limiters and/or compressors to prevent overdriving on transient peaks at high volume levels. To be fair, however, it was quite happy at its rated power and, at this sort of sensitivity, the unit will create very high sound pressure levels when operating well within its power rating parameters.

Examination of the polar response plots, which due to space limitations we are not able to publish, will show that these are equally as smooth and tightly controlled — particularly in the horizontal plane. This applies to both lenses, although horizontal spread is considerably wider in the case of the large slant-plate lens, the 2395, as the results tables show.

At these prices, these are not toys to be played with by the uninitiated but, used properly, some superb results can be obtained. The units are superbly made and finished, but harden the pocket.

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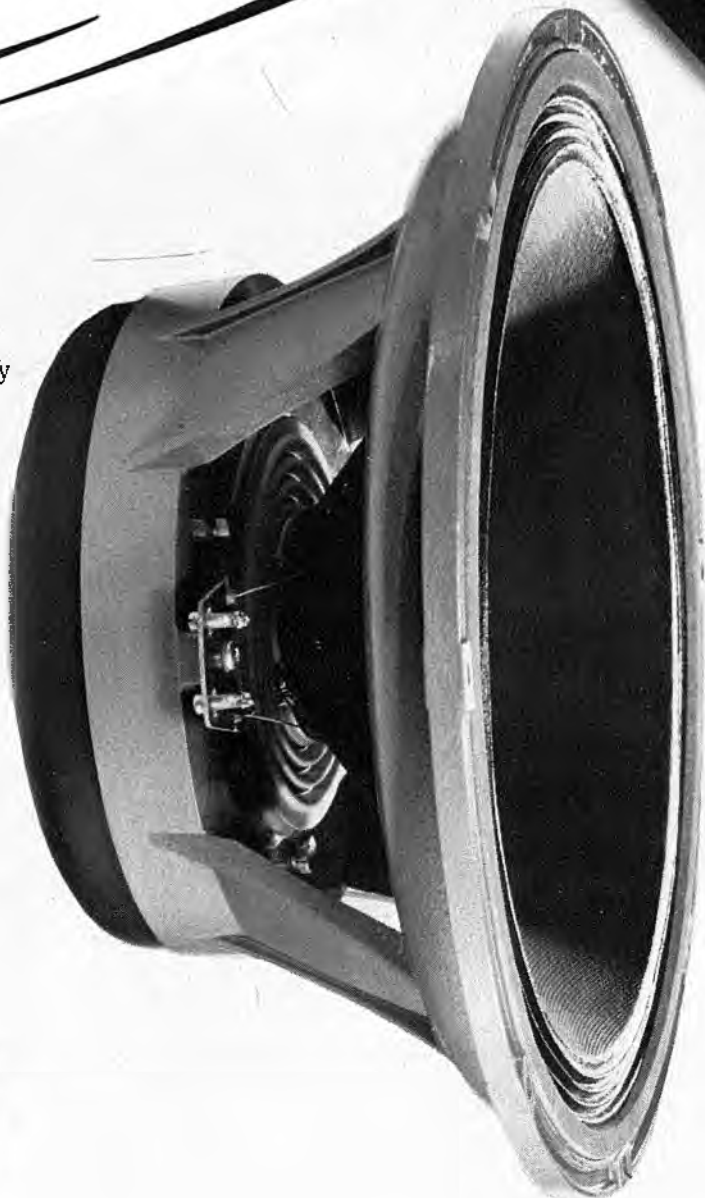
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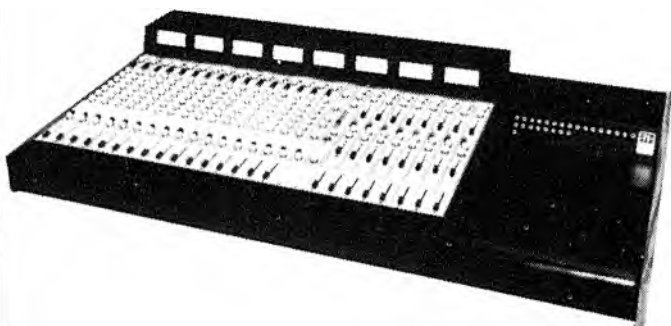
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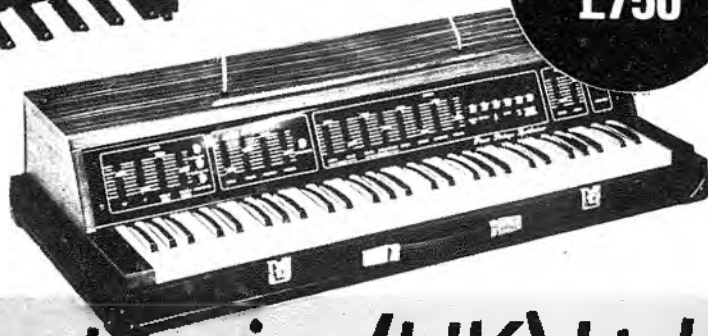
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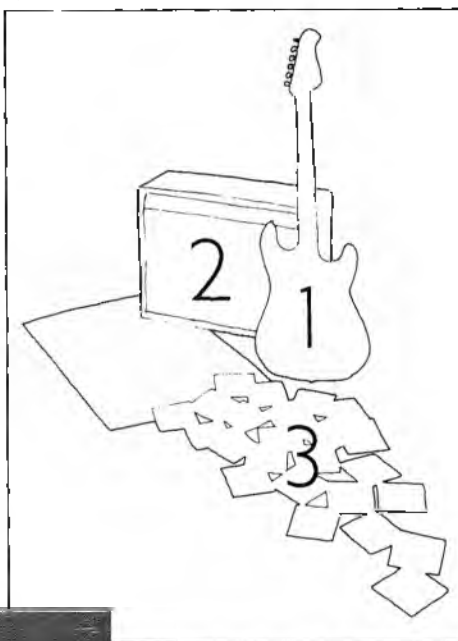
1 The first prize is a superb Music Man Sabre electric guitar. This is the guitar designed by the legendary Leo Fender after 30 years of research and development. It has a one piece rock maple neck, melamine nut and special machine heads designed by Schaller.

There are separate controls for treble and bass providing both boost and cut for the two double-coil humbucking pick-ups. The new cast bridge assembly embodies the rigid bridge design which was a feature of the Stingray guitar and provides excellent sustain without incurring any extra weight.

The winner has the choice of the Sabre I neck which has a 12" radius with Jumbo frets, or the Sabre II neck which is 7½" radius with normal frets.

2 The winner of the second prize can choose between either of two Music Man 65 watt combos, the 112RP-65 or the 112RD-65. The 112RP-65 is single channel with two inputs, controls for reverb, phase,

bass, treble, midrange plus bright switch and deep switch plus sensitivity control. The 112RD-65 is similar except the phase is substituted for two sensitivity and two volume controls, remotely controlled by a foot-switch for pre-set distortion. The units deliver 65 watts rms with less than five per cent THD and the speaker is a heavy duty 12" specially designed for Music Man.



3 For the third prize there are 300 sets of assorted Music Man strings worth £807, and every entrant will receive a free Music Man poster.

All you have to do is answer the four questions below and then state in not more than 30 words why you would like to win a Music Man Sabre/Music Man combo.

- 1) Who played lead guitar on the Yardbirds' hit, "For Your Love"?
- 2) Which legendary English guitarist was a member of Emmylou Harris' backing band?
- 3) Which female British artist did Bob Dylan choose to play on his Blackbushe concert bill?
- 4) Name the American duo that bass player Carl Radle was with before he joined Eric Clapton?



Free Music Man poster

HOW TO ENTER

Fill in the entry form which appears on page 225 and post it to: Music Man Competition, International Musician and Recording World, Grosvenor House, 141-143 Drury Lane, London WC2.

All entries must be received by the last day of November and the winners will be announced in the January 1979 issue. The Editor's decision is final and legally binding. No other correspondence can be entered into.

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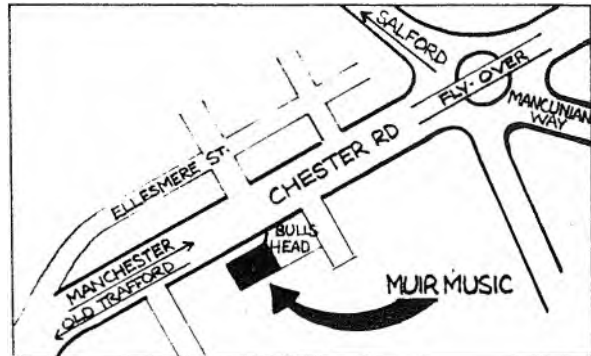
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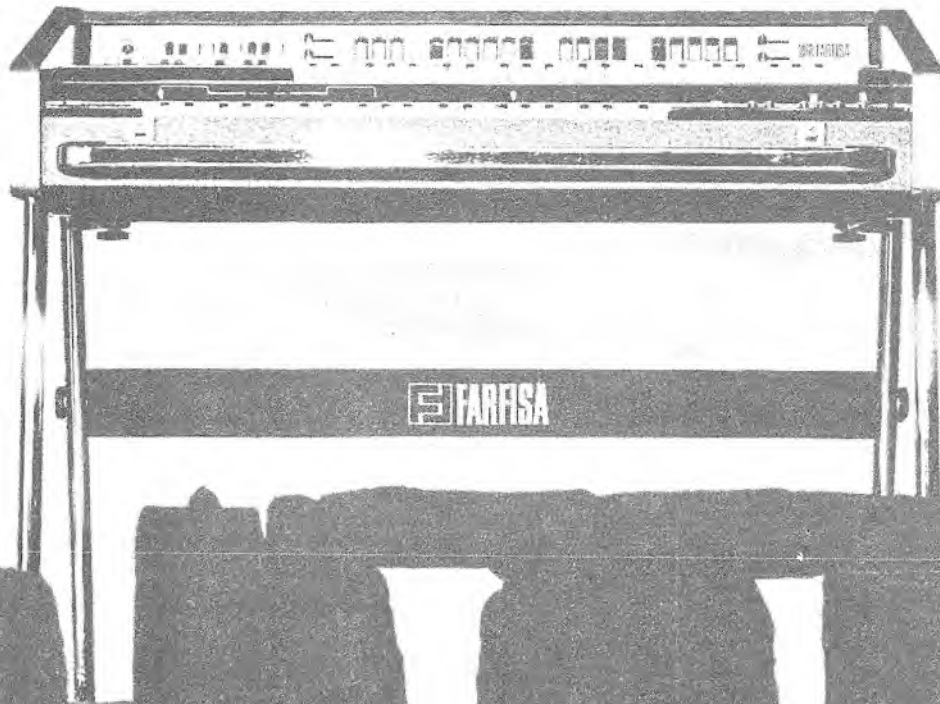
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Edinburgh: Grant's, Home Street

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or find out more by writing to

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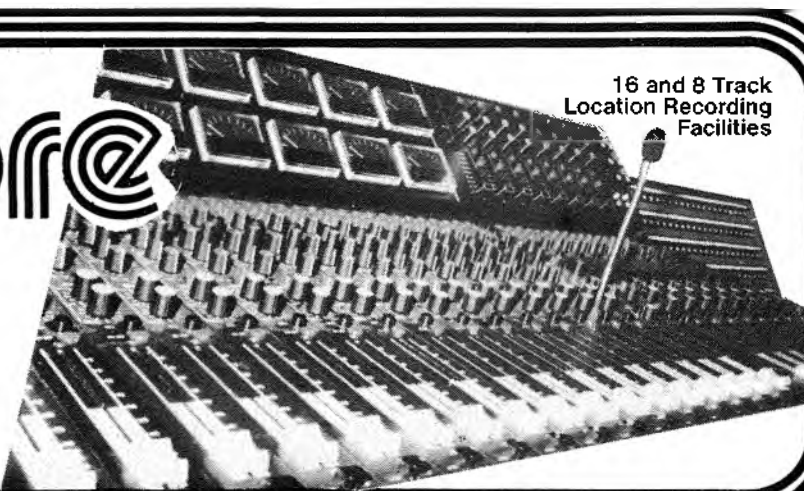
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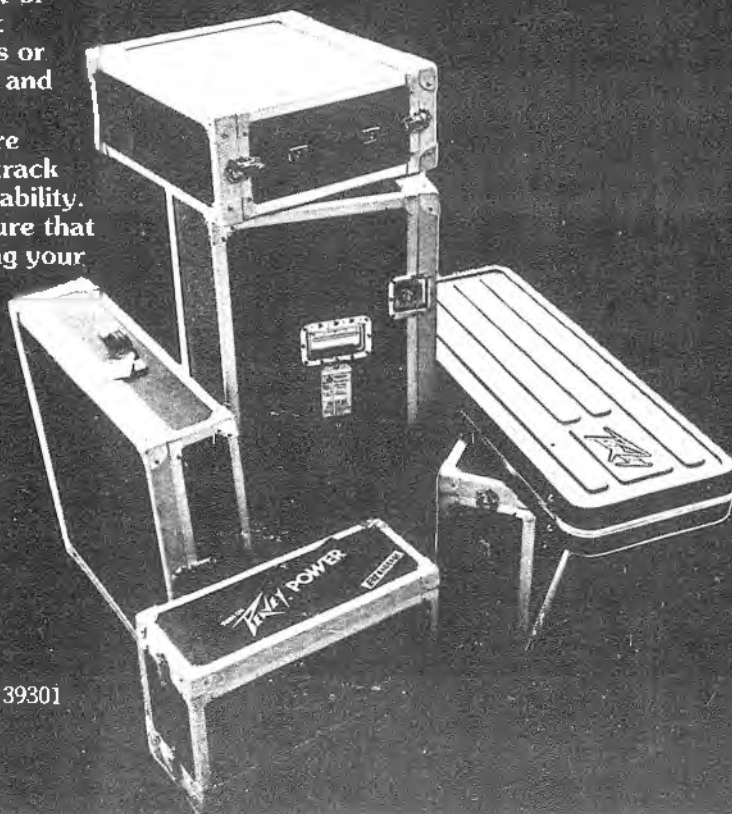
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Neve win £30,000 export order

Neve Electronics have just won an export order for their latest multitrack recording console, the 8066. The order, worth almost £30,000, comes from the Swiss film and television company, Polyvideo, who will be using the console for high quality sound dubbing, mixing and recording.

Neve's new 8066 console is a 20-channel, 16-track desk specially designed for medium sized studios. Features include a separate mix-down section with horizontal faders and routing via stereo positioning controls to four track outputs.

Together with the comprehensive metering, monitoring and talkback facilities and a wide range of optional features, the 8066 offers traditional Neve reliability and proven performance in a versatile package.

Music Stop for Wolverhampton

John Robinson, who runs the Music Stop store in Cannock, Staffordshire, has recently opened new premises in Wolverhampton. The new branch in School Street, Wolverhampton, will cater for all aspects of the group gear market.

It was felt that there was a need for a top class music shop in the area, and John will be hoping for the same kind of success which has made his Cannock store so important to the local music scene.

John will be running the new branch which will have group amplification on the ground floor and all the disco and lighting equipment above, plus the usual facilities for service, installation and hire.

Maccaferri's flying visit to London

Mario Maccaferri, the man who designed and produced the guitars used by Django Reinhardt in 1931, flew into London from New York for the British Music Trades Fair in August. He only stayed for two days, but this was enough time for him to inspect and approve samples of the new Maccaferri guitars now being made in Japan, and to be distributed exclusively throughout the world by Summerfields of Gateshead.

Summerfields advise us that production for the world is limited to about 200 pieces per year, that each guitar will be numbered and Summerfields are sure that in time they will be collector's items. Mario Maccaferri, a youthful 78, commented, "I am delighted with these guitars. They are not only better made than my 1931 guitars, but with my new internal construction, they sound much better." First supplies of the guitar, which retails at £450 and comes complete in a beautiful fitted case, should be available in January 1979.



A delighted Mario Maccaferri and Maurice Summerfield listening to the 1978 Maccaferri guitar being demonstrated by Louis and Ray Gallo.

Roy Morris leads North American consortium in Europe

Roy Morris, former chairman and managing director of Rose-Morris and one of the most familiar figures in the British music industry, has been engaged by an American/Canadian consortium to broaden their horizons in Europe.

The consortium, called the MFM Trading Co. UK, comprises the Musical Instrument Corporation of America (New York), the JM Sahlein Music Co. Inc. (San Francisco), Midco International (Effingham, Illinois) and Great West Imports Ltd. (Vancouver, Winnipeg, Toronto and Montreal). Roy will be pleased to hear from anyone seeking a North American outlet and can be contacted at 31, High Sheldon, Sheldon Avenue, London N6 4NJ.

Bose for Sanyo Jazz Festival

Bose UK have been chosen to install a professional sound system for the Sanyo Jazz Festival which is being held at the Chichester Festival Theatre between October 11 and 15.

Bose have considerable experience in this field having installed the sound system for last year's North Sea Jazz Festival in Holland and the 1976 Montreux Jazz Festival, which proved popular with both artists and audience.

The acoustic sound system for the Chichester Festival Theatre will include 15 pairs of a brand new speaker which will be on show for the first time. The new unit has greater efficiency than ever before and should prove an exciting addition to the Bose range. The new system will be assembled by a team of specialists from America, Germany, Switzerland and Ireland.

Among the great names scheduled for the festival are Woody Herman, Stefan Grappelli, the Diz Disley Trio, Ronnie Scott's Quartet, Humphrey Lyttleton and Bud Freeman, the Stan Tracey Quartet, Sarah Vaughan and her Trio, Paz and Eberhard Weber's Colours.

American approval for Reslo

Two of Reslo's radio microphone systems, the Cabaret and Director I, have been given official approval for use on American communications networks.

This is an important step for the Sussex-based company who have already had the Cabaret approved by the German authorities and, hopefully in the near future the Australian networks. The microphone is a compact portable system weighing only eight pounds which has been specially designed for the travelling cabaret artist.

The Director I, also a compact system, is suitable for speech link to TV or film cameras, outside broadcasts and studio floor supervision. The Cabaret can be used over 150-174MHz and the Director I between 174 and 212MHz.

Following the announcement, Managing

Director George Stow said: "Reslo have organised an extensive export selling effort in both Germany and the States for the complete product range. The new approvals for the radio mike equipment, which is marketed at very competitive prices, will undoubtedly boost our efforts."

CBS/Arbiter support

During the recent London trade show, Ivor Arbiter, Chairman and Managing Director of CBS/Arbiter, announced that the company is putting a new wave of effort behind the Music Trades Association.

Explaining the thinking behind the new approach, Ivor Arbiter said: "We're very impressed by the President, Jimmy Gibbs. He is a very open-minded man and the association can count on the fullest possible support from CBS/Arbiter. We believe that the British retail trade should work together for the benefit of all and, most importantly, we feel that the musician will benefit through our efforts."

Keith Hand moves

We inadvertently published the old address of Keith Hand Musical Supplies in last month's IM. Their new address is 219 Walmersley Road, Bury, Lancashire.

DiMarzio and Hondo Guitars

DiMarzio have raised a few eyebrows in the business recently with their decision to supply pick-ups for Hondo II guitars. These low-priced instruments — they start at £96 retail for the electric bass — have been made available in this country by John Hornby Skewes & Co. Ltd.

It would seem surprising for complete guitars, even ones imported from the Far East, should be available at such low prices with pick-ups from a maker known for top quality expensive units.

A spokesman for DiMarzio, in defending this decision, said that this policy enables the "starter" guitarist to get the feel and sound of quality even on his first purchase. Naturally, DiMarzio make many different models, and the ones developed for fitting to Hondo II instruments are of a special design for these guitars.

Gulton Industries acquire Tapco

Gulton Industries of America have acquired Tapco (Technical Audio Products Corporation), a privately-owned manufacturer of electronics for the music industry.

Tapco, based in Redmond, Washington, manufactures and distributes mixers, amplifiers and equalisers. The company, which holds a significant position in the sound reinforcement sector of the music industry, have annual sales of over \$5 million.

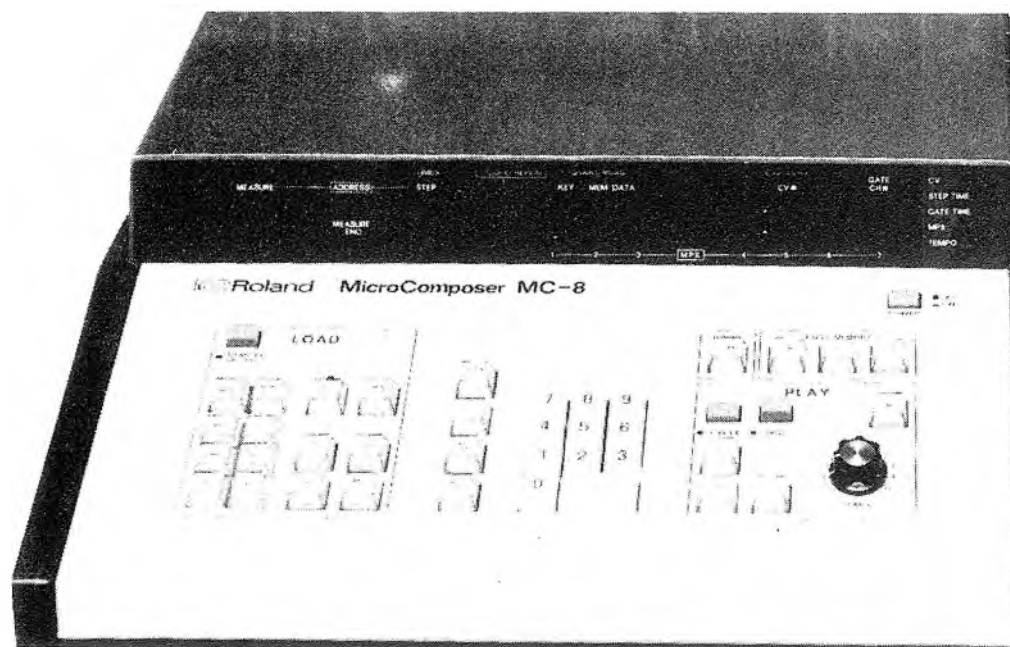
The Tapco operation will complement Gulton's Electro-Voice subsidiary, and integration of the product lines will provide a full line of products to the music industry and a broader distribution base for both subsidiaries.

New Marketing Vice-President for CBS in America

Lloyd Meyer has been named CBS National Musical Instruments Vice-President for marketing. Previously he was Vice-President of sales and marketing for the Norlin Music keyboard division.

Meyer is a graduate of the McPhail College of Music of the University of Minnesota and subsequently studied advanced management at the Harvard School of Business. He spent 10 years at Norlin and was responsible for developing the establishment of a comprehensive manufacturer-sponsored program to locate and assist organ dealers in shopping centres.

IF YOU CAN THE MICRO WILL PLAY



The Roland Micro-Composer does for the musician what the pocket calculator has done for the schoolboy. It is very, very simple to operate and it allows the operator to think of a tune, push the appropriate buttons and the Composer will make a synthesizer (or a whole group of synths) play that tune. The writer needn't even touch a musical keyboard!

Programming the Micro-Composer has deliberately been made easy. If you think of a tune that starts with (for example) C, E, G as the first three notes you punch in the code for C, E and G. The code is so simple you can understand it immediately and learn it by heart in a couple of days. To give you an idea how easy it is middle C is 24 (that's the code number you would push on the calculator-type panel) and because the notes are numbered to correspond with the notes on a keyboard the next note, E, is 28 because that's four semi-tones up. The C above middle C is 36 because that is exactly one octave higher which is 12 semi-tones. So you punch in 24 because you want the first note to be middle C. If you want it to be a crotchet (one beat) you punch in the crotchet code which is 32. Deciding how long you want the note to last is as easy as the pitch choice. A crotchet is 32, a minim is 64 and so on. The only thing you've got to decide now is how loud you want the note to sound. Naturally there's a code for loudness

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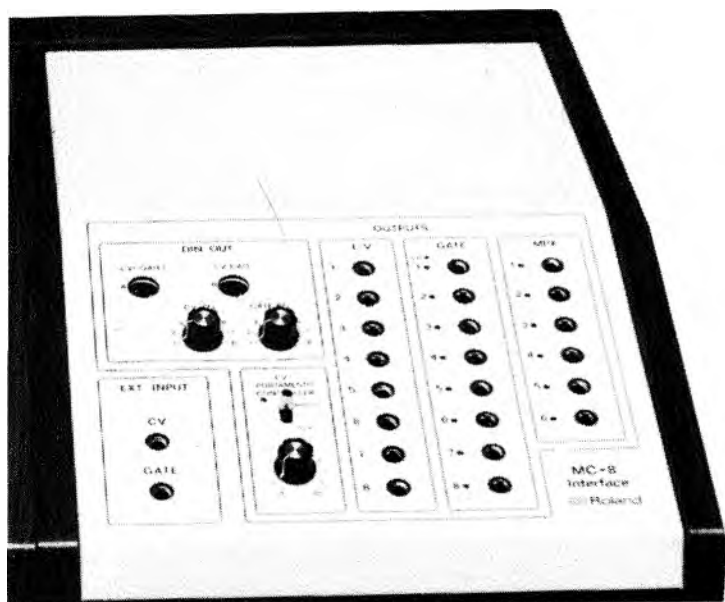
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HUM A TUNE, -COMPOSER IT FOR YOU!



(it starts at 100 and goes down to 30 for very soft). So by punching three numbers in, you've chosen a note, decided how long you want it to sound for and decided how loud it will be.

You can programme each note in about one and a half seconds. Having put in a complete passage, push the button and the synth that is hooked up to the Micro-Composer will immediately play what you have just written. If you don't like a note, or think any note is too loud or too soft, you can alter that without affecting anything else in the memory. There's no recording tape involved, all of the information is held in electronic memories. If you've written something in the memory you can transfer the information to an ordinary cassette tape in a cassette recorder and use the memory again. You can then put back the original piece by playing the cassette recorder back into the Micro-Composer.

Because the Micro-Composer has multi-channel output it can be used to control as many as eight independent voice lines at the same time.

If you will give yourself ten minutes with a Micro-Composer you will change the course of your creative life. See your local Roland dealer to arrange a demonstration.

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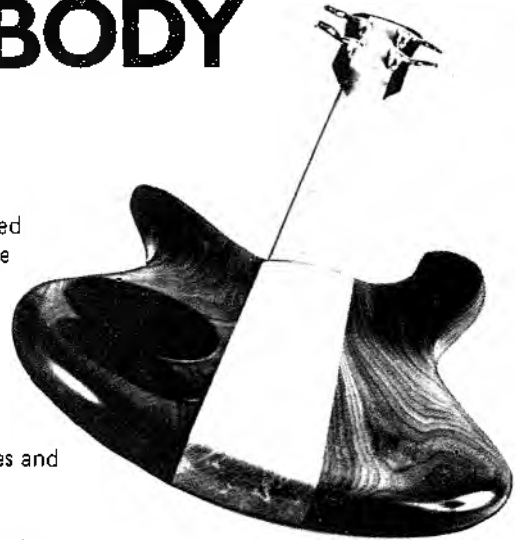
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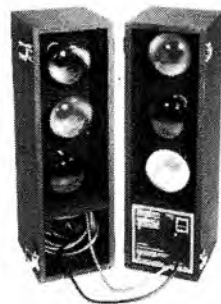
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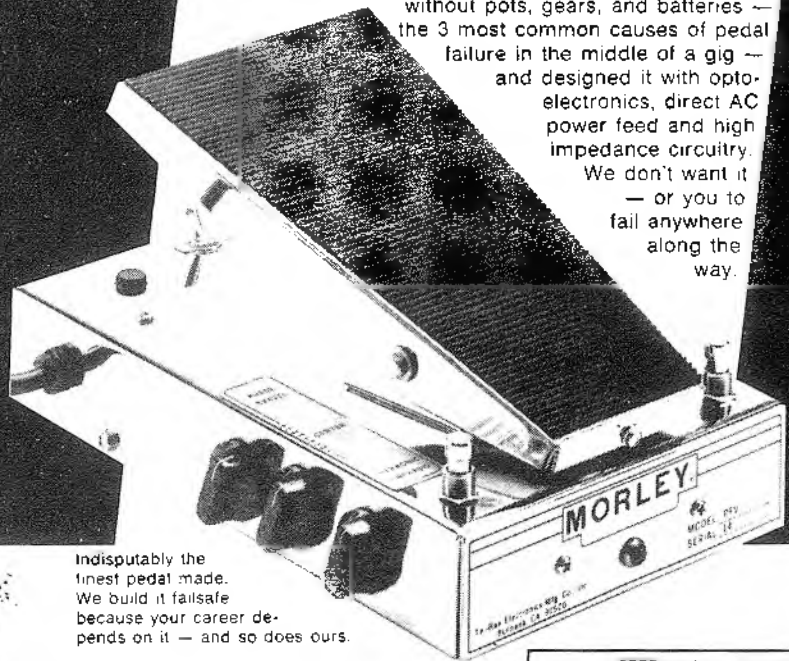
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resonance control enables the player to get a totally different set of vowel sounds and so opens up a whole new world of effects.

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Mixing it up with Red Roe, of the "Midnight Special".

When did you start with Midnight Special?

I was in on it from the beginning. I'm the only original engineer left on the show.

In fact you and producer Burt Sugarman are the only originals still with the show. What keeps it going on?

Burt's a down-to-earth cat who's got a whale of a TV show. I guess you could call it a success because there's a lot more people who care, from our end of it, than they do on other shows. People seem to pump out more. We do a lot together and we kinda keep each other loose.

The music ties all of you together?

Music is a helluva outlet. I really get pumped up on the show. It's cookin' on the natch, it really is.

Cookin' on the natch??

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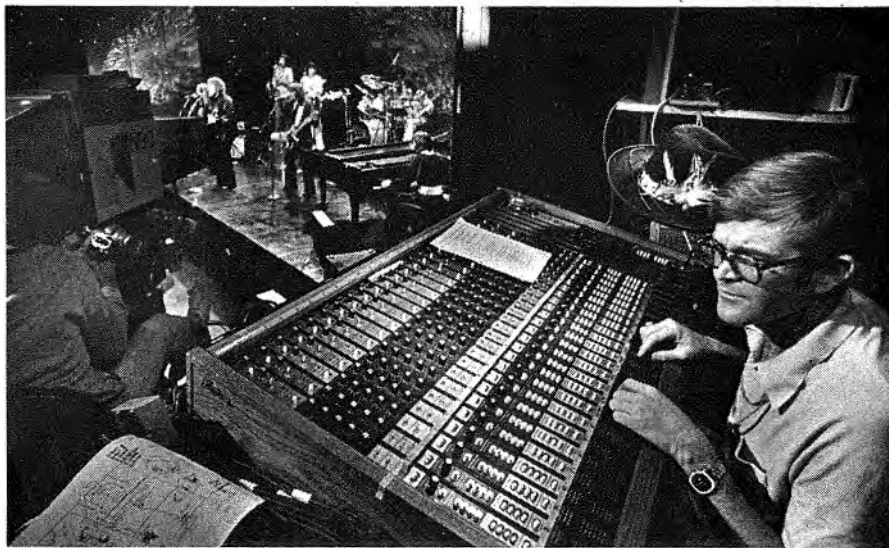
You've been using Kustom PA and mixing equipment on Midnight Special for three or four years now.

Any problems?

Technical problems? No. As a matter of fact, I'm a firm believer that Kustom does kick. It's good. And when it's good, you don't have to worry about it.



Red mixes sound for the Midnight Special with a Kustom SRM XX 24 in, 8 out. Stage set-up includes 8 each MF 1212 cabinets and MF 1012 horns, 4 XII Bi-Amp Slaves, and 8 sets of III Monitor Systems.



How about your Kustom mixer?

This is one helluva board. As a matter of fact, it's a better board than the main mixer on the show. That mixer was made for television and this board is made for music. It gives me what I need.

Did you ever use Kustom equipment before you came to the Midnight Special?

Oh yeah . . . in Texas . . . Oklahoma . . . back when I was a roadie . . . a go-fer in several of the PA houses in some of the towns I worked in.

Back in Kustom's roll and pieat days?

Yeah, Tijuana tuck 'n roll!

Are there any features you especially like about Kustom?

Sure, all of them . . . and that's the truth.

Is the music on Midnight Special your own kind of music?

I just like music. I love all kinds. Music speaks the language of the heart. All music does, but to me I understand country music more than I would understand Prokofiev or Tchaikovsky. I don't feel out of place listening to the Juilliard String Quartet or the Oklahoma Symphony or any of that jazz. It's just that I'd rather kick back with a cup of coffee and listen to a country western group any day.

You have to deal with a lot of different personalities on the show — the groups, the hosts, and so forth. How do you manage it?

When I let people know where I come from, that makes it a lot easier. As long as I'm honest with myself, that's all that counts. I say hello to myself every



morning. I have a sign over my mirror that says if I can't smile at this person, I can't smile at anybody.

But handling the sound for a show like Midnight Special is a great deal of responsibility. . .

It depends on how you look at it. I'm just a person who was put in a position, that's all. I'm a Group 2 engineer, like the guys down on the floor. I just kinda roll with the flow, that's all.



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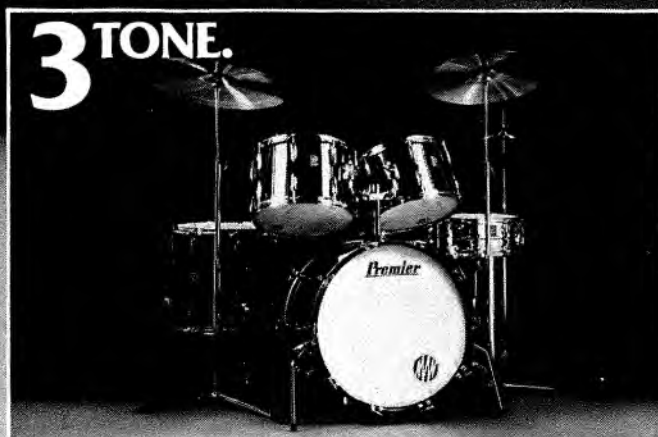
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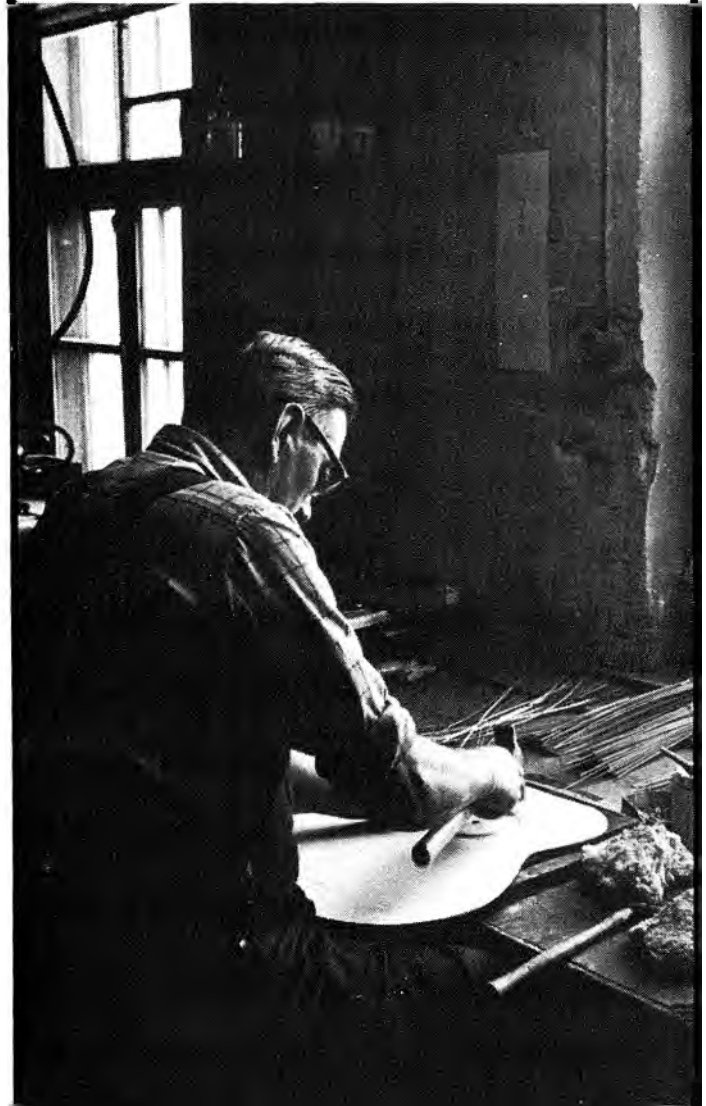
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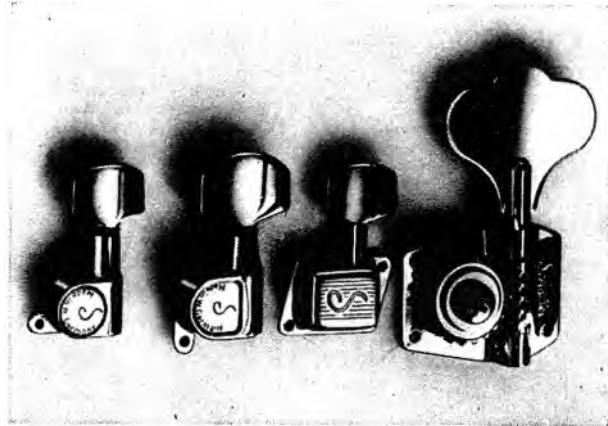
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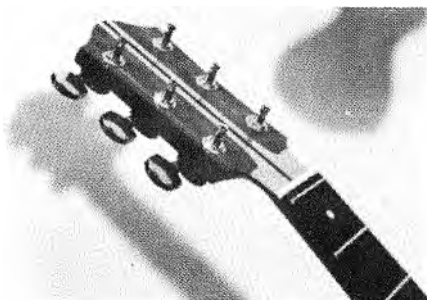
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The AMTA's 1978 Music Trade Fair, held in Sydney, Australia on July 22-24, was reportedly the most successful to date.

The '78 Fair, Australia's fourth such event, was the first to be held under the AMTA (Australian Music Trades Association) banner, and proved that a 'trade only' exhibit could be successfully conducted in this country.

Previously these exhibits have been opened to the trade and public, and while the benefit of the public being involved can readily be seen, it had the obvious restrictions on trade dealings.

It has been estimated that some 2,200 trade people attended, covering music dealers, musicians and music teachers.

Most wholesalers reported writing good business, and all are keenly looking forward to next year's Trade Fair, which is scheduled to be held in Melbourne.



1. Ron Wilkerson (left), Marketing Manager for MXR Professional Products, with Australian agents Tony Boye (seated behind counter) and Barry Farrell (right of counter) from the Music Distillery.

2) Australian manufacturer of the renowned Maton Guitar, Bill May (right) and wife Vera (centre), seen here with Perth dealer Lionel Cranfield (Zenith Music).

3) John Payton (second left), with son John Jr. (extreme left) and Bob & Meryl Size of the Adelaide Brass & Reed Centre.

4) Gordon Harrison (right), Managing Director of Boosey & Hawkes Australia, and Geoff Auty, B&H Instrument Sales Director.

5) Graham Stamford (right), Managing Director with Adrian Rich, National Sales Manager, both of Dynamic Musical Enterprises, discussing their recently acquired guitar line, Aria Pro II.

6) Ikutaro Kakehashi of Roland Corporation

7) Visiting English music trade delegate, Alan Marcuson (left), seen here explaining the new Phoenix Amplifier to Melbourne dealer Peter Robinson (Dynasound).

8) C.F. Martin executive Preston Rishaw (right) chats with Neville Chambers, Managing Director of Tolchin Instruments, South Pacific region.

9) Australis Instruments Managing Director, Peter Haywood (right), pictured with Jack Metz of Sight 'n' Sound International.

A.M.T.A. 1978 Trade fair

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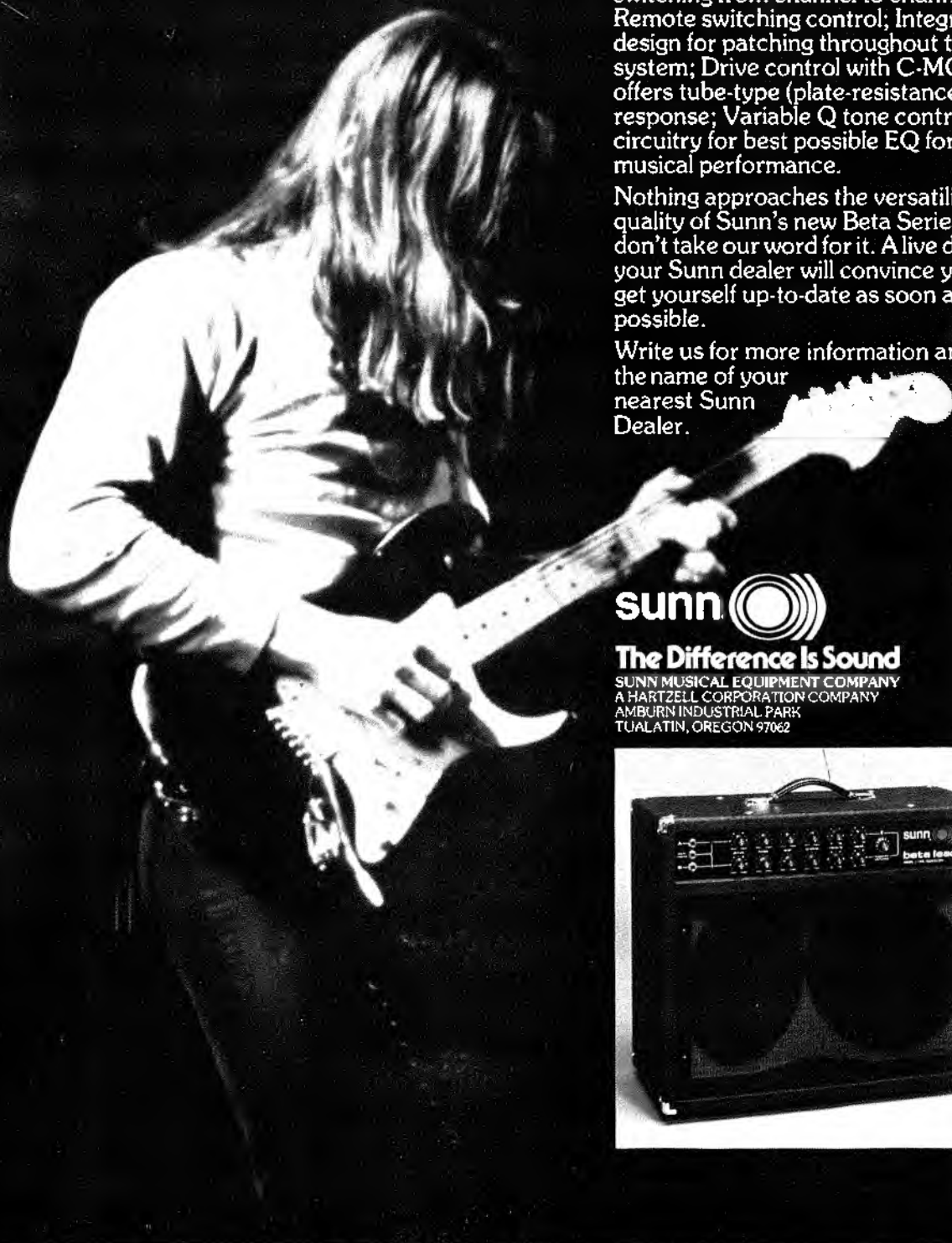
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Australia and New Zealand recently held their musical instrument trade shows and we managed to have a correspondent and lensman capturing the highlights. The music show in New Zealand is the first ever to be held in the territory and we understand that all the participants regarded it as hugely successful.

We acknowledge the help and assistance given by Rod Hancox of Piano Traders Ltd., Alan Marcuson of British Music Strings and Lindsay Austin of the Journal of Australian Music & Musicians.



A) Remo heads on prominent display on the Frank Gibson Percussion stand.

B) Two international travellers chatting: Bob Zildjian of Zildjian (left) and Eddie Haynes of Premier.

C) The Music House people; Bill O'Connor and Mr. and Mrs. Dick McElroy.

D) Roland does as well in New Zealand as it does everywhere else in the world, and

here the lucky distributors — Sound One — show the G500 Guitar Synthesizer.

E) Britain's Alan Marcuson visiting with Ian Biddick of Wellards — distributors of Farfisa organs and Londoner strings.

F) The Hawks Bay company have several important lines for the islands; Tama, Ibanez and Zachry are just three of them.

N.Z. holds first trade show

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R-Cr	Real to Cartridge
Dc	Disc Cutting
d-t	Disc to tape
Q	Quad
OTC	Overtime charge
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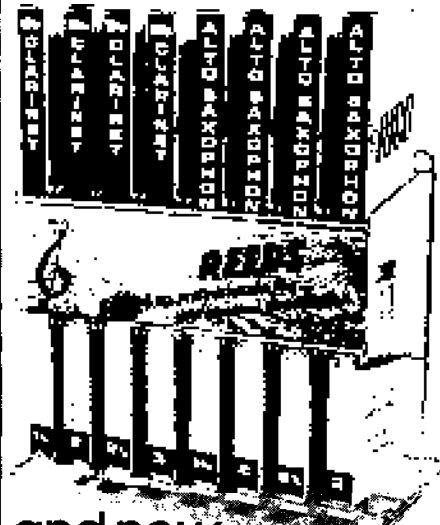
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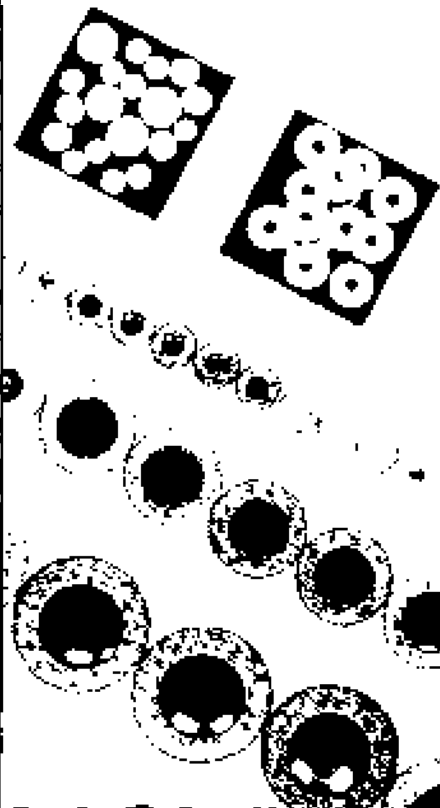
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Competition Answer Form

- 1) _____ 2) _____
3) _____ 4) _____

I would like to win a Music Man Sabre/combo because _____
(no more than 30 words)

Name _____ Address _____

Send your completed entry form to International Musician and Recording World, Grosvenor House, 141-143 Drury Lane, London WC2.

We will be announcing the winner of the Cleartone Musical Instruments competition in the November issue of I.M. as we have been taking entries up until the end of September.

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Even if you don't wish to enter the Music Man competition, use the form below to fill in your name and address and we'll forward the catalogues, brochures etc. to you.

READER SURVEY

If you read IM, you know about us; now tell us about yourselves. (We'll treat all information in strict confidence).

1. How old are you?

- Under 16
- 16-20
- 20-25
- 25-30
- 30-40
- Over 40

2. Which instrument do you play?

- Guitar
- Bass
- Drums
- Keyboards
- Brass/Woodwind
- Vocals
- Roadie
- Others

3. What makes of instruments do you own? (Please state model as well as make).

4. How much did you spend on instruments in the last twelve months?

5. If you were able to choose your ideal instrument what would it be?

6. Do you have any preference for American, European or Japanese instruments? If so, which?

- American
- European
- Japanese

7. Do you usually buy for cash or credit?

- Cash
- Credit

8. Do you prefer valve or transistor amps?

- Valve
- Transistor

9. If you own an amp, what do you have? (Please include model).

10. How much did you spend on equipment in the last twelve months?

- | | |
|------------------------------------|--------------------------------------|
| <input type="checkbox"/> £ 0-100 | <input type="checkbox"/> \$ 0-200 |
| <input type="checkbox"/> £100-300 | <input type="checkbox"/> \$200-600 |
| <input type="checkbox"/> £300-500 | <input type="checkbox"/> \$600-1000 |
| <input type="checkbox"/> over £500 | <input type="checkbox"/> over \$1000 |

11. Are you:

- Amateur
- Semi-professional
- Professional

12. How much do you earn from playing music per month?

- | | |
|-------------------------------------|---------------------------------------|
| Nil | |
| <input type="checkbox"/> £ 0- 25 | <input type="checkbox"/> \$ 0- 50 |
| <input type="checkbox"/> £ 25- 50 | <input type="checkbox"/> \$ 50-100 |
| <input type="checkbox"/> £ 50-100 | <input type="checkbox"/> \$100-200 |
| <input type="checkbox"/> £100-200 | <input type="checkbox"/> \$200-400 |
| <input type="checkbox"/> £200-400 | <input type="checkbox"/> \$400-800 |
| <input type="checkbox"/> £400-600 | <input type="checkbox"/> \$800-1200 |
| <input type="checkbox"/> above £600 | <input type="checkbox"/> above \$1200 |

13. Have you ever recorded professionally?

- Yes
- No

14. Do you own an open reel tape machine?

- Yes
 - No
- If yes, what is it?

15. Do you record yourself at home?

- Yes
- No

16. Do you use a mixer on gigs?

- Yes
- No

17. If you're in a band with a PA, what power is it?

- up to 100 watts
- 100-200 watts
- 200-300 watts
- 300-500 watts
- 500-1000 watts
- over 1000 watts

18. Have you ever built your own instrument or item of equipment?

- Yes
 - No
- If yes, what?

19. Do you usually buy new or second-hand gear?

- New
- Second hand

20. Do you look for discount or knowledgeable service when buying new gear?

- Discount
- Knowledgeable service

21. How would you describe your technical knowledge of electronics, recording etc.?

- Non-existent
- Slight
- Fair
- Good
- Excellent

22. Which musician do you feel influenced you most?

23. Which of the following newspapers and magazines do you read?

- Melody Maker (UK)
- New Musical Express (UK)
- Sounds (UK)
- Guitar (UK)
- Beat Instrumental (UK)
- Studio Sound (UK)
- ZigZag (UK)
- Rolling Stone (UK/USA)
- Crawdaddy (USA)
- Contemporary Keyboard (USA)
- Guitar Player (USA)
- Jam (Australia)
- Fachblatt (Germany)
- Rock & Folk (France)
- Spotlight (Germany)

24. If you have a job outside music, what do you do?

25. How much do you earn per month?

- | | |
|-------------------------------------|--------------------------------------|
| <input type="checkbox"/> £125- 200 | <input type="checkbox"/> \$250- 400 |
| <input type="checkbox"/> £200- 300 | <input type="checkbox"/> \$400- 600 |
| <input type="checkbox"/> £300- 500 | <input type="checkbox"/> \$600-1000 |
| <input type="checkbox"/> £500-1000 | <input type="checkbox"/> \$1000-2000 |
| <input type="checkbox"/> over £1000 | <input type="checkbox"/> over \$2000 |

26. If you are a student, what are you studying?

27. What is your favourite feature in 'International Musician'?

28. What kind of features would you like to see more of in this magazine?

- Playing tips
- How to build equipment/instruments
- Equipment tests
- Instrument reviews
- Interviews with artists
- Musical arrangements
- Record reviews

29. Did you think that the square binding on the August 1978 issue of 'International Musician' was an improvement?

- Yes
- No

30. What credit cards do you hold?

- | | |
|---|--|
| UK | USA only |
| <input type="checkbox"/> Barclaycard | <input type="checkbox"/> Master Charge |
| <input type="checkbox"/> Access | <input type="checkbox"/> Bank America |
| <input type="checkbox"/> American Express | <input type="checkbox"/> Visa |

31. Accommodation. Do you:

- Own your own home
- Rent accommodation
- Live with parents

32. Total value of your musical equipment:

- | | |
|-------------------------------------|--------------------------------------|
| <input type="checkbox"/> £200 | <input type="checkbox"/> \$400 |
| <input type="checkbox"/> £200- 400 | <input type="checkbox"/> \$400- 800 |
| <input type="checkbox"/> £400- 600 | <input type="checkbox"/> \$800-1200 |
| <input type="checkbox"/> £600- 800 | <input type="checkbox"/> \$1200-1600 |
| <input type="checkbox"/> £800-1000 | <input type="checkbox"/> \$1600-2000 |
| <input type="checkbox"/> over £1000 | <input type="checkbox"/> over \$2000 |

33. How many singles and albums do you buy per month?

- Singles:
- Albums:

34. What is the value of your record-playing equipment?

- | | |
|--|--|
| <input type="checkbox"/> Less than £75 | <input type="checkbox"/> Less than \$150 |
| <input type="checkbox"/> £ 75- 150 | <input type="checkbox"/> \$ 150- 300 |
| <input type="checkbox"/> £300- 500 | <input type="checkbox"/> \$ 600-1000 |
| <input type="checkbox"/> £500-1000 | <input type="checkbox"/> \$1000-2000 |
| <input type="checkbox"/> over £1000 | <input type="checkbox"/> \$over \$2000 |

35. What is your favourite non-musical pastime? (apart from sex)

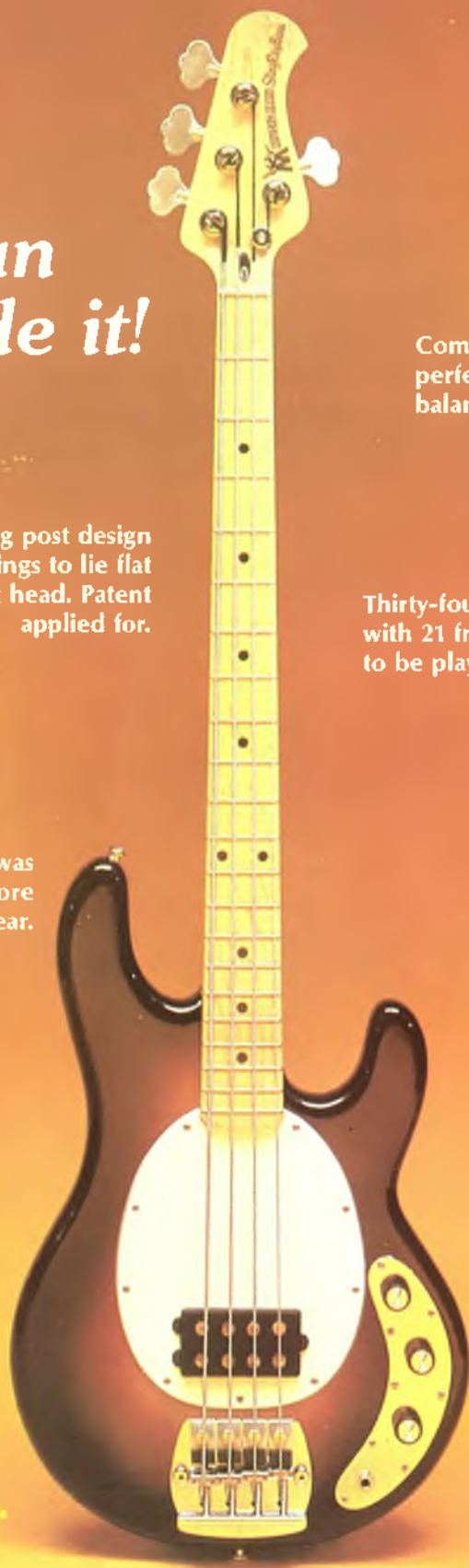
- Cinema
- TV
- Reading
- Electronics
- Sport
- Writing
- Eating out
- Others (please give details)

36. How often do you go to concerts?

- Never
- Rarely
- Once a month
- Once a week
- More than once a week

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