

# INTERNATIONAL MUSICIAN

AND RECORDING WORLD

December 1977 40p

## The Hire Business



# STEVE HOWE

TESTS:

Gibson Les Paul Signature  
Guild electric : Hoshino Drums  
Logan String Melody

Build a Mixer: Yamaha Market Report: Playing

**Phoenix** puts the  
valves back into amplification



See pages 106 & 107

# KRAMER STICKS ITS NECK OUT

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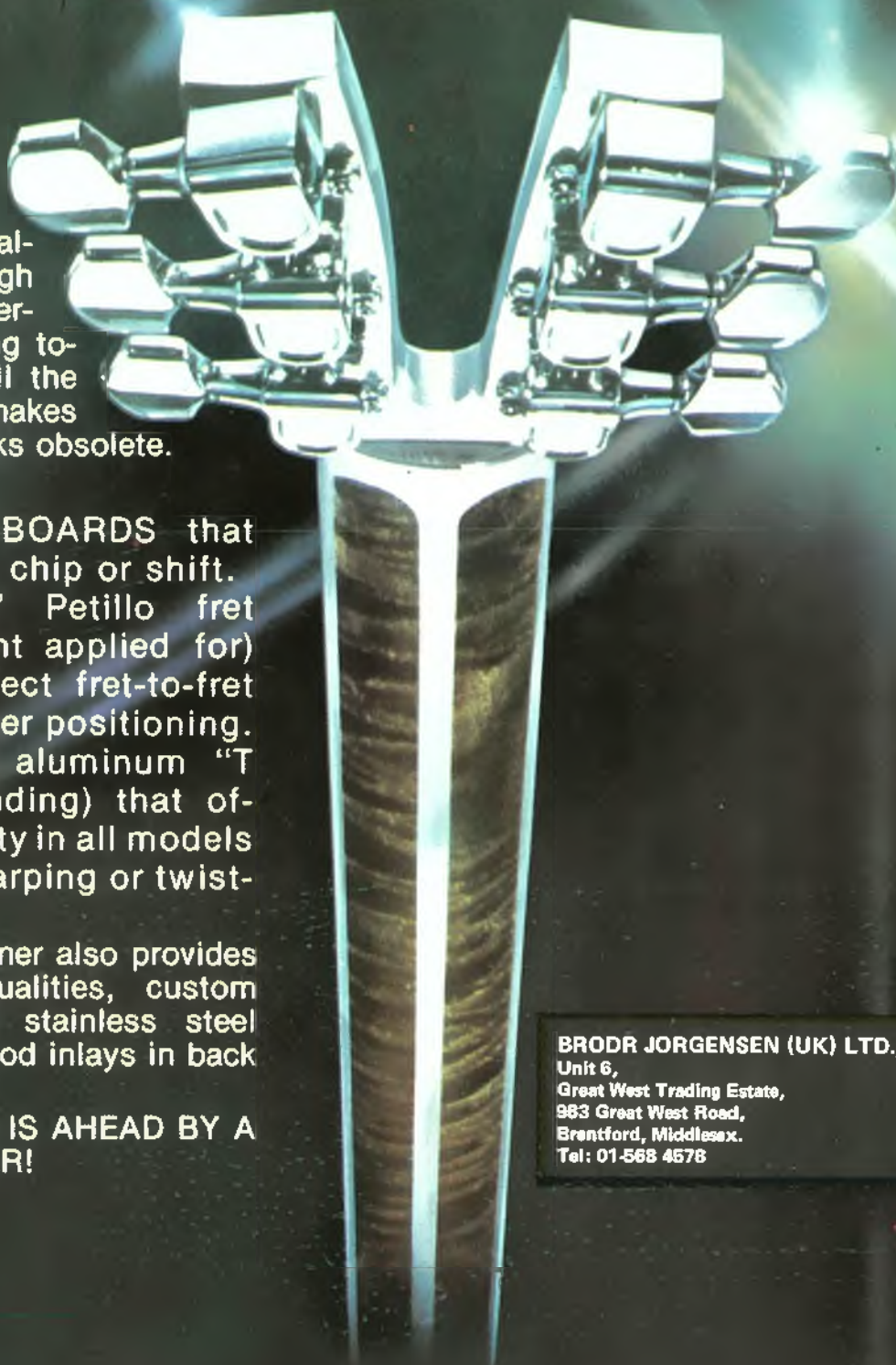
Kramer solid body electric guitars and basses represent a breakthrough in design that allows you to break-through to the ultimate in your performance. It's something totally new that leaves all the others behind and makes conventional guitar necks obsolete.

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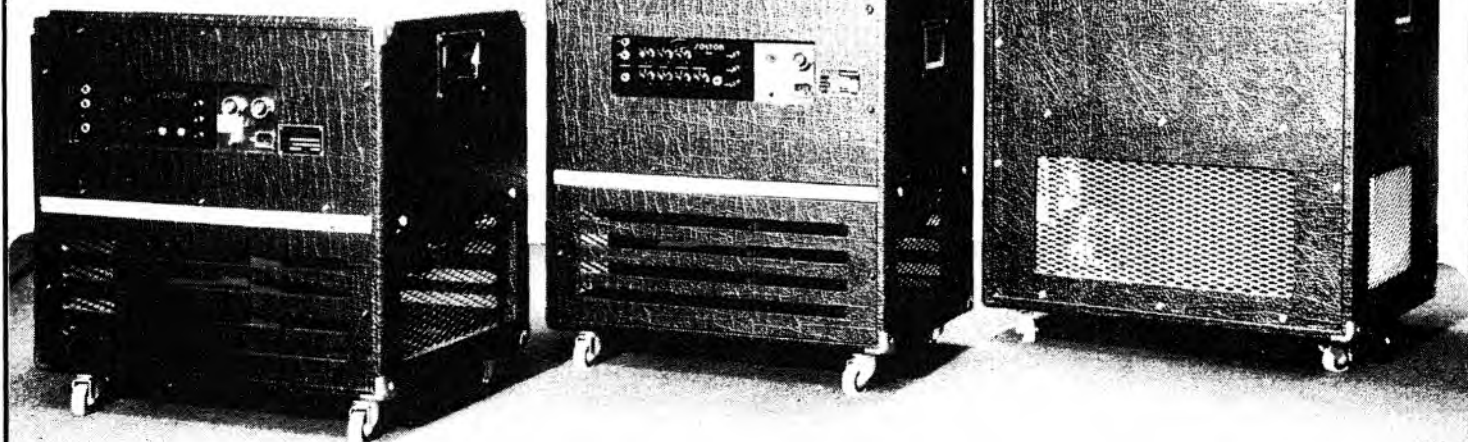
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Stefan Grossman guides you through the first few steps of playing country blues guitar. If there's a better teacher of this style we don't know of him.

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### Playing - Electric Guitar

Big Jim tests your picking with some more scales and exercises which will make you maestro material.

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Want to know which bass the pros like? Jim Rodford tells all, and don't forget the latest competition riff. A set of bass strings can be yours for free if you pick your notes right.

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### delft's

### GUITARCHHECK

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A Les Paul Signature and the new Guild solid get the going over from Stephen this month. The Gibson is quite an electronic handful to work with but the Guild is a straightforward axe which should do well.

### argent's

### KEYBOARDCHECK

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Who needs a violin with the Logan String machine around? Well Rod finds that packing an orchestra into a keyboard is not the easiest of tasks for a manufacturer to do successfully.

### henrit's

### DRUMCHECK

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Bob takes sticks and microscope to a set of Hoshino drums and finds that, once again, the Japanese are offering some excellent value for money gear.

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Ian White test drives a lovely Tele Custom and we find that you don't need to win the pools to own an Ovation now that Kaman have come up with the Applause guitar. Rod Argent makes a second appearance reviewing the Sonorous rotary tone cabinets in an In Brief extra.

## Special Features

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Hiring is one of the most important aspects of the music industry. Without hire companies, struggling bands would never have decent PA systems for one-off tours and many musicians could never get a decent live sound. *International Musician* takes a fine tooth comb to the hire business and talks to the companies, the roadies, and the bands.

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This top American drummer has some interesting tips for practice.

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**85 The Mercury Man**  
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**114 Guitar Collectors: Steve Howe**  
The Yes guitarist has 85 (count 'em) guitars in one of the most lavish collections *IM* has set eyes on. We took a random sample of priceless Les Pauls and Martins and the Yes man guides us through this fabulous fraction of his collection.



**118 Build a Solid: Part 12**  
Nearly there and this month we're fitting the controls and wiring up the pickups to the tone and volume pots. Keep at it!

**136 Build A Mixer**  
Mark Sawicki's course in mixer building enters its third instalment. Soldering irons ready? Then we'll begin.

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Stan Wilson talks about trains and doppler effects in the latest in his series on effects. This month it's 'Vibrato and Tremelo' and you may be surprised to learn there is no such thing as a tremelo arm for guitars.

**148 The Man Who Chopped up Mellotrons**  
Robert Webb is England's (the band) keyboard player and has some interesting theories about synthesizers and the mating of Mellotrons.

**158 Dibble's Speakercheck**  
The first in a new series by Ken Dibble on speaker tests. This first helping is by way of an introduction.



## Editorial

**NOW WE KNOW WHAT YOU WANT TO READ!** Thousands of you opened your hearts to us and told us intimate details of your musical lives. Because we've had such a tremendous response to our reader survey (October) we'd had the forms analysed by computer and we have got a very good idea about the things you want to read and the things you don't want to read.

**MORE** instrument and equipment reviews will now be appearing in this magazine. 59 per cent of you told us that our reviews were the most important items in *International Musician*. **MORE** self-build and practical features will be appearing. Nearly 60 per cent of our readers want to build something musical themselves.

Several amazing statistics came out of our survey. About 80 per cent of our readers buy instruments and equipment with **CASH** rather than choosing credit plans. Twice as many keyboard players are members of the Musicians Union than guitarists. Why?

We now know exactly what percentage of you are Fender or Gibson players and how many prefer other brands. We've settled the **VALVE Vs. TRANSISTOR** argument — we now know exactly how you think on this subject and that will shape our future editorial policy.

Our overseas readers are considerably more technically-minded than our UK readers. Readers in the South East of England told us that 44 per cent had "fair" technical knowledge, overseas the figure was 52.63 per cent.

Another interesting set of statistics related to the Musicians Union. In the South East of the UK nearly 20 per cent of the readers were members whilst in Scotland and Wales only ten per cent carried a card. Why Scottish musicians preferred American made instruments to all others whilst other musicians did not have a particular preference is another mystery. Sadly about three per cent of our readers are unemployed. Now we know what you want **WE'LL GIVE IT TO YOU.**



Vol. 3 No. 11  
December 1977 (UK)  
January 1978 (International)

# NO GUARANTORS

# NEEDED

Take it away to-day

ON PROOF OF IDENTITY

Interest free H.P.

# PLAYSOUND AT LION HOUSE

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Fender Strat S/Burst R/N+Trem.	£246.34	+£11.29	£381.82	Fender F35	£ 48.94	+£ 4.43	£ 74.92	22" Crash	£54.04	£5.00	£ 84.89
Fender Strat Black R/N+Trem.	£246.34	+£11.29	£381.82					22" med.	£54.64	£5.00	£ 84.69
Fender Strat Blond R/N+Trem.	£246.34	+£11.29	£381.82					22" Ride	£65.88	£6.03	£102.11
Fender Strat Natural R/N+Trem.	£249.34	+£11.29	£381.82					24" Crash	£65.88	£6.03	£102.11
Fender Strat Black R/N L/T	£222.20	+£10.18	£344.36	Fender FB5	£ 99.31	+£ 4.55	£153.01	24" med.	£65.88	£6.03	£102.11
Fender Strat S/Burst M/N L/T	£241.27	+£11.05	£373.87	Leo Bluegrass Banjo	£119.32	+£ 5.47	£184.96	24" Ride	£65.88	£6.03	£102.11
Fender Strat Natural M/N+Trem.	£266.66	+£12.22	£413.30					18" China	£48.78	£4.56	£ 77.15
Fender Tele Blond M/N	£215.86	+£ 9.89	£334.54	<b>PAISTE CYMBAL RANGE</b>				20" China	£48.78	£4.56	£ 77.15
Fender Tele Black M/N	£215.86	+£ 9.89	£334.54	602 H/H				18" China W/Rivets	£63.27	£5.79	£ 98.06
Fender Tele Custom Blond R/N	£215.87	+£ 9.88	£334.55	13" H/H S/E	£72.17	£6.61	£111.83	8" Bell	£21.46	£1.96	£ 33.29
Fender Tele Custom Walnut M/N	£264.12	+£12.10	£406.32	14" H/H S/E	£75.11	£6.88	£115.47	11" Splash	£25.55	£2.34	£ 39.60
Fender Jazzmaster S/Burst R/N	£285.70	+£13.09	£442.78	15" H/H S/E	£79.83	£7.31	£123.59	18" Flat Ride	£49.79	£4.56	£ 77.17
Fender Precision Natural R/N	£205.71	+£ 9.42	£318.75	14" H/H	£57.46	£5.26	£ 89.09	20" Flat Ride	£63.27	£5.79	£ 98.06
Fender Precision S/Burst R/N	£205.71	+£ 9.42	£318.75	15" H/H	£64.30	£5.89	£ 99.64	22" China	£82.03	£7.51	£127.14
Fender Precision White R/N	£205.71	+£ 9.42	£318.75	802 CYMBALS							
Fender Precision Walnut M/N	£224.76	+£10.30	£348.36	16" Thin	£36.70	£3.36	£ 56.89				
Fender Precision White M/N	£224.76	+£10.30	£348.36	16" T/C	£36.70	£3.36	£ 56.89	Vox concordia organ	£ 172.12	+£ 7.89	£ 286.80
Fender Precision S/Burst M/N	£224.76	+£10.30	£348.36	16" med.	£36.70	£3.36	£ 56.89	Pinnacle with stand	£ 153.03	+£ 7.51	£ 253.15
Fender Mustang Bass Black R/N	£157.45	+£ 7.21	£243.97	16" med. Ride	£36.70	£3.36	£ 56.89	Vox FB 212 cab	£ 66.11	+£ 3.03	£ 102.47
Fender Mustang S/Burst R/N	£157.45	+£ 7.21	£243.97	18" thin	£44.17	£4.04	£ 66.46	Vox AC 50 amp	£ 93.83	+£ 4.29	£ 145.11
Fender Mustang Bass Black R/N	£ 92.51	+£ 4.24	£143.30	18" T/C	£44.17	£4.04	£ 66.46	Vox AC 30 Top boost	£185.24	+£ 9.15	£275.04
Fender Jazz Bass White R/N	£241.90	+£11.36	£383.80	18" med.	£44.17	£4.04	£ 66.46	Vox AC 100 Amp	£209.30	+£ 9.50	£324.39
Fender Jazz Bass Black M/N	£236.66	+£12.22	£413.30	18" med. Ride	£44.17	£4.04	£ 66.46	Vox AC30 reverb	£181.76	+£ 8.33	£281.72
Fender Mustang S/Burst R/N+Trem	£145.00	+£ 6.69	£226.28	20" thin	£55.09	£5.04	£ 85.38	Vox Export M/Batt	£ 32.13	+£ 2.94	£ 49.27
Fender Tele White R/N	£196.82	+£ 9.02	£306.00	20" T/C	£55.09	£5.04	£ 85.38	Vox Export batt	£ 24.09	+£ 2.21	£ 37.35
Fender Telecaster Natural M/N	£378.41	+£17.34	£586.49	20" med.	£55.09	£5.04	£ 85.38				
				20" med. Ride	£55.09	£5.04	£ 85.38	<b>ARBITER</b>			
<b>AMPS</b>				20" Flat Ride med.	£62.27	£5.79	£ 98.06	Huetler H400	£ 24.38	+£ 2.23	£ 37.76
Fender Champ	£ 47.90	+£ 4.38	£ 74.24	22" thin	£70.58	£6.46	£109.39	Huetler H300	£ 22.99	+£ 2.10	£ 35.59
Fender Vibro champ	£ 52.98	+£ 4.85	£ 82.08	22" T/C	£70.58	£6.46	£109.39	% Steel Acoustic	£ 10.45	+£ 0.95	£ 16.15
Fender Deluxe Reverb	£160.40	+£ 7.35	£248.80	22" med.	£70.58	£6.46	£109.39	% Nylon Classic	£ 10.45	+£ 0.95	£ 16.15
Fender Vibrolux Reverb	£187.09	+£ 8.57	£289.93	22" med. Ride	£70.58	£6.46	£109.39	TV E245 guitar	£ 52.87	+£ 4.84	£ 81.91
Fender Pro reverb	£224.64	+£10.29	£348.12								
Fender Super reverb	£241.78	+£11.08	£374.74	24" thin	£84.88	£3.89	£131.56	TV E235 w/cass	£ 69.75	+£ 2.82	£ 101.19
Fender Quad reverb	£329.57	+£15.10	£547.54	24" T/C	£84.88	£3.89	£131.56	Autotune Showmen	£ 537.03	+£ 20.11	£ 778.36
Fender Twin Reverb	£353.26	+£16.19	£564.54	24" med.	£84.88	£3.89	£131.56	Rogers Landoner VI	£ 494.25	+£ 22.19	£ 780.59
Fender Princeton Reverb	£125.59	+£ 5.75	£194.59	24" med. Ride	£84.88	£3.89	£131.56				
Fender Twin Reverb	£283.28	+£12.97	£438.92					<b>GULBRANSEN ORGANS</b>			
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D130's	£447.83	+£20.52	£684.07					Pacemaker 1511	£1052.00	£ 47.33	£1625.00
Fender Musicmaster Bass amp	£ 78.98	+£ 3.82	£122.42	18" China	£49.82	£4.73	£ 77.10	Pacemaker 1511W	£1181.00	£ 52.00	£1785.00
Fender Bassman Ten	£135.28	£ 9.99	£204.16	20" China	£63.27	£5.60	£ 96.00	Pacemaker 1511 kW	£1276.00	£ 57.25	£1985.00
Fender Bassman 50 complete	£257.48	+£11.80	£399.08	18" H/R	£44.17	£4.04	£ 66.46	Pacemaker 1811L	£1187.00	£ 53.18	£1825.00
Fender Bassman 100 complete	£309.00	+£14.16	£478.82	20" H/R	£59.09	£5.04	£ 85.38	Pacemaker 1811LW	£1281.00	£ 57.83	£1985.00
Fender 300 PS guitar set up complete	£548.13	+£25.12	£849.87	22" H/R	£70.58	£6.46	£109.39	Pacemaker 1811 KLV	£1408.00	£ 63.08	£2165.00
Fender 300 PS bass set up complete	£363.13	+£26.72	£503.77	<b>2002 CYMBAL RANGE</b>				Paragon 3516	£1811.00	£ 81.16	£2785.00
Fender PA 100 + Cols + Horns	£412.72	+£18.91	£639.64	13" H/H S/E	£68.87	£6.31	£106.74	Paragon 3516W	£1914.00	£ 85.91	£2945.00
				14" H/H S/E	£75.11	£6.88	£118.42	Paragon 3516 Kw	£2268.00	£ 72.25	£3125.00
<b>ACOUSTICS</b>								Theatrum 3318 W	£2057.00	£ 92.33	£3165.00
Fender F25	£ 43.13	+£ 3.95	£ 66.83	15" H/H S/E	£79.83	£3.85	£123.73	Theatrum 3318W	£2175.00	£ 97.50	£3345.00
Fender F45	£ 48.66	+£ 4.55	£ 76.98					Theatrum 3318W	£2519.00	£113.00	£3875.00
Fender F15	£ 39.43	+£ 3.61	£ 61.09					President 4116W	£2500.00	£112.00	£3845.00
Fender F85 12 string	£ 80.11	+£ 5.51	£ 93.17	13" H/H	£42.08	£3.85	£ 65.22	Premiera 5118	£2898.00	£129.91	£4455.00
Fender F85	£ 80.11	+£ 5.51	£ 93.17	14" H/H	£44.82	£4.10	£ 67.47	Rialto 11 6018	£4548.00	£203.91	£6995.00
Fender FC30 Classic	£ 50.98	+£ 4.67	£ 78.88	15" H/H	£50.09	£4.59	£ 77.63	411 Traditional	£1706.00	£ 94.08	£2355.00
Fender FC10 classic	£ 33.97	+£ 3.11	£ 52.83	16" Crash	£28.59	£2.82	£ 44.31	411 K Traditional	£1818.00	£ 99.91	£2305.00
Fender FC40 classic	£ 56.19	+£ 5.15	£ 87.09	16" med.	£28.59	£2.82	£ 44.31	421 Traditional	£1869.00	£103.83	£3115.00
Fender FC 10K classic	£ 30.70	+£ 2.80	£ 47.50	18" med.	£28.59	£2.82	£ 44.31	421 K Traditional	£1979.00	£109.66	£3295.00
				18" Crash	£34.45	£3.15	£ 53.39	422 Contemporary	£1928.00	£107.25	£3215.00
				18" med.	£34.45	£3.15	£ 53.39	422 K contemporary	£2036.00	£113.08	£3395.00
Fender F75	£ 75.80	+£ 6.94	£117.44	18" Ride	£28.59	£2.82	£ 44.31	428 Theatre	£2064.00	£114.25	£3425.00
Fender F95	£126.76	+£ 5.81	£196.48	20" Crash	£34.45	£3.15	£ 53.39	428K Theatre	£2173.00	£120.16	£3615.00
Fender FB0 12 string	£ 77.10	+£ 3.53	£119.46	20" med.	£42.71	£3.91	£ 66.20	429K Theatre	£2238.00	£124.68	£3735.00
Fender F115	£185.46	+£ 8.50	£287.58								
Fender F80	£ 99.31	+£ 4.55	£153.91								

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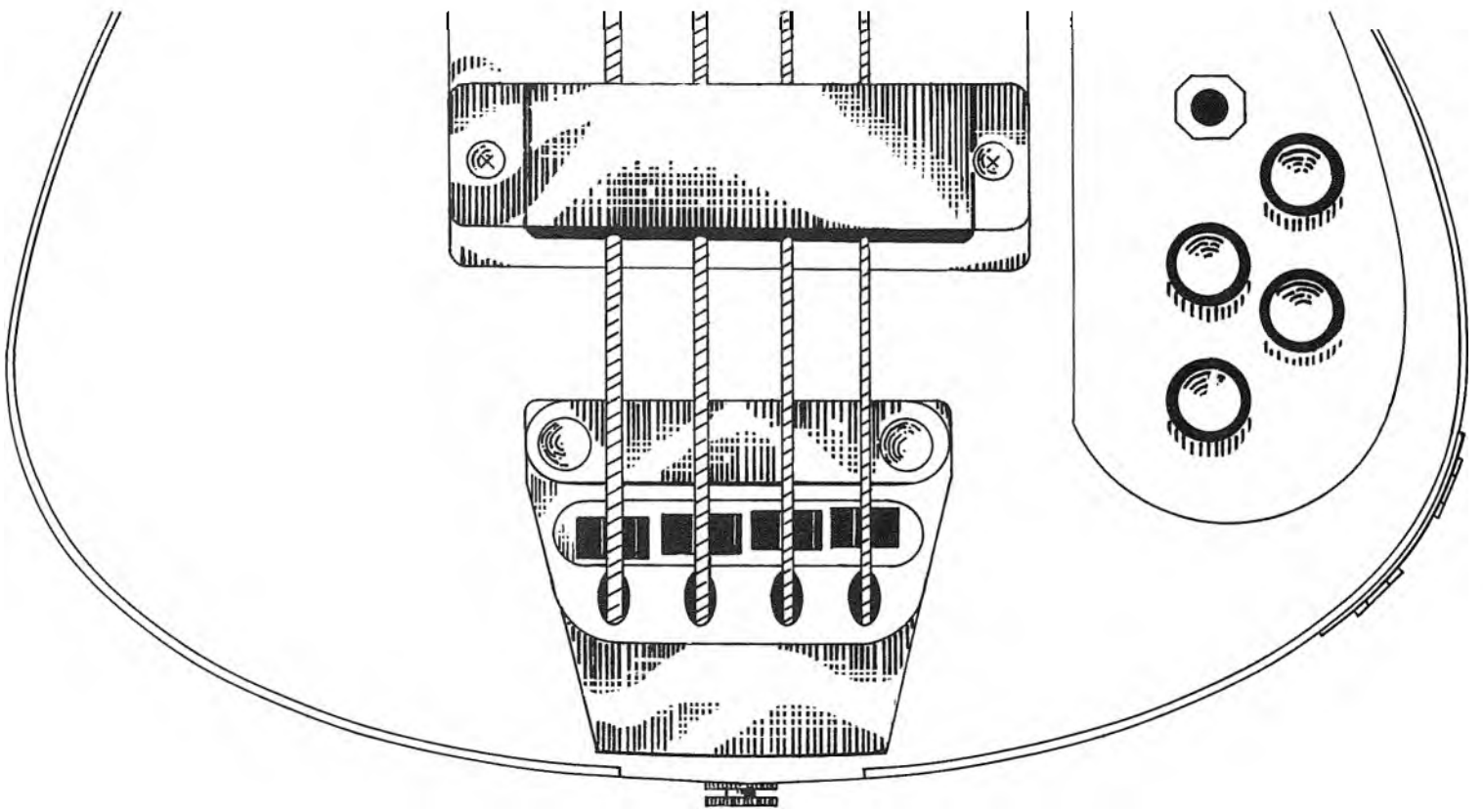
**REVOX A77**  
*Used in more broadcast and recording studios than any other recorder.*



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*Based on the A77 chassis and introduced at the request of the recording industry to meet their requirements of 3-speeds, full editing facilities, motion sensing and immediate access to the heads. Designed and rebuilt by ITA.*



**REVOX B77**  
*For the Hi-Fi enthusiast and semi-pro user, a new model, variable tape speeds and attractive styling.*



# The beginning of great bass sound.

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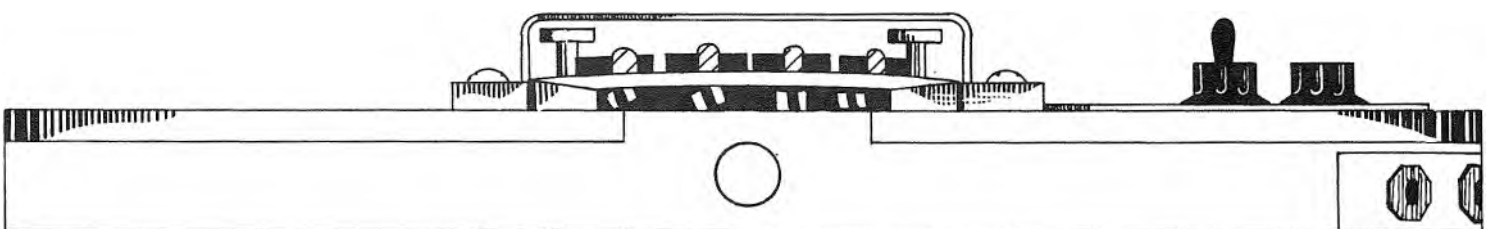


Alphonso Johnson

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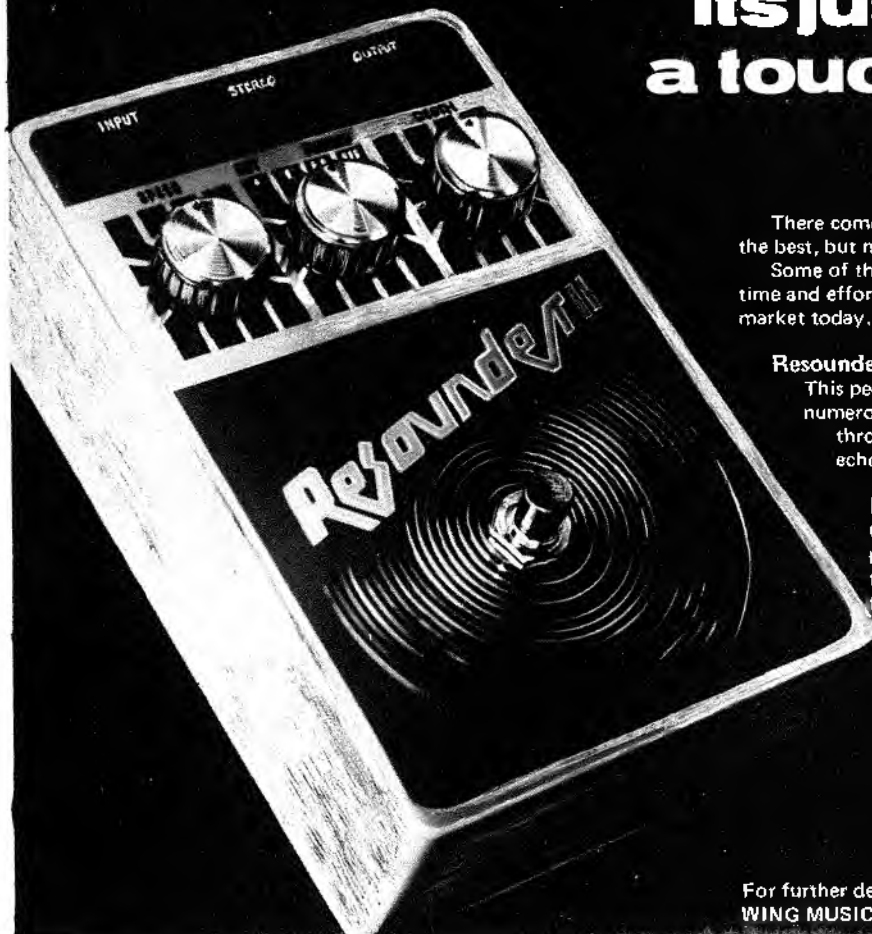


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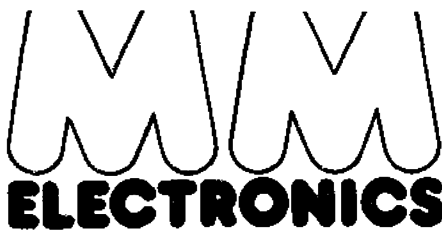
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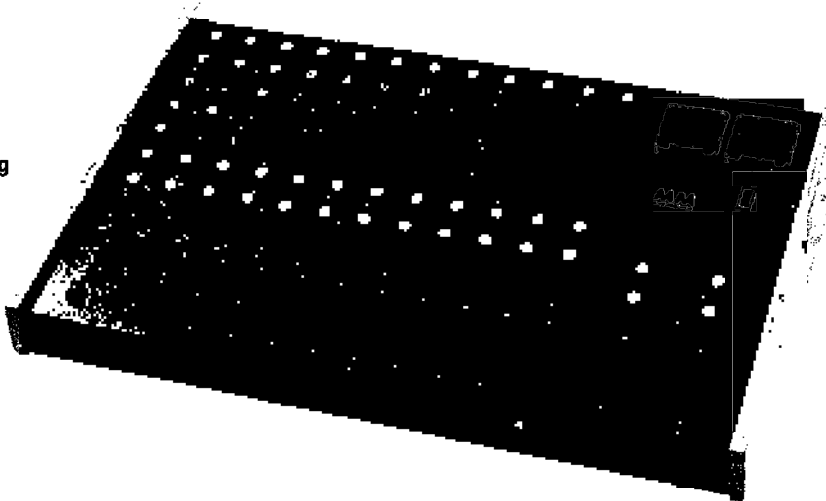


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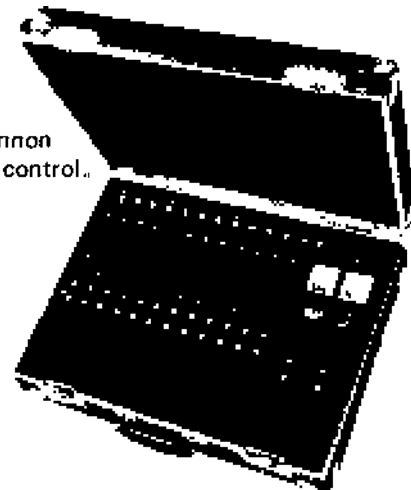
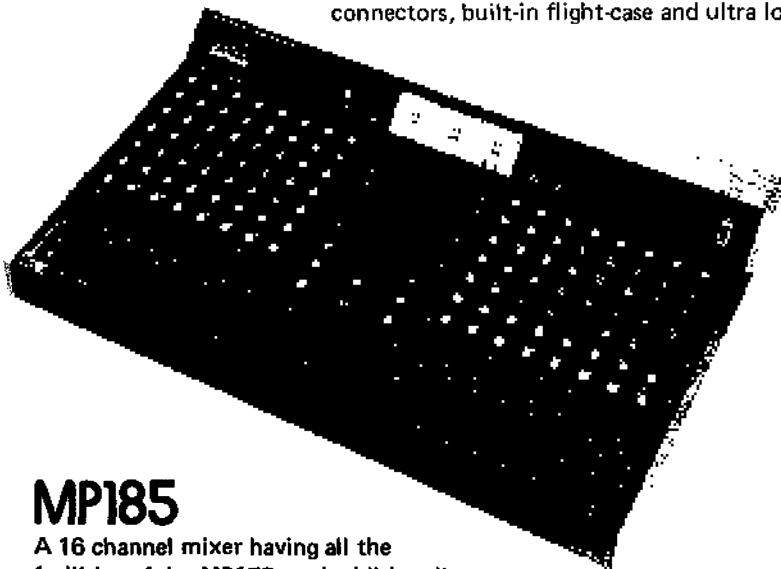
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# ★ LETTERS ★

Last month's letter by Fife reader John McFadyen certainly proved as controversial as we expected and it is obvious that many readers have been moved to do some serious thinking about their motives as musicians. We have been impressed by the seriousness of the replies we have received to Mr McFadyen's letter and have printed the following answers to the points he raised in last month's magazine.

Dear Sir,

I read with interest (among other feelings) the letter in last month's International Musician from John McFadyen and for what it's worth I would like to offer my comments.

In case, having read the following, the reader questions the validity of any of the comments I make, I will briefly state the background which I feel qualifies me to write this letter.

I am in a similar position to Mr McFadyen, having played for four years in a group who earns its bread and butter by playing social clubs. The principal differences between my situation and that of Mr McFadyen are:-

1) We don't play as frequently as his group do;  
2) We are not interested in residencies, the reason for which (in our opinions, at least) is summed up by the word 'stagnation'

3) Our involvement with rock music has been rather more in the line of Deep Purple than some of the examples Mr McFadyen quotes as "rock".

Because of the type of gig we choose to do, we rarely have the benefit of some of the perks Mr McFadyen mentions, so we don't have it quite that cushy, but nonetheless I feel I must make one or two points in reply to this letter.

It seems to me to be a contradiction to say on the one hand that most rock bands buy their gear on tick, and on the other hand that the gear they use is rubbish. If you're going to commit yourself to monthly payments for up to five years you certainly aren't going to put up with rubbish! The reason gear is so often bought that way is because these days very few musicians can afford to buy gear outright for the first time. I certainly couldn't!

It MUST, I feel, be pointed out that there is a certain ilk of music which loses all its power if you try to play it softly; however, I fully agree that on the whole, a group should be capable of tailoring their volume to the requirements of the venue at which they are performing. Our line-up is Guitar (Gibson SG), Keyboards (Hammond and Korg), Bass (Fender), Drums (Premier) and most of our amplification is HH—equipment which we do not consider to be rubbish, by the way. We too play Viva Espana to audiences who wouldn't care much whether it was us or The Beatles on the stage, and we too keep our hand in by taking the odd gig where we play heavier music—and as stated earlier, by "heavy" I mean more in the line of Deep Purple than the Stylistics (The Stylistics—Rock??).

But to answer what Mr McFadyen cites as being his main point, of course there is a rift between what he loosely describes as "rock" bands and bands like his—or indeed mine! How can you expect someone who gets off on stuff like Viva Espana to appreciate Emerson, Lake and Palmer, for example—but more to the point, how can you expect the reverse to be true? I have no illusions about the music I play at social

clubs—most of it I regard as crap, and I wouldn't argue with someone who came up and told me so. That doesn't mean I am any worse a musician for playing it, and even if the audiences I play to most of the time don't really appreciate that, at least I have the satisfaction of knowing that if and when I want to, I can probably play my instrument as well as, possibly better than, most other people of my age and experience. Being a good band has nothing to do with whether you wear monkey suits and comb your hair or not. There's good and bad in every field, but Mr McFadyen's letter suggests to me that he has chosen to take the best in his field to compare with the worst in the field of Rock.

I suspect that his (as I like to think mine is) is one of the better and more conscientious bands among those who play that kind of music at that kind of gig, and certainly bands like ours are adequately capable of being as creative and innovative as the best of them. But to restate my point—there are the good and the bad in any field—even ours, Mr McFadyen.

Genuine, bona fide rock groups take time rehearsing their music for precisely the reason that he has accused us earlier of neglecting—concern for the audience. There is more than one way to exhibit concern for your audience. He mentions "Top Of The Pops" groups and audiences in support of his argument, but when all is said and done, a lot of what is played on "Top Of The Pops" has as great a connection with rock music as an elephant's foot.

I think groups of our ilk are given as much publicity as they deserve, and after all, we earn our bread. The groups who need the publicity and encouragement are the genuinely talented young rock groups today who are struggling to survive and often split simply because there isn't the work to be had for that kind of band that there is for one like us.

Live and let live. It is for the very reason that Mr McFadyen states—that is, because rock music has a restricted audience—that rock bands need all the publicity they can get. Bands who play the kind of gigs he and I play mostly do it primarily for the money—not all, but mostly. I don't really think even he expects a band like hiw own (or mine) to be given the same sort of coverage in print that is given to musicians who are in it for the music first and the money second, rather than the other way around.

By the way, I support his views wholeheartedly that Deeja's are an insidious growth on the backside of modern music and should be treated accordingly.

Apart from all that, thanks for a great mag and keep up the good work.

**MARK DELLOW**  
Essex

PS: I think it is worthy of note that International Musician saw fit to publish a reader's letter which filled up a whole page, no matter what it's content. Well done!

Dear Sir,

While John McFadyen's letter certainly made interesting reading it seemed a bit, well, pompous, in places.

Mr M states that unlike the typical rock band he pays cash for his gear. Let's face it. How many teenagers can afford the sort of cash required to buy gear outright. Even when the payments can be met this does not mean the

best equipment is in everybody's reach, as anyone who has tried to talk a parent into being a guarantor will appreciate. I say teenagers because most of John's comments seem to be directed at "kids", which makes me wonder if this isn't an example of that tired old cliché "THE GENERATION GAP".

Regarding the jargon criticism: Surely this is just part of these guy's enthusiasm. Mr McFadyen is obviously an experienced player but we've all got to start somewhere and anyone who's interested enough to read all day can and learn as much as they can about a subject is bound to use jargon when discussing same. (Ever been in the company of a Hi-Fi fanatic?).

That's a good point about the rock orientated guys sneering at bands in the cabaret mould but I don't think it's so much a case of them resenting the others ability as just not recognising it.

On several occasions I've listened to bands for an evening and thought them just, O.K. Then they suddenly do a number which makes you think "Hey, these guys can play". I don't mean they do lightnin' licks or virtuoso solos but just a number which they've obviously thought about instead of simply playing it the way everybody knows it goes, as they had the rest of the material.

As for the three weeks rehearsal grouse. Why not! If that's how long it takes to get it the way you want it to sound. Even if your audience has no musical appreciation what-so-ever, and this is by no means limited to young girls, if it doesn't come out the way you want it to sound you notice.

I really get the impression that Mr McFadyen is doing the sneering, at guys who aren't, yet, up to his standard. I repeat, we all start somewhere.

Lastly, (sighs of relief all round) I really would have warmed more to John's letter if just once he had defended his chosen style of music by saying he **enjoyed** playing it. Or are we, perhaps, to take that for granted.

Thanks for your time and your magazine.

**IAN BURNSIDE**  
Scotland

Dear Sir,

John McFadyen's letter in your November issue was, indeed, interesting; however, I feel that many of his points do need answering.

To start with, Mr McFadyen seems to feel rather smug that all their gear is paid for cash and "is not rubbish", furthermore he informs us that they "enjoy facilities . . ." which your average pub-rocker can only dream about, as if his situation is the top of the ladder, whereas we all know that the rewards for a successful band are far beyond Mr McFadyen's wildest dreams.

The letter goes on to describe the kind of music his band plays, and very varied it is too; but the comment about successfully invading the rock domain, and doubting the ability of a rock group to invade his, brings us to the crux of my argument: However much Mr McFadyen & Co "re-arrange" a number, it has still been written by musicians other than themselves. These people provide the music for his band to play, and the music they write is the music they *want* to produce. Mr McFadyen can never "invade" a rock domain or any other because he is simply an instrument in the reproduction of that music, just as a record or tape is. People in general, and especially in rock areas, go to hear a "bard", ie the musician and *their* music: The two

*continued overleaf.*



# **Phoenix amplification apologises to VOX**

Our attention has been drawn to the fact that in our advertisements in this journal and other music papers introducing Phoenix amplification and mentioning Marshall and Fender we omitted that other great name of the 60's and 70's – VOX.

## **Phoenix puts valves back in amplification**

Phoenix amplification is manufactured by  
**British Music Strings Ltd.,  
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\*DON'T MISS PAGES 106 AND 107



# THE CHASE MUSICIANS

## Roland/Chase Demo in London



A fantastic evening of keyboard expertise was the order of the day when Chase Musicians got together with Roland to organise a professional demonstration of the range of Roland synthesisers by top Roland demonstrator Adrian Lee. The successful evening was held late in October at the Horseshoe Hotel in London's Tottenham Court Road.

The evening was part of a programme of ongoing synthesiser demonstrations organised by the London Synthesiser Centre, which is fast earning the reputation of holding one of the most comprehensive stocks of synthesisers in London.

The London Synthesiser Centre, part of the Chase Musicians group, is pledged to be of service to the musical public and is trying to educate the public in the new technology of music which is represented by companies such as Roland who are pioneering new directions in musical instrument technology and playing.

The evening at the Horseshoe Hotel was particularly well attended and there weren't any people there who didn't enjoy themselves or come away a little more knowledgeable about Roland and synthesisers in general. Adrian Lee, who is a competent guitarist as well as being an ace keyboard player, was kept busy with the

equipment and had his work cut out for him answering the questions from visitors who were anxious to learn and hear the Roland equipment.

Adrian is experienced enough to deal with the most advanced questions from knowledgeable musicians as well as very basic questions from complete beginners. There was some discussion on the Roland guitar synthesiser and much controversy was raised by International Musician's recent, lead story on guitar synthesisers which was perhaps the first proper look at these instruments which are still shrouded in a great deal of mystery as far as the majority of players are concerned.

Adrian demonstrated a wide range of Roland equipment including the SH2000 and 1000 synthesisers, the SH5, System 100, RS202, the Roland Guitar Synthesiser, EP20 and 30 pianos, MP700 piano and the Jazz Chorus amps such as the JC 60, 80, 120 and 160. All this equipment is tailored to be of maximum use to professional musicians who require the best sound obtainable as well as reliability.

One interesting point about the demonstration evenings is that the same faces keep cropping up at each demo evening. The demo evenings appear to be turning into cult events with a consistent following comprising of a hard-core nucleus of fans.

Also seen at the demonstration evening was Mr. A. Luther, Chase Musician's boss, and all of the staff of the Chalton Street shop who were wearing the new promotional T-Shirts which have the Chase logo emblazoned on the front in glitter paint. These very desirable T-Shirts are available free from Chase Musicians as are various badges which promote the London Synthesiser Centre. The T-Shirts were worn by members of Gordon Giltraps band on the BBC's Old Grey Whistle Test last month

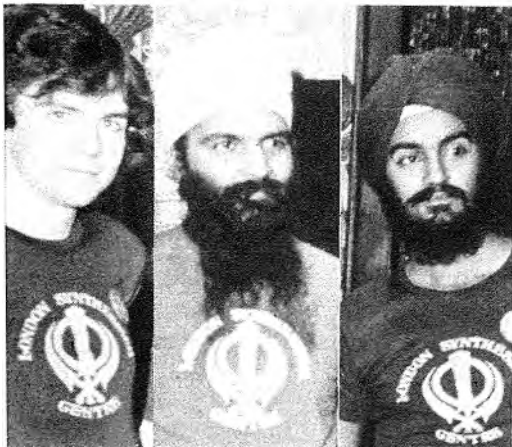
when Gordon Giltrap appeared on the show to promote his new album *Perilous Journey*.

For all musicians interested in synthesisers, Chase Musicians is rapidly becoming the place that is synonymous with synthesisers. While the rest of the band goes to Charing Cross Road for their gear, keyboard players would be well-advised to stick to Euston and Chalton Street for their requirements. If you weren't at the Horseshoe Hotel demo evening don't despair. Chase Musicians are holding regular programmes of demonstration evenings and the next one is planned for December 8th. You can get all details about future events from Phil at Chase Musicians by phoning 01-387 7449.

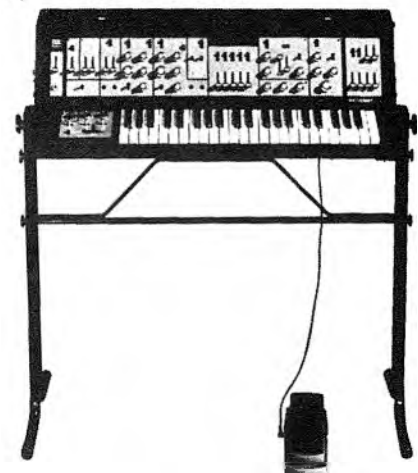


Roland's demonstrator, Adrian Lee

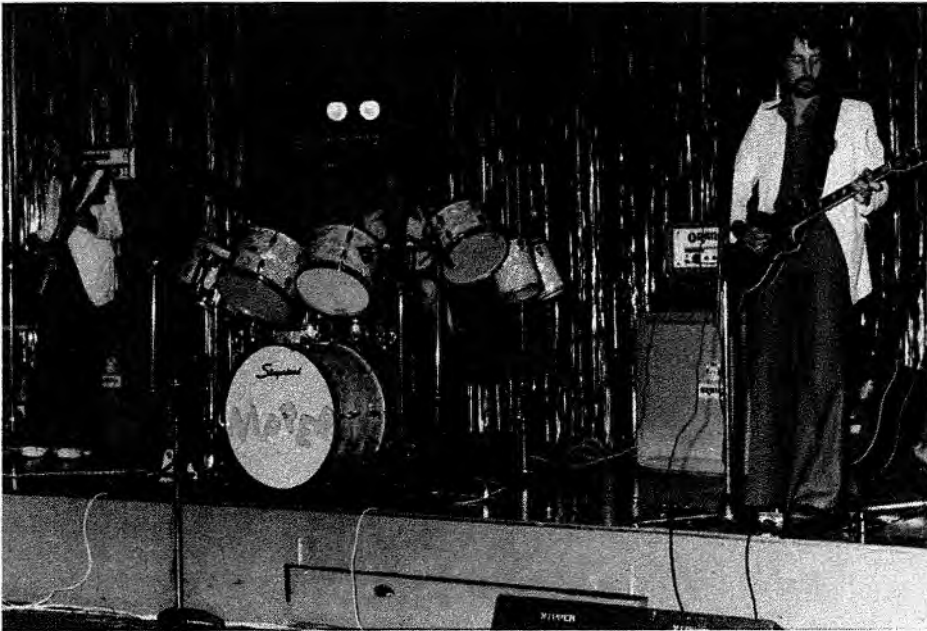
One last word. All the Roland range can be seen and tried at Chase Musicians. The shops has practically all the synths and amps produced by Roland in stock.



Phil Moore - Stanley, London Synthesiser Centre Sales Manager with Mr. A. Sing-Luther and Mr. Pammi Sing-Luther



Roland SH 5 Synthesiser



Nipper

## 'pure sneering hatred....'

are intertwined, and any copying of that work, unless done with love and due affection for that work, can only be a second best.

Going back to the letter, the next portion seems to be pure sneering hatred: may I remind Mr McFadyen that rock musicians only *want* to play their kind of music, and therefore only a rock audience is generally interested. Also the enjoyability of rock bands' music is a matter of personal preference and not a good/bad thing, and that very few rock musicians are under 20, and can, in general, play.

Moving on, we find that Mr McFayden is, in fact, not the informed gentleman he would have us believe, as he quotes TOTP as a typical rock audience—well!!! And, by the way, Mr McFadyen, if you have to *write* a number, as well as arrange it; doesn't three weeks' rehearsal seem reasonable?

Reading back on this letter, it does seem rather bitchy; however, I would like to say I have a great respect for cabaret and commercial bands as I can appreciate that not every kind of music is everybody's cup of tea and somebody should be around to entertain the "non-rock" (for want of a better phrase) audiences with live music; however, Mr McFadyen seems to hold in contempt the people who may one day enhance his repertoire with new rock classics and as such seems to be a little hypocritical in his stance. Because of this I hope you print this letter so he might re-examine his feelings towards rock musicians and give them an easier time in his oratories in future!

Thanks for sparing the time to read this letter, and full marks for allowing this kind of interchange of views to take place.

**R. PEACH**  
Derby

Dear Sir,

Strangely enough my letter giving info on our band "NIPPER" coincided with John McFayden's letter about club music. I am proud to be a member of a band similar to John's and we take an awful amount of trouble about appearance, lighting and sound quality. It may not always be appreciated by the audiences we entertain, but the professional thought behind the set up is always recognized. I've enclosed two photos of the band, one in concert at a holiday camp, and our usual publicity pics.

Incidentally the PA which is hidden consists of 2 pairs of HH bass bins and horns, a 12-2 stereo HH mixer and 2 100 HH power amps. With this we use the HH echo unit and phase unit. Certainly we find this adequate for most gigs we play. (We use Unidyne 3 and 4 mikes).

Basically we are based near Bristol and play in an area from Exeter to Coventry (including Wales). We entertain very diverse audiences, and pride ourselves on being able to entertain most sections of society. Incidentally we are ambitious, and hope perhaps to do some recording next year.

As you can imagine I personally agree with John's philosophy, and wished more "heavy" bands took more care over presentation. In some middle of the road clubs, they have "killed" future live entertainment. Not a thing any musician likes to have happen.

**B. MARTIN**  
Somerset

Dear Sir:

Quite an issue, last month's IM. I especially liked the article on Producing (an area I'd really like to get into, but how?), Revox maintenance,

mixer building, and sax bugging; and the That Letter. I love controversy and couldn't resist responding to it although many major points were made in the Editorial.

The poor fellow sets himself up and then shoots himself down several times over during his letter. It's hard to see what he's after. He tells us what a cushy number it is for him and his band and how much he gets paid and then tries to make out how hard done by he is.

Some of us have only got 'respect' and integrity to go for. I don't see myself getting rich quick with my musical policy but I can't bring myself to just churn out other people's stuff. Mr McFadyen is surely only worthy of respect for what he obviously is: a technically good musician. But he seems to be after more than this.

I would suggest that a musician who simply does a good job of performing and thus entertaining his audience is no more or less worthy or respect than an engineer or doctor- it's only a job like any other until you do something that makes you stand out from the rest. How about a contest for club-type bands, then Mr McFadyen could prove that his is the best.

I don't see the relevance of his equipment list. Lots of small-time rock bands have as good or better and many bands have more basic stuff without even any mixing facilities but still get a good sound. Being up in Fife he's probably not heard of many modern jazz groups such as Barbara Thompson's Paraphernalia for instance.

Since when has versatility been so important an attribute for a self-respecting musician? It's only important if you play to cabaret/dinner dance/disco/pub/ audiences. Besides, the spectrum of rock and associated music forms is pretty much as varied, with bands throughout the range, although again, Fife must be a bit limited in choice.

In the Luton area over the past couple of years, the only band I've heard that would fit Mr McFadyen's description were the utterly appalling band who should be publicly ignored.

Being disparaging about rock audiences is a dangerous game for Mr McFadyen to play. Club and works dance audiences aren't exactly renowned for their discerning tastes in music. In fact they probably couldn't care less what the group/band plays as long as it doesn't jar or interfere too much with their concentration; whereas most rock fans for the music, whatever it is like.

More power to your finger, however, if you make a point of playing music differently from the original version and any band that accepts whatever limitations it may have knows what it wants to do - ie entertain people; and which concentrates on its strong points eg cunning arrangements, deserves respect on those counts.

Nevertheless, I still wonder what it is you want from International Musician Mr McFadyen. You're a success, you're band gigs regularly and it has probably got as far as it is likely to go. I would have thought that magazines like International Musician should concentrate on helping those who haven't yet made it.

**C. CORRY**  
Redbourn Herts.

# Buzz

Brothers Paul and Simon Townshend are following in the footsteps of famous elder brother Pete by each forming their own bands. Paul plays rhythm guitar with **Shy** while the **Simon Townshend Band** has their leader playing keyboards and synthesizer. Both operate in the Middlesex and West London area and Simon's band in particular are building up a reputation in local colleges ..... Still in the West London area are a band named **Peach** who play Free-type heavy rock but rely on original material. They are hoping to branch out into the Midlands in the near future .... Up in Bradford, **Freefall** are taking their brand of commercial rock into as many pubs, clubs and discos as they can find. They are made up of: Steve (rhythm guitar/flute/vocals) Martin (lead guitar/vocals) Terry (drums), Mary (percussion) and Pete (bass guitar).... Liverpool group **Marseilles** won the US talent contest to find the best new rock band of 1977 and took the £5,000 first prize. Said lead guitarist Neil Buchanan. "We never thought we'd even get through the heat let alone win. We've been playing for two years and this is the first competition we've entered" ..... Four-man Birmingham outfit **Paradox** is being tipped for big things in 1978. The band is to release its first single on the Ariola-Hansa label and comprises: Dave Bailey (vocals/keyboards/guitar), Paul Sargent (vocals/lead guitar), Bob Moore (drums) and Alan Tallis (bass guitar) ..... The **Chris Cool Band** from Newcastle is a 'steamy, hot soul band' featuring a tall, elegant lady who contributes some very powerful and sensual vocals ..... Still in the North-East, a Morpeth New Wave group called **The Coils** are finding difficulty getting gigs. They remain optimistic and hope to be recording material in the near future... Oxfordshire New Wave band **Vile Bodies** is available for gigs anywhere (Tel. Bicester 41257) .... **Visions** is a band of 16-year-olds playing Yes/Genesis/Camel

*Free Fall*



*Simon Townshend Band*

type music around Woking and a five-piece called **Hazzard** are building up quite a following in the Reading area. Henry Hopkins is their guitarist and also acts as the band's temporary manager. The rest of the line-up is: Neil Sadle (guitar/vocals) Martin Leshor (bass vocals), Kevin Bull (lead vocals/acoustic guitar) and Andy Aust (drums). Henry says their activities have been rather limited gig-wise but they have recently appeared on local radio and gained second place in a local contest. They will take gigs anywhere in the Midlands or South

of England and can be contacted on 0734 781918 (early evening)

**Buzz is your column. Send all information about your band to: Buzz, 7a Bayham Street, London NW1 0EY**

### **New Store Opens**

Soundwave, the East London music people, are opening a new store in Romford to replace their musical instruments shop in Brentwood and PA centre in East London. The new store is at: 66 Victoria Road, Romford and the opening weeks is December 12-12.



### **Our Slip Is Showing**

Apologies first to Guild for last month describing their Guild M20 acoustic as a "Golden Oldie". The model is a new edition of guitar from Guild. The "Golden Oldie" is in fact the earlier F20 guitar.

Also "very sorry" to Julians Studio Rentals who were reported as having opened a new Willesden base. Julians have in fact been there for a year and the event that should have been reported was an evening of product demonstration and promotion by Yamaha and Roland.

### **Carlsboro Turnover**

Last month's Carlsboro market report stated the company has a monthly turnover of 350 units. This, in fact, is the weekly turnover.



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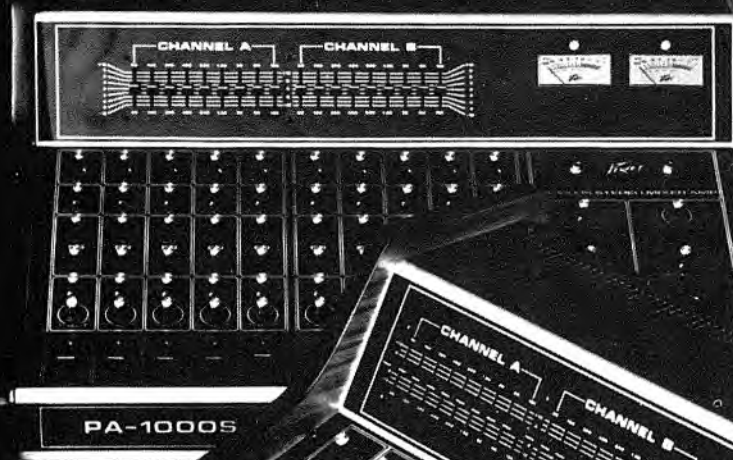
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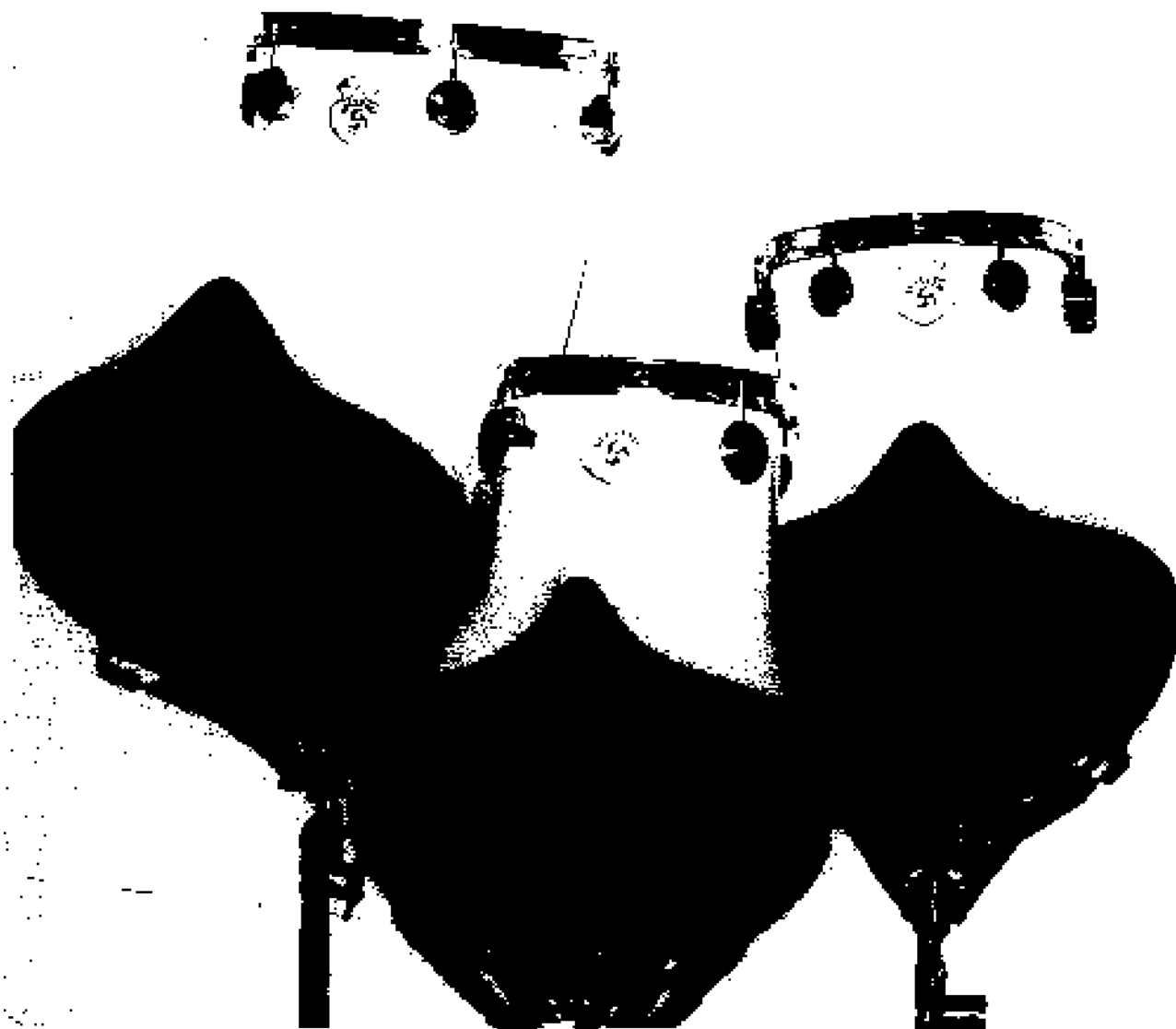
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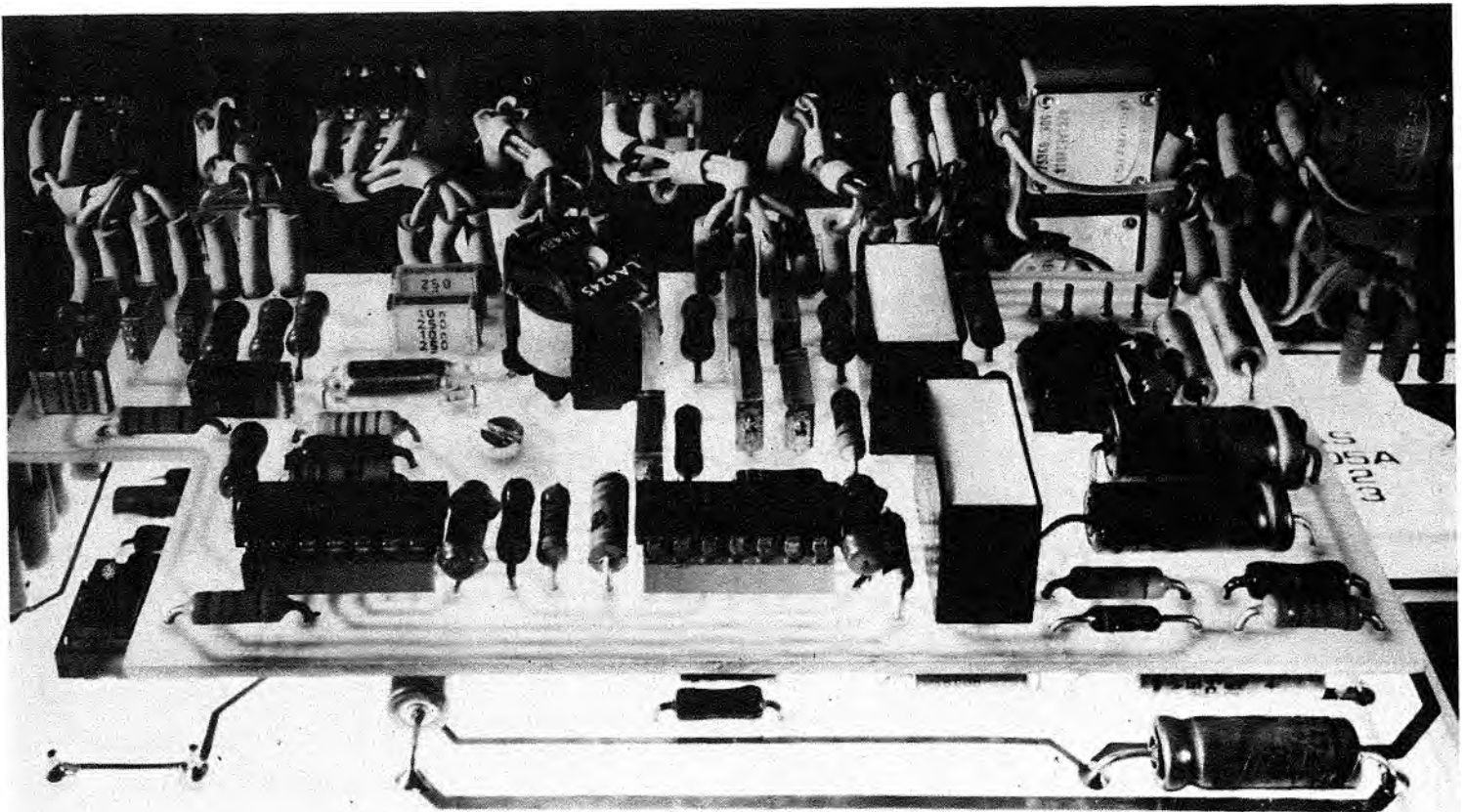
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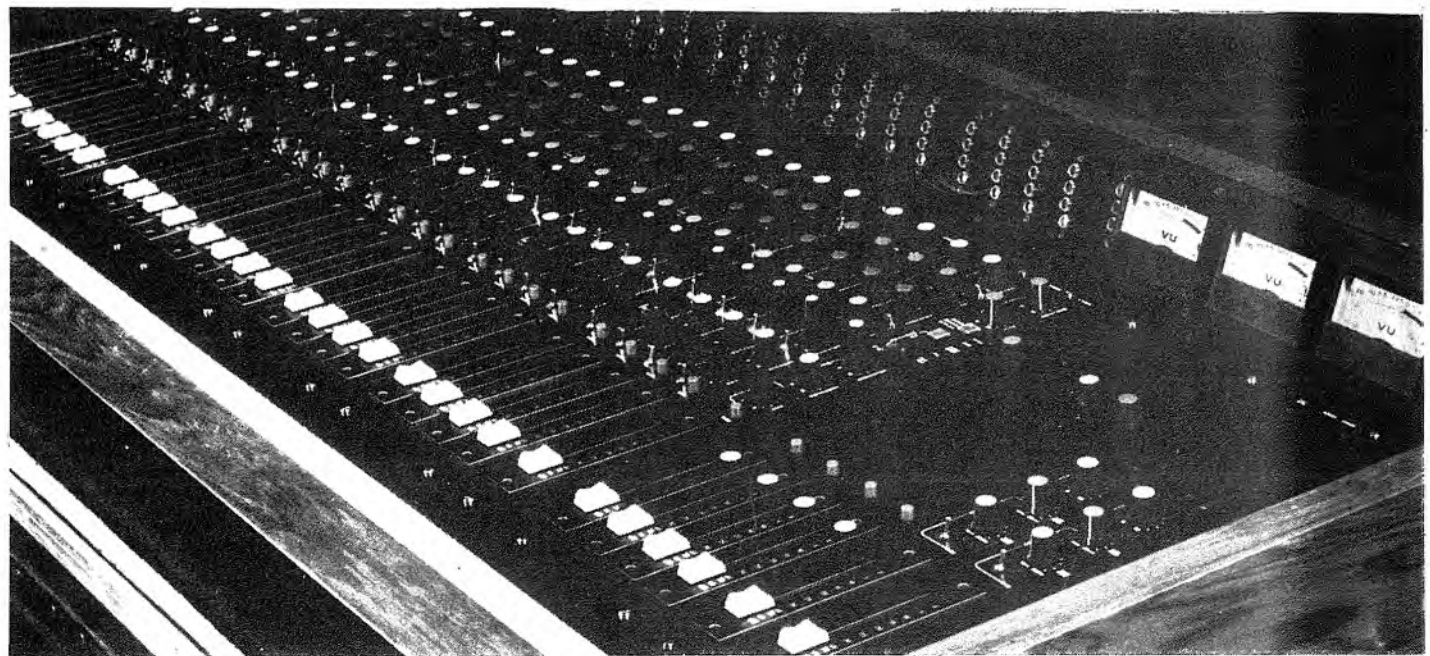
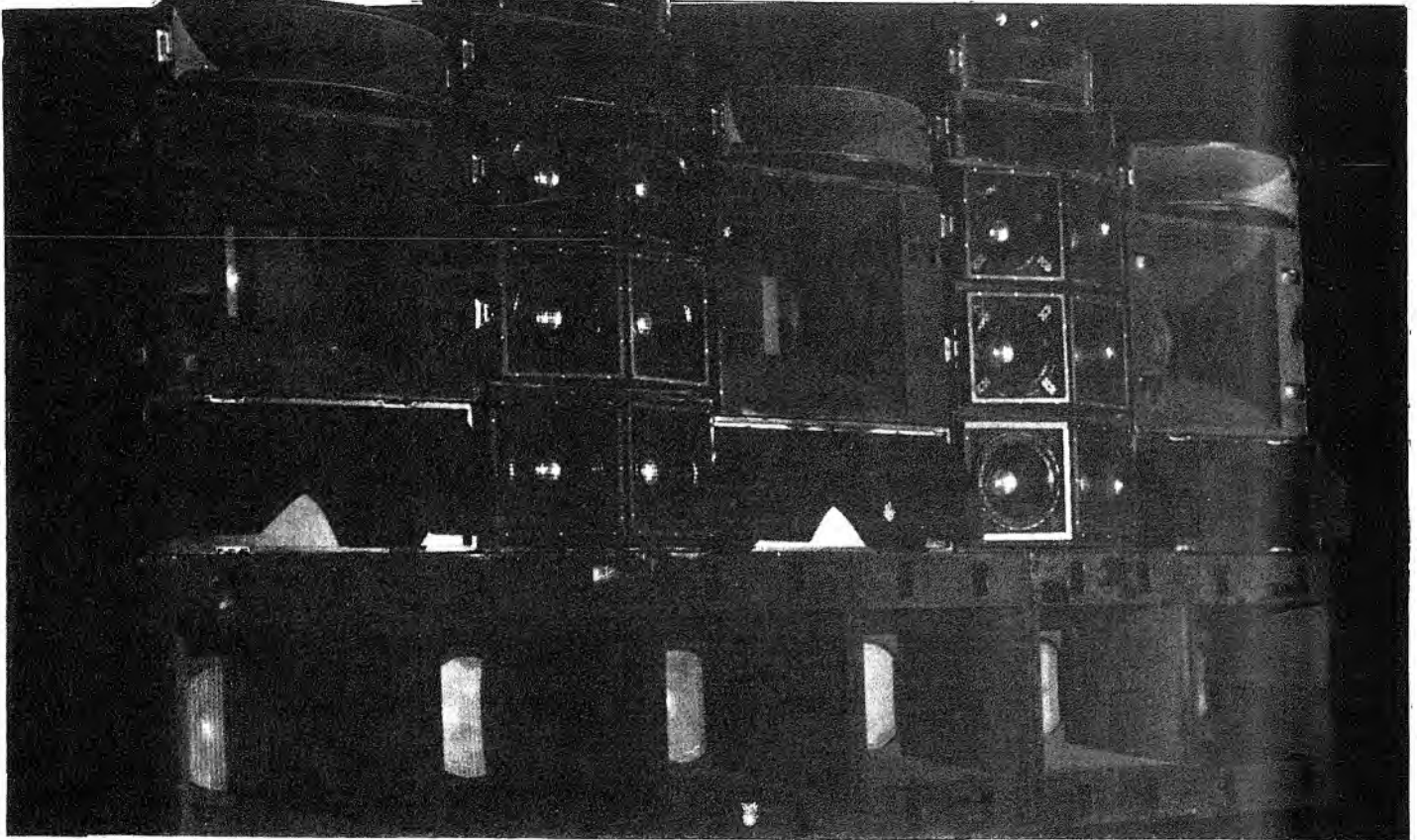




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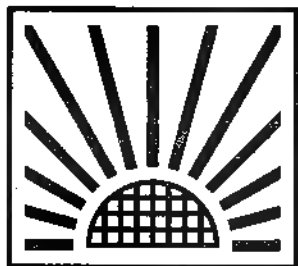
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# The Hire Business

There comes a time in the life of every band which embarks on the long haul to fame and fortune, when their battered amps and much-abused speakers can go no further.

The gear may have been all right for the local youth club gig. But for any decent-sized club or hall it just cannot cope. So, with money scarce, the only way out is to hire. Such a step is not only necessary but significant, because, for the first time, it makes the band dependant on someone else, and quite possibly their music will never sound the same again.

The main item is the PA system, although lighting and special effects are becoming standard requirements with many top rock bands. As rock music has progressed over the years, so equipment has become more sophisticated with both artists and audiences expecting a live performance which comes somewhere near the recorded sound.

Considering records are made in near perfect studio conditions with the help of multi-tracking while live performances can take place anywhere from Earls Court downwards, the task would seem to be impossible.

However, the 70's has seen the rise of thoroughly professional hire companies who are capable of handling any artist or band in whatever environment they choose to work

whether it be a club, concert hall or even an open air festival.

Still, the problems involving the hiring of equipment are immense and vary tremendously from artist to artist and company to company. So, when a band find a system which is suitable they tend to stick with it. At the top end of the hire market are the big companies who deal almost exclusively with a handful of name artists. Electrasound are one such company. They have recently worked with: Graham Parker, Uriah Heep, Bob Seger and the Tubes both in Britain and Europe.

Managing director Brian Croft knows the business inside out and is confident that he can supply any band with what they need. He told IM "The average size of a rig we provide is between 8-10,000 watts although there is really no limit if a band wants to go beyond that. We usually reckon about 10,000 watts to ever 3-4,000 people in the place.

## Transport

"We provide all the necessary transport and send along our own PA crew which is a minimum of two. Because everything is so well organised we have few problems, our crew know the equipment and usually know what the band want. Possibly the only problem would be with a new group whom we are not used to. But you can guarantee that the second time out it will always be better.

As you can imagine, we pay a pretty hefty insurance premium which covers us for just about everything from vans, equipment to gear injuring

the audience. But luckily, we have never had anything really disasterous. The only thing we can't get insured against is riot. This used to be quite common in places like Italy a few years ago with a group like the Osmonds, but it seems to have died down now."

The cost of hire varies greatly, but at Electrasound an average PA and lighting rig would cost about £3,000 a week.

The equipment used by most big hire companies is very much standard, almost all opting for Crown amplifiers and JBL speakers although mixing desks did vary. Lighting is much more flexible, and most companies can provide any special effect that is required.

Over at Britannia Row, they reckon they can cope with anything after working with Pink Floyd—arguably still the leaders in the field of electronic music. In common with many of the larger companies, they have established an American operation which enables bands to have the equipment they are used to when touring either country.

## Word of mouth

The hire business is still a very personal thing, the companies rarely advertise their service but rely solely on





word of mouth recommendation. Once an artist or band have found a firm who are suitable for their needs and provide a good service, then they tend to stick with that particular company.

But hiring equipment isn't just about providing the necessary amplifiers, speakers and lights etc., it is important that the technical crew work sympathetically with the musicians to produce the best results. Roger Lindsay at Europa Concert Systems believes that this personal touch is all important.

"Basically, there is very little difference in the type of equipment supplied by the various hire companies, so we put the emphasis on providing a good personal service.

"We try to make the artist feel we are working for their benefit, and it is important for the road crew to get to know the band and find out exactly what they want.

"We find that bands will tend to ask for a particular crew whom they have had before, know what is required and enjoy working with," he said.

Among the leaders in the field of mixing desks are Midas who not only sell their equipment to the sound hire companies, but also to many of the top groups who have built their own systems.

Rick Kilminster, design engineer at Midas said 'We are supplying three of the main American hire companies with desks, and in fact we have designed a desk which is fast becoming standard in the professional sound hire business. In fact, when Santana came over to England recently, they insisted on a Midas desk.

'Recently, the desk belonging to Gallagher and Lyle fell four feet on to the floor out of its flight case. Yet when we looked at it there was not a thing wrong with it, and remember, it weighs a couple of hundredweight. We reckon a desk kept properly in its flight case should last ten years'.

'We also provided Pink Floyd with three desks for their own sound system which we built from scratch. We spend a lot of time and trouble designing the desks which are rugged and able to stand up to wear and tear

### Systems

Europa have four basic systems which they hire out, the minimum size would be 1,000 watts. But there is no real maximum. If the company do not have the necessary equipment for a particularly large concert, then they



will borrow from other companies under a "gentlemen's agreement."

A basic system for a standard 3,000 seater venue will cost about £300, which Europa says may seem expensive but which people are prepared to pay in order to get the best possible sound. There seems few problems that the big highly professional companies cannot deal with, but there are inevitable difficulties when tackling some of the larger venues which were not really designed for rock concerts. Many, such as the infamous Albert Hall, may be acoustically perfect for an orchestra but electric music is an entirely different matter. Still, as the equipment becomes more sophisticated, so these problems become easier to overcome.

The requirements of artists and bands vary enormously, for example Colac have among their regular customers Black Sabbath, Dr Hook, Allan Price, Steeley Span, Ralph McTell and Thin Lizzy. Director Scott Thompson remembers Black Sabbath wanting a drum rise which involved two and a half tons of machinery hanging over the drummer's head. "Needless to say, with something like that you have got to be very careful what you are doing. No one is going to be very pleased if the band's drummer gets flattened," he said.

Obviously, with so much expensive equipment being used regularly, the hire companies take great care to ensure that it is well looked after and not subject to any undue stress and strain.

### Crew

Invariably, the equipment is accompanied by their own technical crew who usually supervise loading, unloading and setting the rig up. Obviously, this reduces any possibility of damage, but perhaps the rise of the "new wave" groups, with its accent on aggression both by the bands and their audiences, has posed special problems?

Not so was the unanimous verdict of the hire people. "When all is said and done, they are just down-to-earth musicians who are only interested in putting on the best show" was the usual comment. If bands did start to abuse the equipment, they would soon find themselves without a hire company to turn to.

Powerhouse are a hire company with practical experience of covering both the large concert halls as well as the smaller pub and club gigs. Actually, Powerhouse is really four small companies who have got together and pooled their resources, with the result that they can easily accommodate any type of gig.

Director Mike Cuppage explained: "We have recently done the Sutherland Brothers and Quiver, Frankie Miller, The Four Tops as well as places like the Marquee, the Vortex and the Greyhound pub. We have no real problems, but at somewhere like the Vortex, where the stage is small and the audience are crushed up against it, you do sometimes get beer spilled into the monitors, but that is just one of those things, it is not intentional."

# The Hire Business



## Insurance

Mike reckons that a four-week tour with an average load of equipment would cost in the region of £1,000 to insure, which gives some idea of the overheads involved in the business.

John Denby of Entec, who has worked with Wishbone Ash, Gary Glitter and many of the middle-of-the-road pop artists, is fully aware of the problems of insurance. He said "You can insure against most things, but not something like a riot which is in fact what happened when we were doing Lou Reed in Holland.

Recently, we had a lighting tower pushed over, luckily no one was hurt but I have been in touch with our legal adviser with a view to clarify the whole legal position for us."

## Roadies

Probably the most important link between the hire companies and their clients are the roadies. It is they who know what their particular artists require and therefore must work closely with the sound people.

Get Fitzpatrick, Hot Chocolate's roadie, is full of praise for their regular hire company Europa. He said: "They are really reliable and great blokes to work with. We have tried others, but they suit us best there are no problems at all.

"I find the biggest difficulty is not with the hired gear, but the back line equipment which we have had for some time. Although it is old the band still like the sound, but it is hard finding

replacements because the modern amps do not seem as good."

Ged's brother Del has worked as a roadie with such diverse acts as Charles Aznavour and the Roy Young Band and feels that generally hire companies do a good job.

"Mix ups over gear do occur. But I have never had any real trouble and there are plenty of good hire companies around. It's very much a word-of-mouth thing. Roadies talk among themselves and you soon get to know of the best companies. In fact before the Fender Soundhouse burned down they used to have a sort of roadie's club which was a great idea, because it gave you a chance to meet other guys in the business and find out just what was happening."

Tour promoters are also vital cogs in the sound hire business, particularly when they have American artists touring this country who perhaps use different equipment to what is generally available here.

The Mervyn Conn agency specialises in booking American country artists such as Don Williams and Emmylou Harris, and director Malcolm Anthony reports no real problems with regard to hiring equipment.

"If you spend time with the artists finding out just what they want, then you can usually get the equipment they ask for. The only problems arise when you haven't got time to do this thoroughly, but that's understandable," he said.

## Surprised

We find that a lot of the American artists are pleasantly surprised by our sound systems and some are really knocked out." With so many of the big companies now operating in America as well as Britain, many of the differences between the systems have been totally eliminated.

The Harvey Goldsmith agency, probably the biggest of the rock promoters in this country, usually employ the hire company suggested by the bands or their roadies and find that the majority are good presenting them with few problems.

But what of the musicians themselves, who when all is said and done, are directly in the firing line if anything goes wrong with their equipment or the sound is bad? A good sound system will never compensate for a poor band, but a bad sound can reduce even the best musicians to a howling whine.







In particular, it is the hard-gigging bands who rely most heavily on a hired sound system. Night after night the sound must be right no matter how big or small the place—just one appearance in a small town is enough to make a lasting impression on a record-buying public.

### Slogging

Bass player Trevor Burton has seen more gigs and sound systems than most with one of the Sixties' most successful bands, The Move. Trevor is now a member of the Steve Gibbons Band, who have just broke through into the big time after much hard slogging around Britain.

"The gear we have hired has always been very good. We have never really had any problems. Once you have found out what you are looking for, then you tend to stick with that particular set up. At the moment we are using a Birmingham company who are just perfect for us, we also use a Birmingham firm for our lights which are really good. I can't say we have had any particular problems or disasters with our sound."

Peter Cowling is a member of another hard-working band who rely on one-nighters all over the country to build up a following. He has been with the Pat Travers Band for two years, and realises the importance of a good, reliable sound system.

"We have had the same company for about three or four tours and it works out really well. We know them,

they know us, they know what we want and the guys are really great. It is a lot easier working with people you know.

"We play a lot of different places from large halls to small clubs and in the smaller places we cannot always use all the sound system. Even so, these guys are professionals and it is their job to get a good sound, although we do have our own sound engineer working with them. The only problem I have had has been in America when I couldn't really get the equipment I wanted for recording."

Although the majority of bands hire a sound system, a few decide to take the plunge and buy their own. Burlesque are one band who have done just that, and according to manager Chip Chipperfield the decision has paid off.

"Burlesque are a band who decided that they would make it by going out on the road and playing to as many people as possible. We bought our own brand new PA and as a result of doing 500 gigs in the last two years we reckon it has been more economical than hiring.

Another thing is that PA's do not depreciate a great deal in value and there are plenty of up and coming bands who would be willing to buy a two year old PA. If we got to the stage of only doing a few gigs then we would probably hire, but the advantages of your own system is that you get the same sound and know the system inside out so you know when things need replacing."

### Outlay

Many of the top bands, such as the Who, who decide to buy their own sound equipment elect to hire it out when they themselves aren't touring, to recoup part of the massive outlay which is usually incurred.

Probably the first thing that springs to mind when you go to a concert where a massive sound system is being used, is how the crew manage to physically hump all the equipment and get it into the right place. This is also something which has developed into virtually a fine art by the crews and is part of their fully-professional service. Speakers and amplifiers are heavy and very often awkward items to handle, as anyone who has lent a kindly hand to some struggling group personnel after a gig will tell you.

Much hard graft is the order of the day at any gig, but most crews make full use of small trolleys and in some cases winches to ease the burden. A

good roadie also needs to be a bit of a juggler, knowing just how much equipment can be loaded onto a trolley at one go without sending it crashing to the ground mid-way between truck and stage.

The loading of the truck itself can also be considered a talent which in other spheres would probably be recognised by some kind of diploma or degree. Usually there is one way—and one way only—that all the gear can be fitted into the truck, a bass bin or amplifier in the wrong place is usually enough to upset this finely balanced "jigsaw."

A vital part of the setting up operations is, of course, the actual size and shape of the venue. Many of Britain's concert halls were not designed with rock concerts in mind or the fact that heavy, bulky sound equipment would have to be moved in and out. Still, by and large, hoists and small lifts exist in some of the more awkward theatres. According to Trevor Burton, things have changed for the better since his Sixties days of touring with the Move.

"Some of the Mecca places we used to play in the old days were pretty awkward. Often the ballroom would be on the sixth or eighth floor which was quite a way to get the gear up. Fortunately, we do not have to do those type of places these days, although there was a place we played recently where the gig was on the eighth floor with only one little lift up to it, still we managed."

The Apollo Theatre in Glasgow would not be at the top of a roadie's list of best venue. The problem here is that all the gear has to be taken in through the front door and wheeled up the aisle to the stage. This may not seem the greatest of inconveniences, but a few trips along the length of the auditorium with several tons of equipment would soon have even Arnold Schwarzenegger buckling at the knees!

But, whatever the venue, the intrepid road crew can cope, although life would be made a little more easier if everywhere was like the Hammersmith Odeon in London, which draws many favourable reports. So there it is, the blood and sweat of live rock music, maybe next time you go to a large concert you will perhaps spare a thought for the work which has gone into bringing you that show and the people behind the scenes who rarely catch the limelight.



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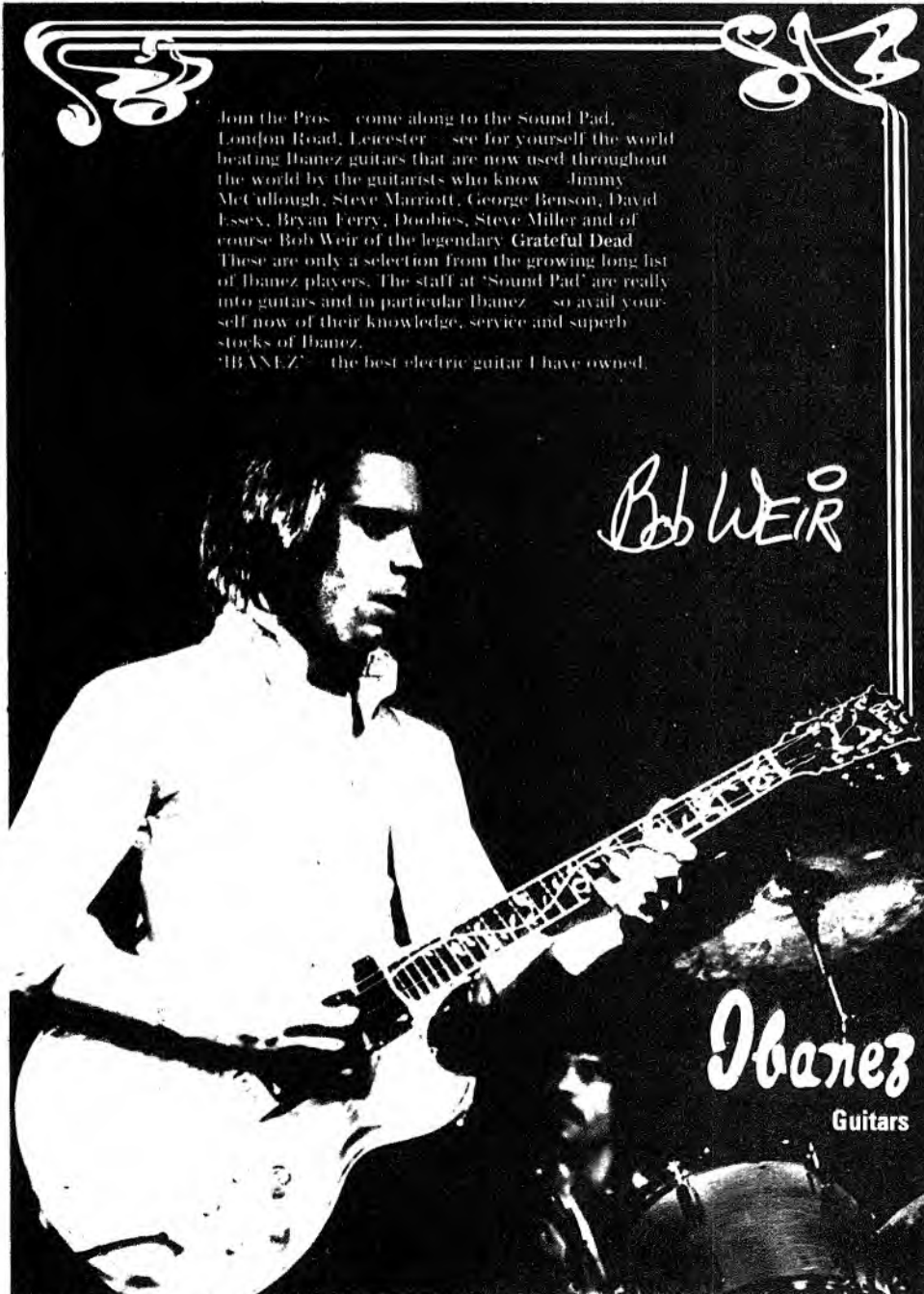
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# SOUND CHECK

By David Blake and  
Mark Sawicki

TEST ON: Music Man 212 HD One Thirty Combo

DATE: November 1977 PRICE: £601.30 ex. VAT (UK)

The Music Man 212 HD 136 combo is indeed a pretty little unit, looking much in the Fender mode, weighing in at about 70lbs and measuring 26½" wide by 19½" high (plus 2½" for the casters) by 11" deep at its deepest point. Contained within the very sturdy ¾" Ponderosa Pine is a 130W valve amp driving a pair of 12" speakers.

Sound-wise, this is the finest piece of electronic machinery I have tested for IM - probably the best I have ever played through. With the Strat and the controls tending toward the bassy end, the sound is full and fat without giving that irritating jangle much beloved of New Wave musicians and much disliked by me.

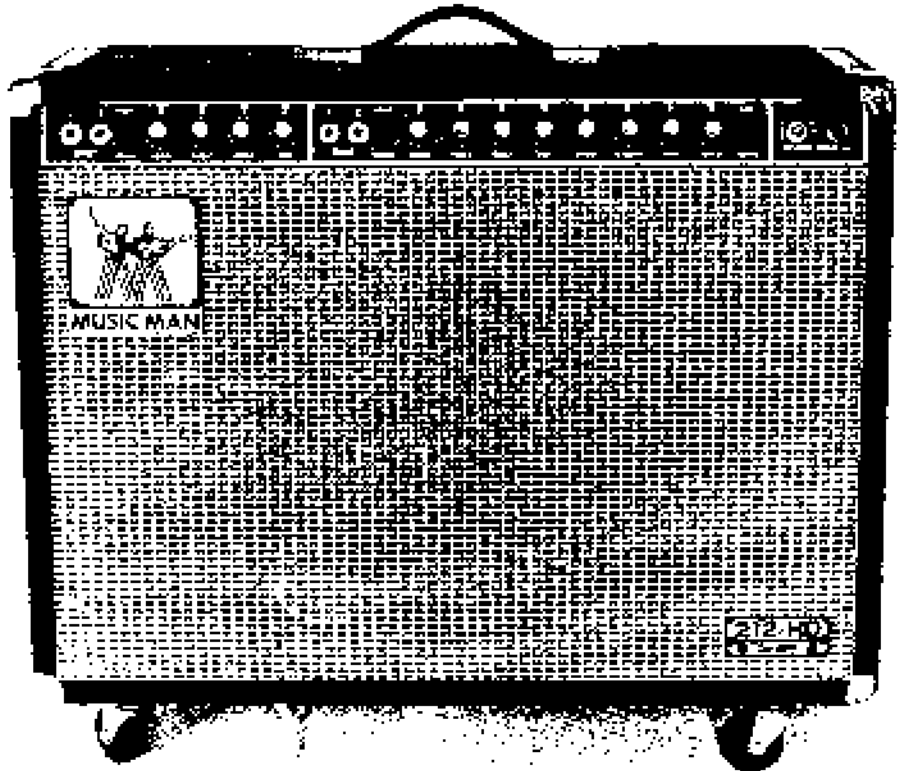
The bass is plenty full while the treble is smooth and bell-like. Winding up the channel volume control at the expense of the master gives that superb nasal distortion which is fairly hard to get with the light Strat pickups and which seems to be the exclusive province (whatever the solid-state manufacturers might content) of the bottle school. A sound difficult to describe in words (aren't they all?), it is what I call a Duane Allman sound, buzzy without rasping, present but subtle, not to be confused with fuzz or sustain although it does the job of both. Every note is clear and snappy and old string sound new. Most guitarists I know prize that sound above their women's virtue.

Then the Les Paul. Likewise a lovely sound; perhaps even a touch over-fat, not as subtle as the Strat, very much Heavy Metal (probably an isotope of radium). Bringing the channel gain down evens out the sound into Chateau Clapton '67 or '68. Using the treble and snapping on the treble-boosting bright switch gives it a silk-and-barbed-wire edge. For once I prefer the Strat sound - it is more musical to my earholes.

But after twenty minutes of feverish knob-twiddling, I reckon I have found every sound a decent guitar and good amp can make without interfacing gimmicks. I decide there and then to purchase such a beastie.

## Construction

Having sung the aesthetic praises of the Music Man, let me tell you about the hardware. As aforementioned, the 212 HD is a 130W 2 x 12" combo amp of smallish size and heavyish weight. It is extremely well built, being constructed of what looks like (and without taking it apart I can't be sure) ¾" ply



use comb-jointed at the corners. It is covered in a particularly thick and strong black leather-look cloth-backed vinyl; all corners are protected by large pressed-steel cornerplates; on the top surface is a single heavy strap handle. The controls are mounted a la Fender on a sloped panel on the front face above the silvery speaker cloth. Extra facilities are: reverb (the unit is located at the bottom of the speaker enclosure and is protected by its own envelope of vinyl), tremelo (complete with reverb/trem footswitch), low and high power output, provision for extra speakers, and treble and bass boost.

## Controls

The controls on the front panel are simply, logically, and (dare I say it?) ergonomically laid out in black and white. Channel one has two standard ¼" jack inputs, a bright/normal rocker switch, then channel volume, treble, middle, and bass knobs. Channel two has likewise inputs, bright/normal switch, channel volume, treble, middle, and bass knobs; then the second channel continues with reverb, trem intensity and speed, master volume (which in fact controls both channels and should really be cordoned off by itself) and a deep/

normal bass boost rocker switch.

In the extreme right corner is the power switch (a good metal toggle switch with three positions: off, lo, and hi) and the mains lamp. Also mounted on the front speakercloth face are the two plastic escutcheons, one the Music Man logo and the other the model designation - to be honest, they both look a bit Toytown.

The rear panel has a 2A 250V fuseholder, standby toggle switch, inputs (phone plugs??) for the footswitch, 4/8 ohm speaker switch, internal speaker output and lead and external speaker output (both standard jacks), all mounted directly into the main chassis box. The major amp components (mains and output transformers, and pre-amp and output valves all hang downwards into the speaker enclosure. The valves are held in place by pincer-leaves or a cap in the case of the pre-amp.

The only quibble I have insofar as construction goes is the relative lightness of the wooden slats across the open back of the cabinet - these move inward with hand pressure and might break during the stresses of a tight van pack. The only other quibble is an ergonomic one: why couldn't the standby switch

be on the front panel where you can see it and get to it easily?

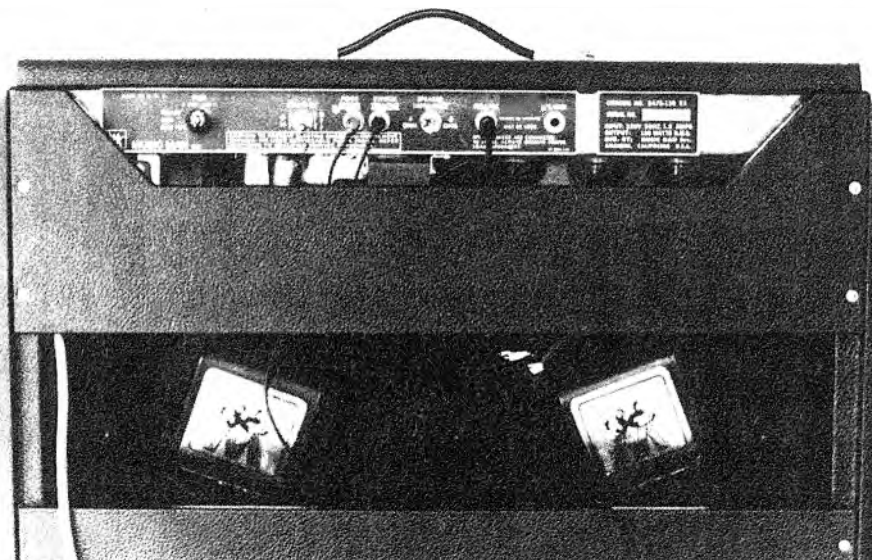
Having been thoroughly chuffed with this unit, I called Our Editor to elicit further info on Music Man, Inc., Anaheim, California, USA, and their UK agents Strings and Things of Lancing, West Sussex. Here are some of the interesting facts he gave me: first, that Music Man is Something To Do with the immortal Leo Fender – award ten points; then, although the unit comes with owner's book and complete circuit diagrams, a waterproof cover will cost about six quid extra as soon as they get them made (in England to save loot); then, the guarantee is a standard year on parts and labour, and Strings and Things say they will stand by this (which they are legally obliged to do anyway) – minus points for lack of free cover and average guarantee; and finally – are you ready for this? – the retail price will be £601.30 ex VAT, or £649.40 inc. To which I replied, "Cor struth" and other syllables which editorial policy will probably cut.

#### Conclusion

A few last comments. Okay, I know this is a superb piece of equipment,

and I know the pound is not strong against the Holy Dollar, but it seems to me that the Law of Diminishing Returns has been taken to extremes here. For instance, forgetting about the lack of cover, the guarantee on such a high-priced piece of gear should be more like an unconditional three years. And

admittedly the valves might be hand-chosen for ultimate performance, but what happens when you whip into your local radio shop to buy replacements – how much will un-hand-picked valves deteriorate the performance? I'm still impressed, but I stand by my moral. . .



PARAMETER	RESULT	TEST CONDITION	COMMENTS
Specific Power Output (Watts RMS) Ref. 1.0 KHz	128.25W r.m.s. (60.84 W r.m.s.) 87.78 W r.m.s. (44.65 W r.m.s.)	Onset of clipping into: 4.0 ohms Onset of clipping into: 8.0 ohms Tone Controls – "FLAT" Bright Switch – "NORMAL"	Slightly lower power level than claimed 130 W r.m.s. Values in brackets corresponds to power switch in "LOs" – pos. The "Low" power setting is expressly fed distortion and eliminates the excess current and protects speakers from damage.
Total Harmonic Distortion T.H.D. (%) Ref. 1.0 KHz	1.87% 1.33% 1.15% 1.10% 1.05% 0.90% 0.92%	@ 125.0 W r.m.s. @ 100.0 W r.m.s. @ 80.0 W r.m.s. @ 60.0 W r.m.s. In to 4.0 ohms @ 40.0 W r.m.s. @ 20.0 W r.m.s. @ 10.0 W r.m.s.	Mainly second harmonic. Satisfactory.
Input Sensitivity for 125.0 W r.m.s. 22.36 V r.m.s. Output Signal – mV r.m.s. Ref. 1.0 KHz	2.6 mV r.m.s. 5.9 mV r.m.s. 8.1 mV r.m.s. 15.0 mV r.m.s.	I/P 1) Ch. A Ref. bright sw. – "Normal" I/P 2) Tone controls – "Flat" I/P 1) Ch. B Power switch – "Hi" I/P 2)	Very high sensitivity which is more than enough for guitar amplifier applications. Channel "B" – less sensitive one. (Lower Gain) The number one jack (Ch. A) is the High Gain input and should be always used when only one instrument is plugged in.
Tone Controls range Swing in dB	22.50 dB – swing *14.35 dB – swing 21.80 dB – swing	Bass @ 50. Hz Middle @ 300. Hz Treble @ 10. KHz  * – Re. – treble control in approx. pos. 3 – Bass – Flat	Very good. Symmetrical. Both "TREBLE" and "BASS" should be adjusted for the desired tone balance together with "Middle" as mid-range control actually the effectiveness of "TREBLE" and "BASS". When middle control is set at 10. (max) there is less bass and treble boost available and a flatter response is obtained.
Signal/Noise Ratio in dB	Better than 64 dB	All tone controls – Flat measured at 1.0 KHz into 4.0 ohms power sw. – "Hi".	Four EL 39 (Telefunken) form "valve" output stage with high made voltage at . . . 0.725 KV!! (DC)
Bright Switch	Approx. 13.2 dB	Boost at 10.0 KHz	Bright switch operation is related to the volume control and is more effective with lower volume settings. Prevents TREBLE overload when playing at high volume levels.
Deep Switch	Approx. 11.0 dB	Boost at 50. Hz	Extend of the "Bass" control range.
Tremolo/Reverb Effects	Wide range of interesting sound available.		Satisfactory.
Capacitive Load Test	Good	2 uF and 4.0 dummy load	OK
Short Circuit Test	1 min		No ill effects.



# delft's GUITARCHECK

TEST ON: Guild S60

DATE: November 1977 PRICE: £185.63 (ex VAT) U.K.

## Introduction

This is the least expensive solid guitar in the Guild range, and sells at a price comparable with that of some of the better Japanese instruments. It does not require much effort of imagination to conclude that lower-priced American guitars are competing with better-quality Japanese ones for the attention of the same sort of customer. As the Japanese instruments generally carry more detailed decoration than American ones of similar price, they are likely to appear more impressive in illustrations, and more attractive to relatively inexperienced guitarists.

This is certainly not to say the Japanese guitars are an unwise choice, but I would suggest that some people who are presently trying to decide which instrument to buy must base their decisions on rather less information and experience than they would wish. One of the purposes of these reviews is to attempt to increase the amount of information which is readily available to you. I know that many of you are able to spend something like £200 to £300 on your first decent electric guitar, and specifically wish to know whether to buy a guitar from near the top of a Japanese range or from near the bottom of an American range. I also know that question is particularly relevant to this review, but I still cannot fairly give a simple answer which can be applied universally. First, different people expect, and demand, different things from their instruments.

Secondly, I don't believe that anyone can consistently produce perfect electric guitars to sell here, for £200 to £300. Certainly some makes and some models will, on average, be nearer than others to perfection, and if you can provide me with a universal definition of perfection, I will try to tell you which instruments come closest to it! Until that day let us accept that some samples of any guitar in any given price range will have faults. I would also accept that certain makes and models of guitar will have a tendency to certain types of fault. What I can do is to give you some clues to the sort of problems a particular instrument might have. Then you can decide which of these problems you can live with and which you can't. (For instance, you might think that a tendency to lacquer crazing is of little importance. To another person, a decomposing finish could be a tragedy.) When you have narrowed your choice down to a short list, you also know some of the points to look for, on the instruments you are offered. After that, it must be your decision.

What I can suggest, and it is only my own opinion, is that some makes of instrument which appear to give amazingly good value for money, may have a greater variation between individual samples than other makes, which offer a more modest specification, but are more likely to achieve this specification consistently



from one sample to the next. This situation is not really so surprising when you think about it, and parallels may be found in the fields of Photographic and Audio equipment.

## Construction

I think this Guild S 60 comes into the category of simple, reliable guitars, from well-established makers. Its specification is adequate, although it could hardly be

called exciting, but you could order one unseen, and you are not likely to get a bad one. The perennial problem is that good workmanlike tools don't usually look very exciting. I know of a man who makes some of the best woodcarving tools in the world, but the average do-it-yourself enthusiast would never give a second glance to the dull, ordinary-looking bits of steel he makes for discerning craftsmen all over the world.

According to the catalogue, the S 60 is available in Sunburst, Cherry, Black, Walnut, Natural, or White, although as it is a new instrument, some of the colours may not be available from stock. The review sample is finished in a soft warm white which makes a very good 'stage' white. (That is, it looks good under bright lights.) On this sample, the opaque white layer of the finish seems to be suffering from poor atomisation, and the colour is slightly mottled in places. Also, there are specs of white paint on the black Guild Logo on the head. Both these problems can be cured by a little more attention to good housekeeping in the spray shop.

If I know Guild, that is all that needs to be said on the subject. A really good white spray job is at least as difficult as a fancy sunburst and I am surprised that this lower-priced instrument is even available in white. That it should be a warm white, and not the Arctic White used on refrigerators, is a further pleasant surprise.

The S 60 is one of Guild's new range of solid guitars, and like the Guild Bass reviewed recently, it has the new Guild shape. I am still not sure whether I like it. On the other hand, I am certain that I like Thunderbirds, and equally certain that I would not give an Explorer house-room, so it is all a matter of taste.

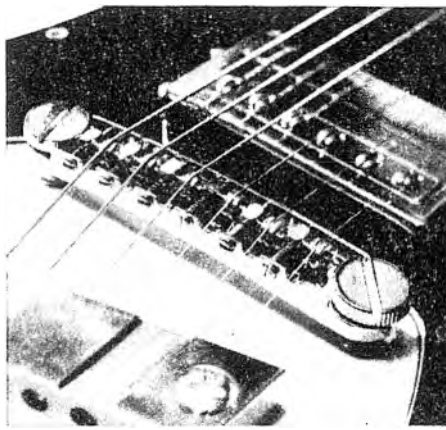
The bridge is similar to a previous Guild bridge, as you will see from the photograph, but there have been some modifications to provide better performance and more comfort to the player. The back edge of the bridge chassis has been cut away under each string to permit a greater string 'break' angle over the bridge and reduce the possibility of bridge buzzes from several causes. Also the bridge height adjustment screws now have smooth edges and are set into the bridge frame, instead of projecting about it.

Like its predecessor, this bridge has individual string adjustments for intonation and spacing, pre-set individual string heights, approximately matching the curve of the fingerboard, and overall action adjustment by height screws at each end of the bridge.

The tailpiece block appears to be the standard Guild fitting. I like its looks; some people don't, but it is a large heavy lump of brass and it does its job very well. There is also virtually nothing which could possibly go wrong with it, which always makes a pleasant change. The neck on this sample needs a slight truss-rod adjustment but otherwise is acceptable straight.

The fingerboard and frets are comfortable and well finished, and the fingerboard has neat markers in the front and edge.

In common with several of Guild's lower-priced instruments, the S 60 is fitted with fairly basic Japanese machine heads. I don't think I would use the term 'Deluxe', as found in the Guild catalogue. In my experience, such machines are usually good for two or three years of average use, after which I recommend replacement with something better. The cost of having Schallers fitted, in this country, is probably less than the



additional price incurred by having them fitted as standard at the factory. Also this arrangement keeps down the initial cost of the instrument, and overall, probably benefits the purchaser.

On this sample, there is a significant discrepancy between the open third string (and to a lesser extent, the second string), and the lower fretted notes. This is caused by the excessive height of these strings above the first fret. Some of the slots in the nut should probably be deepened. This is the sort of adjustment which most shops should be able to carry out. If you have this done, check that the strings are not then *too low* and buzzing against the first fret.

Although this is the least expensive model in the Guild Electric range, I think a little more care could have been spent on shaping and rounding the back of the neck. It already feels more comfortable to my hands, than *some* higher priced Japanese necks, but most Guild necks I have played are smoother and better rounded at the back. I do not consider this fault to be typical of the average Guild neck, but I must say that most of the hand-shaping operations on the neck and body of this sample are not quite to Guilds usual standards. Nevertheless, there is something about the feel of American electric guitars, which no Japanese company, to my knowledge has ever duplicated. The most advanced Japanese companies are now establishing their own standards, and their own 'feel' and the others are still nearly copying American instruments. If 'nearly' is not good enough for you and somewhere over £400 is out of the question, you might try this S 60, or perhaps the similar, but more expensive S 300 with two pickups.

### Pickup, Sound and Controls

The pickup on this guitar is mounted directly on the scratchplate. No scratchplate can be entirely rigid, and at high amp. settings, the guitar will produce faint tapping sounds if any hard object hits the plate, in the area around the pickup. It is just possible that this form of pickup mounting could cause acoustic feedback when playing at very high sound levels, but I have not been able to produce this fault on this sample or on other similar Guild solids. Four more screws through the scratchplate, by the corners of the pickup would reduce the possibility of feedback to very small proportions, although complete elimination would require the much more expensive method of fitting the pickup directly on the body, isolated from the scratchplate.

A pickup which is very slightly microphonic and which would be acceptable mounted directly on the body, is likely to be unacceptable when mounted

on a scratchplate in this way. As I have heard no complaints about unwanted feedback on these guitars, it says something for the consistency of Guild pickups. The unit fitted to the S 60 seems to be the standard pattern Guild humbucking pickup. It has plenty of output for overdriving amps, and a bright punchy sound which can easily hold its own with other instruments. The volume and tone controls work particularly smoothly, but I find that the tone control cuts a bit too much, and causes an inconvenient drop in apparent volume. I would guess that halving the value of the associated capacitor is all that would be needed.

### Conclusion

I would like to see the pickup mounted on the body. Alternatively the scratchplate could be screwed firmly to the body as close to the pickup mounting points as possible. This alternative would cost very little. I would prefer a change in the tone control, which would add nothing to production costs. I would prefer better machine heads, but fitting Schallers would raise the price too much, and there seems little point in half-measures. This really only confirms Guild's choice of machines for this model.

I think it was a bit naughty to leave the nut slots as they are on this sample, as the instrument is obviously likely to be used with thin, plain second and third strings. It is also not in Guild's best interests, as the effect is to make the guitar appear to play out of tune, when there is really nothing wrong except for the nut adjustment.

All these points are peripheral things which are easily adjusted and/or corrected. Basically the S 60 is a solid, well-made, working guitar, with no flashy bits, and at a reasonable price. Apart from the machine heads, I don't think it is likely to cost anyone much for maintenance, and I can't see much that could go wrong with it. As with *any* guitar, if you want to play it with a low action, try it with a low action *before* you buy it.

Measurement on Guild S 60 Ser No 159077.

Scale Length 628 mm

String spacing at bridge 50 mm.

(adjustable 48 to 56)

String spacing at nut 35 mm

Fingerboard width at nut 41 mm

Action as supplied 1.2 mm treble /

1.3 mm bass.

The treble could come down to 1.1 mm without buzzing.





# delft's GUITARCHECK

TEST ON: Les Paul Signature

Date: November 1977

PRICE: £352.75 (ex VAT) U.K.

## Introduction

I am pleased to have the opportunity of reviewing this guitar, partly because it has a useful and slightly unorthodox electrical system, and partly because it gives me an opportunity to clarify a point about which some owners of Les Paul model Gibsons seem to be a little confused.

The Gibson Guitar Company has been in business for a long time, and, during this time has made various models of guitar bearing the name 'Les Paul': some of these models have the words 'Les Paul' engraved or stamped on the truss-rod cover on the head, and some do not. I have heard several otherwise knowledgeable owners describe their instruments as 'Signature models' because the 'Les Paul' name is engraved on the cover plate in a cursive script similar to normal handwriting.

As far as I can establish, this is not strictly correct, and it is rather unlikely that the form of script used, represents the signature of the gentleman concerned. This is no slight on the instruments, or on the owner of the name, but is probably one of the misunderstandings which tend to accumulate around any famous and long established company. It is only of importance because it tends to obscure the fact that there is a distinct Les Paul 'Signature' model, rarely seen and relatively costly, but a totally different instrument from the more common ones bearing the same name. It is difficult to be precise about instruments made in relatively small quantities but as far as I can establish, the true 'Signature' model is inscribed 'Les Paul Signature', and is a 'gold-top' semi-acoustic resembling a 335 with a deeper cutaway on the treble side of the body.

The review instrument was not supplied by Norlin: it was purchased second-hand by a customer of mine and brought to me for some small repairs and improvements. Consequently, any comments about the construction, finish or durability should be taken with the understanding that this instrument has had a certain amount of normal and apparently careful use. It is frequently necessary to review brand new instruments, but I feel it does no harm occasionally to see how an instrument survives after a little use.

I have heard various rumours about the development of this instrument, all concerned with the particular sound(s) which it can produce, and with some of the sounds used on Les Paul's own recordings.

Whatever the basis (if any) of these rumours, the 'signature' Les Paul is a very different creature from most other Les Paul guitars. The first thing one has to appreciate is that the instrument has two





jack sockets, one on the front and one on the edge. One socket is connected directly to the low impedance pickups (more of this later) via the selector switch; the other socket provides a normal high-impedance output with the additional facilities of treble control, and a 3-position bass-cut control, marked 50, 200, and 500.

If you try to connect the edge jack to a normal amp, you will get a very weak signal, and you may think the tone controls are not working. This is the 'clean feed' direct from the pickups. The source impedance is relatively low, and can feed direct to a mixer or to a special low impedance input on an amplifier, through a considerable length of cable, with fewer problems of interference than usual. I seem to remember that certain Gibson amps had a low impedance input, perhaps with this, and similar guitars in mind. Surprisingly, this low impedance output does not seem to be 'balanced'. It works well enough. But as the guitar already includes a fairly complex matching transformer, a 'balanced' output would not have been too difficult to arrange and would probably have given even greater immunity to interference.

Whether balanced or not, any low impedance system is likely to lose less treble down standard cables, and permit a more controlled loading of the pickups. It is possible that this was the designer's main objective, so as to transfer the output of the pickups to amp or mixer with as little modification as possible. Depending on the equipment used, it may be possible to use the low impedance and high impedance outputs simultaneously. For instance it may be possible to connect the guitar to a small amp in a studio, and also, separately, to the mixing desk, this signal being unaffected by tone or volume controls on the guitar.

The high-impedance output on the front of the guitar is also unusual, and probably of more interest to most musicians. In any case adaptor boxes to provide a 'clean feed' are available from various companies, and if used sensibly, will give most of the advantages of the low impedance output. I really did not have much opportunity to judge the sound of the guitar using the low impedance output. I did what most people are likely to do most of the time: I plugged into the front socket and treated the instrument like any standard guitar.

#### Pickups

The Les Paul Signature has two humbucking pickups, a selector switch, a phase-change switch which as usual is only effective when both pickups are on together, one volume control, one treble-cut tone control, and a three-position

bass cut switch marked 50, 200, 500. There may be more thought behind this bass control than is first apparent. It is a characteristic of many low-impedance pickups, that they seem to have more at the extreme top, and more in the upper bass region than conventional pickups of similar construction.

I have heard from several known and respected guitarists that instruments with such pickups have great possibilities for recording work, but are unsuitable for public performances under less than ideal conditions. Played against other instruments at high levels, a subtle tone can easily become a weak, flabby tone. I suspect the problem may be that most guitar amplifiers are 'voiced' to suit the usual run of guitars, and their tone controls cannot remove a surplus in the upper bass region without cutting too much, elsewhere. The bass control on this guitar does a fine job of 'hardening' the sound at the bass end, when required. The 500 setting is definitely biased towards the treble end, the 200 setting produces, (with my amp) a balance similar to what I expect from a good standard Les Paul, and the 50 setting on my amp is definitely bass-heavy.

However, I would still use this setting for solo passages on the top strings, because it gives a nice fullness to the sound. The treble tone control is quite conventional and affects whatever signal is routed through the front jacket socket. It may cause some confusion that the group of four control knobs on this two-pickup guitar are not the usual two tone and two volume. However it is obviously a specialised instrument, and a certain amount of adaptation on the player's part will probably be necessary in any case.

Overall, the tone is a little less distinctly coloured than most other Gibson models, but the difference is not sufficient for me to say whether I liked it more or less in the limited time available for testing. The bass control is another matter - I would like to see those fitted to more guitars if it can work as well. Unfortunately, the circuit used, seems to depend on the existence of a low to high transformer, and these are not used in most guitars.

#### Body and Neck

The body and neck are constructed from laminated Maple. The body is mostly hollow; lightly blocked in under the centre of the front and back, and blocked between front and back under the bridge and tailpiece-bar. The guitar front is unusually thick and solid and the tendency to acoustic feedback is minimal.

The front of the body is finished with metallic gold lacquer, body and fingerboard edges are bound with thin cream plastic, and the back and sides are

finished with clear lacquer on a pale brown base colour. This particular colour is beginning to appear on some American instruments and personally I don't like it: you may disagree. The neck is made from three sections, finished a darker brown than the body, which looks better. There are signs of lacquer crazing along some of the joints in the neck. This may be caused by moisture from the glue lines, or it may be caused by differential movements of the pieces making up the neck. I can not be certain which it is, without stripping off the lacquer. Whatever the cause, this phenomenon seems to occur more frequently on recently made guitars.

#### Fingerboard

The fingerboard is Rosewood with celluloid 'pearl' inlays firmly glued in place. There is a nice fretting job which seems to be original and untouched. The frets are the wider Gibson type and rounded, rather than 'square' on top. The neck is not perfectly straight, but acceptable, and this is not a new neck. Most of them need the frets stoning lightly after a year or two.

The pickups have no adjustments for individual strings but the string balance is tolerable with Ernie Ball Super-Slinky or Dan Armstrong number 2. Their sets are typical of popular electric string gauges. If the pickups don't balance with your favourite gauges, you will have to change your gauges, but this applies to several well thought-of guitars.

#### Conclusion

In spite of quite a bit of wear, this guitar is holding up well. One of the jack sockets needed replacing, and the lacquer has crazed along some of the glue joints. Apart from normal required maintenance, nothing else has gone wrong. I think the colour used in finishing doesn't do justice to the wood underneath, and if examined very closely, the shaping of the neck lacks a certain style found in some older Gibson instruments. However the neck feels comfortable, and there doesn't seem to be any difficulty in getting the instrument to play tolerably in tune. My Korg tuner says that, with light strings and fairly heavy finger pressure, the open strings could be far enough flat to require some nut adjustment if you are fussy, but this effect was not obvious on listening tests.

Measurements on Gibson Signature Ser. 12020

Scale length 627 mm

Spacing at bridge 51.5 mm

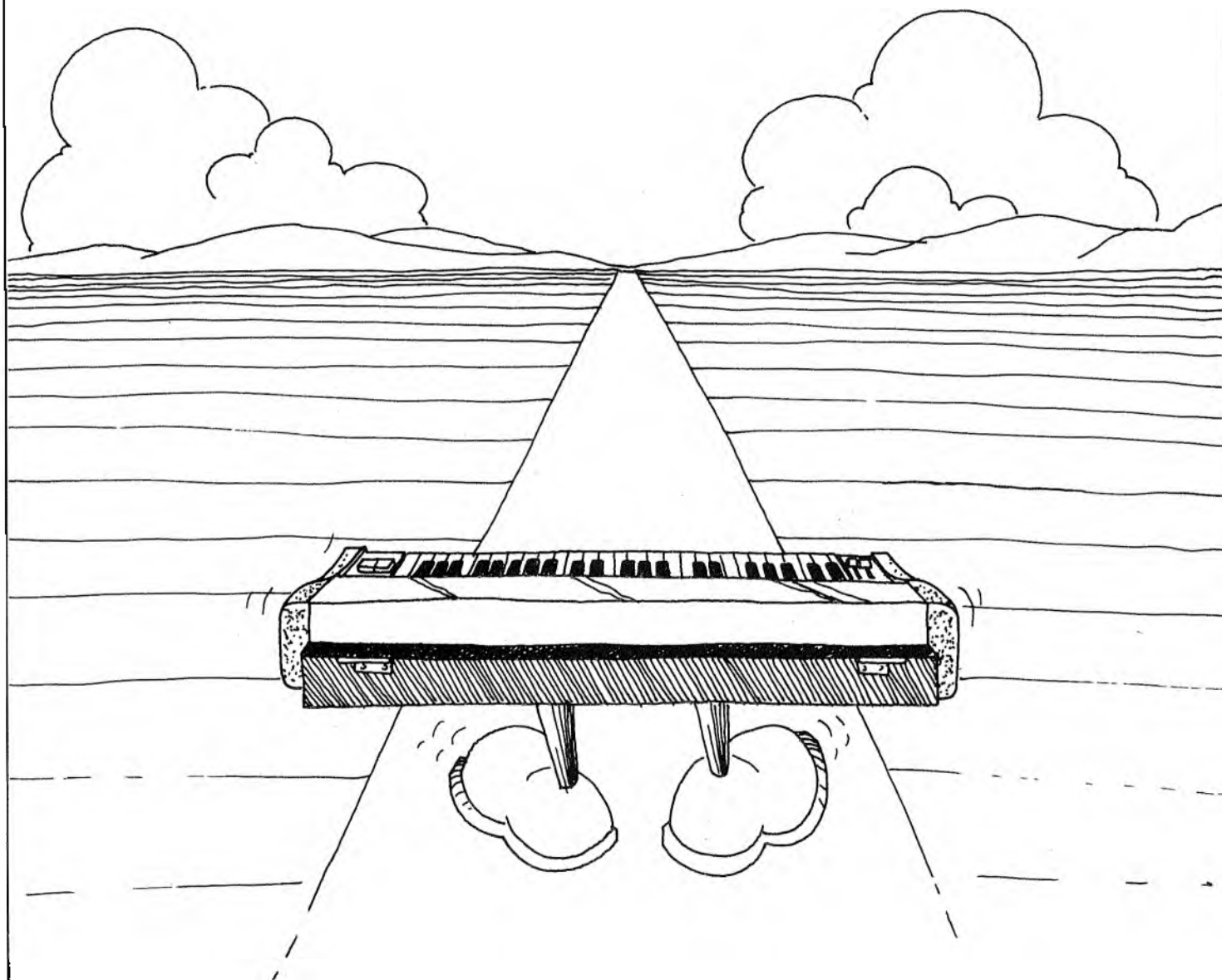
Spacing at nut 38 mm

Neck Width at nut 43 mm

Lowest action under standard conditions

2.1 mm treble / 2.2 bass.

# ON THE ROAD

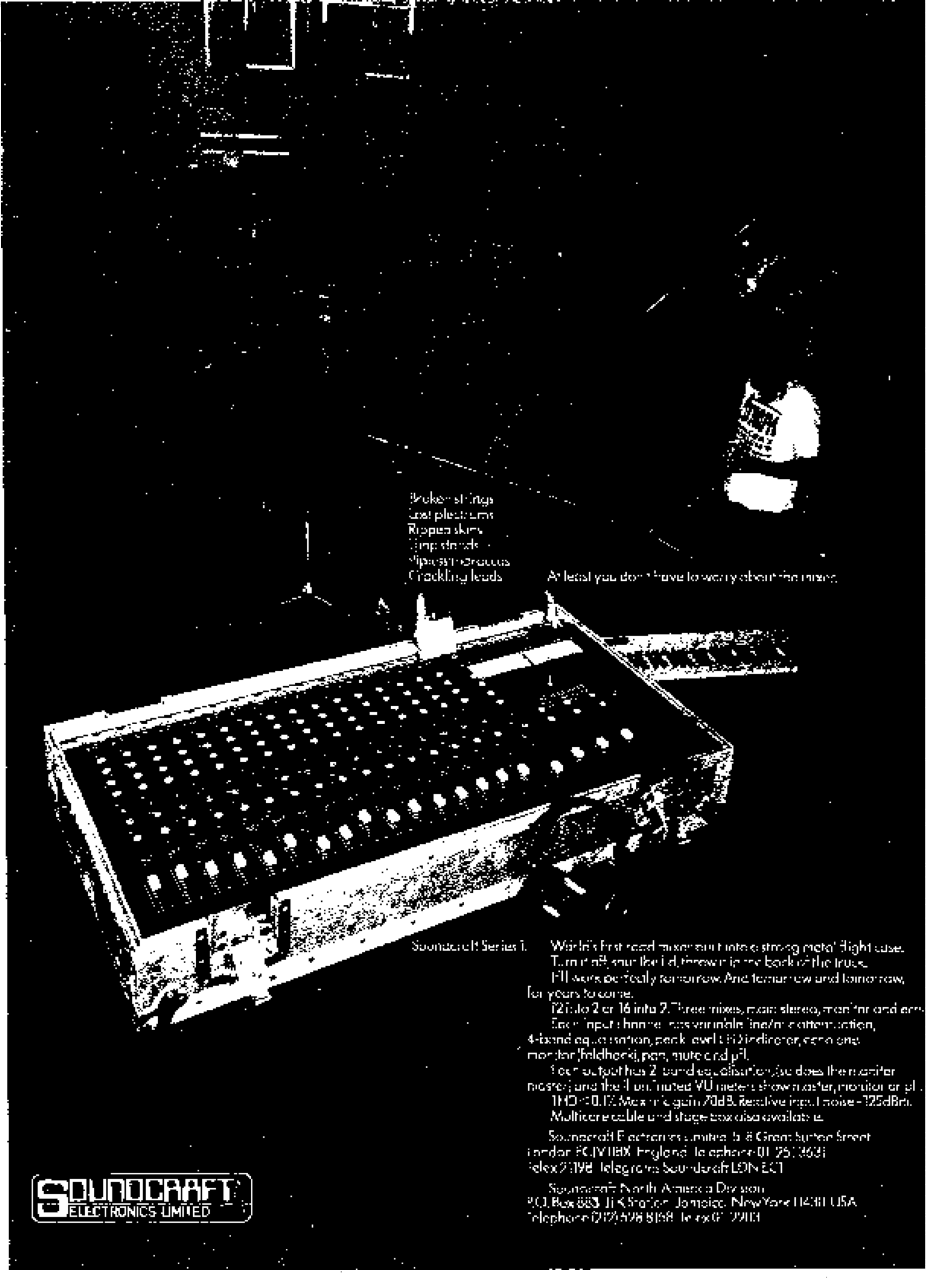


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# henrit's DRUMCHECK

Bob Henrit, is an ex Argent drummer who now has a top drum store in London's Wardour Street. He keeps his hand in drumming for the Trident Studio House band Phoenix.

TEST ON: Hoshino HSD 500 kit

DATE: November 1977 PRICE: £360.19 (ex VAT) U.K.

## Introduction

Hoshino are an economy priced Japanese drum set which are relatively unknown in the south yet evidently do pretty good business further up country. Imported into Britain by the Yorkshire-based John Hornby Skewes Company they have been seen here since about 1970.

It's a little difficult to discover their parentage what with Tama drums emanating from a company called Hoshino Gakki. However I have it on good authority from the importers that there is no link with Tama. It's just that the two companies share the same surname.

This month's set then is five drums from Hoshino called H.S.D. 500. It features a 22 inch bass drum, 12x8, 13x9 and 16x16 tom toms, a 14x5 inch metal shell snare drum, two cymbal stands, hi hat and snare drum stand and a foot pedal. Because all the drums were fitted with Remo's cheaper weather master heads I was not expecting the convincing sound which these drums put out - they're definitely not short on balls.

After considerable tuning up the drums had a decent sound which belied their price tag. All drums have five-ply shells made from Mahogany (or something very like it) with the grain running from head to head, and are not treated with anything inside. They have a roughish large radius-ed chamfer edge and the covering material is cut back for about half an inch there to accommodate the heads. (It's often necessary to do this with a Gretsch drum to fit anything other than Permatone heads).

## Bass Drum

The 22" drum had an authoritative sound - big and solid but a little 'ringy' with two heads on. (Without the front head this ring would almost disappear). It has twenty, cast beaver-tail-type nutboxes, cast claws and 'T' handled tensioners and one felt strip damper. These nut boxes have springs inside but their actual threaded inserts are not very long and do not protrude from them. This means you could push the inserts right inside while changing a head (say) and spend a deal of time fishing it out again with a tensioner.

Hoshino's spurs are not of the disappearing type but swivel on a cast block specially shaped to fit flush to the shell. This block has radial splines cut into it as has the swivel attached to the substantial tubed spur itself. A spring



goes between the two pieces and a large wing bolt locks it all up tight. The ends are not spiked but have a rubber foot instead which would be inconvenient on some surfaces. In common with almost all Japanese bass drums the Hoshino has chromed metal counter hoops in laid with plastic.

It's very simple but works well. The height adjustment of the whole unit is with a large wing bolt tapped into the base plate with a piece of spring steel, between it and the down tube. The knurled rods joined to the balls penetrate a cast female fitting with a diamond-shaped base plate attached to the tom tom shells. The small drums can then be locked into position with a drum key operated screw.

Hoshino's tripod-based cymbal stands look pretty good. They have a widish tripod base, three stages with a large diameter top tube and a case, radial-splined, ratchet-type tilter. This tilter is a bit small as is the cymbal seating at its top and like retaining wing nut.

The wing bolts on the set are copies of Rogers old flattened-in-the-middle rod type which I personally like. At height adjustment points on all the

stands these bolts don't screw directly into the tubes but into a box-shaped piece of steel carriage assembly as the later pre Memriok Rogers used to.

Like the cymbal stand, the hi hat has a flat bar rubber-tipped tripod base with a two-piece cast footplate with a toe stop. This plate is attached to the centre pull mechanism with a double, plasticised, industrial-fibre strap.

This hi-hat is not so sophisticated as to have an adjustable spring although it does have an adjustable spur in its base. The height adjustment on this stand is the same as on the cymbal stand. Above this is the best top tube constant height adjustment clamp I've ever come across.

It's made from, pressed steel with a large wing'nut and really does the job. The bottom cymbal seating is adequately wide and adjustable in angle and the turned top cymbal clutch owes everything to the old Ludwig type which can't be bad. The hi-hat's action was reasonably smooth but somehow did not afford the resistance I'm used to from an adjustable spring pedal.

It did go to a reasonable height though and felt sturdy. Their de-luxe footpedal, looked and felt familiar to me. It's much the same as Pearls, with

a two piece cast footplate and frame assembly. There's also a toe stop to match the hi-hats and a hoop clamp which locks (unlike Pearl's) with a knurled screw situated below the footplate which is definitely not so convenient. The felt beater's length is adjustable in its throw in the way the old Swivo-matic used to be. There's an adjustable, but not lockable expansion spring set upwards from the cam towards the player, and two adjustable spurs tapped into the framework to stop forward movement.

### Tom Toms

All three drums had surprising depth. Their clarity however could be improved by better quality heads, but, since this is an economy-type set perhaps the guy buying it would be satisfied.

I was surprised to find that both the 13x9 and 12x8 had sixteen tensioners as had the floor tom tom. I've never seen this before and it ought to give the drums a better tone, or at least make them easier to tune. (It's funny this because one would expect a cheaper-type set to have not more but less tensioners per drum).

All drums have triple-flange hoops, square-headed tension screws and a quite substantial internal, under batter head operating sprung steel, felt damper. The sixteen-inch tom tom has three wide spreading, bent rod legs which locate into a shaped block attached to its shell.

These blocks do not have a, strengthening plate behind them inside the drum which could definitely be 'bad news' if you dropped the drum on its leg. The cast blocks are tapped to take a drum-key operated, square-headed screw which locks on to the knurling at the top of the leg.

### Snare drum

As far as I can ascertain, Hoshino make only the 14x5 inch metal shell snare drum which comes with H.S.D. 500. It has a lightish gauge shell with a 45°

inverse flange, indentations, for strength and a shallow snare bed; like the toms it has triple flange hoops. It too has an interval under batter head operating damper and ten double ended Rogers type nut boxes.

The snare drum's sound was bright and pleasant enough but its conviction could absolutely be improved with a more resilient, more expensive head. Hoshino's snare mechanism is very interesting. It's got a non-adjustable pressed steel butt end and a completely pressed steel, cam action adjustable strainer which worked in a sideways arc into the drum. Unfortunately it was (is) impossible to tension the snares in the 'on' position which is definitely a drag. These 40 strand snares are attached to their strainer with a plastic strip.

### Accessories

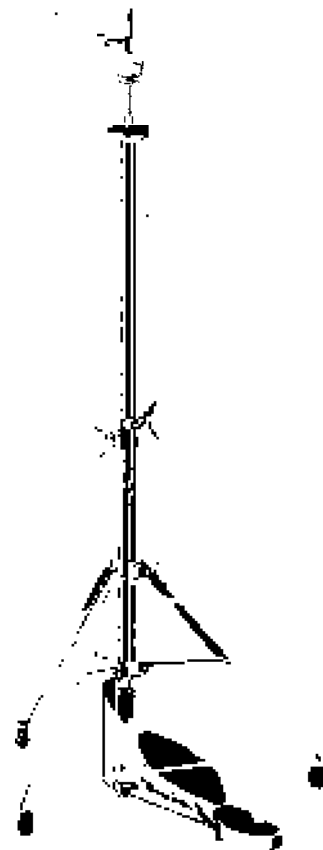
The double tom tom holder has a cast female boss bolted to the bass drum shell (in its centre) to take the down tube. This has a flat 'T' plate bolted to it and two ball retaining cages are fitted in turn to it with grub screws.

This ball is mostly inside its turned cage and has a knurled rod protruding from the portion outside the cage. (The hole in the cage is smaller than the ball).

Thus the ball, with its protruding rod, is at liberty to swivel around, until arrested by a large wing bolt screwed into the cage (opposite the hole) from below it via a hole tapped in the 'T' plate.

This pedal's action wasn't at all bad but I was unable to make the spring tight enough for what I consider comfortable playing because all the adjustment was taken up. I think this was just a bad example and almost as if too long a spring had been fitted in Japan. Lest I forget there's also a substantial leather strap.

One also gets a tripod-based-type-adjustable snare drum stand based loosely on Ludwig's old 'Buck Rogers'. It's made completely from pressed steel (save for its cast ratchets) which hold the playing



angle steady and locked with a bolt. The basket drums are adjustable from below the snare drum with one of their ubiquitous wing-bolts and are sheathed in plastic to protect the snare drum. The stand is good, and works well within limitations of the thickness of the material.

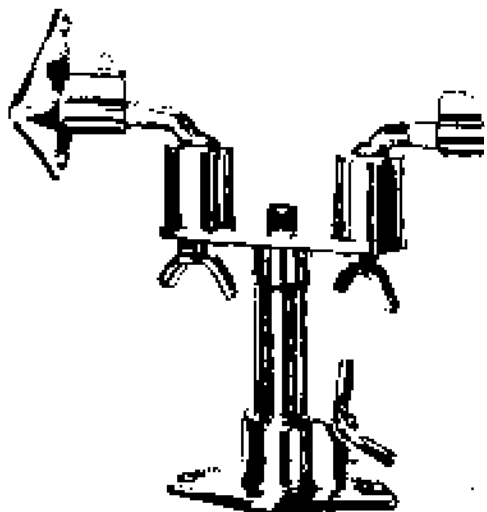
### Conclusion

To be honest, the interiors of the drums left lots to be desired but also, to be honest, I've seen drums from more respected manufacturers which suffered from poor interiors at twice the price. It's almost excusable in this case since the sound is definitely there.

A box of cup washers would not go amiss since no screws anywhere had them — even inside the snare drum. Externally the drums look fine there are seven finishes to choose from one of which I hated and the other half dozen I liked. Black, silver, red and blue metallic, fine gold and fine copper, and lastly and definitely leastly silver silky. Finally, if you wanted a new set instead of an equivalently-priced secondhand one, you could do worse than Hoshino.

Besides these stands, there are available a range of professional heavy duty stands and stools, all with wide spreading twin tripod legs. The snare stand is much more sophisticated like Ludwig's Atlas, the stool has the widest tripod base I've ever seen and there's also a boom cymbal stand and more sophisticated hi hat — all with 'thicker-than-before' tubes.

There are also a range of concert tom toms (one octave) complete with stands and available only in black.





# argent's KEYBOARD CHECK

In addition to leading Argent for seven years, Rod is the composer of several million-selling numbers. He has a classical keyboard training and plays on sessions and at instrument clinics.

TEST ON: Logan String Melody

DATE: November, 1977

PRICE: £508 (ex VAT) U.K.

## Construction

Choosing a string synthesizer nowadays is becoming more and more a matter of personal preference and less and less a matter of objective appraisal. Most of the instruments on the market are built to a high standard; all, to some degree, share the characteristics peculiar to synthesized string tone, and all, to some degree, suffer from the same limitations.

All, in my experience, have to be approached in a fairly skilful way if a realistic string imitation is to be achieved and a theatre organ sound avoided: the main difference lies in the arrangement and subtlety of the modifications – such as phasing, attack and sustain controls, division of the keyboard etc. On these depend largely the approach necessary to obtain good orchestral imitation and on these also the *sort* of orchestral effects that may be achieved. Each layout, in other words, will suggest different solutions and therefore produce different results from roughly similar basic material.

The Logan string synthesizer opts for an approach whereby the component parts of the string orchestra may be split and mixed by the operator. Cellos, violas and violins can be selected separately and their tonal characteristics mixed to taste. Moreover the operator decides whether he wants "solo" or "ensemble" tone from his settings – although it must be one or the other; ensemble violas, for example, cannot be mixed with a solo violin.

In practice, it's the ensemble settings which are the realistic ones. This is something I've found to be universal; the sound of a solo bowed instrument is

something I've never heard any synth. come near.

The solo settings on the Logan really sound far closer to an electric organ than they do to anything orchestral. The vibrato in particular, which is fixed, sounds rather bald and mechanical. The individual ensemble sounds, on the other hand, are very good, and represent one of the most effective areas of the instrument. The sound is at its most convincing in the lower, middle and upper middle registers. The high violin sound, while marginally less so, is nevertheless still very good.

Each section combines very well with the others although, as always, this is one of the danger areas where it's all too easy to end up with the 'mighty Wurlitzer' sound. Not the least reason for this effect is of course the unlikeliness of the orchestral voicing – if you add cello and viola to violin sections, you are duplicating every note of a played chord in two octaves.

This can tend to sound like an organ simply because an orchestra would rarely be voiced that way! It's a reasonably good rule when playing any string synthesizer to voice sparsely rather than densely to obtain maximum effect.

In actual fact the String Melody II does offer a very useful divided keyboard facility to enable you to play more "orchestrally". One of the nicest things about it is that because all three sections are available on both parts of the keyboard this is not simply a method of pitting high strings in the right hand against low strings in the left. For example, a violin ensemble voicing towards the top of the

left hand end of the keyboard (one of the nicest textures on the instrument) combines beautifully with a combined ensemble cello and viola single line on the right hand side.

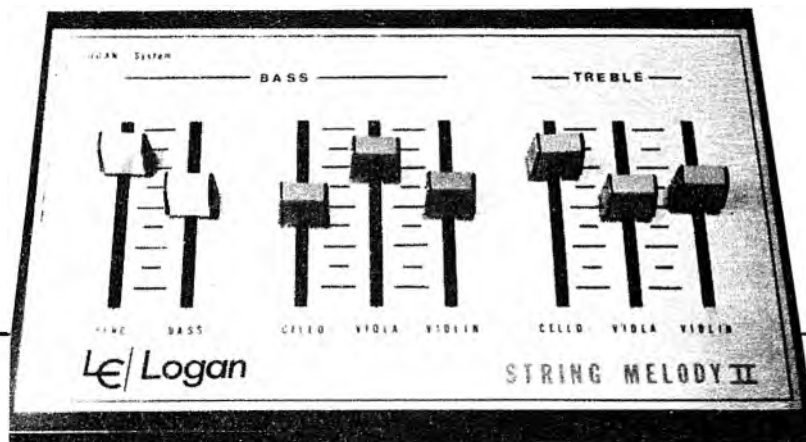
Because of the layout of the instrument the right hand line is thus set below the floating chord played by the left hand! The independence of the divided keyboard effects you can obtain is enhanced further by the separate attack and sustain settings which can be brought to bear on either side of the dividing mark. The mark, incidentally, occurs after 24 notes of the 49 note keyboard.

## Voicing controls

The voicing controls for the instrument are set to the left of the keyboard in these banks. The three faders, cello, viola and violin, affecting the right hand side of the keyboard comprise one bank; these faders are marked "treble" and coloured blue. The three corresponding faders for the bass end are red and share the bass section with yet two more, yellow in colour, and marked "bass" and "percussion".

The bass fader is capable of adding a useful lower octave to the lower end of the keyboard, while the percussion control adds a sharp attack to any desired setting. Attack and sustain may be varied for both halves of the split keyboard and two faders are set over each corresponding section. Both of these controls are really quite adequate, although I would have personally preferred the option of an even longer attack time. One thing, the Logan does not possess is an independence of attack for each individual note.





### Presets

In addition to the basic orchestra which may be totally mixed by its operator, the Logan String Melody II has four presets located above the string faders together with a button which selects those faders.

An organ preset, which is very good indeed and of the big church organ timbre that string synthesizers seem to do so well, is the first goodie on offer. To call it a preset is actually quite misleading as the string faders all affect the setting: what it really does is to introduce a phased overall "straighter" effect to the string ensemble voicings in a very effective way.

I'm not so bananas about its next door neighbour, the "full orchestra" button. This really is a preset in the usual sense of the word, being unmodifiable except by attack and sustain controls. It is in fact quite good, and capable of being used

very effectively in single line situations, but whenever full chords are played on the setting, the result has an unmistakable touch of the Reginald Dixons.

The philosophy behind the setting seems good, though — to quote the manual; "Orch" — a preset effect giving the sound of a whole string orchestra, and leaving the sliders free to be positioned for the next setting. Which in itself might well incorporate the effect of the next button, the purpose of which is to introduce an accordion tone to any combination of string faders, in a similar way to the 'organ' button.

The rank of buttons is completed by selecting the two: 'solo' or 'ensemble' voicings. The controls on the front of the instrument are completed by two screwdriver-adjustable sockets; one to vary pitch and the other to alter impedance so that the synthesizer may be matched should it be lined to another

electronic instrument. A volume pedal is provided as part of the overall price, as is an amplifier lead.

The Logan is quite good looking as string synths go, and gives the impression of being well-built. Its overall dimensions are as follows; length 40½", width 15" and depth 6".

### Conclusion

If you are considering the purchase of a string synthesizer, should you choose the Logan? That is a decision only you can make and you should try all the models you can before reaching a decision. So much depends on your way of playing and what you personally want out of a synthesizer; it's such a subjective thing. The Logan does offer some nice features, not the least of which is the divided keyboard. It is undoubtedly a good instrument, and could be just what you are looking for.



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# IN BRIEF IN BRIEF

## On Test: Fender Telecaster Custom Price: £270

First, let's bury the myth that old guitars sound better than new ones. This Tele is barely out of its box and sounded immaculate from the first note. It is also as well built as any "old" Fender I've seen and, if this model is indicative of the standard of other new Fender products, then you have nothing to fear from buying a new guitar from this manufacturer.

The Custom's main difference from the standard Telecaster is that the former has a humbucking Fender pickup on the front position. Other differences include a bullet-truss rod, dual volume and tone controls, different scratchplate style and a smaller pickup selector switch mounted on the top cutaway.

The difference in sound between the Custom and Standard Telecaster is quite substantial. The humbucker gives a far fuller and bassier sound than the familiar single-coil bridge pickup and, compared with my own Tele standard, has a far more responsive sound with more body in the note at low volume playing.

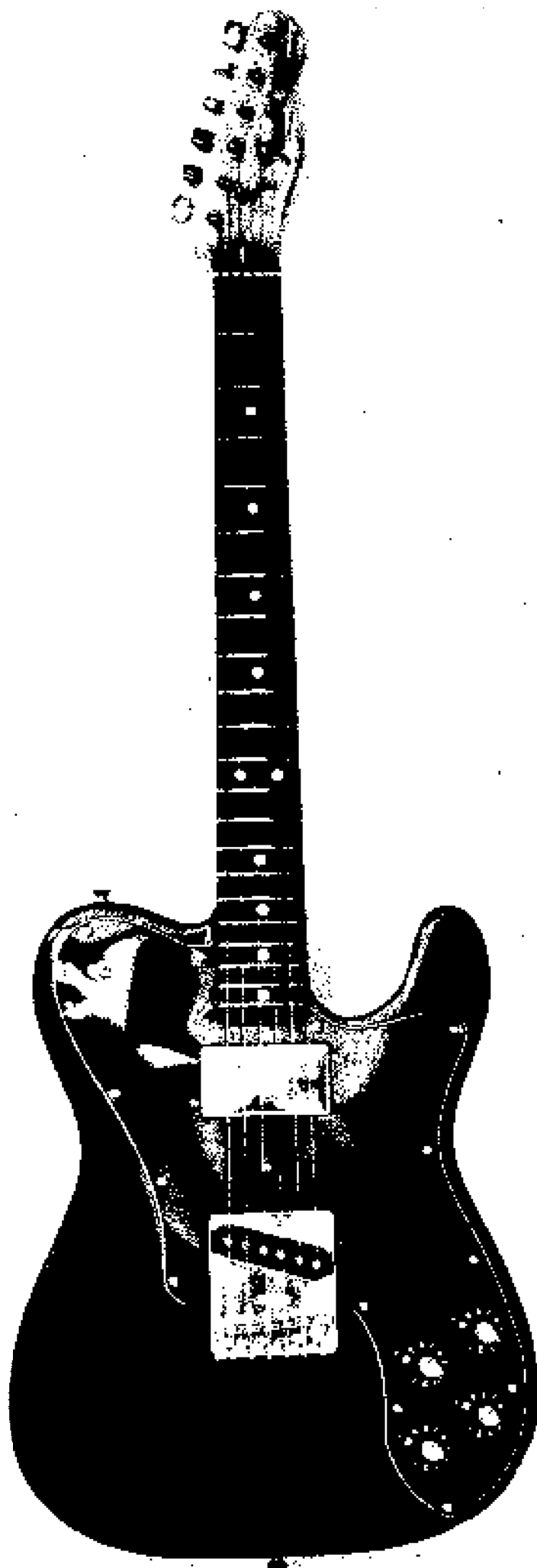
It also makes the guitar far more responsive to the dynamics of your playing i.e. the note gets louder if you increase your attack. If you flip the selector switch to the bridge pickup, you get a normal bright and twangy Telecaster sound. The humbucking position is perfect for playing rhythm chords with a full balanced sound while the middle position is good for single note leads as well as putting more top on rhythm work.

One thing that puzzled me at first about the Tele Custom was the fact that the bridge pickup gave out the least volume. On the standard Tele this back pickup is noted for the extra boost it gives to the sound. Not so on this Custom, it seemed to be the other way round with the strongest tones coming from the middle position.

The rosewood neck of the Custom on test was near perfect to play as can be expected for a virgin fingerboard. The guitar was perfectly in tune all the way up the neck.

The best thing about this Telecaster Custom was that indefinable feeling you get with some guitars that makes the instrument immediately playable. Maybe it was that good old Fender feel, but the Custom felt part of me when I played it and perhaps that is the highest compliment you can pay a guitar.

**Ian White**





## On Test: Kaman Applause Price: £169.95p excl. VAT

This is a new guitar which will come as a Godsend to acoustic players who have always dreamed about owning an Ovation but could never afford the price.

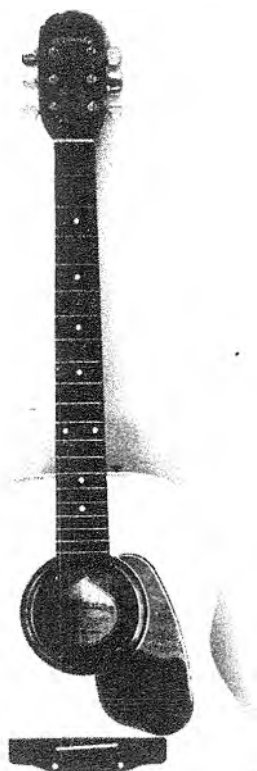
It's been a long time coming but it's here at last, a roundbacked guitar within a realistic price range. I'm glad to see someone has the foresight to produce something like this that everyone can afford. Those of you who are firm believers in an acoustic guitar being made from wood think again, because the only wood in this is the spruce top and strutting.

The Applause features a one piece cast aluminium neck which is permanently secured to the body and the back is moulded with high density polyurethane foam that has been finished to feel like mahogany; (something that might feel a bit alien to you when you first try it). As far as I can make out the frets are all part of the same casting and, although they are treated with nickel for extra hardness sooner or later (as with any guitar) they are going to wear down, which might cause a few problems when it's time for a re-fret.

Full marks must go to the action though it's suitable for any style you play even at its factory pre-set. But if you're not happy with that you can lower it (as with Ovations) simply by removing small shims that lie underneath the bridge. I lowered the action to its maximum depth (which on the 6th string was 7/64" at 12th fret) and found no loss of attack in the sound, or fret buzz of any kind.

The overall appearance of a guitar is something that will always boil down to a musician's personal taste. The Applause is certainly not ugly looking. But I do think Kaman could have been a bit more discreet on certain features, the model reviewed had a tan finish that is so heavily lacquered that you could mistake it for cream plastic. This finish, coupled with what seems to be a rather over-sized beading round the edge tends to make its appearance a bit cumbersome; but for its price and amazing sound quality that's not much to complain about. Kaman have taken much care in the things they know matter most to any guitarist; the action, octave intonation, and overall sound response, all of which score full marks!

The idea of a fibre-glassed roundback is something that I'm a firm believer in. Applause produce a series of models based on the deep-bowl and shallow-bowl



design, presumably to give you the choice of different sound resonance quality. Some people I have spoken to contest this principle but it seems logical to me that any sound response inside the body is free to travel instead of being absorbed into the wood of a conventional acoustic guitar or by its bracing.

**Chris May**  
*Guitar courtesy of Chappels*

## On Test: Mighty Mite Screaming Distortion pickup. Price: £33.50 inc. VAT

Apart from anything else, there are two ever-increasing markets within the musical equipment industry — effects units and guitar pickups. Both these fields have been rapidly expanding over the past year and the latest "hot" American pickups to arrive on these shores are those made by Mighty Mite.

The Screaming Distortion pickup is a powerful (13.5K) double coil job with height adjustable pole pieces. These are raised or lowered with a small allen key which comes supplied with each pickup. Mighty Mite can also supply pickup surrounds for these units in either cream or black. The demo pickups we reviewed were fitted onto an Eros Les Paul copy and, tested through both a Music Man and a Yamaha 100 watt combo, sounded great either at low or high volume settings. Bags of sustain

and a gutsy, biting sound — ideal for HM or blues freaks. The pickups were in fact a little "dirtier" at low volume than, say, Gibson humbuckers so it would be fair to say a certain loss of clarity was observed.

These pickups are also available in split-coil configuration and a wiring diagram is supplied with those versions. Mighty Mite can also supply the necessary three-way toggle switch for single/double coil switching. There are three different finishes available — cream, black or see-thru.

Mighty Mite also make a lower-powered (9.5K) pickup, based on the patent-applied-for Gibson humbuckers, called the "Vintage". The same finishes are available for the Vintage and they are also available as split or double coil units.

Mighty Mite pickups first saw the light of day in England at the Trade Show in August, although they have been on the American market for about eighteen months. Their range also includes Strat and Tele (front and back) pickups, Jazz Bass and Precision pickups and there is an acoustic guitar pickup expected soon.

## Erratum: From Di Marzio

Your publication has been unfailingly kind to our company, so it is with some trepidation that I must offer several corrections to the In Brief review of DiMarzio pickups in the October issue. To wit:

The Dual Sound pickup does not turn one coil off. Both coils remain on in either mode, to preserve the humbucking function of the pickup. What actually happens is the coils are switched from series wiring to parallel. I should point out that the Gibson 345 switch does not work in the fashion described, either, but rather employs a choke-driven capacitive circuit which cuts frequency bands at each switch position. At no point does it turn off a coil.

I must also point out that, contrary to Mr. Percival's statement, we have never used flat wire in our pickups. As far as we can determine, Gibson has not, either. What Gibson in fact used was enamel-coated wire, which they discarded in favor of poly-coated wire. Results with enamel-coated wire do indeed tend to be inconsistent, partly due to higher incidence of coating breakdown. Our own wire is made to our specified tolerances, with correspondingly little breakdown and consistent response. Steve Blucher, Vicent President, Di Marzio Musical Instrument Pickups, Inc.

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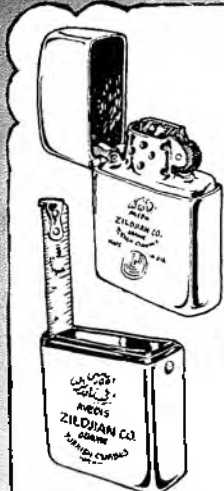
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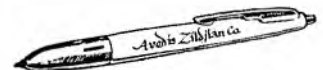


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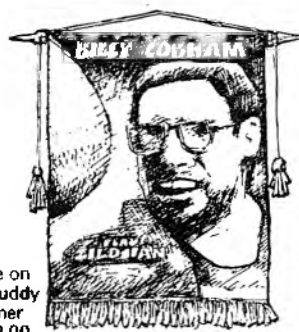
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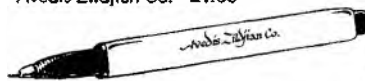
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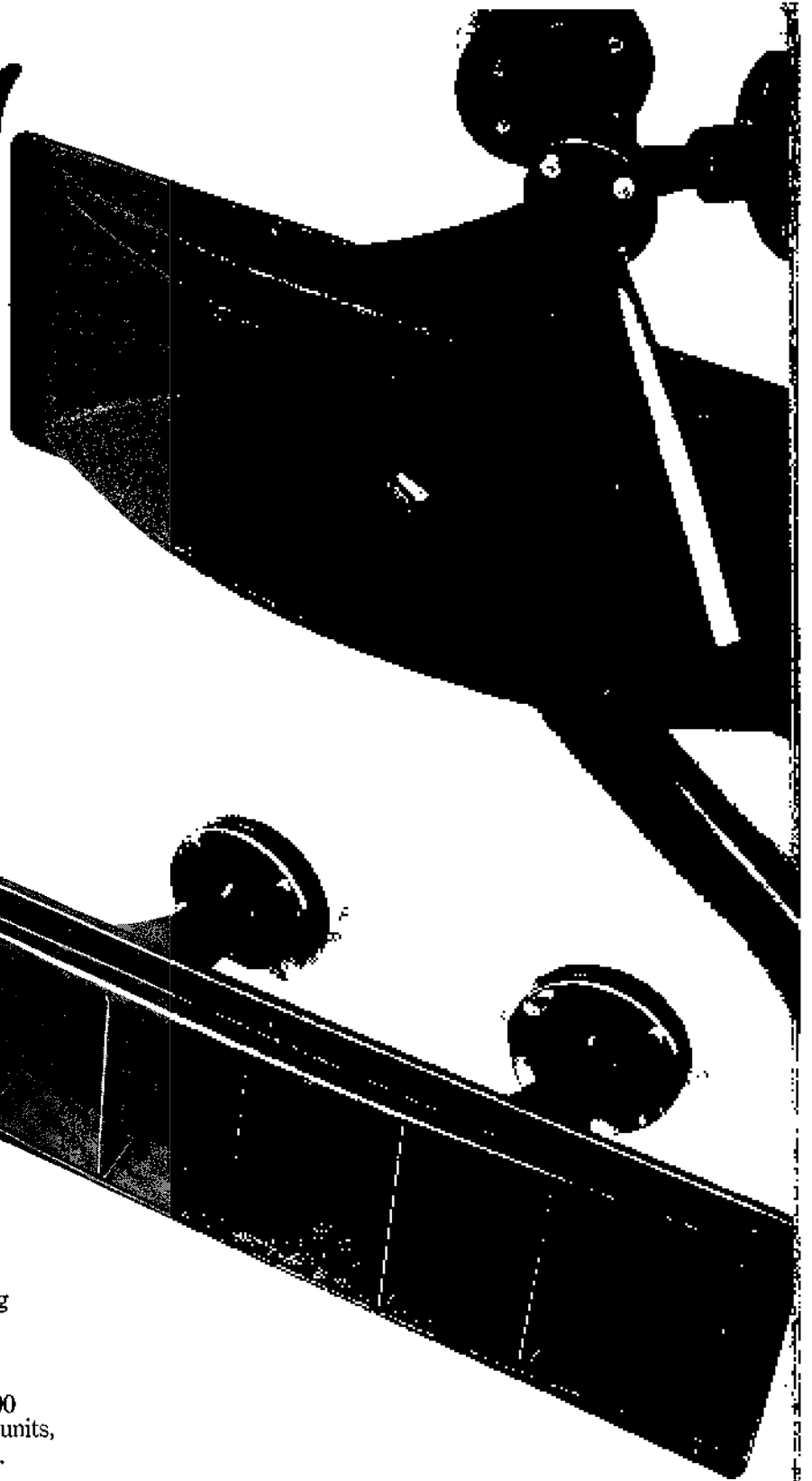
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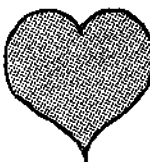

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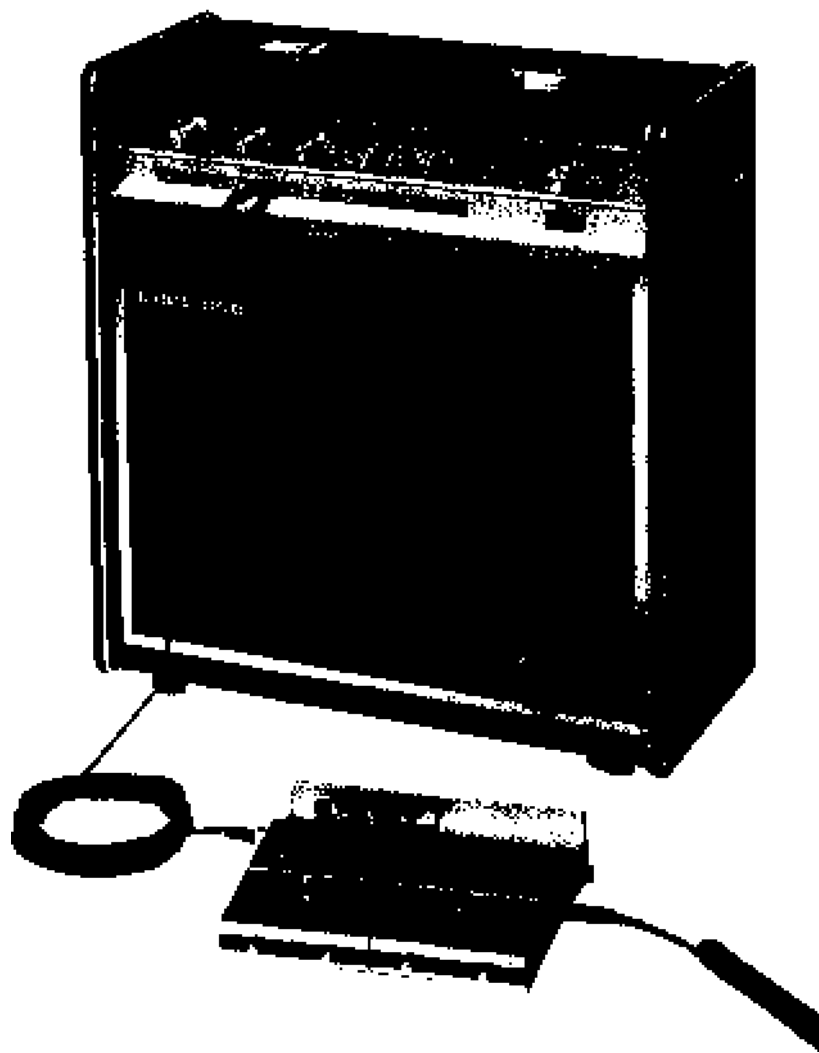
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F#	G	G#	A	B <sup>b</sup>	B
● ○ ● ○ ○ ● ● ○	● ○ ○ ○ ○ ⊗ ALTO ○ ○ ○	○ ● ● ○ ○ ○ ○ ●	○ ● ● ● ○ ○ ○ ○	○ ○ ○ ● ○ ○ ○ ⊗	○ ○ ○ ● ○ ○ ○ ⊗
B <sup>b</sup> aux F	B <sup>b</sup> aux F	E <sup>b</sup>	G#	C	C D

The octave key remains pressed throughout.

## Hitting the high notes

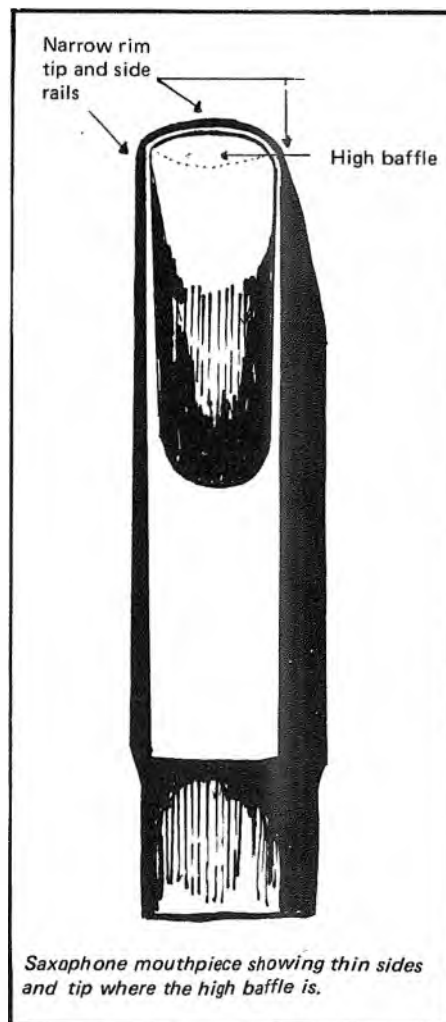
by Alan Holmes

If you have heard a record by Junior Walker, King Curtis, Tom Scott, or David Sanborne and wondered how they reached those incredible high notes, you can now rest assured these are controlled squeaks called harmonics which can add a whole octave to the range of the alto and tenor and are lurking in every saxophone and waiting to be unleashed.

It is very odd that these extreme upper tones are not included in the standard saxophone fingering chart, as the oboe, flute and clarinet of the same woodwind family all have their upper range produced harmonically and the fingerings included in standard books.

While it is true that at least two years playing experience is required before the mouth is strong enough to exert the pressure necessary to produce the harmonic range with any certainty, to a lesser extent the same applies to the clarinet, flute and oboe. Despite this, the majority of professional players have managed to produce some of these notes, and the addition of just the G and A above the range can make a lot of difference to solos in these keys. Few have bothered to put in the regular and, at first unpleasant, practise and gain complete control of an entire octave of harmonics which, in the case of Tom Scott, are matched in tone to the rest of the instrument and are a musical and extremely useful addition.

It may be that initially these tones are difficult to find and control, requiring as they do, a change in the embouchure and tongue and throat positions. A lot of this initial reluctance of the harmonics to sound is caused in most cases by the use of mouthpiece which is not really playing the complete standard compass with ease. Because of the increase in the pressure of the lips and jaw when playing harmonically, it is essential to use a mouthpiece that is not tiring to play in the normal range, as prolonged practise of high notes is



Saxophone mouthpiece showing thin sides and tip where the high baffle is.

# CHART FOR SAXOPHONE HARMONICS

C		C#		D		E <sup>b</sup>		E		F		
C	E <sup>b</sup> D	E	E <sup>b</sup> D	C	auxF	C	C	D				

Use ⊗ if required for stability

impossible on a wide lay so that progress becomes very slow indeed and is very often abandoned.

The instrument must be set up in such a way that these notes become a musically pleasing extension to the range with the same tone continued up and with the same vibrato and inflections which are usually dispensed with for fear of the note cracking and trailing off in a strangled grunt. This results in the commonly heard and occasionally used strained squawk. If only some time was spent every day these would not only turn into the exciting and impressive sound heard on record but would also strengthen the mouth and give more control throughout the entire range.

## Mouthpiece

The type of mouthpiece plays an important part in the production of harmonics and some types of mouthpiece will not play them with any certainty, if at all. The most important part used is the rim tip and the rails for about half an inch back from the tip, these should be as narrow as possible without excessive speaks when playing normally. The length of lay should be long, (as in the Berg Larsen range) and the baffle immediately behind the rim tip should be fairly high again Larsen and Lawton B models. The tip opening should be medium: 7 or 100 thou for tenor and 6 or 80 thou for Alto. Some recommended combinations: Tenor: Berg Larsen metal an ebonite 95 or 100/1/M, Lawton 6\*B, 7\*B, Link Tone Edge ebonite 6\* or 7, Selmer S80 G or Jazz Metal G, Brillhardt Level Air 6. Alto: Berg Larsen ebonite 80/1/M, Lawton 6\*, Link tone edge 6\*, Meyer 6\* or 7\* medium chamber medium or long lay, Brillhardt Level Air 5. The reeds should be medium, for tenor, 3 or 3½ Rico, Rico Royal, or medium, medium hard in La Voz. For Alto 2½ or 3 Rico, Rico Royal,

medium, medium hard La Voz.

## Fingerings

The harmonic fingerings shown on my chart only set up the possibility of that particular note sounding as there is more than one harmonic for each, the extreme high F, for example will also produce a very good C. The note must be heard ahead of it sounding and it must be lipped with breath and jaw pressure into the correct and stable pitch.

## Chart

My chart differs from others in that it continues as far as possible with each harmonic using the keys to ascend rather than embrochure changes. The F sharp will slur into the G then comes the embrochure change to the G sharp which is the A flattened and this fundamental will continue up to the C sharp where instead of opening the side F and getting an equally acceptable D the embrochure change is made for a very stable D using the Auxillary F key and side C if it seems flat. There is another easy change to the E flat which is sharpened to the E by opening the side D and releasing the G. The F is very stable too and can be sharpened to a not so stable F sharp by opening the side B flat and C together with the E flat and D. The changes to practise are the F sharp to G and G to G sharp then C sharp to D, D to E flat and E to F. The three changes in fundamental are indicated by arrows on the chart.

For the beginner to harmonics the first one to try for is the first F sharp which is done by playing the ordinary Auxillary F and then opening the side B flat and closing the right hand E and F simultaneously. If this doesn't seem to happen after a large number of tries spread over a week have the height of the auxillary F opening adjusted so that the F is in tune you might then find F sharp easier.

When the F sharp is sounding stable and

with a strong tone try opening the E, F and B keys and slurring up to the G. Having mastered the G and being able to play it without slurring up to it try the first step of the series which will take you to C sharp. This is done by fingering the A without the G sharp and with the D,E,F of the bottom action closed.

Keep referring back to the ordinary A so that you can hear what to try for and vary the lip and jaw pressure to get the note to sound. The throat should be in a position as if you were saying 'eeee' and it may be helpful at first to bite a little further up the mouthpiece. The tongue is arched upward to deflect the air stream. When you eventually sound this tone, and it may take weeks, keep playing long notes on it.

This will strengthen the embrochure and until this tone can be obtained consistently and tongued without cracking this should be practised daily. When this tone is very consistent then open the bottom D,E,F and G sharp as shown on the chart and this will be a good A. The B flat is perhaps the most unstable note on the chart and for some reason is more prone to crack with Rico reeds than La Voz however it must be persevered with and it could take as long as a year to eighteen months before these notes are really musical. A lot depends on the time spent as harmonic practise is very tiring for the lips and even more so for the unwilling listener! If your neighbours are prepared to suffer the awful squeals and your mouth the agony then you too can take off into the statosphere. A word of warning to beginners do not attempt these olympic athletic marathon of the lips unless you have been playing at least two years or you could damage the delicate membranes and muscles of the lips and ruin your playing altogether so just be patient please and practise the standard range till your lips hurt instead. O.K.?

## Sex Pistols: "Never Mind The Bollocks Here's The Sex Pistols" (Virgin V2086)

Well here it is then. Possibly the most eagerly-awaited album of the year and bound to prove the most controversial. After all the hoo-ha and reverse psychology hype, the question is do the Sex Pistols cut it on record. The answer, on first listening, is 'Yes'. Here in the grooves of this album you'll find a performance that is closer to the edge than anything since Dylan did "Highway 61 Revisited" back in 1965.

Remember, the howls of derision that greeted Dylan's nasal whining anti-voice. Well let's not be caught out again. Johnny Rotten proves on this album that he is probably THE rock singer of the Seventies. Now before you curl up with laughter, just listen to the energy this singer is putting into his performance. Forget conventional yardsticks like melody etc. and just hear the way he spits out each word with every ounce of power he can muster.

Once you've broken in your ear to the Pistols, even the playing doesn't sound bad and the lyric on "No Feelings" where Rotten screams "You don't realise I take the piss out of you", is probably the key to it. This boy is no fool.

The album contains the latest Pistols single "Holidays In The Sun" as well as the notorious "God Save The Queen" and the chart single "Pretty Vacant".

There is a sound on the album that is so strong with nothing held back. That is what is so good about it. The Sex Pistols are a band who are not asking for any quarter and who are giving none. In that respect this is an important album because it breaks away so much from the norm and shows too clearly the confines that most other musicians work within simply because there are no boundaries for the Sex Pistols.

Rotten really does make the likes of Jagger and Paul Rodgers sound over the hill. Listen to the Sex Pistols with an



Strong with nothing held back

open mind and you'll find yourself re-examining your own definitions of what music is about. Between the 24-track album that takes six months to record and the "four-track" spontaneity of the Pistols is a wide gap. At least the Pistols have drawn one line of the boundary. **Ian White**

*Producers: Chris Thomas and Bill Price. No other recording details.*

## Donovan: Donovan (RAK SRAK 528)

I can guarantee when most people think of Donovan they think of a singer with a denim cap, spouting peace and love and waving daffodils everywhere. But that was a long time ago. Since then he's matured into a fine musician. His new album marks a return to public appearances with material reminiscent of his 'Barabajagal' and 'Hurdy Gurdy Man' days (with the Jeff Beck Group).

Although Donovan's lyrics have always seemed a bit naive at times, his ability to pick the right musicians and his skill at arranging always out-weighs that problem. For a long time he's drifted through various line ups, lasting the space of one album and the disappearing into oblivion again. This time round I think he has something a lot more lasting with Issac Guillory (guitar) (see Pacific Eardrum review). Colin Allen (drums) Nick South (bass) and Ronnie Leahy (keyboards). His material seems a lot more 'gutsy' than on his previous stuff, with the opening number 'Brave New World' having quite a disco feel about it. Sure enough he's slipped in a couple of his sweet romantic ditties, 'Lady Of The Stars' and 'Maya's Dance' but he's always claimed that this sort of material came from a much harder and realistic viewpoint, as hopeful and as musical as ever, but not quite so head in the clouds.

The backing harmonies on a few tracks are provided by Smokie which really seem to work well with Donovan's own (at times) high key vocals. "Local Boy Chops Wood" is a beautiful paean



Not quite so head in the clouds

of the Sixties about an aging rock star trying to make his comeback, a song that brings his lyrical side to the front. Not only is this album a return for him, but also for a couple of old friends John Cameron (string and horn arrangements) and Mickie Most. Cameron was responsible for those haunting string arrangements on the Sunshine Superman album (Pye 1967) Psychedelic? Well... maybe yes, maybe no. Those records still hold up though, listen to the radio, they still play them now and again.

Well that's pretty much where Donovan is, still something of the wandering minstrel, but definitely tuned into the realities of the 70's as the new album will clearly show. Peace man!

## Chris May

*Recorded at Chateau du Regard, France. Produced by Mickie Most. Mastered by Chris Blair at EMI Studios.*

## Steve Gibbons Band Live: Caught in the Act. (Polydor 2478112)

Not having seen the Steve Gibbons Band (unfortunately) I don't know whether this live set shows the band off at its best or not. But it does prove that the Steve Gibbons Band is one of the hottest acts in the country as well as being very versatile.

It seems that the strongest numbers in the band's repertoire are numbers that have been penned by various living legends. Thus we get songs by Dylan, the Beatles and Chuck Berry as well as Gibbons' own competent songs.

The first track is "Watching The River Flow" a little-heard Dylan song that features Gibbons doing one of the best Dylan imitations ever. You'd swear it was Bob himself rocking out unless you knew otherwise and is totally convincing through Gibbons' immaculate phrasing and Dylanesque style. The soaring guitars of Bob Wilson and Dave Carroll make this a cover version Dylan himself would be proud of.

The single "Tulane" is given the live treatment on this album and is even more urgent than the studio single. One thing



Boogie to blues and back again

# ★ ALBUMS ★

you've got to give the Gibbons gang, they're totally in command of every type of Rock from boogie to blues and back again. Steve Gibbons, total empathy with the material he picks gives any song a new life and he is one of those rare singers who has the ability to make you forget the original version and accept his own rendition on an equal level.

If the Steve Gibbons Band was an American act they would be enormous in Britain. As it is, this album demonstrates that Birmingham can do it with the best of the rest.

## **Ian White**

*Live Recordings by Bobby Pridden, Mixed at Rampart Studios, Mastered at Utopia studios. Produced by Kenny Laguna. Associate Producer, Mark Dodson.*

## **Pacific Eardrum: Pacific Eardrum (Charisma CAS 1133)**

Pacific Eardrum have been gigging around London in one shape or another for well over a year. The band now has apparently reached a satisfactory and permanent lineup and in their first album have produced a commendable debut record which, while not appealing to everyone, is certainly a good showcase for their talents as very-good-indeed musicians.

Pacific Eardrum boasts some well-known and respected names amongst London musicians: Dave Macrae is a familiar name to many players for his keyboard work and Isaac Guillory has been gigging around with his own band for a long time without getting the recognition he deserved as a top jazz-influenced guitarist.

Jim Sullivan, while not a permanent member of the band, plays on this album which is an adventurous outing into a style of music which floats from jazz and

rock, to African rhythms. Joy Yates uses her voice as an instrument and her pure high soprano floats in and out of the other instruments.

Pacific Eardrum have produced a musician's album which is to say that other players can look to it to learn for themselves, whether they are keyboard players, guitarists, bass players, or drummers. The standard of playing is as high as you'll hear anywhere and as a reader of International Musician who obviously cares about such things you would do well to get a copy of the album. It is very good.

## **Ian White**

*Recorded at The Workhouse. Engineer: Laurie Latham, Produced by Dave Macrae and Geoff Calver.*

## **Lynyrd Skynyrd: Street Survivors (MCA 3029)**

The cover shows them all engulfed in flames. It was probably taken only a few weeks before the band actually did perish in flames in the plane crash that's wiped out one of the best boogie bands around.

It's sad to listen to this album because it is Lynyrd Skynyrd at its best and could make you feel really good until you realise there will be no more music like this.

The band had a gift to churn out shit-kicking boogie tempered with taste and moderation that put it on a level above much mediocre heavy-metal bashing that goes out under the same category.

This album cooks from start to finish. The addition of Steve Gaines to the line-up introduces a player who could have been one of the "Greats" in the best tradition of Duane Allman. At least Allman achieved the recognition

due to him before he killed himself on that motorbike ride.

But, leaving aside the tragedy which now surrounds this record, it is one of the best pieces of vinyl to come my way in yonks. Ronnie Van Zant is in splendid form, belting out the lyrics with his usual sing-it-like-there's-no-tomorrow energy. The band is in there tight behind him.

If you are a guitarist, a brilliant workout by Steve Gaines on "I know a little" will leave you breathless. It starts off in a swing/jazz mode and develops into a full-scale blues blast.

Put it like this. If you never heard Lynyrd Skynyrd live, this album is the last chance to get into the hottest band that ever waved a Confederate flag. "Street Survivors" is the best epitaph the band could leave. Heaven must be hot.

## **Ian White**

*Recorded at Criteria Studios, Miami. Engineer: Dennis Herkendorfer, Mastered at Capitol Records.*



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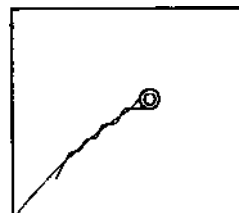
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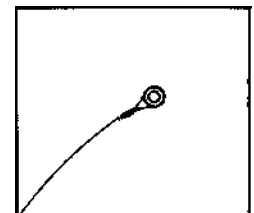
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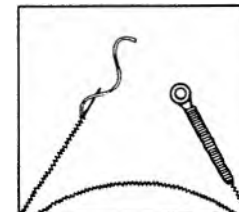
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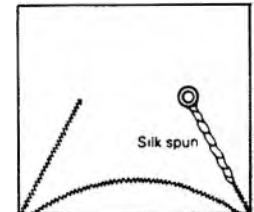
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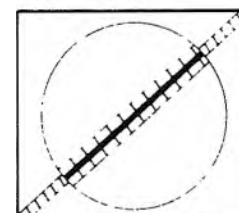
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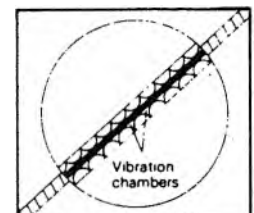
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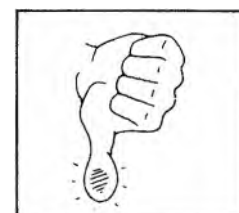
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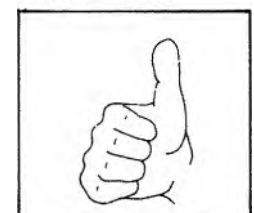
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# 'Sandpaper and tennis shoes can help your drumming'

Gerry Brown is a drummer who has got his work cut out for him. Any drummer who works with musicians like Chick Corea and Stanley Clarke, among others, has got to be on the ball. Gerry has been playing drums since he was 4½. He has played with Larry Coryell and toured with Corea and Clarke as well as appearing on the same bills as Uriah Heep, Small Faces, and Ted Nugent. In this interview with New York correspondent John Farris, Brown gives forth on tips for improving playing.

## What sort of exercises do you do to get loose?

Well' I do a lot of things that will enable me to play well all night, if it's a gig. You have to be like an athlete, and pace yourself. Some exercises I do include a very slow single stroke roll on a pad with a towel over it. This makes it harder to bounce off. It's more difficult ... the same idea as a baseball hitter having a metal doughnut on the end of the bat to make it heavier. When he takes it off, he can swing much faster.

**Do you use metal practice sticks at all?** No. I stay with my regular sticks for the same feel. Then after I've done alternating single strokes, I do:

LLL RRR LLL RRR, increasing my speed gradually.

Next I move to:

LLLL RRRR LLLL RRRR, and get this going fast. The object is to get your fingers and wrists moving with great speed and facility, and with control. I do:

LLLLLL RRRRRR LLLLLL RRRRRR to speed, then back to:



More flams with:



**This may have an obvious answer to it, but what should the young drummer today be able to play, or to play first?**

I think the more you can play the better. Supposing the guy is playing college dates, he can probably get by with knowing rock drumming only. But if he gets a cabaret job with brass in the band he must know the horn licks, too, so he can cut with the brass and set them up. I know some drummers who say: "Man, I just play rhythm. I don't play that

horn shit. Let them play it."

**That's kind of un-professional and limiting.**

Right. It's a bad attitude, and not profitable either. I read piano parts with Chick Corea. It helped me to fatten the horn licks, do fills and punch accents for bass emphasis.

**This gets into the importance of reading.**

Today reading is as important as reading a book or the papers.

**You've got to do it all.**

Right. It's a matter of preparation. You must be able to take on anything. From a four mallet marimba part, to filling in at a Broadway show without a rehearsal. You've got to be able to defy the odds, have a challenging attitude. You don't want to try things, you want to play them.

**You had a lot of classical training in your background. Do you recommend that?**

Not exclusively, but it's one of the best ways to get there. There's reading and a lot of technique involved in it. At the Settlement Music School they had a percussion ensemble. One guy, John Siroca, who is now with the Baltimore Symphony was a mother and a half.

**A lot of the most important rock groups have a great deal of visual excitement in their performances. Do you like that?**

Yes. It's part of that scene, and if you play it, you should be into it. I'm working on several pretty wild things myself. One thing is for me to have these giant over-sized sticks that Frank Ippolito has ... show sticks. I'll be taking a solo, with a harness on my back, and I'll start twirling the giant sticks like helicopter blades, with a tape recorder playing the sound of a chopper very loud.

**Aside from the visual aspects of soloing, how do you approach taking solos?**

Well, I think a 32 bar solo is a drag. Nothing. If you're going to solo, make a statement, give a show. Use the dynamics of the drums. Express yourself. Specifically, I do a double stroke roll between my two 10 inch toms and my snare. Then I pause. Then I repeat what I did, to build the emotion of my solo. For flash, I hit the swish cymbal and floor tom very fast. Solos are okay, they're good, but I really think it's often more of a kick to express yourself through the band ... to drive it and make it sound great. Let's face it, drums are not the main instrument in a band, they support.

**So many rock drummers are bathed in sweat during and after a performance. What do you do to keep the sticks in your hands?**

Several things. I wear wrist bands for control of the sweat. I also have pitcher's rosin next to me, and I sand all the gloss off my sticks so they won't get sticky. And I have a towel with me, too and I rub my hands with sandpaper.

It's all a matter of removing obstacles for yourself ... of giving yourself the best possible chance to do well. Like running three or four miles to build up my lung capacity. That helps build up my endurance so I get that rush inside my body that will keep me from tailing off at the end of a night. A lot of little things can help. I have this tennis wrist builder I found in Los Angeles. It has two handle bars with a wheel between them to increase the tension. It may not help a lot, but it doesn't hurt. And I've found out that the Adidas tennis shoes are best for me to drum with. Everything seems like a detail, and it is, but it adds up for the way a drummer can help himself do anything. For instance, I do this (spreads hands out on table and presses down on them). I discovered that I unconsciously hold my hands as though I'm playing the drums when I walk around town, or relaxing. Pressing my hands down, and stretching the palms releases the pressure.

**Any further tips for drummers getting into it now?**

This isn't a tip, really, but it did happen. Harvey Mason was recording in Los Angeles, and the producer was hung up on the psst sound everyone's doing on the high hat. So Harvey said okay he'd do it. On the next take, the producer was listening but not watching, so Harvey took out an aerosol can and gave the producer a whole gang of pssts from the can, and the guy loved it.

**In general, what you've been saying is that a drummer who wants to succeed has to be prepared physically, mentally and technically.**

That's right. Try things. Listen. Innovate. Play your drums at home by yourself, and experiment. Or play with a band, any band, anytime you can. Never be satisfied, and be ready. There's a lot of competition out there.



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# THE NAKED REVOX PART 2

The first Revox A77 was introduced around 1966 and has undergone a continuous process of development ever since. The chart shows some of the more important changes and the serial numbers when they occurred with approximate year dates, as it would take about a year for the supply pipeline to empty and the new model to reach the shops.

Modification to the one hole head mounting occurs quite early on in the Mk 1 development, and it is not advisable to consider buying an earlier machine. The second modification shortly after, was to modify the brake mechanism to make it less fierce and to stop it stretching the tape. The third, and most important, was the tape feeler arm mechanism which visually distinguishes the Mk 2 from the Mk 1 and can be found just under the left hand reel next to the head cover. It is a pin (about 3/16" diameter) protruding 1" from the cover and moving in an elongated slot on an arc next to the ball race guide. The back of the tape passes over the pin and its function is to stop the tape snapping taut over the heads and bouncing off when the start button is pressed. Before this mod, a blip of unerased sound was left at the start of each new recording, so the feeler conversion kit at £11.99 (plus fitting and VAT) is a worthwhile investment for Mk 1 owners who wish to update to Mk 2.

A change in the front panel moulding both in material and detail was also made at the Mk 2 stage as the previous front had a different expansion rate to the shell which covers it and bowed out badly, visually distinguished by a strip between the VU meters on the Mk 2. When doing

a cosmetic update and converting the appearance to Mk 4, it is necessary to also change the front panel of the Mk 1 before attempting to fit the shell which is only about 1mm thick and carries all the labels for control functions.

There then followed six different motors during the run of the Mk 2 so it would be advisable to look for a Mk 2 having the final type motor. By the time the Mk 3 was reached around 1970, the development was almost finalised and the Mk 3 is distinguished visually, apart from the grey lower shell, by the change to white VU meters with a small red window in the centre to indicate the "record" mode. Additionally, an extra bulb was fitted to illuminate the VU meters when the power is on. This modification can be fitted for around £25 to earlier models and involves recalibration.

The current Mk 4 was introduced around 1975 and is built entirely in Germany with the exception of the capstan motor which is made at Studer in Switzerland. The most important improvement was the Mk 4 heads which have a life five times that of the earlier design and which can be fitted for around £50 to any machine. From a visual aspect, the Mk 4 has a dark grey-green lower shell and some new (and much better) knobs with solid skirts replacing the old perspex see-through type which tended to go yellow with age and be wobbly, all the new buttons and the

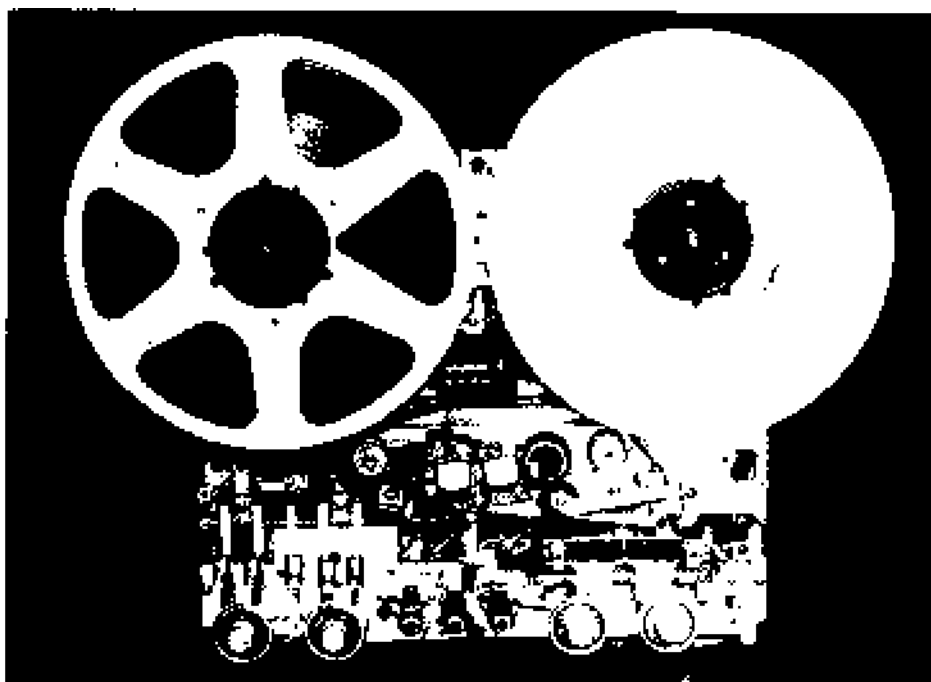
edges of the knobs and skirts having serrated aluminium edges. The new head cover of dark grey plastic replaced the previous brushed aluminium on later Mk 3's.

Buying a secondhand Revox is a fairly safe bet, provided the price is right. But it's worth bearing in mind that it will probably be with you for a very long time, so the newer the better.

After checking the serial number, found under the hinged flap at the back, examine the heads to find the approximate age and true Mk. Remove the reels, lay the machine on its back in a good light and pull off the head cover. If there is a lot of oxide caked round the heads, it's pretty obvious the machine has not been looked after. You could ask if it has been regularly demagnetised as it's important to demagnetise once a month so that the high frequency performance is maintained. Next, measure the flat wear mark on the heads and make sure it is less than the 4mm which means replacement. If it is close, it's an excuse to knock the price down a bit as the new heads will cost £50, although if the price is right this can be an advantage, to start off by having the machine serviced and fitted with new heads, as it will then be performing like new. If the machine is said to be fitted with output amplifiers, and you will pay a bit more than a deck for this, check by plugging speakers into them. Or, if this is not possible, put the machine in a vertical position, remove the reels and, after taking out the four Phillips screws from the back and removing the remote multi-plug, gently walk the chassis out of the case. You will find the amplifier cards plugged horizontally to the bulkhead next to the transformer. The fact that there is a button on the front of the machine marked "speakers off" means nothing as all decks are supplied ready-wired for the cards to be just slotted in. They are 8 watts per channel output and can be obtained from the main agents, should you wish, for £31.83 each. Check for genuine high speed if this applies. Having kicked the tyres, so to speak, now for the road test, or a check on all the functions.

To test the playback, it is much easier if there is a good hi-fi to connect up to with preferably a stereo tuner as a source for record. If not, you will need a mike with a jack plug and a pair of low impedance headphones for source and replay.

There are two things to check the mechanics, which is the three motors, brakes, pinch wheel, controlled by five



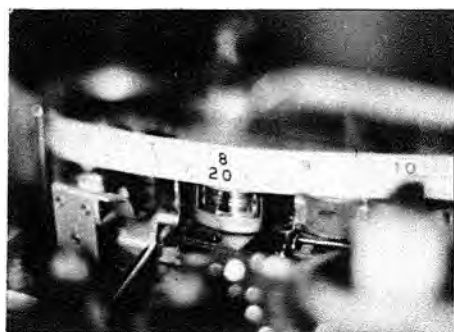
# by Alan Holmes

solenoid push buttons, and the electrics which is the record, replay, monitor, and channel selection functions. By testing the electrics, the mechanics will also be checked.

Thread the machine with decent recording tape and select 7½ and the appropriate 'reel' size on the power switch. The red power-on light should come on together with the magic eye bulb which you can see with the lid flipped down. Press the "play" button, let the tape wind a few turns, press "stop" and reset the counter by the button beside it. From the left of the machine, set the output to 10, the skirt to "stereo", the next knob to "centre balance", the skirt to "input". Set the channel 1 volume to maximum (10) and the skirt to "mic lo", ditto for channel 2. Next to the VU meters are the press on/press off recording channel selections; press them both off. Press the start and record solenoids simultaneously and the machine should start. Press on channel 1, leave for ten digits on the counter, press off channel 1 and on channel 2 for ten digits, then press 1 again so both meters are lit for ten digits. Rewind, and connect the output which should have been unplugged, or the headphones. Play back quite loudly through the hi-fi while selecting the appropriate channels on the left-hand skirt, 1 for the digits, 2 for ten, stereo for ten. You should hear a smooth, rustling hiss without any crackles or pops apart from the noise of the selectors.

Reset the input volumes to try a recording from the tuner or disc and switch it from "input" to NAB on the monitor selector. There should be no audible difference between them after setting the output volume to match the levels. Rewind and play back the piece while switching from 2 on the monitor to the source on the hi-fi amp. Again, no audible difference should be heard.

You may notice, when recording in stereo with both channels selected, that the volume controls cross over, volume 1



Measuring flat wear mark in head

controls meter 2 and vice versa; this is correct. If all this has been satisfactory then the record and replay circuits are working properly. You can check the sound-on-sound track transfer by selecting record channel 1 channel two off, plug a mic into input one and with the level on the meter set, sing or talk and record on the first track, change the skirt from "mic" to "1 to 2". Release "record 1", press "record 2", and the volume of channel one will now act as the transfer volume when the mike is put in "input two" which will control the mike. The channel one volume will go from the 3 or 4 for the mike to 7 or 8 for the transfer. Turn the monitor to channel two and record a new voice. Playback, and the two voices should now both be on channel two.

The wow and flutter can be checked by recording a piano or plugging a guitar in on "mic lo" and recording long notes and check for any chinese wobble effect. There should not be any audible tremor.

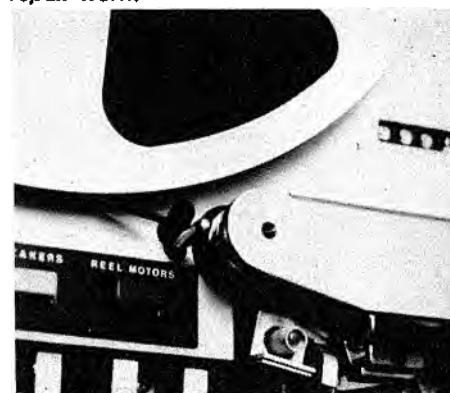
Apart from the click of the solenoids when the buttons are operated and a slight whirring when gathering speed in fast forward or rewind, the operation of the mechanics should be smooth and silent. So, having checked the electrics in record and replay, listen carefully for any wow and flutter or mechanical noise. Measure the heads and check the serial number and there is no more to do but form an opinion and act accordingly. It is very unlikely that, apart from head replacement, any faults should cost more than £50 to cure.

As the new owner of a Revox, don't forget to budget for tape at around £8 a 10" spool plus NAB adaptors if you want to use professional tape. Then there is a splicing block for joining the tape when it's cut or accidentally snapped, plus some leader tape and small empty spools if you are making demos, not forgetting splicing tape to stick it all together. A couple of rolls of tape and all the other stuff can easily come to £30 or more, not to mention a demagnetiser if you don't have one. You will also require a spare 10" empty spool which could be around £5.

There are some very useful accessories that you might feel you can't do without — a 5 meter remote control will save a lot of getting up from the piano or guitar every time you make a mistake and have to rewind and costs around £25. An operational reel cover which fits over the reels and top part of the machine keeps the dust out and saves having to remove the reels every time you finish for the day. It also enables

you to see what's happening while it's working and costs around £28. Very useful for taking the Revox to record a gig or rehearsal is a vinyl jacket with pockets for the reels to prevent getting any scratches or marks on the investment, at around £10.

Many thanks to the service and sales departments of F.W.O. Bauch Ltd., who are the main Revox and Studer agents in England. Any queries should be addressed to them at 49 Theobald Street, Borehamwood, Herts. WD6 4RZ, (Tel: 953 0091) along with any conversion or repair work.



The feeler arm which tells a Mk2 apart from a Mk1

## REVOX A77 DEVELOPMENT

G prefix German  
S prefix Swiss

Approx. Year	Mk.	Details	Chassis No.
1966	1	Heads to one hole mounting	G00000 G007300 S009307
		Brake system modified	G011368 S018080
		Improved tape tension feeler arm	G019369 S019745
1968	2	Callibrated for Agfa PE36 tape	G021500 S020200
		Final change to capstan motor (of 6)	G025100 S024960
		Change to white VU meters with record light in centre. Dark grey plastic drive cover. Light grey shell. Revised skirts. Dark grey head cover.	G055000 S045460 060483
1970	3	Permalloy heads with 5000 hr life. Grey green shell. Aluminium control edges. Revised Lid. Servo motor board changed to IC's for easier vari speed conversion.	G only G145200 G182467
1975	4		

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
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## Guide to studio effects

In previous editions of this column, I've used names and phrases like Kepexes, Gain Brains and tape-phasing, which may have been somewhat mysterious to you. Well, this month, we're going to take a look at some of the tricks and special effects used in studio sound recording and try to explain what they do and why we need to use them.

I suppose that there are two basic categories of "effects": those that are obvious sound effects like phasing, for example, and those that are used like tools to facilitate recording from a technical viewpoint, which are not so obvious in an audio sense except to the initiated listener. I'm referring to things like limiters and Kepexes, so let's deal with those first.

The limiter, or levelling amplifier, to give it its true name, is often used when actually recording and not just for mixing, which is normally when effects are applied. Let's suppose that we're recording a vocal overdub, and that we've obtained a vocal sound that everyone is happy with, having used the right microphone and the right desk equalisation. Now, with a recording subject like a voice, the commitment to tape of that voice in a successful and undistorted manner requires that the level, or volume of signal from the microphone, be as constant as possible. With the vox humana, it's impossible for a singer to perform with all the expression he would desire if he is to also concentrate on maintaining a set level of volume from his larynx. So, we insert a limiter in the line between the mike and the tape machine and the limiter then acts like an automatic volume control. When a note from the singer is a bit too quiet, it turns up the level, and when a note is too loud, it turns down, so that the whole performance from the vocalist goes to tape within a few dB's of level at a set volume. The effect is really levelling by amplification, thus the name "levelling amplifier".

Another device that is used when actually recording, as well as when mixing, is the Kepex. There's no clue in the name as to the use of the equipment, as "Kepex" is a manufacturer's name. Kepexes are one of many products manufactured by an American company called Allison Research and we'll hear more of their gear a little further on in this article. The best way to explain the operation of the Kepex is by an example of its use. Let us suppose that we're recording a drum kit and that we've mixed up the snare and the hi-hat separately, and routed them to separate tracks on the master tape. We may have done this so that we can have independent control of the hi-hat in the mixing stage, perhaps to put some sort of effect on it.

Well, as you know, the snare drum and the hi-hat are right next to each other and, consequently, their respective microphones are very close to each other, so that there is a lot of leakage of hi-hat sound onto the snare drum mike. Now this is when the Kepex comes into its own. The crack of a snare drum beat is substantially louder than the "snick" of a hi-hat beat so, if we insert a Kepex into the snare drum mike-line, the following happens: we set the Kepex which is, in effect, a sophisticated noise gate, to allow past only a signal of a certain pre-determined level or above, so that only the snare drum beat sound passes through the Kepex. The hi-hat beats, not being the same volume, fail to "trigger" the Kepex, so that they are not heard via the snare mike. Thus, we have artificially preserved the separation of sounds on tape and kept the snare and hi-hat totally independent. This is only one of the many similar uses of noise gating for which the Kepex may be used.

Probably one of the most recognisable sound effects on record is phasing. Everyone has heard phasing and everyone knows what it sounds like since its first usage on tracks like "Itchycoo Park" by the Small Faces back in the mid-sixties. The way phasing was done then is often the way it is done now; that is, by using another tape machine running at a very slightly different speed to the master tape machine. The second machine is recording and playing back the sound of the instrument to be phased and this signal is mixed with the original from the master tape. But, because the second machine is running at

a tiny speed difference, we are hearing the original played against the other, slightly "vari-speed" version. This has the effect of throwing the wave-forms of the notes "out of phase" with each other so that they slightly cancel and slightly reinforce each other. The result is the familiar, rushing, swoopy sound that we call phasing.

The tape method is still arguably the best, although electronics manufacturers have come up with "black boxes" which do the same thing, and are far less hassle to set up. Furthermore, companies like MXR and others have built and sell even less sophisticated versions of phasers that you can use yourself outside the studio, connected directly to your guitar or piano or whatever else you choose. This is often the way; a studio effect becomes popular to the ear, and induces the design and marketing of an effects box for stage use.

Another device from Allison Research is something they call the Gain Brain, which gives you a hint of what it does. It's a bit like a specialised limiter, really, but one of the ways you can use it is as follows. Let's say you are recording congas or tom-toms that have a fast decay to their sound, and you wish to lengthen that decay. Then, you simply introduce a Gain Brain set up in such a way that when a beat from the instrument occurs, and begins to die away, the gain brain winds up the signal level as fast as it is naturally decaying, rather like turning the volume of your stereo up as a record fades out. You can also use them to artificially add sustain to guitar notes without the distortion normally associated with amp sustain.

Although it may be overlooked echo is an important and indispensable studio effect and, used carefully and intelligently, can provide perspective and three-dimensional proportion to a finished mix. But there are probably more ways in which echo is used than you may have imagined.

Firstly, the echo effect itself is usually provided by echo plates, which are large spring suspended sheets of metal through which the signal of the instrument to be echoed is fed. The length of the echo effect can be varied from one to ten seconds or so, which immediately provides for varying effects for different instruments. Then you can try using a "delayed plate", as it is known. To obtain this

interesting echo effect, the signal of the instrument is sent to another tape recorder, recorded, and then almost immediately played back, and sent to the echo plate. The overall effect when heard is that the guitar chord or piano note or whatever appears, followed by a slight delay, when its echo then appears. This is especially beautiful on electric pianos. Of course, you can use a mixture of straight (i.e. untreated) plate echo and a delay plate echo as well to create other echo textures to enhance the overall sound. Also, treating the echo signal itself through some device like phasing can be extremely interesting. With this idea, the effect or sound alteration is not applied to the actual instrument itself, but only to the sound of its echo. Introducing the stereo concept to echos can be fun, with the ping-pong effect of having an instrument on one side of the stereo, and placing its echo on the other. But I'll be continuing with lots more studio effects explanations and games next month, especially on the subject of when to use effects and why.



*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 He recorded the "Peter and the Wolf" album which sold over 250,000 and then met and joined Brand X. Currently producing Rod Argent, Bill Bruford, and others, as well as recording with Brand X.*

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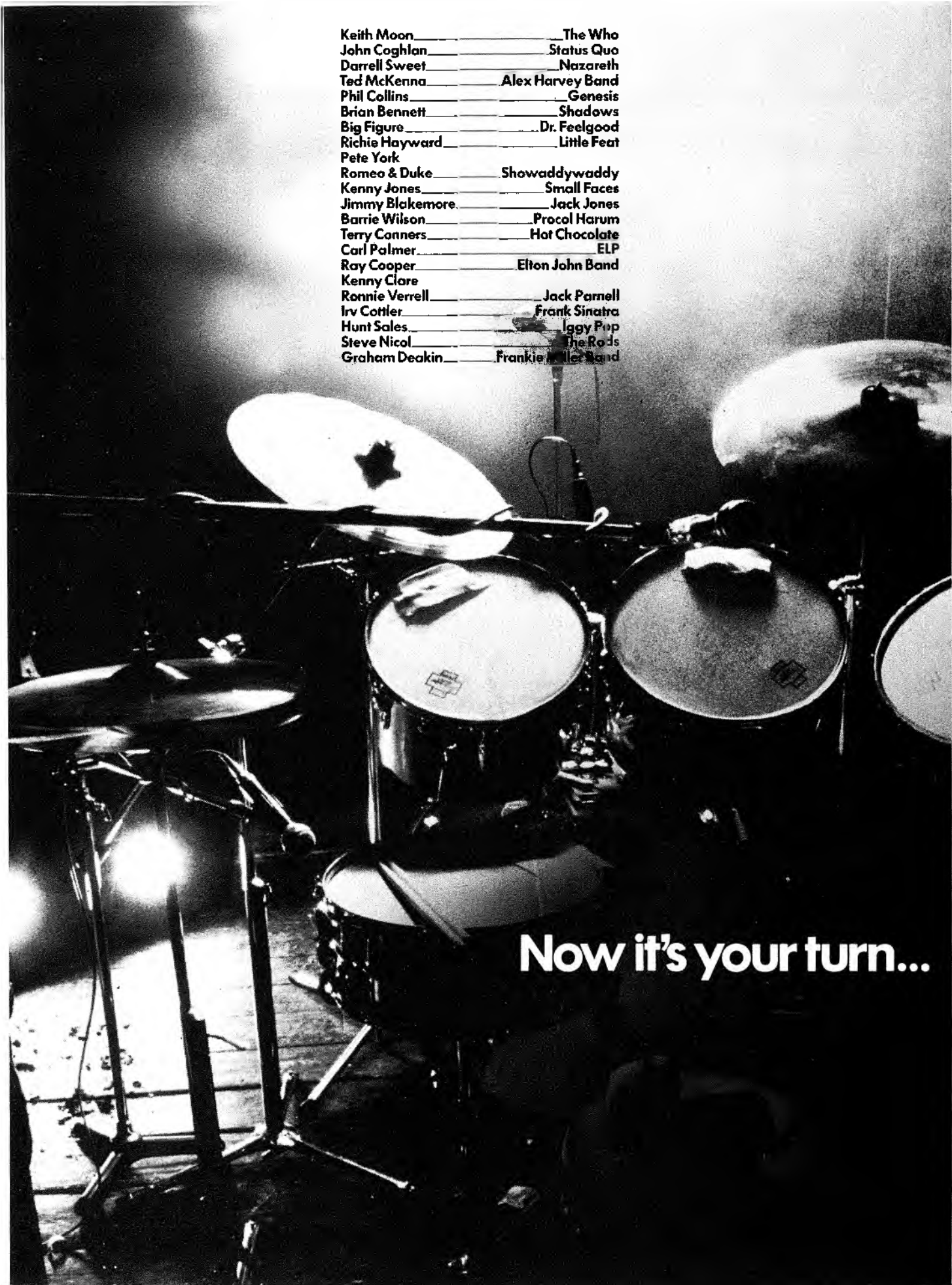
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Jimmy Blakemore	_____	Jack Jones
Barrie Wilson	_____	Procol Harum
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Carl Palmer	_____	ELP
Ray Cooper	_____	Elton John Band
Kenny Clare	_____	
Ronnie Verrell	_____	Jack Parnell
Irv Cottler	_____	Frank Sinatra
Hunt Sales	_____	Iggy Pop
Steve Nicol	_____	The Rods
Graham Deakin	_____	Frankie Miller Band

Now it's your turn...

# THE VOCAL PROJECTOR

## A reasonable alternative to the "Black Box Blues"

After extensive research into the soundman's "response vs. portability" dilemma we've arrived at what we feel is the ideal solution...The Peavey Vocal Projector. The Vocal Projector system is a compact, highly portable system that maintains the wide frequency response of the bulky theater type "Black Box" enclosures.

These new enclosures are bi-amp compatible and employ matched low, mid, and high frequency components in a three-way system that is crossed over by a precision inductor/capacitor type crossover network.

Lows are handled by a super heavy-duty 15" driver employing a 3½ pound magnet coupled to a 2" aluminum voice coil assembly.

Low frequency is enhanced even more by the Vocal Projector's ported, horn loaded enclosure.

The mid range of these systems is provided by a high quality folded horn. This horn is coupled to a motor/driver assembly with a 1½" voice coil wound on an extremely heat resistant phenolic coil form.

The extreme high frequencies are reproduced by the popular Piezo super tweeters, and add response to 20 KHz.

High quality, selected components in a well designed system make the Peavey Vocal Projector unmatched in value...a truly outstanding alternative to the "Black Box"

Distributed in the United Kingdom and Ireland by  
**PEAVEY ELECTRONICS (U.K.) LTD.**

49, THE BROADWAY, HAYWARDS HEATH,  
SUSSEX RH16 3AS, ENGLAND. (Registered Office)

TELEPHONE: (0444) 58301

TELEX 87265



215HT

\*Two 15" drivers, two mid horns, two Piezo tweeters in a 4 ohm enclosure.



115HT

\*One 15" driver, one mid horn, two Piezo tweeters in a 8 ohm enclosure.



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# OTARI

## The unusual masterpiece: half-inch, eight-track. Otari MX5050-8SD for discriminating recordists.



If you have been thinking eight-track machines are bulky and costly, this unusual one will change your idea. It's exceptionally compact, yet comes with every feature critical professional applications require. DC-servo capstan motor for less than 0.05% wow/flutter, with  $\pm 7\%$  pitch control. 63 dB S/N and greater-than-50 dB crosstalk. Selective reproduce on all eight tracks. Motion sensing control logic, front panel edit and adjustable cueing control for fast-mode monitoring. Front adjustable bias, record equalization and output level. 600 ohm

+4dBm fixed output with XLR connectors. And it comes with the latest plug-in card electronics. The compactness and performance make it ideal for live recording.

In short, the MX5050-8SD is an exception of eight-track professional recorders with performance, reliability and economy internationally proven in hundreds of applications producing high quality 15 and 7-1/2 ips masters. For the full story of this unique model, get in contact with your nearest Otari distributor.

Please send me details on  
**MX5050-8SD**

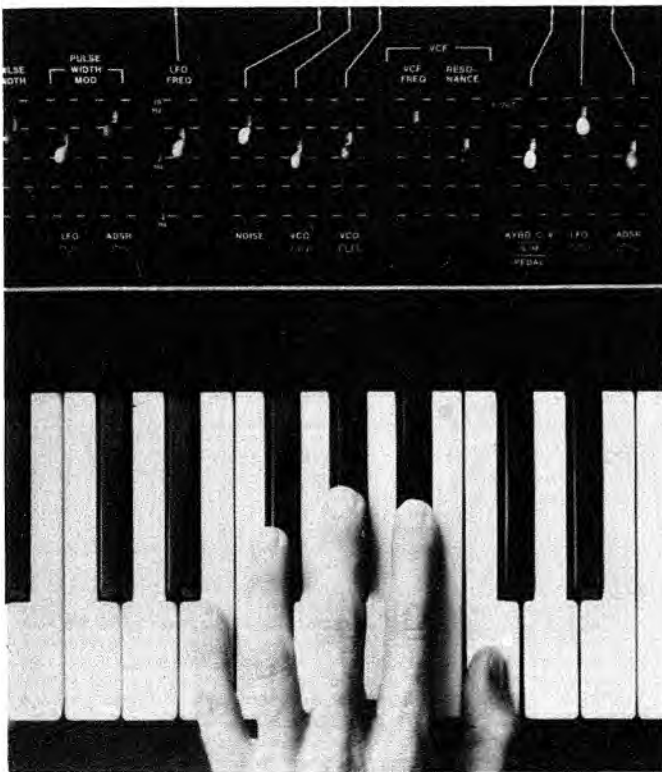
Name \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

IM

Japan: Otari Electric Co., Ltd., 4-29-18 Minami Ogikubo, Sugiyama-ku, Tokyo 167, Japan U.K.: C.E. Hammond & Co., Ltd., 111 Chertsey Road, Byfleet, Surrey KT14 7LA  
France: Reditac, 62-66, Rue Louis Ampère, Zone Industrielle des Chanoux, 93330 Neuilly-s/Marne West Germany: Peter Strüven GmbH, 2 Hamburg 53, Bornheide 19  
Belgium: Trans European Music S.A., Koeivijverstraat 105, 1710 Dilbeek, Brussels Italy: Exhibo Italiana S.R.L., 20052 Monza, Via F. Frisi, 22  
Switzerland: Audio Bauer AG, CH-8048 Zürich, Bernerstrasse-Nord 182, Haus Atlant Australia: Klarion Enterprises Proprietary Ltd., Regent House, 63, Kingsway, South Melbourne, 3205



# THIS IS WHERE TOMORROW'S GREAT MUSIC IS COMING FROM.

We think musical styles change because musical talents change.

There is hardly a musician making money today who doesn't know as much about recording music as he does about playing it. And recordists know as much about playing music as they do about recording it.

Because both know the equipment that captures music can also be used to improve it.

So while musical styles may change, the interdependence of musician, recordist, and the instruments they use will not. And that is the reason for the TASCAM Series by TEAC.

For not very much money TASCAM lets both musician and recordist get their hands on mixers and recorder/reproducers that let both tailor their music their way.

For every kind of music, for every kind of need, at home and on the road, by price and application, everything we make

has the same goal as everything you make—be the best.

Because it still takes great talent to make great music.

## TASCAM SERIES BY TEAC®

A new generation of recording instruments for a new generation of recording artists.

**TELEDYNE ACOUSTIC RESEARCH**  
HIGH STREET, HOUGHTON REGIS, DUNSTABLE, BEDS. LU5 5QJ

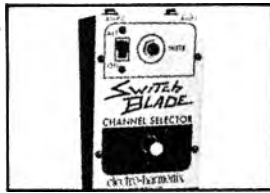


The Model 5-EX shown with four optional 201 input modules. Model 5 shown with optional 204 talk back/slate module.

# electro-harmonix

ON SALE NOW...

AT LEADING MUSIC STORES...THROUGHOUT THE WORLD...AT  
**Wholesale Prices**



## INSTANT SWITCHING BETWEEN ACCESSORIES

The SWITCH BLADE is a simple switching device that enables a musician to get a tremendous amount of flexibility from his set-up. You can now get full use from your existing two-channel amp, switching between channels instantly. You can preset volume and tone (rhythm and lead) settings and switch them instantly. You can combine two channels with the flick of your foot. The switch can be used for switching instruments to two different stage amps in any combination. If you're using multiple electronic devices in combination settings, you probably have to tromp down on all of them to get the sound you want... Well, save the rubber on your sole. The SWITCH BLADE enables you to pre-activate all your effects and switch your guitar or other instrument to either the interfaced effects or back to amp directly—instantly! using just one switch. The SWITCH BLADE never needs batteries—now, that's a switch!

5 1/4" x 3 3/8" x 2 1/4" x 1 1/2"



## GET RID OF UNWANTED NOISE

The SILENCER, a line noise eliminator or "noise gate," cuts out the hisses, hums, and other unwanted background noises produced by electric instruments and sound effects that can ruin a combo's stage presence. It operates on the principle that while most instruments and effects produce hisses and hums, this noise is at a much lower volume level than the music that is being played, and therefore not audible. However when an instrument idles, the extraneous noise is no longer masked by the music, and it becomes an up front sound. The SILENCER works like an extra hand on a master volume control. When the music starts it instantly turns up the volume, when the music stops it instantly cuts the volume down to zero. The noise disappears.

5 1/4" x 3 3/8" x 2 1/4" x 1 1/2"



## THE QUEEN TRIGGERED WAH IS THE SUPREME ALL-FUNCTION WAH

Resonance control adjusts the wah from razor sharp to ultra-mellow. Low Pass or Band Pass outputs give a choice of the standard wah or a fuller tone sweep with trailing low frequency responses. Built-in Envelope Follower triggers automatic filter sweeps for today's popular synthesizer effects, which can be overlaid at the same time on a range of wah effects with complete versatility. Bass and Treble Boost controls provide for pumping lows and/or fine-pointed highs. Adjustable Q, Range, and Filters, as well as Trigger, give sounds from Tape Reverse Simulation to Hendrix to Shaft and beyond. Because of its unconventional voltage controlled filter design, the QUEEN has the low noise and smoothness of a light-operated pedal without its fragility or heavy power consumption. The QUEEN TRIGGERED WAH is fantastic with bass and keyboard as well as guitar.

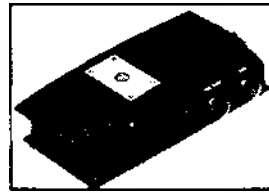
13" x 6" x 3 3/4"



## A FUZZ WAH VOLUME PEDAL

The MUZZ FUZZ CRYING TONE WAH WAH Pedal combines two of the most useful and popular guitar effects, fuzz and wah, with one of the most useful control functions, the volume pedal. This highly efficient unit is the offspring of the Big Daddy of fuzz tones, the BIG MUZZ PI, and the durable dual function wah, the CRYING TONE pedal. Its capabilities include fuzz tone alone, wah alone, fuzz and wah combined, and any of these combined with volume control.

13" x 6" x 3 3/4"



## THE STURDIEST WAH IN THE BUSINESS

The CRYING TONE WAH WAH Pedal has many of the features players have been looking for... a 4-position Tone Bank that gives the player four ranges of the tone spectrum to sweep through as well as four different attacks; a Reverse switch so the player can sweep the frequencies in either direction giving him an "aawaw" as well as a "wahwah" effect; a Mode switch which deactivates the wah wah effect and converts it into a volume control pedal, and a greater sweep in the foot pedal itself, so the player really can get that "crying" tone or make his axe talk the way Jimi Hendrix did. As a caper, this pedal with its sealed pots and metal bridges over pot shafts is the most ruggedly-built pedal of its kind—bar none!

13" x 6" x 3 3/4"



## SMALL STONE THE STATE OF THE ART PHASE SHIFTER

The most advanced Mini-Phaser available anywhere! Exclusive "Color" switch transforms the mellow rolling, full-bodied milky phasing to the sweeping swooshy phasing made famous on early Jimi Hendrix recordings, and previously only available on special studio equipment. Rate dial sets the speed of the shift, from a slow swelling to vibrant warble. The SMALL STONE is highly efficient, having the lowest battery power drain of any popular phaser. Also it's AC/DC. Plug a 9V battery eliminator into the back and you run on AC only. Low noise, high quality, and fantastic effects make this a necessary addition to any guitar or keyboard.

5 1/4" x 3 3/8" x 2 1/4" x 1 1/2"



## FOR UNEQUALLED PHASER VERSATILITY

The BAD STONE Phase Shifter provides the professional musician with unequalled phaser versatility. Extra stages of phase shift plus a continuously variable Feedback control give your axe or voice a light touch of color, a pounding swoosh, or any sound in between. The Rate control will take you all the way from slow chorus rotation through vibrato into spacey ring modulation. The BAD STONE'S exclusive Manual Shift allows you to stop the sweep at any point for a whole range of new tone colors. You can sweep the phase shift in rhythm with your playing or for special accents or by foot with the HOT FOOT Universal Pedal. OR Get the BAD STONE Phase Shifter Pedal model—all the features of the BAD STONE floor unit plus built-in foot-controlled phasing. Our heavy-duty pedal design places the Bypass and Auto-Manual footswitches forward of the pedal so as to avoid accidental switching during a hot solo. As an extra feature the BAD STONE Pedal incorporates a Color switch for a choice of standard phasing or pitch-modulated vibrato.

BAD STONE Box 6 3/4" x 5 1/2" x 2 1/4" x 1 1/2"

BAD STONE Pedal 13" x 6" x 3 3/4"



## ZIPPER: THE ULTIMATE ENVELOPE FOLLOWER

When it comes to synthesizer effects for guitar, the ZIPPER has it all... easily adjustable harmonic range and intensity, an LP-BP control switch to provide equalization, PLUS our unique Filter Form/Attack control with two fantastic and different contours, a sweep from low to high with a moderately fast return, or for a real whipping synthesizer effect, a sweep from low to high, but snapping

quickly back. The ZIPPER is especially refined because its wide range of effects are completely flexible and easily varied. This is possible because we have included the functional controls that are found in the envelope follower modules of expensive keyboard synthesizers, while maintaining the famous Electro-Harmonix quality and low price. The ZIPPER will also give your bass or clavinet these fantastic synthesizer sounds. AC/DC.

6 3/4" x 5 1/2" x 2 1/4" x 1 1/2"

# electro-harmonix

FOR THREE DIFFERENT AUTOMATIC DEMONSTRATIONS, DIAL (212) 741-1797, (212) 741-1799, AND (212) 242-7799.

## Wholesale Prices



### PUT ANY KNOB UNDER FOOT CONTROL

**HOT FOOT** Universal Pedal can turn any accessory, made by any manufacturer, into a foot pedal. How does it work? Simple. Just pull off the knob of the control you want to work with your foot and attach the screw at the end of **HOT FOOT**'s flexible shaft and presto! you've got another effect under foot control! It's a simple invention, but brilliant. There are no electronics to worry about. No matter what new types of sound effects are created in

the future, **HOT FOOT** will never become obsolete! Also comes in a **HOT FOOT** Universal **PAN** Pedal model, for special effects using two amplifiers or accessories.  
13" x 6" x 3 3/4"



### E-H DEMO RECORD GETS DOWN TO IT

This new LP, produced by Elliott Randall using top New York City studio musicians, is a contemporary, highly listenable set of music ranging from funky blues to space jam. It demonstrates ingenious uses of our most popular effects devices—uninterrupted by live hype. You'll hear 6-string guitar multiplied to 12 by the **ELECTRIC MISTRESS** Flanger, voice doubled with sax-like sound

through the **OCTAVE MULTIPLEXER**, plucked strings silkened into bowed strings by the **BIG MUFF PI**, and many more startling transmutations using our "STONE" series of Phase Shifters, **GOLDEN THROAT**, **DELUXE MEMORY MAN**, **DOCTOR Q**, **FREQUENCY ANALYZER**, and **HOT FOOT**. Hip liner notes by *Village Voice* music critic Carman Moore described how the effects are created. A must for every electric guitarist. Albums are available at your musical instrument dealer, or you can send \$3.00 to Electro-Harmonix Work Band, 27 West 23rd St., New York City 10010.



### STRETCH YOUR GUITAR NECK UP TO 19 FEET!

Try the effect that musicians in Europe like Kraftwerk are using. The **FREQUENCY ANALYZER** can compress the neck of a guitar down to two feet or stretch it up to nineteen feet. This highest-quality Ring Modulator available is a brilliant accessory for all brass and woodwind instruments. Blow horn through the **FREQUENCY ANALYZER** and out come three different horns in moving harmonies.

Shift the frequencies of drums, cymbals, and hi-hats. Play any note on any piano, for example a C, and out comes a D, E, B, or any note or fractional in-between note, according to the setting on the dials. Blend your regular signal with the new shifted notes. Filter control allows you to sort out high frequency components. Set any harmonic multiple desired for an *avant-garde* sound.  
6 3/4" x 5 1/2" x 2 1/4" x 1 3/16"



### OUR GREAT NEW ECHO/ANALOG DELAY LINE

Until now all echo and reverb effects relied on moving parts—springs, tape loops, and other mechanical gear that could wear out or break right in the middle of your act. Delay effects depended on digital delay lines that were fine for the studio but too expensive and bulky for onstage use. Now our engineers have put all of these key effects into one durable, reasonably-priced footswitch unit through the development of state-of-the-art hybrid techniques.

Presenting **MEMORY MAN DELUXE**. Discriminating musicians welcome the superb totally-electronic echo unit you've been waiting for. Number one in features and performance. Slapback stage echo...repeating arpeggios...delayed split stereo... "bathub" reverb...controlled feedback...vocal doubling—a range of effects effortlessly achieved that is truly astounding!

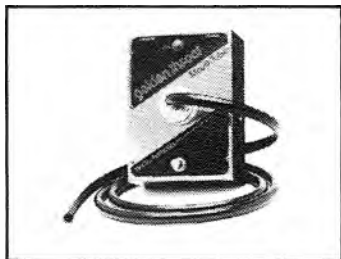
Clean noise-free operation with distortion under 1%, a signal-to-noise ratio of 60db, and a built-in **SILENCER**® Noise Gate.

Unlike competitive solid state echo units, **MEMORY MAN DELUXE** does not decrease its bandwidth as Delay is increased. The result? Crisp razor sharp highs at any echo setting for the professional performing musician.

- Wide range of Delay: 15 msec—4 sec.
- Wide frequency response, 10 Hz—100 kHz (Direct), 10 Hz—3kHz (Echo) ±3db
- Infinite echo Repeats with minimum signal degradation
- Variable gain level control and overload indicator
- Dual outputs
- AC operation with power switch and indicator

Combines with other effects for a smashing echoing flange echo-wah or echo-fuzz. Attractively packaged in a nickel-plated steel chassis with heavy duty line cord.

Also available in an economy design less indicators, level control, and noise reduction circuitry, but including special Boost switch.  
8" x 6 3/4" x 6" x 1 1/2"



### GOLDEN THROAT WILL LET YOU SING YOUR AXE OFF

This top-of-the-line mouth tube and filter enables a musician to make the unique sound recently popularized by Peter Frampton and also used by Stevie Wonder, Jeff Beck, Steely Dan, and Joe Walsh. Your mouth becomes an extension of your guitar, as the guitar music feeds up into and is controlled by the movements of your jaw, tongue, and lips. Wah, fuzz, tremolo, phasing, and many other effects are possible.

**GOLDEN THROAT** is more powerful than the competition, with a 100 Watt driver and a red light overload indicator. Its sharp but meaty sound can be produced with any strength amplifier.  
6 3/4" x 5" x 3 3/4"; TUBE—6" x 1/4"



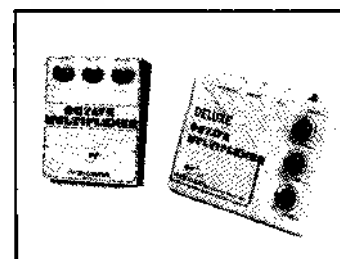
### MOUTH TUBE FLEXIBILITY WITH BUILT-IN MONITOR AMP

Now, using only one **GOLDEN THROAT DELUXE**, you can boost the range of your group *threefold*.

1. Enjoy the best mouth tube effects available by just plugging in—no need to touch a single speaker wire or disable your good guitar amp.
2. Get a 25 Watt RMS, 60 Watt peak auxiliary amp head with Volume and full-range active Tone controls.

3. Be able to simultaneously route your instrument input to the **GOLDEN THROAT DELUXE** and to an external amp for a variable blend of straight and tube sound. Puts an end to thinning out a band's sound when using mouth tube effects.

And each of these sound dimensions is instantaneously controlled by simply tapping one of two heavy-duty footswitches! AC.  
8 1/2" x 8" x 3" x 1 1/2"



### DELUXE OCTAVE MULTIPLEXER WITH ERROR-FREE TRACKING

Now you can sound like Eric Clapton and Jack Bruce playing together in lightning fast runs as the **DELUXE OCTAVE MULTIPLEXER** synthesizes a note one octave below the one you're playing. You'll get clean octave division on every guitar note with no false triggering. Five filters allow the musician to shape the harmonic content of the new note from fuzz bass to a pure deep organ bass. This device can explode the tonal capabilities of horns

into the bass and baritone range. Makes any singer sound like like Turner. The popular standard **OCTAVE MULTIPLEXER** has the same line features and throaty bass with slightly relaxed tracking accuracy. The pedal version of the standard unit gives the musician continuous foot-controlled blending of high and low notes for the ultimate flexibility of guitar/bass duets and answering bass runs.

AC only **DELUXE** 8" x 6 3/4" x 6" x 1 1/2"  
AC-DC STANDARD 6 3/4" x 5 1/2" x 2 1/4" x 1 3/16"  
AC-DC PEDAL 13" x 6" x 3 3/4"

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SHOP AROUND!!! SHOP AROUND!!! SHOP AROUND!!!

# Wholesale Prices



### CONVERT YOUR AMP INTO A STACK OF AMPS

The LINEAR POWER BOOSTERS 1 & 2 can increase the output of any electric instrument such as guitar, bass, organ or microphone. Since all amplifiers are overdesigned to more than handle the most powerful pick-ups, the LINEAR POWER BOOSTERS will let you derive optimum results from your amplifier. And it's much cheaper than buying a high-output pick-up. • Maximum setting of the volume control of one unit can make your amplifier TEN TIMES LOUDER! • The switch allows instant change from regular

instrument output to pre-set boosted output. • Increases guitar sustain. • Vastly increases the performance of all distortion devices, wah wah pedals, and other accessories. • Using two LINEAR POWER BOOSTERS will give you even more sustain. Turning up the volume level of the first one past the halfway point will shift the second one into overdrive. Using the first LINEAR POWER BOOSTER's control, you can now develop the initial bare hint of harmonic distortion to any desired degree. The second LINEAR POWER BOOSTER can control the volume of the combination. • Two models: LINEAR POWER BOOSTER-1, with a double male plug, will fit into amp or instrument! LINEAR POWER BOOSTER-2 does the same dynamite job down on the floor.

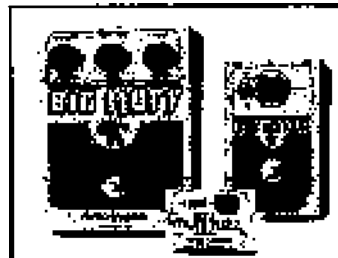
LINEAR POWER BOOSTER-1—3" x 2" x 1 1/4"  
LINEAR POWER BOOSTER-2—5 1/4" x 3 3/8" x 2 1/4" x 1 1/2"



### NEW ELECTRONIC DEVICE FOR SELF-MULTIPLICATION

Let THE CLONE THEORY Chorus Effect double your live vocals or instruments, with the fullness of studio overdubbing and the natural intermodulation of large orchestral groups. Makes voice, guitar, and horn sections—in fact, any instrument—sound bigger and richer. This new device utilizes a highly sophisticated voltage-controlled analog delay line, which generates both echo and flanging at the same time. The result is a moving chorus otherwise obtainable only with an expensive combination of delay and flanging equipment. Multiple controls can produce a delightful true vibrato and other variations. AC.

8" x 6 3/4" x 6" x 1 1/2"



### TRY HENDRIX' SWEET SUSTAIN

Jimi Hendrix relied on the BIG MUFF PI for his smooth, mellow, supple electric-lady sound. Now Santana uses this finest distortion device, high on sustain and low on distortion. Whole chords can be played with minimum distortion. It is designed for the guitarist who wants his axe to sing like a hummingbird with a sweet violin-like sustaining sound. The sustain control allows the player to optimize long sustain with a hint of harmonic distortion. The tone control allows you to control the

harmonic content, from a sweet silvery liquid to razor sharp. AC/DC. 6 3/4" x 5 1/2" x 2 1/4" x 1 3/4"  
THE LITTLE BIG MUFF PI is a compact version of the famous Big Muff Pi favored by Jimi Hendrix and Carlos Santana. Preset maximum sustain. AC/DC. 5 1/4" x 3 3/8" x 2 1/4" x 1 1/2"

MUFF FUZZ—This funkier distortion device will give the player that dirty sound which cannot be gotten from today's popular solid state amps. It gives the player that natural distortion of tube-amps used by the Rhythm 'n Blues bands of yesteryear. And now it comes with a double male plug that lets you plug into amp or instrument. 3" x 2" x 1 1/4"



### TASTE AND FEEL EACH NOTE

The SCREAMING BIRD and SCREAMING TREE are treble boosters that will give your instrument that razor sharp edge that can cut through when you're playing live. The high end of your sound spectrum will sparkle, as you can taste and feel each note.

BIRD—3" x 2" x 1 1/4"  
TREE—5 1/4" x 3 3/8" x 2 1/4" x 1 1/2"



### PUT SWAMP IN YOUR BASS

The MOLE and HOG'S FOOT Bass Boosters cut the highs and amplify the subharmonics, giving your instrument the depth, authority and heavy penetration of the foot pedals of a church pipe organ. The MOLE or HOG'S FOOT will give your axe or amplifier that thick, swamp-bottom blues sound of the Fender jazz bass used in conjunction with the old Ampeg B-15.

MOLE—3" x 2" x 1 1/4" HOG'S FOOT—5 1/4" x 3 3/8" x 2 1/4" x 1 1/2"



### WELL DONE, DOCTOR Q

DOCTOR Q is the most economical yet high-quality Envelope Follower available on the market today. Effects ranging from involuted mellow funk lines to slashing thin chops can be instantaneously and sensitively controlled through the player's use of attack and decay dynamics. The range of the filter can be preset. And as an added feature, the bass switch can be used to add a rich bass equalization without losing the thin, whipping Envelope

Follower sound on top. This makes the unit excellent for getting potent new sounds from the electric bass, as well as guitar and clavinet.  
5 1/4" x 3 3/8" x 2 1/4" x 1 1/2"



### ELECTRO-HARMONIX PRESIDENT KEEPS TWO MISTRESSES!

Our internationally popular ELECTRIC MISTRESS Flanger/Filter Matrix was much too good to discontinue just because the brand new DELUXE model has been designed with improved noise and distortion specifications, greater reliability, and convenient AC power. Rick Derringer, for example, has honored the standard MISTRESS as "the best sounding of the flanging devices." Both units

gently sweep the sound spectrum to create a prismatic array of absolutely fascinating and ethereal sounds. Both are made on earth for rising stars!  
DELUXE (AC): 8" x 6 3/4" x 6" x 1 1/2"  
STANDARD (DC or Adaptor): 6 3/4" x 5 1/2" x 2 1/4" x 1 1/4"



### MIXXXXX

The 5X JUNCTION MIXER is designed as an input-output mixer and accessory blender. As input mixer 4 mikes or instruments can be attached as inputs to obtain one output. As output mixer, amps connected to external speaker combinations can go directly to the 5X with up to four external speaker cabinets being connected to one 5X. This eliminates sloppy wire hookups and decreases set-up time. As accessory blender, instrument signal can go directly to the 5X. Up to four different accessories can be joined with another 5X, with one line then going to the amp. This facility allows the blending of any combination of distortion devices, wah wah pedals, echo effects, etc. An infinite number of connecting problems can be solved with this very functional accessory. 3" x 2" x 1 1/4"



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ALL NEW STATE-OF-THE-ART PRODUCTS AT

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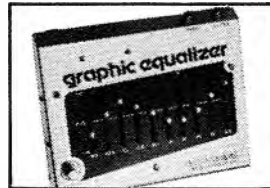


### THE NOISE-FREE MULTI-PURPOSE ECHOFLANGER

You don't need a seat on the space shuttle to make interplanetary journeys. ECHOFLANGER can take you on the greatest variety of far-flung musical trips our analog circuit design team has ever chartered. Its four basic, switch-selectable modes are:

1. FLANGE—the first reasonably-priced NOISE-FREE Flange. A professionally smooth, studio quality, wide-range sweep with tuning, feedback, rate, and width controls.
2. SLAPBACK—a short delay, high-quality echo with variable delay time. Just as quiet as the Flange.
3. CHORUS—Slapback and Flange together, at the same time, for the totally new sound of a swirling, doubling galactic concert.
4. FILTER MATRIX—this true comb filter produces chime-like effects or can be swept manually for "custom" flanging.

These stunning sounds can be further modified by a Blend switch and dual outputs to produce "stage" echo and other enhanced effects. ECHOFLANGER features a broad dynamic range, wide frequency response, and virtual cancellation of "foldback" and other extraneous noise through companding circuitry. This makes the unit suitable for keyboards and synthesizer as well as guitar. Included in the handsome, nickel-plated chassis are LED power indicator and bypass footswitch. AC-powered. 8" x 6 1/4" x 6"



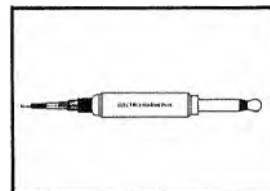
### THE 1ST GRAPHIC EQUALIZER FOR MUSICIANS WITH FEET

The new Electro-Harmonix TEN BAND GRAPHIC EQUALIZER includes a footswitch for instant changes between equalized and normal sound, a feature that is omitted on competitive units claiming to be musical instrument equalizers. An equalizer without a footswitch is practically useless in a live performance. The TEN BAND GRAPHIC EQUALIZER is a "super tone control" which can add punch to your bass without making it boomy, make your humbucking pickups sound like single coils, brighten up a muddy sounding electric piano, or add presence to vocals. With low noise, low distortion, and wide dynamic range, the TEN BAND GRAPHIC EQUALIZER is suitable for musical instruments, P. A. systems and tape recorders. 8" x 6 3/4" x 6" x 1 1/2"



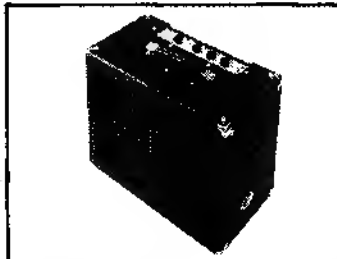
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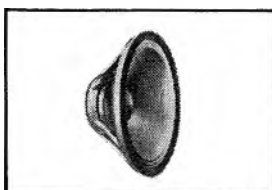
able for the peak transients essential to a really striking attack. Included are Volume and full-range active Tone controls, LED power indicator, and an exclusive Bite control to contour your sound to a fine, incisive presence. Built to take the bumps, it features materials carefully selected for their acoustic and structural properties, tough, textured vinyl covering, chrome corner hardware, and shock-mounted PC boards and control panel. Ideal for studio and club use. 24.5 lbs. 17 1/4" x 14 1/4" x 9 1/4"



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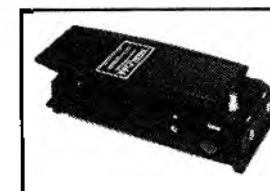
included on the STEREO SLAPBACK to allow external echo placement and blended STEREO also includes LED power indicator. AC-DC 5 3/4" x 3 3/4" x 2 1/4" x 1 1/2"



### GUITAR SPEAKERS WITH FEELING

Do your speakers take out all the soul you put into your guitar playing? Then throw out those insensitive clunkers and replace them with genuine CELESTIONS. For years these speakers have been largely responsible for the characteristic sound of the Marshall amplifiers, as well as the early Vox amps used by the Beatles. This full, rich, sustaining guitar sound is heard in concert and on recordings by Eric Clapton, Jimi Hendrix, The Who, Dickey Betts & The Allman Brothers, Ritchie Blackmore, Kiss and countless other artists. CELESTION understands that a guitar speaker isn't just a reproducer of sound, but an integral part of the sound of the instrument itself. CELESTION speakers add warm frequency response and smoothly controlled harmonic distortion to give a total guitar sound that is fat, funky and harmonically rich. Precision made in Suffolk, England, the CELESTION speakers are exclusively distributed in the United States by Electro-Harmonix.

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speech, superior wah and mouth-tube timbres are obtainable through variations in your playing techniques. The Sustain adjustment controls the degree of effect and also introduces a BIG MUFF-like sustain. AC or DC. 13" x 6" 3/4"

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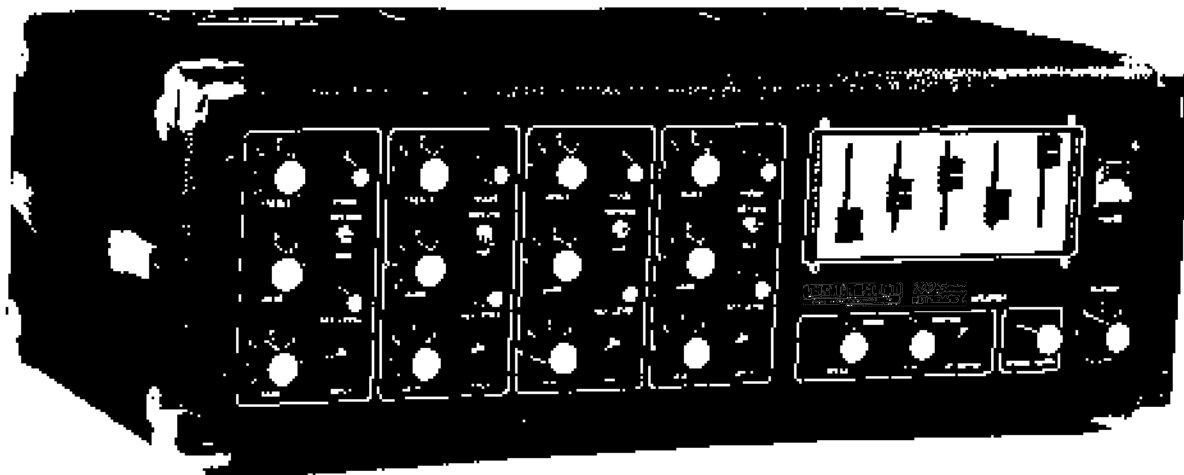
to either the built in full size reverb unit or an external effects unit such as an echo unit, and to set the relevant level on each channel separately.

Custom Sound (SST) Ltd. also developed for this amplifier a special phasing circuit capable of providing a wide range of phasing type effects (chorus, rotosound, etc.) by adjustment of a depth and a speed control. Each channel can be linked to this unit at any desired degree of blend between phased and unphased sound.

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This amplifier gives the ultimate for the keyboard player but is at a very competitive price.

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| : Reverb (or aux) Level Control      | : Master Volume Control          |
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# HAMER<sup>U.S.A.</sup> Sunburst<sup>TM</sup>

Charlie Fasch is the antithesis of what you'd expect a record company vice president to look like. He doesn't smoke cigars or wear fancy clothes and is practically a walking history book of the early American Rock era.

He was in on the first singles meeting at RCA back in the early Fifties when the company was riding the first Presley wave and decided to put Hounddog and Don't Be Cruel on the same single, a record which proved to be Presley's biggest seller. Today, Charlie Fasch is vice-president of Mercury Records and still takes an active interest in the contemporary music scene as well as taking care of the business end of the stick.

After spending so many years in the business, Charlie Fasch has some valuable advice for bands and artists trying to score record deals whether or not they are aiming for a contract with Mercury.

"We're not sure about New Wave but we're not going to ignore it," he told me in a recent interview in London. "We have set up a subsidiary label in the States which will deal with New Wave acts. This is Dip Records which is mainly an experimental label which we're going to invest a considerable amount of money in to find the talent that is around'. Dip, he explained, was an American company which expected to sign five or six artists next year with hopefully a few English acts on the roster as well.

"We try to balance our signing and we go after the established acts which become available. But we are also seeking out new talent. Established acts will be dealt with by Mercury to sort out management deals, new acts will be looked after at first by the A and R man. If an act comes to me directly I'll sign

# The Mercury Man

by Ian White

them on my own if I think they are good enough but usually I only handle the business side while the A and R men handle all the musical side.

"We are looking for acts that are unique in their own way. I'm looking for musicians who want to write and play what they feel. It is very important to us that a band writes its own material. The days of a publisher submitting songs to an artist are more or less over and now its the turn of the self-contained act that can write its own material".

Charlie Fasch reckons that musicians don't have to be stunning in their virtuosity. On the contrary, he says that it is the bands who are "young and hungry" who are coming up with the best performances when scrambling young musicians are writing from life experiences

rather than accepting the chaffeured cocoon of the big-time rock star.

"We could sign the best session men in new York if we were going for the best musicians. But that sort of line-up would not necessarily work. I like to see anything new, whether it is New Wave or Disco as long as its a new form of music that isn't being done by anyone else.

"The thing about a record company such as Mercury is that we don't own any physical assets. We feel our real assets are the contracts we hold. We're only doing a few single deals and most of the rock acts we sign are only involved with LP deals. Usually a band will sign for one LP with an option to do one more and then two more over a 12 month to 18 month period.

"To do one LP requires a considerable investment of between \$40,000 and \$75,000. Even if a band's first album didn't sell so well we would probably continue if we believed strongly enough in the potential of the group. But if eventually we get a complete zero from both the business and audience alike we would probably have to drop an act. Sometimes it happens that what we first hear on demos and in live performances doesn't always come off".

"In America we have three major avenues to expose an act. The first, and most important one is Radio. If you don't get any airplay it is very difficult to launch an album at all. Th other two outlets are touring and through publicity and press, although if the radio exposure isn't there then the other two outlets don't do so well. If you get a combination of all three of these factors you stand a pretty good chance of doing well with an album".



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# PLAYING

## PAUL BRETT: Acoustic Guitar

I find Chord exercises most helpful for co-ordinating just about everything to do with guitar playing. They sharpen, as well as discipline, the player as it can take ages to get one right. I can sit for hours practising simple and intricate patterns as they hold a kind of hypnotic texture once you get into them.

I once played some shows for the Clark Brothers (the world famous tap-dancers) and there was a part where the guitar had to play with the taps of the dance shoes. I nearly fell through the floor when I saw this part and spent a week rehearsing it. Each time the feet tapped their rhythms, the guitar had to play a series of chord runs in accompanying time, which proved to be a chord change a tap. From that time on I've always worked regularly on this particular

area of guitar playing, even though I don't use it professionally much.

### Exercise A

This is a beauty because it has everything. In simplicity, counting a slow steady 1234 you change chord on every beat in an across downwards pattern from 12th to bottom frets. The plectrum strokes are down/1 up/2 up/3 down/4 down/1 up/2 up/3 down/4 all the way. The last chord is a bit tricky when the exercise is played at high speed, but that's the fun of it. Your left hand will probably want to continue off the guitar head and out of the door. It's a good one to swear at this!

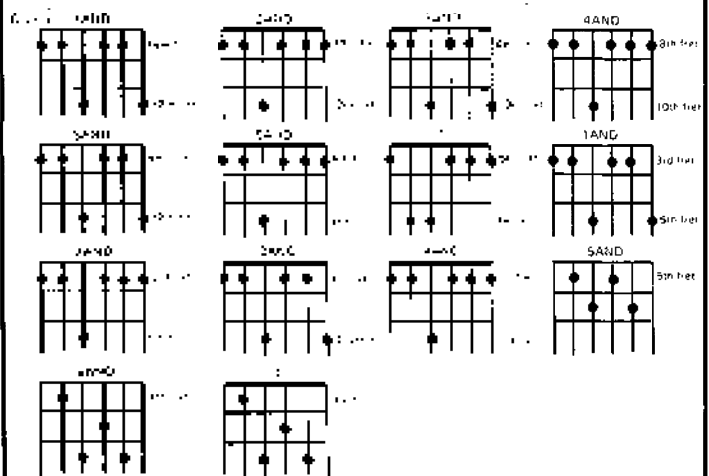
### Exercise B

This is also a tricky one as its played mostly with barre chords. It will help strengthen your first finger, left hand, as well as make you think.

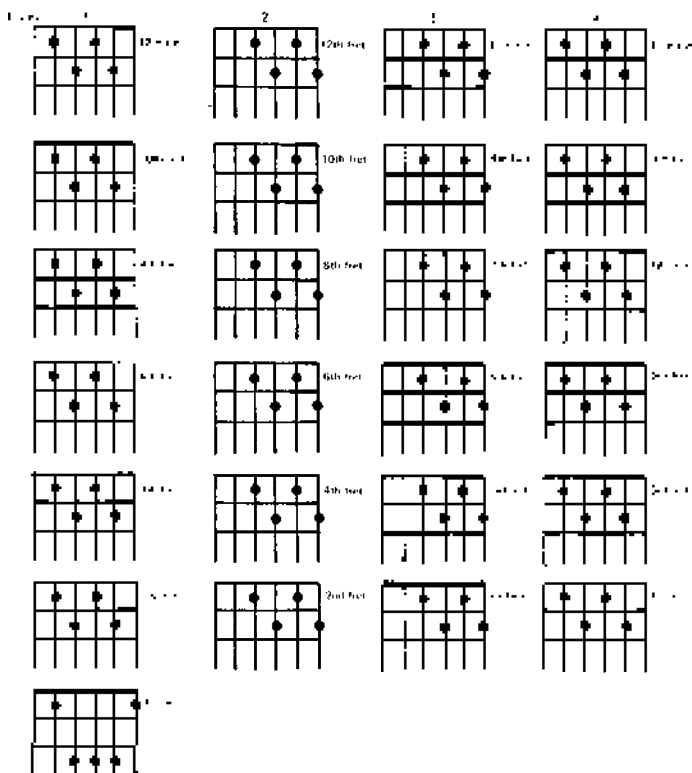
Again it's a downward progression of chords, changing overall shape on the last three chords. The plectrum strokes are down, up (one and) down up (2 and) down up (3 and) down up (4 and) down up (5 and) down up (6 and) down (7)

pause. Then continue the second half in the same fashion. Count the 1 and 2 ands etc. slowly at first, until you get the feel of it. The same also applies to exercise it. Count the 1234 slowly till you get the hang of it.

### EXERCISE B (read left to right)



### EXERCISE A | (read left to right)

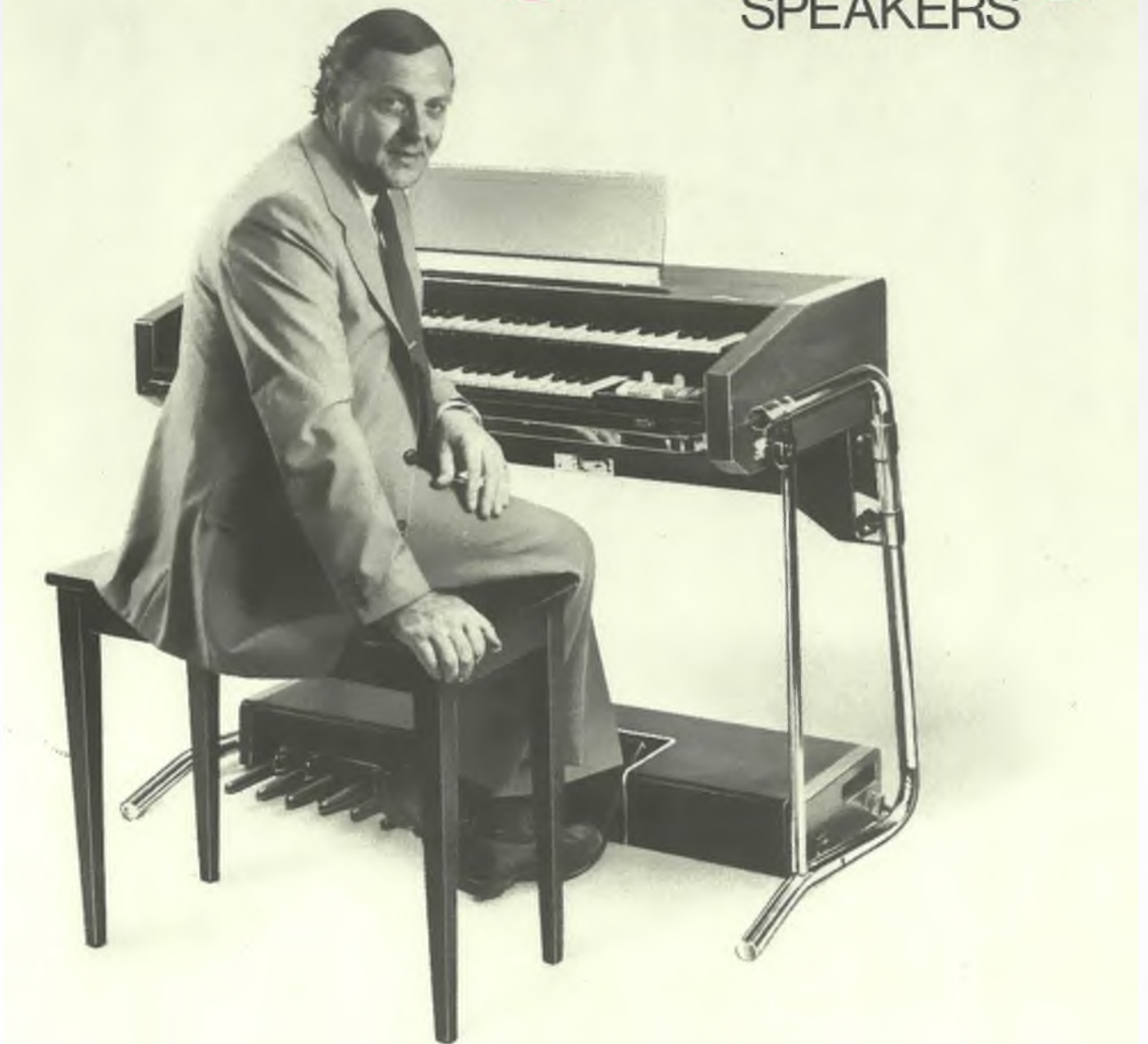


### Strings

Quite a lot of people recently have been asking me why guitar strings don't seem to hold their resonance and tone very long these days. Well my answer to that is that it's down to the consumer society we live in. Supplying the demand is not the best way in the world to guarantee quality. If guitar strings lasted you for a long time as they used to, then you would not buy so many and the manufacturers wouldn't like that would they now?

However, there is something you can do to prolong the life of your strings and that is, when you feel the quality has faded, you can take them off and boil them. Just simply put them in a saucepan of water and boil the sweat and bits of flaky finger out of them. At least they'll last you a bit longer!

# INTRODUCING *Sonorous* SPEAKERS



It gives me great personal pleasure to be able to tell you about the new range of Sonorous rotary tone cabinets which are being marketed by Boosey & Hawkes (Electrosonics) Limited.

I know of the speaker cabinet requirement of the professional organist, not only from personal experience, but those of my fellow musicians. These cabinets have been specifically designed to meet your needs on performance, portability and price.

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Approximate dimensions: Height 29½" (750 mm), Width 23¼" (590 mm), Depth 19" (483 mm).

Approximate Weight: 93 lbs.

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# ★ PLAYING ★

## STEFAN GROSSMAN: Country Blues Guitar

Country Blues Guitar offers the guitarist many styles and techniques to master. Additionally many of these ideas can be transposed onto other instructional instruments. David Lieberman, while playing saxophone in the Miles Davis Group, was studying various musical phrases from Stefan Grossman's Delta Blues Guitar book (Oak Publications). Eric Clapton has been very successful in adapting various licks from Country bluesmen to an electric guitar set-up. His version of Blind Joe Reynolds "Outside Woman Blues" and Robert Johnson's classic "Crossroad Blues" are excellent examples.

In the next six Guitar Workshop columns we will investigate various Country Blues ideas. For this month

we will study the alternating bass and how it can be used in the key of C.

Pallet on Your Floor is a very popular old blues standard. It has been done by a host of great bluesmen. It is interesting to note that this song has generally always been played the same and always in the key of C. This is unusual in that a tune will often take on different complexions as different players put their mark on it. The version we have transcribed comes from my Country Blues Guitar album (Kicking Mule Records Snkf 129). On the recording I teamed up with Sam Mitchell to combine a Mississippi John Hurt sound with a Delta bottleneck/slide part as played by Sam.

The tune should be easy to master. The only unusual

aspect is that it is 15 bars and the E chord in the 8th measure might feel awkward at first. The chords are all normal first position chords i.e., C.F.G.E. The important technique to remember is to heavily accent the even beats. These almost become strums in feel and will give you the proper "bum-chick" texture that is so important with this alternating bass style.

To help with this accenting, it might be wise to try and rest your little and/or ring fingers of the right hand on the face of the guitar. This technique seems to help guitarists obtain the proper accent.

To master Country Blues Guitar means more than reading tab or notes off a written page. You must try and hear some of the great old bluesmen. There are

many exciting re-issues, as well as new recordings of blues music. Especially of interest are the re-issues on Yazoo Records. These should be available from most record shops. If you have difficulty locating them, write to Collet's Record Shop, 180 Shaftesbury Avenue, London W1. You can also obtain an American catalogue direct from Yazoo by writing to: Yazoo Records, 245 Waverly Place, New York City, N.Y. 10014.

If you have any questions about the material in this column or forthcoming columns or suggestions about tunes and styles you would like to see discussed, please drop us a note at Kicking Mule Mailing Service, 125 Studdridge Street, Fulham SW6.

J - 104

	①	②	③	④
Ex. 1 Major	Cmaj7	Dmin7	Emin7	Fmaj7
Ex. 2 Melodic Minor Ascending only	Cmin (maj7)	Dmin7	Ebmaj7+5	F7
Ex. 3 Harmonic Minor	Cmin (maj7)	Dmin7b5	Ebmaj7+5	Fmin7
Ex. 4 Natural Minor	Cmin7	Dmin7b5	Ebmin7	Fmin7

	⑤	⑥	⑦	⑧
Ex. 1 Major	G7	Amin7	Bmin7b5	Cmaj7
Ex. 2 Melodic Minor Ascending only	G7	Amin7b5	Bmin7b5	Cmin (maj7)
Ex. 3 Harmonic Minor	G7	Abmaj7	Bmin6b5	Cmin (maj7)
Ex. 4 Natural Minor	Gmin7	Abmaj7	Bb7	Cmin7

Harmonic Minor Ex. 1

① Cmin (maj7) ② Dmin7b5 ③ Ebmaj7+5 ④ Fmin7 ⑤ G7 ⑥ Abmaj7 ⑦ Bmin6b5 ⑧ Cmin (maj7)

① ③ ② ① ② -- ③ -- ③ -- ① -- ② --  
4 3 2 1 4 2 1 3 4 2 1 3 4 2 1 3 4 2 1 3 4 2 1 3 4 2 1 3 4 2 1

*Use own fingering for descent*

② Dmin7b5 ③ Ebmaj7+5 ② Dmin7b5 ① Cmin (maj7) ⑦ Bmin6b5 ⑥ Abmaj7 ⑤ G7 ④ Fmin7

③ Ebmaj7+5 ② Dmin7b5 ① Cmin (maj7) ⑦ Bmin6b5 ⑥ Abmaj7 ① Cmin (maj7) etc. up and down

# ★ PLAYING ★

## JIM SULLIVAN: Electric Guitar

1st Exercise No. 1 – no need for introduction, refer to as guide to the rest of the scales. Exercise 2: Very much the same as Exercise 1 but I have flattened the 3rd so you've got what is called a melodic Minor. The melodic Minor scale ascends in one way and descends in another way. All I've done here is taken the ascent of the scale and not bothered about the descent of it. Here, it changes from the first exercise in that the 1st exercise starts on C-Major 7th, D-Minor 7th etc. This exercise, through changing one note, is flattening the 3rd which makes it into a C-Minor, Major 7th, and it gives a whole different sound to the scale and a whole different approach. You can see here again we've got seven chords in the scale as there are seven notes between the octave, we've got seven different chords; 1st chord C-Minor Major 7th, we've got a scale to that. Then D-Minor 7th, we've got a scale to that. Then, instead of the 3rd one in the Major scale being an E-Minor 7th, it becomes an E-Flat Major 7th with an augmented 5th. The 4th, instead of becoming a Major 7th, becomes an F-7th, the 5th stays in the G-7th; the 6th, instead of being an A-Minor 7th becomes an A-Minor 7th with a flattened 5th. The 7th chord stays as it is and becomes a B-Minor 7th flattened 5th going, of course, into the C-Minor Major 7th again. I will go into the use of the scales at a later date . . . now I just want you to get used to the sounds of the scales against the chords I have given you. Once you do that, you'll be able to use them according to your own

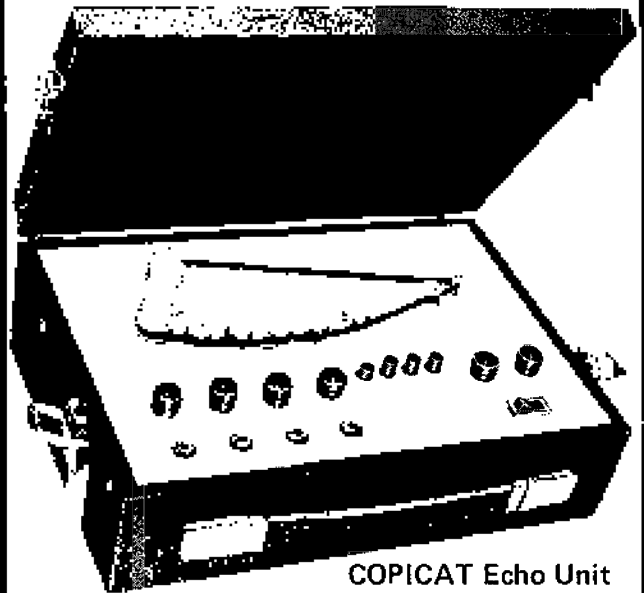
tastes and ideas.

Exercise 3: I've added another flat – An A-flat. The 1st exercise is Majored – there are no flats. The 2nd exercise is a melodic minor with only one flat in it. Exercise 3 – is a Harmonic Minor – which has two flats in it, an E-Flat and A-Flat. You'll see, as you look through, that the chords change from the previous scales. So this shows that you can have more than one scale against any particular chord and it's knowing what scales to use against what chord. I shall go into that at a later date. So for now, just concentrate on these exercises here:

Exercise 4: A natural minor scale – Exercise 1: no flats, Exercise 2: one flat, Exercise 3: Two flats and Exercise 4: Three flats:- and we've added now a B-flat. So now, within; the structure of the scale, we've got an E-Flat, A-Flat, and B-Flat, and again you'll see that this changes the chords and the scales we are playing.

All I want is for you to put the scales and to transcribe them to the exercises I've given you over these last few months. I've given you an example of what I want you to do on the Harmonic Minor Scale and I've written it all out with the fingering only on the ascent and when you play these exercises against the chords, you'll find it gives you some very melodic structures. It's getting used to these melodic structures against the chords that I want you to practise. Next month I'll be giving you some exercises with little tunes in them so you can use these chords and what you can do with them.

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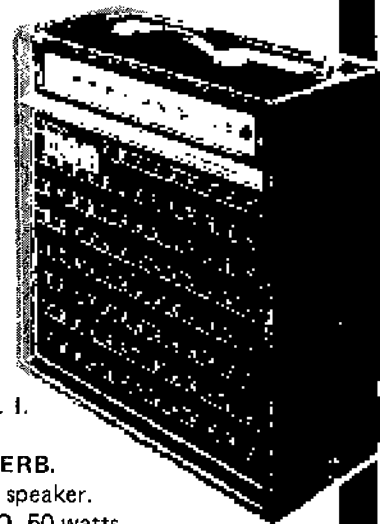
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# PLAYING

## JIM RODFORD: Bass Guitar

I'd like to commence this month's offering by continuing last month's discussion on questions put to me regarding my advice on your ultimate choice of instrument, and the relative merits of the many different makes to choose from.

Last month I dealt with first-time buys, and the cheaper, and "copy" end of the market. When considering the more expensive "First division" category, I know I'm skating on thin ice, as experience and personal taste are the prevalent factors involved in the ultimate choice you make before you part with £300 - £500. I've tried pretty well all of them, and in my opinion, a good Fender Precision or jazz bass, beats the lot for all round performance, feel, looks, reliability, and value. I stress the word good, because as I mentioned last month, quality control seems less stringent these days, even amongst the top makes. Standards seem to have fallen considerably over recent years, not only in the setting up and finishing of guitars, but also in some instances, in customer-retailer relations.

I'm not generalising here, as I know, personally, some excellent salesman and shop managers around the country, but there are shops where service is far from satisfactory. I bet a vast majority of you can quote instances of less than satisfactory product on sale, and indifferent, sometimes surfy salesman-ship. A friend of mine from the North recently complained he couldn't find a decent, new Stratocaster in any of the shops, in and

around his area. It mainly involved the "setting up" of the instrument, (which I went into in detail last month) as he was purchasing it for his novice young son. One top retailer there offered to make the necessary adjustments to transform it into a saleable product for an extra charge of £25. I consider this to be absolutely scandalous, and completely unacceptable. The main bone of contention here would be whose responsibility is it - the makers, the importers, wholesalers, or the retailer? All I know is that the guy shelling out hard earned cash for a top product should get what he pays for. I'm not suggesting that all older basses are perfect, there always were some duff ones about, it just seems that nowadays, the unsatisfactory proportion is greater. Conversely there are some beautiful new examples. John Verity owns a 1974 jazz bass, and I think it's the finest of its type I have ever played. Whatever your choice or fancy, it's important to bear in mind that even two basses, of the same make, model, and year can vary slightly, even though, in most cases, they are mass-produced.

When trying a new guitar, try to cut out all the variables i.e. use the strings you're used to, and your own amp, or one similar. The ideal situation would be to take it away, and use it in rehearsal with your own band, in your usual rehearsal room, but I know this is impossible from the retailers' point of view, but you see what I'm getting at. This way you have a much better chance of

judging if it's an improvement on what you already have or what your looking for in terms of sound and feel.

We all have a slightly different concept of how a bass guitar should sound, and your final choice will obviously be heavily influenced by the instrument the player you most admire, uses. My opinion on Fender is backed up by an overwhelming majority of bass players, around the world. Even Chris Squire, who has probably been the main promotional influence behind the success of the excellent Rickenbacker basses, has admitted, in print, that he can obtain the same, cutting, distinctive sound he features on his Ricky, from the Fender jazz bass he owns. I witnessed this at first hand, at one of the Yes concerts last week, where he opened the set with his jazz bass, later changing to his Rickenbacker, without any perceivable change in sound to my ears.

Greg Lake uses a very similar sound on earlier E.L.P. albums with a jazz bass instrument, which differs radically from the funky sounds obtained by Stanley Clarke (on earlier albums) and Jaco Pastorius, (arguably the leading exponents of the bass guitar in the world today) and even they obtain individual sounds in this category on Fenders. Most of the other makes fall short in all-round tonal response for me. Gibsons in general, I find too deep and "plummy" sounding although Jack Bruce would probably disagree. The Grabber and Ripper models have a greatly

improved "top" response. The newer Guild bass has nice treble characteristics, especially in the execution of harmonics, and the Music Man has most of the qualities associated with Fender, which isn't surprising as Leo Fender is involved. I intend to check this one out more closely though, and fill you in on it in a later article.

When Leo Fender, and Freddie Tavares designed and built the original "Fender bass" in 1951. They created an extremely versatile sounding electric instrument, and as I intimated earlier, with a decent amp and speaker set up and newish strings, you can obtain any sound you require from a Fender.

Many top bassists conceive their own hybrid variations to compensate for, or add to, what they already have in terms of pickup characteristics and performance, or even body-neck, combinations. Tony Reeves for instance, has a Gibson Thunderbird bass, which I find most arresting in appearance, to which he has added two jazz bass pickups near the bridge.

This sort of idea is a good compromise but fraught with disaster unless you have the experience, and know-how, to experiment with expensive equipment in this way. One jazz bass I saw in the U.S.A. had four Stratocaster pickups, placed horizontally under each of the four strings, between the two conventional pickups, and they were wired up in quad! The owner, Lou Reeds bassist at the time, obviously knew what he was doing, but I pity the poor sound engineer on



## COMPETITION RIFF 1.



## COMPETITION RIFF 2.



live gigs. Modifications like this should be left to seasoned, expert, professionals.

The Alembic bass, recently introduced over here, has tremendous all-round tonal response, but is expensive and, I feel, probably out of the price range of the majority of readers. The same goes for Kramer and Travis Bean both excellent in their original concepts, of design, but extremely pricey.

The new Ovation and Peavey basses promise a great deal, but again will be very expensive, but I intend to try these out, plus the Kramer, Travis Bean, Alembic, and Music Man, and will report my findings in a later article.

### Competition

I'm very happy to reveal that my first competition riff received a very pleasing response, which has encouraged me to continue it. It was also most interesting and informative to read your thoughts and comments on the articles so far, which were most heartening.

The answers to the first competition were 1) Song title — Shakin' All Over, 2) Group — Johnny Kidd, which was his stage name. Most of the entries received were correct, although some were only slightly wrong, usually regarding the composer. Many entries credited Mick Green as writer, so let me lay this ghost to rest once and

for all.

The original Pirates were, Alan Caddy (lead guitar), Brian Gregg (bass) and Clem Cattini (drums) who all appeared on the early hits such as, "Please Don't Touch", "Shakin' All Over", and "Lindy Lou". Session guitarist Joe Morretti actually played the lead solo on "Shakin' All Over", and Mick Green didn't join until the early sixties.

The six winning entries were from:- 1) G Grant, of Glasgow, 2) G. Fortsch of Rye, East Sussex, 3) Tony Adams of Fokestone, Kent, 4) D. Twose of Ruislip Gardens, Middlesex, 5) David Meaden of London, and 6) Peter Jackson of Nottingham. They should

now have received the strings of their choice.

This month I've written out two riffs for you to identify, No. 1, the "New Wavers" should find easy, and No. 2 the "Old Farts" shouldn't have much trouble with. In both instances, name the song they are taken from, and the group. So your entry should read:- 1(a) Song (b) Group 2(a) Song, (b) Group.

Don't forget to put your name and address, and to stipulate your choice of Rotosound strings i.e. long, medium, or short-scale — flat, tape, or roundwound. Good reading, next month more arpeggio application.

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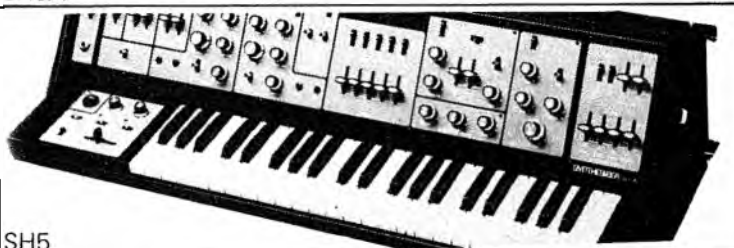
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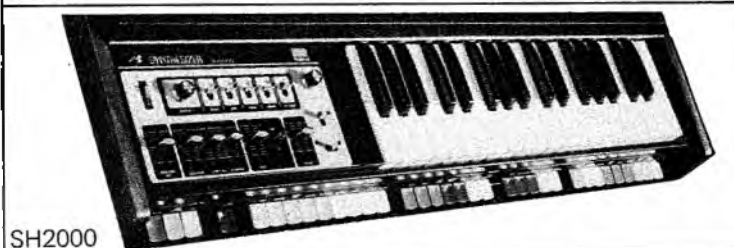
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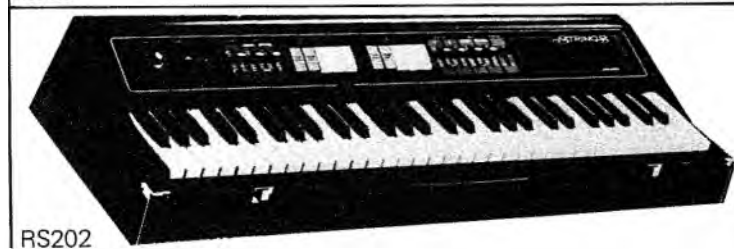
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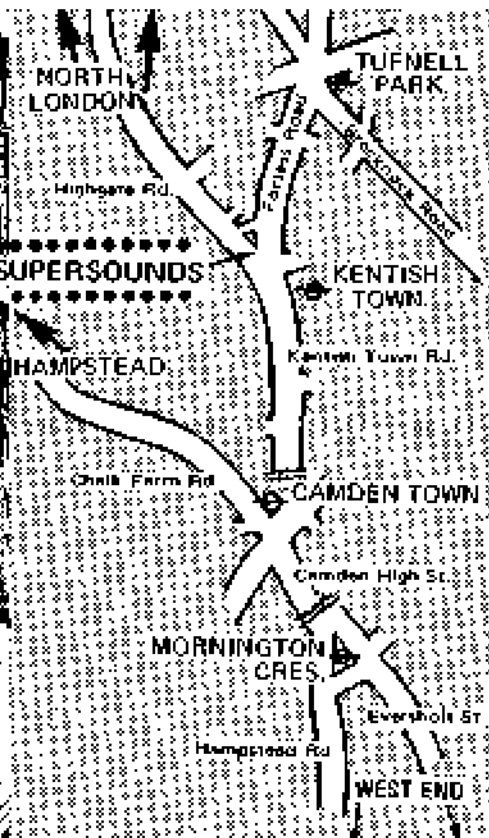
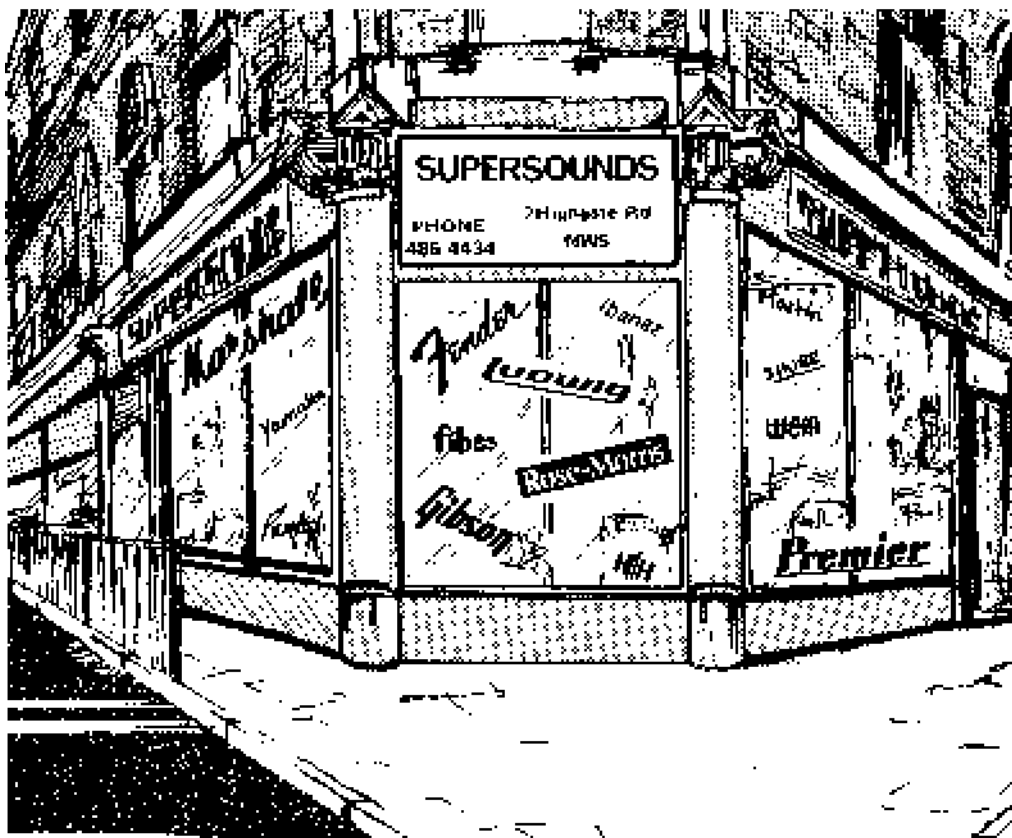
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# Supersounds



## Rotosound in Tokyo

A visit to the 1977 Music Fair in Tokyo has paved the way for a New Year assault on the Japanese market by James How Industries, of Rotosound strings.

Sales manager Martin How said the trip proved a real 'eye opener' as it seems that Rotosound strings are favoured by musicians and manufacturers alike.

'We went out there to check out the market and do a bit of public relations.

'We were surprised at what we found. Many of the models we saw at the Fair were using our strings, and manufacturers were interested in the strings for factory fitting.

It was interesting to see so many of the local groups using our strings. We really did not know just what the situation was before we went.

## South East Expand

South Eastern Entertainments, who have been established in Lewisham High Street for 15 years, are expanding their showroom.

Their new premises are an extension of their present Music House showrooms in the High Street, and will mean a larger stock of amps, guitars, and PA equipment will be available to customers.

## CP Hire

CP Cases, the Chiswick firm who have been making flight cases for rock bands for over six years and are one of the leading companies in Europe, have launched a



The Japanese Music Man marketing team pictured at the 1977 Tokyo Music Fair. The fair ran from October 7 to 10 under the slogan "Touch the Sound."

Kanda Shokai are the exclusive Japanese distributors of Music Man, and Mr. Chitoshi Kojima, president of Kanda Shokai, is pictured third from the left.

brand new hire scheme.

Called appropriately, CP Hire, they supply a full range of their cases for hire by the day, week, month or as long as you like.

Flight cases are light, yet incredibly strong and are designed to protect any instrument from the scrapes and bumps of travel. Inside the tough case is foam which can either be cut to shape to house specific instruments, or simply form a thick lining into which instruments can be packed.

With a cost as low as £1.80 a day, the new service is already proving very popular, yet CP claim they can cope with any order.

CP Cases are based at Pier House, Strand-on-the-Green, near Kew Bridge in Chiswick.

## Trident on the 48 track

Trident Recording Studios have scored a notable first, with the introduction of a 48 track studio — believed to be the first in Europe.

The studio, which is situated in St. Anne's Court just off Wardour Street, have been working in 48 track for the past month with impressive results.

The man behind the 48-

track development is studio manager Peter Booth, who hit upon the idea of locking two 24 track machines together electronically.

The basic concept involves recording on the first 24 track machine, then transferring the results to the first track of the second machine electronically and working from there, the machines are simply locked in for the mix.

## Southside Music Opens in Putney

Southside Music is a new shop specialising in pro and semi pro PA and stage equipment. The shop is based at 277 Putney Bridge Road, London SW15.

The shop stocks a comprehensive selection of mixers, amps, and loaded speaker cabs which are on permanent display. There is also a fully equipped electronics workshop on the premises to provide after sales service.

Manager Mick Ekers is an experienced road manager and is aware of the needs of bands and musicians and will welcome any enquiry whether for a 2Kw rig or a couple of spare cannon plugs.

Peter Booth said: "The results so far have been fantastic, we have found that the sound is very different. It is a lot clearer, avoiding things like loss of harmonics."

"As far as we know there is nothing like it either in London or anywhere else in Europe, and talking to the producer it seems we will be going over to 48 track totally next year."

## Expansion for Citronic

Citronic Limited — voted "most reliable equipment supplier" in a poll of 138 London dj's — is expanding its plant at Melksham, Wilts, to cope with rising demand.

The company made its name with a range of rugged, mixers and disco consoles, and has since branched out into sound-to-light units and speakers.

"Sales have doubled in the past year," reports Managing Director Dick Wadman, who started Citronic in his garage less than four years ago. "We're working flat out to fill orders from our UK dealers, let alone coping with overseas demand."

The company is building an extension at the rear of its present works — a converted night club in Market Place, Melksham — and has bought premises close by which will add another 3,000 square feet of production space.

## Chaz Expand

Midlands' speaker manufacturers Chaz Speakers are branching out with the opening of a new shop in Blackheath to cater for everything in the rock music field.

The shop, CC Music, is situated at 390 Long Lane, Rowley Regis, Blackheath, and according to partners Tony Shields and Charles Dunn, will provide a comprehensive service including part-exchange and even hi-fi.

Mr. Shields said: "If we haven't got something in stock that a customer wants, then we will go out of our way to try and get it."

Chaz Speakers, which are based in Birmingham, began trading six months ago and specialise in custom built speakers.

Up to now, the studio has been mainly used by Demis Roussos' producer, who has also been responsible for a number of hit disco albums in the States, but Brand X and Rod Argent are in line to use it.

And if that weren't enough, Trident are set to score another first with a direct-to-disc recording of up and coming band Warsaw Pakt.

The DELUXE MEMORY MAN solid-state echo exists in its own universe and can't be compared with any other echo/delay unit. It's a breakthrough in state-of-the-art Large Scale Integration design that does not depend on wear-prone tapes and moving parts or bulky digital delay lines. In answer to the hopes of musicians and vocalists everywhere, ELECTRO-HARMONIX has engineered quality echo and analog delay into one, durable, footswitch unit—with a wide array of user-controllable features:

**Noise Reduction** While in normal operation the DELUXE MEMORY MAN's unique compander circuitry produces immaculate, high signal-to-noise ratio sound, the touch of a switch engages a noise gate for processing with the silence of intergalactic space.

**Flexible Delay and Repeats** Multiple controls allow access to a vast range of effects: "slapback" echo, repeat-

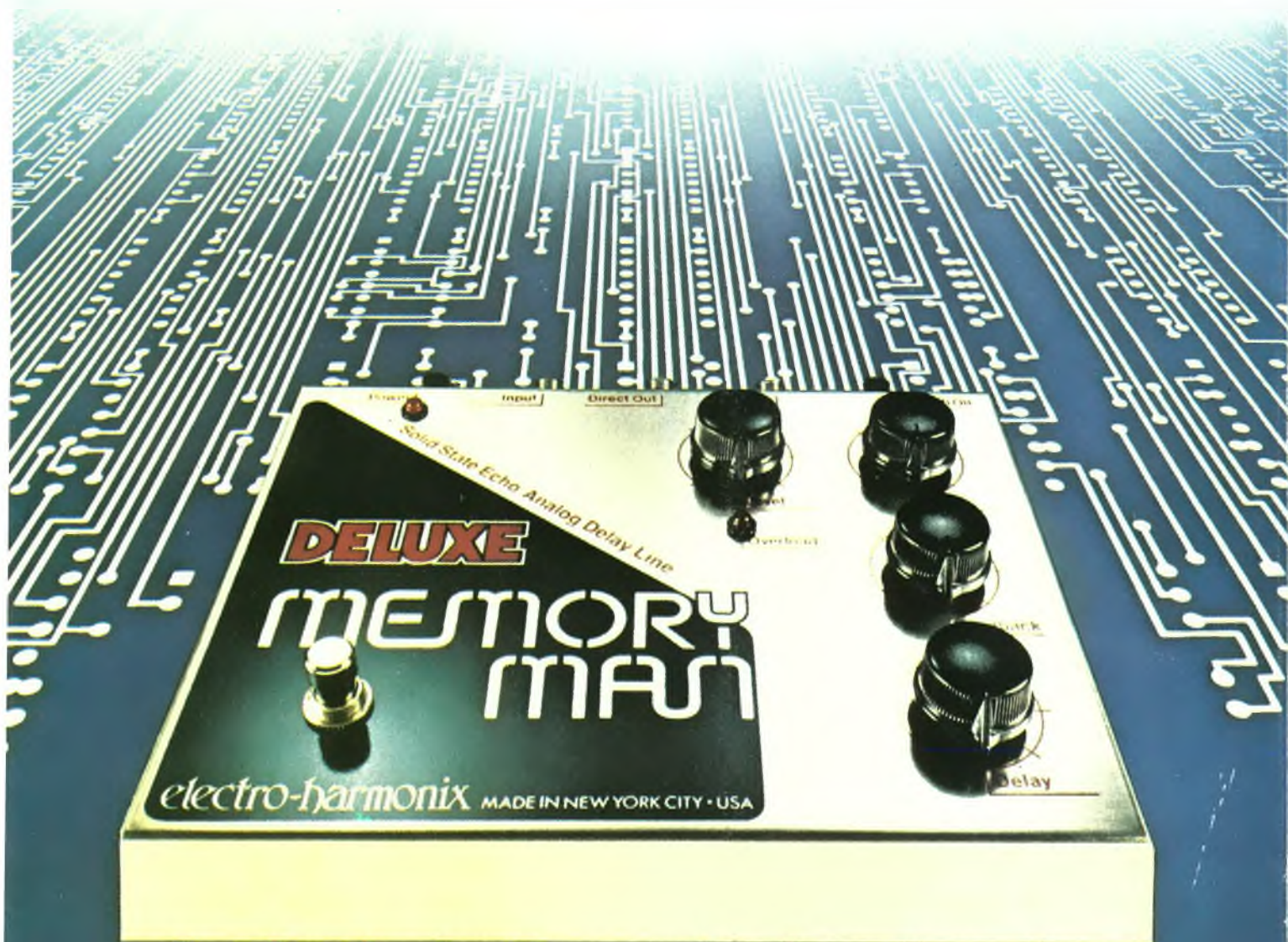
ing arpeggios, "bathtub" reverb, voice or instrument doubling, panoramic delay, controlled feedback, and more that bold exploration can seek out.

**Dual Outputs** Send "direct" output to one amp and "echo" to another for striking stereo enrichment.

**Clipping Elimination** Adjust the Level regulator and associated LED indicator to banish distorted sound forever.

With all of this control, the performing musician is on top of an all-electronic advancement that DOES NOT DECREASE ITS BANDWIDTH as delay is increased, creating crisp, endless echo with minimum signal degradation. With PA systems, the added dimension is truly cosmic.

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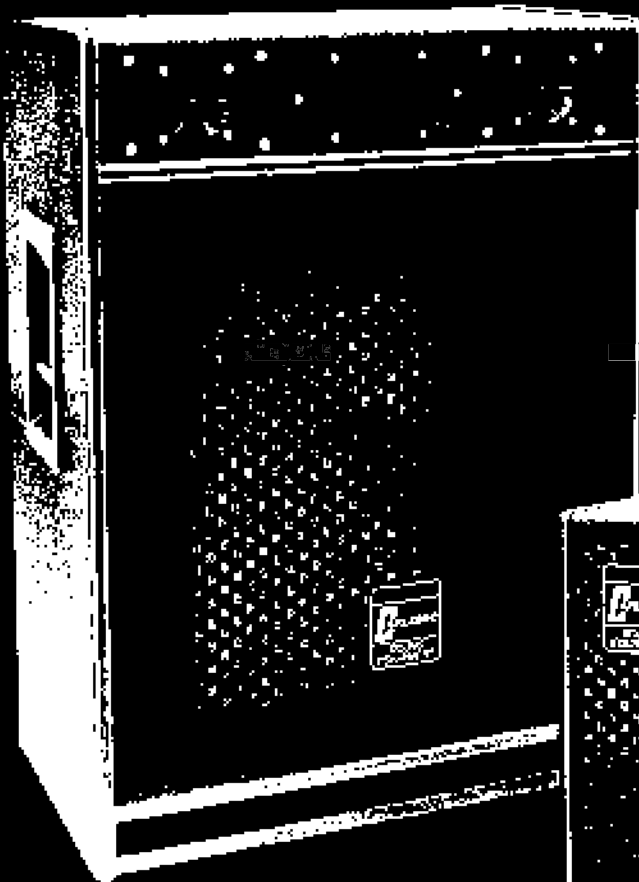
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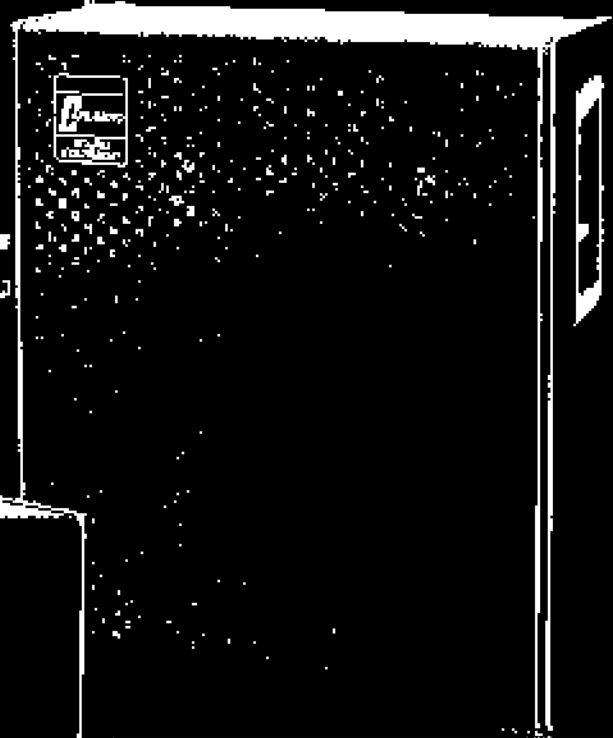
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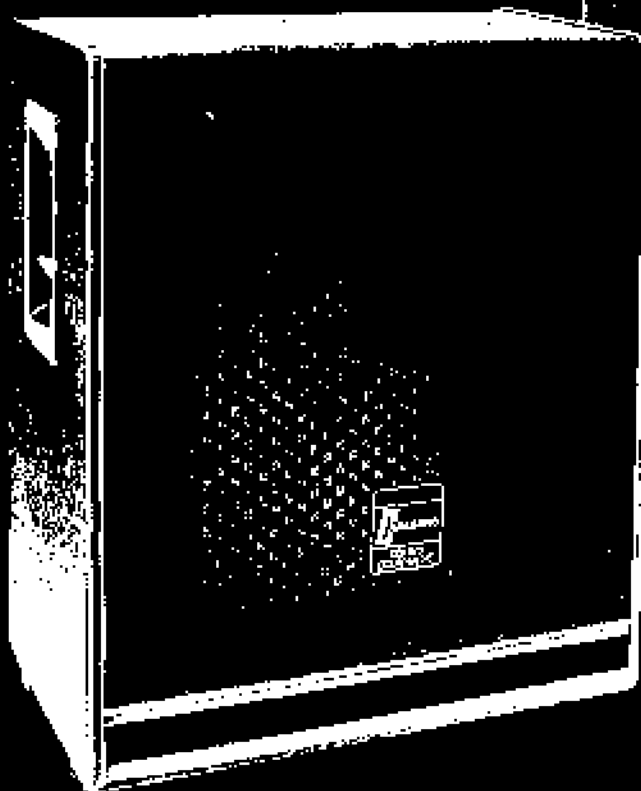
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# 6

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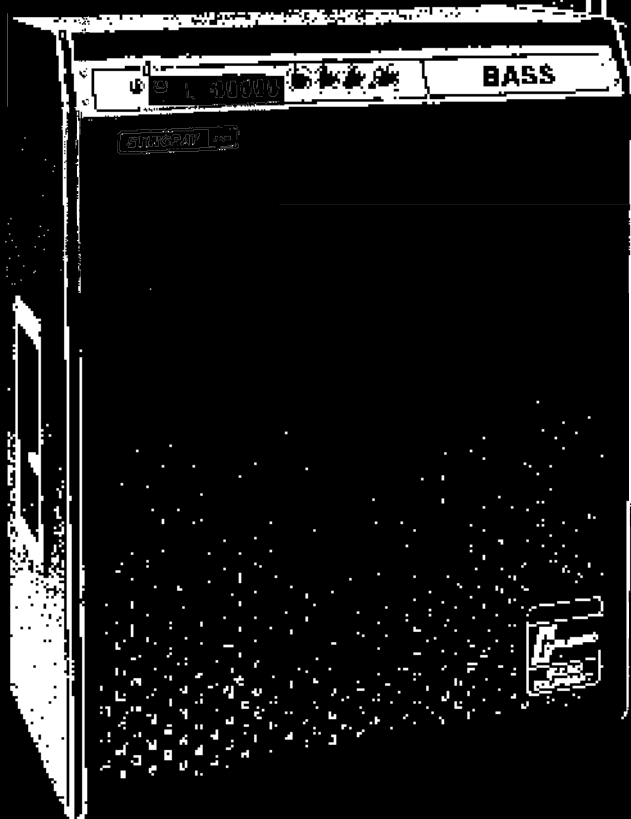
#### Stingray Bass

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#### Stingray Bass Combo

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#### Scorpion 11

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#### Scorpion Custom

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## On Test: Sonorous 601 & 602 Rotary Cabinets

Price: 601 (£391) 602 (£515) ex VAT.

The Sonorous 601 and 602 rotary cabinets are the two latest additions to the growing number of such speakers now coming on to the market.

The Leslie, the prototype of all rotary cabinets, is of course still available, but it is very expensive. Several excellent cheaper rotarys — such as those made by Sharma and Keynote, for example — can be obtained at a considerably cheaper price, and are in many ways even better and more practical for the gigging musician. However, relatively speaking the companies involved are still fairly small and demand probably still exceeds supply by a considerable amount. Hence the Sonorous 601 & 602.

Actually, it seems to me that the Boosey & Hawkes cabinets offer a more specific approach, at least in a couple of areas. Interestingly, the cabinets have not been developed in isolation but as part of a package including the new Cavendish organ — a prototype of which I tried whilst at the factory. The idea has been to offer a complete organ unit, matched both in design and sound, for an extremely competitive price. Also, unlike its competitors, it's probably aimed less at the wholly professional market than at the huge semi-pro area covered by pub, club and cabaret gigs. Thus it offers a punch 60 watts rather than 150 — more than enough for the demands of the afore mentioned work but probably not enough for the power hungry rock musician.

### 601

The 601 is the smaller of the two models and weighs in at 93 lbs. Its approximate dimensions are as follows; height 29½", width 23¼" and depth 19". The cabinet like its big brother is constructed of chipboard covered with red vinyl and reinforced at the corner with steel brackets. The units are largely made in St. Albans, which means of course that a good deal of control over the whole operation may be exercised by the parent company.

The power for the 601 is provided by a built-in 60-watt Tuac amplifier. This is



Sonorous 602

a bit more rugged than a wholly solid state amp., as it has a transformer output stage. This prevents the whole thing being destroyed in the event of something untoward happening. I understand that, because of this arrangement, the frequency response at the very top end of the spectrum is reduced. But as the area in question is around the 30K mark, the whole thing becomes academic, as an average ear stops hearing at about 18K!

The amplifier powers a single Altec 12" speaker rated at over 100 watts. This faces down on to the one rotor possessed by the 601, and is reinforced by two 2.5" Piezo direct radiating speakers to handle the top frequencies. The rotor, which comes from Italy, is made out of polystyrene.

The cabinet itself is sealed and airtight and the chamber is 'tuned' to the speaker — this reinforces the lower end of the frequency spectrum and makes the most of the sound generally.

Two speeds (chorale and tremelo) govern the rotor, and, in addition, a straight tone is available with the rotor stationary. The input is by means of a nine pin connector cable to connector kit, pre-amp or organ direct, and while the speaker has been developed specifically with the 'Cavendish' in mind, it can of course be used just as easily with any organ.

### 602

The 602 differs from the 601 in several ways, the most obvious of which is its size. It is considerably taller — its height being 44½", but its width and depth are the same. The extra height is needed to accommodate the Electrovoice rotary horn unit, which is matched with a 12" bass speaker made by the same company. Electrovoice were chosen from a test conducted with units from maybe a dozen manufacturers. The test was based on what difference could be heard from a one point change on a drawbar setting — the thinking being that any speaker reacting significantly to such a small variation must be efficient indeed! Again the cabinet is tuned. The horn units are constructed of plastic and have a built in deflector.

The amplifier powering the 602 is rated in the specifications as 60 watts R.M.S. Unlike the amp powering the 601, however, it is in fact a 100 watt unit governed down to 60 watts. The fact that it operates so well within its capabilities results in a correspondingly greater quality and fullness of sound. The bass speaker is rated at 120 watts and the horns at 90 watts. There are no A.C. relays on the amp — A.C. switching, which normally causes any problems, is eliminated by the use of solid state circuitry. Reed relays are in fact used in the system, but they are D.C. and life expectancy is almost infinite.

Both cabinets are simply and sturdily constructed and produce a good sound. If you are an organist considering the purchase of a rotary cabinet, and don't demand the super power of 100 watts plus, you would do well to give them a try. The 'Cavendish' organ, by the way should be available sometime in the new year.

Rod Argent

## Phoenix amplification dealers see one today!



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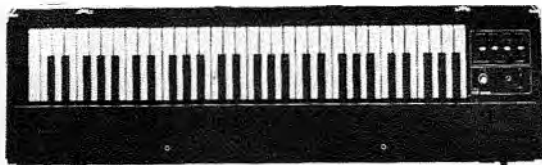
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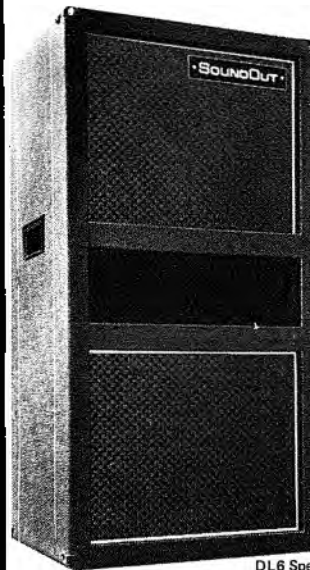
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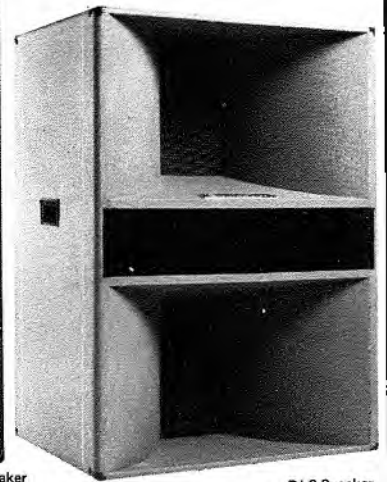
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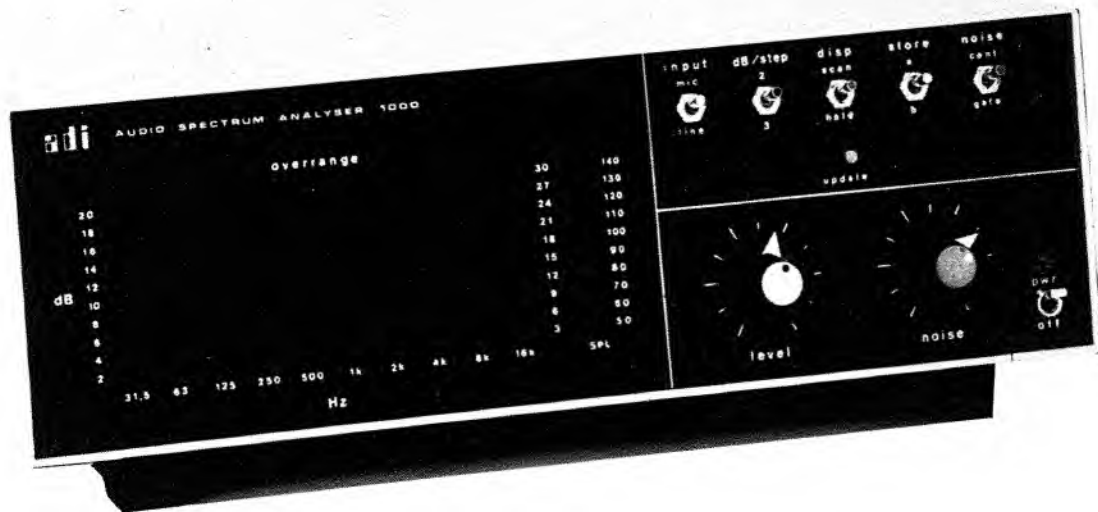
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# Ed & Den

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Below: (L-R) Les Paul TV, Les Paul Recording, Les Paul Goldtop, The Les Paul Artist, Les Paul (1955 - four pickups) Les Paul Junior, Mandolins all Gibson.



## Steve Howe

Steve Howe has an astounding collection of 85 guitars. That figure may not look much in print but just count to 85 and remember that each figure you say to yourself stands for a rare and valuable instrument.

The bulk of Steve's collection is made up of 45 Gibsons including flat-tops and many rare Les Pauls. The rest of the collection comprises rare Martins, Fenders, and Gretsch axes plus numerous mandolins and ukeleles.

If it was obviously impractical to go over every guitar in the collection so Ian White just asked Steve to nominate a dozen or so of his favourite guitars. The Yes guitarist has been collecting for 13 years and although the value is crudely estimated at £25,000, the Howe collection must be priceless and irreplaceable.

Steve Howe has had a major love affair with Gibson and is probably one of the most knowledgeable Gibson people outside of Kalamazoo. Even now, Gibson are building a guitar especially for him which will bear his name and he makes regular visits to the Gibson factory.

## Les Paul TV

I bought this a couple of years ago and the only reason I bought it is that it's got a lot of power. The TV is really the same as the Junior except that they did it in this cream colour. It's terribly raunchy, quite a screamer. It doesn't feed back but it does give a very chunky sound: a rock and roll rhythm 'n blues sound.

I bought it on the East Coast I think I got it in St. Paul and it was one of those incidents where a guitar seller I knew had a few guitars and that was the one I liked the best.

## Les Paul Recording

That's a guitar with the low impedance pickups and it took some setting up. It's one of the few Gibson guitars I've come across which was really hard to set up. The sixth string wasn't lying on the guitar right when I got it but that was a guitar I swapped an old Gibson for. It was part of my wheeling and dealing period. I was getting rid of guitars I didn't want for guitars I did want. Quite a few shops in London did that for me I gave them a guitar I didn't want and they gave me something new.

It's got phase switches and tone switches. My idea is to try it out plugged into the desk because, sometimes, the interference of an amplifier can bring out not all the best qualities.

## Les Paul Gold Top 1955

That's a guitar I have used for guitar solos on records. The joy of that guitar is the infinite variety of tones available with just two pickups on it and turning the bass pickup down. It's a guitar with very sensitive pots and each time you turn it a quarter you've got a new edge to the sound. If you use the pickups independently you'd think it was quite a nice, but ordinary, Les Paul. But with two pickups on together I've got some extraordinary sounds. I mean, we're talking about Les Pauls and you really can't go too wrong anyway. But if you find a good old Gold Top they really rate with the standard Les Paul and of course they're much cheaper.

It's in its original condition with the trapeze tailpiece that is a bridge and tailpiece in one. That helped getting the guitar back to its original condition. A tailpiece on a Les Paul can be quite a successful idea. A very expressive sound comes from that. The quality of sound relies a lot on what you're going to do on

it. But it's all there resting and when you plug it in and start using some of the sounds it really does make you stop and think because some of them have got that lovely "cardboard" quality, sort of a muffled sound.

## The Les Paul Artist

This is made by Richard Snyder at the Gibson factory and is part of the range in the area of the Mark acoustic. Richard Snyder lives in Kalamazoo and he has his own guitar workshop and he's a part-time employee of Gibson. When he's there he's very meticulous, on these lines. He does the really tricky jobs which make these guitars stand out, which is the "Zebra" style of polish and finish and choice of wood grades. All the trimmings, scratch plates, pickup surrounds are wood. The fingerboard is split: it looks like Rosewood down the middle and ebony on the sides. I picked it up in Chicago and I went for this one and had it on the road for a week and it really did blow me away. It's one of the guitars I'm going to use more and more. It's a very fine, and very heavy, guitar. The only thing I did was put on the De Luxe Grover heads which are really hard to get, I took them off a Gretsch guitar. It's a special order item and the trouble with those is that there is very little encouragement for people to go out and order them.

## Les Paul Custom 1955-four pickups

This was bought in Nashville and was one of the guitars I bought for the guitar shop we were going to open. It had Black Beauty pickups and I was a bit disappointed with the sound. I suppose I was after a humbucking sound. I took this guitar along to Sam Li and I had four pickups in my hand and I asked 'well can we get four pickups on it, because I haven't got a guitar with four pickups'.

One of my ideas originally was to have six, but slanted with one on each string. I was looking for something like a broadening of a stereophonic guitar idea which I did use on Topographic Oceans to start a lot of stereo panning that I couldn't do on a desk, but which I did when I played the guitar. I wanted to continue that idea along to the Les Paul Custom so I had four pickups fitted in.

Sam did a wonderful job doing without pickup surrounds. He built just one pickup surround. And I've got them fully adjustable just like Gibson ones, all

balanced on springs. One incident happened when I knew Les Paul was doing a trade show at Heathrow Airport in a hotel. I took the guitar along and got him to sign the truss-rod cover. He saw the guitar and said "God what is this thing". He thought it was great that someone had thought of something a little bit different which was just going to town on pickups. How I've got it wired is that each volume control is a volume for each pickup. I've got it very simply wired at the moment and I'm hoping to get one of those Cannon sockets put on it so I can have a quadrophonic guitar. I'm hoping maybe that it will turn into the Les Paul Quad guitar.

## Les Paul Junior

The Junior is the most "played" Les Paul I've got. I think it was the first I bought and that's partly why. It took me ages to overcome the tuning problems on the neck and the fact that if you walked out on stage with it the whole thing could just go out of tune. I think it didn't adapt very well to changes in temperature. Some guitars do and some guitars don't. The Junior is very tricky to keep in tune on stage. I carried on using it because I found it was the Les Paul which had a particular sound, especially a sustaining sound, that was used on three sides of Topographic Oceans, all the time. That's mainly the guitar I play on that particular album.

The guitar has had a lot of wear and also at home on demos it's the guitar that's easiest because you haven't got to plug it in and think what sound you're going to get. There's only one sound so I've used it on a lot of demos. It's a guitar I really got to terms with using a volume pedal effect. I put one of those Badass bridges on it and that just about sorted it out. And when I restringing it I try to restring it one string at a time. I find if you take all the strings off a guitar, the action seems colossally different. You love the sound of the fresh strings but on the other hand the action takes two or three days to settle down. It's very logical but I don't know if some people realise this.

## Martin D35 1973

That was bought mainly because my Martin, (that is the 0018) got damaged while we were on tour. All the 0018s that you could buy I didn't like the feel of or the sound so I ended up having to buy a replacement guitar on the road. I bought the D35 because I thought it would mature well and I liked the way

below (l-r) D35, 0045, Stauffier. 021, Martin Flamenco, 0018, Steve holds a Martin ukelele

they put the work into the back. So I bought the guitar and it just added to the fact that Dreadnoughts are too big for me. It's a lovely guitar if you're singing and you sing solo, with a guitar but as a guitarist's guitar for fingering and picking, they're a bit restrictive and it's only when you get to the D45 which has got a much lower and thinner action that you can really start zapping around. It's a chord guitar, mainly for chords. I use the Dreadnoughts for the rhythm sounds.

## Martin 0018

I bought this on HP. The HP company chased me to pay for it, I could just about afford it. This was in about 1968, I'd moved out of London and it was the end of "Tomorrow" and I bought that guitar on HP. I'd been searching for a Martin and I knew that, one way or another, my guitar learning would start when I bought a Martin because the way they made them, the construction of their necks, was important to me as discovering the Gibson neck. All of a sudden there was a different style of neck, a different thing and it was a good vehicle for me to utilise my technique. A lot of other guitars I came across, I felt I wasn't playing a guitar that was the right size.

But that was my size guitar. So that's its main attribute and I've played it since then and written endless pieces of music on it. It's been on the stage everywhere that I've been and it's akin in my mind to my Gibson 175. They are the two guitars I'd pick up if London

flooded. I'd be rushing out of the door with a 175 and an 0018. I could do without everything else if I had to and I could cut down to two guitars and I'd still be able to create everything that I do. I'm not saying there's no point in having a collection if you only need two but you have to have keystones in that.

## Martin 021 1890

This is a guitar I picked up in St. Louis. It's a nice old guitar. It got dragged out to me in a coffin case and I saw the thin strip of herringbone down the middle and a small amount of inlay. At that time, no guitar was really exempt from having a bit of inlay. It was only when they got so organised and all the ranges were laid out and they decided that certain guitars would have inlays and others wouldn't.

But I like it when you can pick up a guitar like this one which isn't particularly fancy but a second look will appear they did go to some trouble maybe just to put a bit of inlay around the hole.

## Stauffier 1840 Rebuilt by John Bailey

That was from a friend of my brother-in-law who had this guitar in a

photographic studio. I had this quiet half an hour with this thing thinking I'd never seen anything quite like it before. I think it is a lady's guitar because it is so small. Although it has a label inside that says "Martin: New York" the chap told us he was told it wasn't the right label. He said it was supposed to be pre-New York. If you look up anything you notice that Martin didn't register New York until 1933. But there are so many junior and senior Martins that, for the life of me, it's worse than history at school. You just can't remember the facts.

## Martin 00045 1926

I found this in Nashville at George Gruhn's place. He's got a very good selection of old Martins and he said he's had them for years in his vault and he said he thought he'd never sell them. But as his shop's got very successful he's started to move them. And he has quite a few of them out.

So I played the 045 which is quite a small guitar and then he had one 0045 which I thought I was going to like and it wasn't till I found this 00045 that I thought I'd found a guitar that had an almost end-of-the-road sound.

Once you get the plectrum really happening on it it's got a resilience I haven't found on other guitars. Once you open up on it, the guitar is very responsive and it's also got a very thin top and the inlay is beautiful. That is the most expensive guitar I've ever bought anyway. They're expensive I'd expect about \$3,000 for it judging from what I paid for it and the duty. All of George's rare Martins from this period are the same price: they're \$3,000.

They've gone up similar to the Les Paul standard and other collector's guitars.

## Martin Flamenco turn of the century

I don't think there's much I can say about this except that it is a very mellow guitar. I bought it because I thought it was a collector's style of guitar because although, they're Martins, no flamenco guitarist from Spain is going to be particularly thrilled that he's got hold of a Martin flamenco. It's not that they were famous for being good. But on the other hand, the sort of construction they have and the different struts different inside, makes it a nice piece.





# MAKING A SOLID GUITAR

## Part 12 Fitting the controls

By Stephen Delft

Before cutting any more holes in the body, decide what controls you are going to use. If you want to use conventional moulded guitar knobs, you will need to use potentiometers with splined shafts. There are at least two patterns of spline in use and they are not interchangeable. It may be simplest if you use Japanese pots and Japanese plastic knobs.

If you don't fancy using Japanese components, I suggest you order replacement Volume controls, Tone controls and knobs from Guild U.K., via your local music shop. If you have pots and/or knobs already, take what you have with you when you buy the other bits you need. Before you buy anything, ensure that all four knobs fit all four potentiometers. You will require '10 per cent Log', or 'Audio' pots. This is the type which is normally sold in radio component shops for use as a volume control, but radio-type pots usually have plain shafts, and/or mounting bushes with insufficient thread to go through the front of the guitar. The plain shafts are acceptable if you will use matching radio-type knobs, but with short mounting bushes are not suitable for this project. Even some of the replacement parts for guitars have short bushes and these are not suitable, either. To use such pots, you would have to make the front of the guitar thinner, or cut recesses in the front for the fixing nuts. Either of these may weaken the guitar front: if you want to bodge your work in this way do not expect any further help from me. Other ways of mounting such pots on this kind of guitar are either unsatisfactory, or too complicated for this D-I-Y article.

### Potentiometers

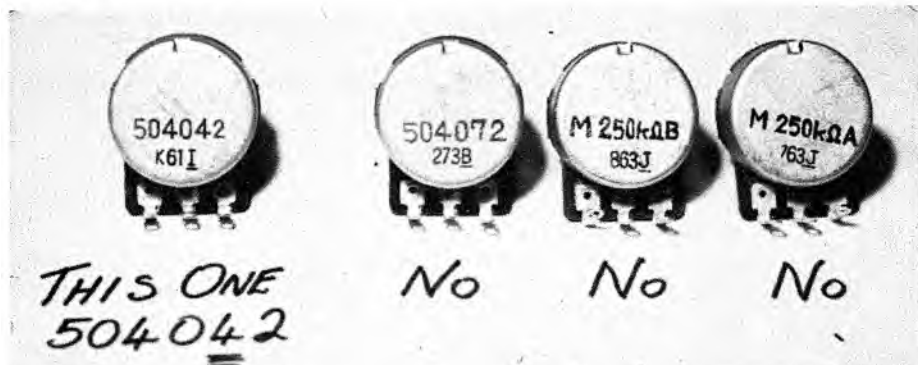
You will need Log Potentiometers with a resistance of 470 k Ohms, 500 k Ohms, or 1/2 M Ohms. (These are different ways of describing the same component) As some replacement tone controls for Japanese guitars have unsatisfactory characteristics, I suggest you use volume control spares for volume, and for tone controls. One suitable Japanese potentiometer is marked 504042, and should be available to order, from stockists of Antoria guitars. You may be able to buy, or order, suitable knobs from the same source. Don't be tempted to buy 'Genuine Gibson knobs'—they are perfectly good knobs, but they probably won't fit the Japanese spindles.

The recommended selector switch for this project is the standard 'Right-angle' selector switch, used in several Guild and Gibson guitars which have a control layout and mounting similar to this project. The Gibson switch used in standard Les Paul models is not suitable: you need the Right-angle version.

Jack sockets come in a variety of forms. The skeleton type, made from bits of metal and plastic washers, rivetted to a threaded metal bush, is not the most reliable, but it is easily available, and easy to fit, as long as you ensure it



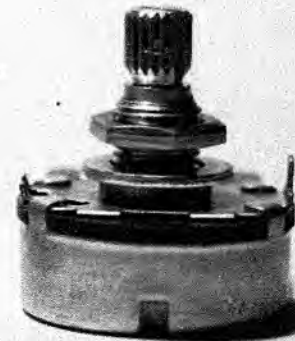
various Japanese knobs



various Japanese pots



suitable



not suitable

has enough thread. (See above notes on potentiometers.)

Before you start drilling holes in the body for controls, it might be useful to discuss some possible wiring arrangements. This could easily occupy 10 or 20 pages, so I must restrict myself to the more common arrangements. To help those who cannot read electronic symbols, I have used a series of pictorial diagrams. Diagrams A, B, and C refer to the selection circuit, the tone and volume circuit, and the output jack connections. These circuit groups can be inter-connected in a variety of ways to give different control arrangements.

The first suggested control system is quite simple and uses two pickups, a selector switch, one tone control and one volume control. This requires one of each type of circuit section, in the order: Pickups to A/A to B/B to C.

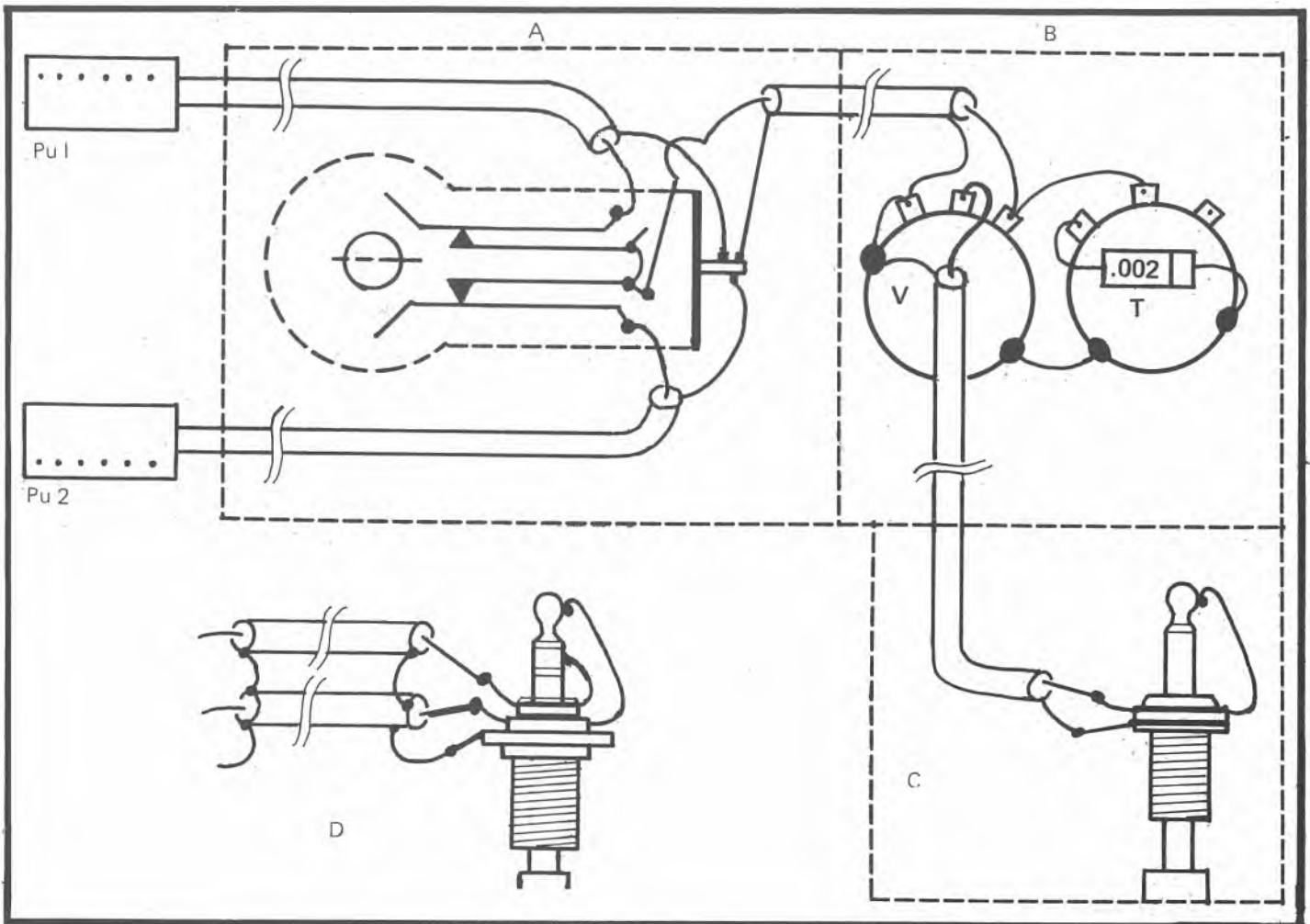
I have distorted the shape of the switch in the illustration, to show the wiring more clearly. In the real switch, the chassis connection appears between the other two pairs of tags. Soldering is easier if the outer tags are gently bent apart, as shown. You will notice that most of the wiring uses screened cable with an insulated wire, inside an insulated woven wire tube. This outer 'braid' or screen also acts as part of the circuit wiring. If you are willing to screen the whole of the control cavity with foil, as described in an earlier article, you can use any ordinary insulated wire for all connections inside the cavity. The connections to the pickups will still need to be made with screened cable, but the rest of the

wiring will be much easier. The advantages of screening the whole cavity instead of the individual wires become greater, as your control circuit becomes more complex. (Of course, if you intend to fit any electronic gadgets inside the guitar, you will probably need both forms of screening.)

### Capacitors

The capacitor marked .002 should be within 20 per cent of 0.002 Microfarads, but otherwise can be virtually any type which will fit in the space available. In general, cylinder-shaped capacitors will take more rough handling than the rectangular ones with both wires on one edge. If you do not intend to screen the whole cavity with foil, you should try to obtain capacitors which have a band round one end to indicate connection to the outer foil. The 'outer' end of the capacitor should be connected as shown in diagram B. If you use a foil lining in the guitar, the Cap. can go in either way round.

If you are unable to solder fine wires in a confined space, get some skilled help with wiring the guitar. It only requires one hair-thin strand of wire in the wrong place, to silence an electric guitar in the middle of a gig, and if you have been telling everyone that your own guitar is 'better than all that mass-produced rubbish', a sudden breakdown could be even more embarrassing than it is normally. Don't worry about finding help immediately: you won't actually need to do any wiring until you have made some more holes in the guitar body. However, you do need to decide which circuit you intend to use, how



much space the components will need, and where you want the controls on the front of the guitar.

A more complex circuit, which corresponds to the usual arrangements of two volume controls and two tone controls, can be made up from two B sections, One A section and one C section. Each pickup goes to a B section; the outputs of these go to the selector switch A section, and the output from the switch goes to the jack socket.

The so-called 'Stereo' wiring requires a slight modification to the above circuit. Use an 'A-Gauge Stereo jack socket' as sold to fit stereo headphone plugs. Connect a pair of screened cables as shown in diagram D. Connect the other ends to the selector switch as in diagram A, but remove the link between the middle switch tags and connect one of the pair of inner wires to each of the tags.

If you intend to fit a phase-change switch, leave it till later, but allow for a 5 mm hole in the front panel and the same removal of wood from the back of the guitar that you would allow for another potentiometer. It is worth spending some time on deciding the exact positions of the controls on the guitar body. Keep in mind the

dotted line on the body plan which shows the limit on how near the control cavity can come towards the bridge mountings.

#### Drilling

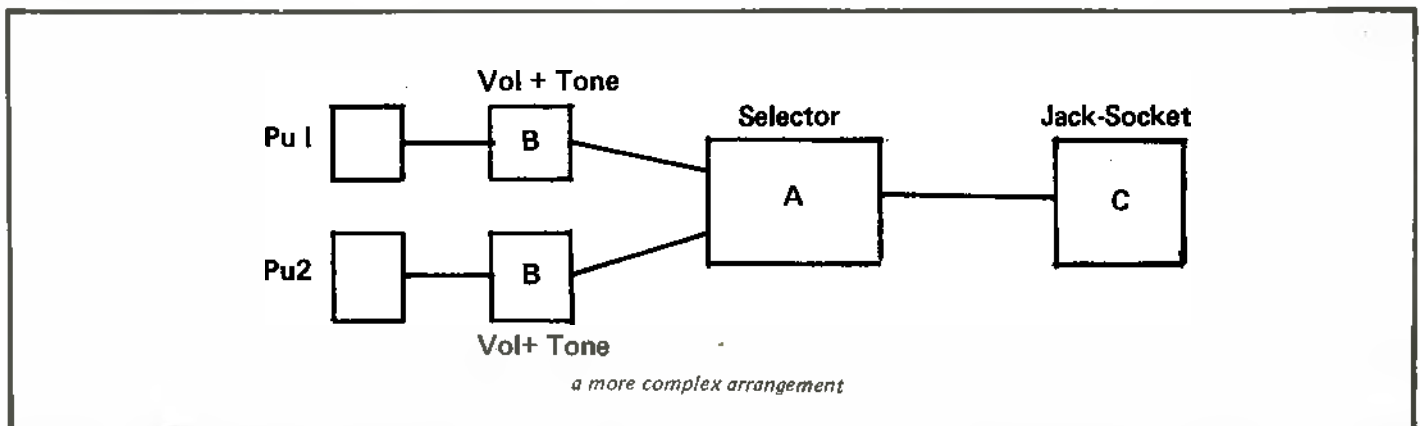
Whichever way you drill the holes for the control mountings, the drill will have to come through somewhere, with the risk of damage to the surrounding surface. I find the following sequence of operations useful, as it gives clean holes front and back, and is quicker and safer than using a portable router on such a deep hole. If you have a router, it will be useful for finishing off the bottom of the control cavity and later for the shallow recess for the back plate, but it is by no means essential.

Decide which controls you want, and where you want them. If in doubt, use the positions marked on the body plan. With a pair of dividers, scratch neat circles on the front, the same size as the required holes. At the centres of these circles, drill right through the body with a drill bit between 1.5 and 2 mm. This makes a pilot hole for the mounting hole at the front, and for the clearance hole at the back. Turn the body over and drill approx 1 1/4 inch holes through the body on each of these pilot holes until 6 to 7 mm of

undamaged wood remains at the front of the guitar.

I clamp the body to the table of my drilling machine and use a Flat-bit, together with the depth stop of the machine. I do NOT recommend a hand-held electric drill. You could use a 1 1/4 Forstner bit in a Carpenters brace, or the cheaper alternative of a 1 1/4 inch standard wood-boring bit, to about 10 mm from the front, followed by a Flat-bit in the same carpenters brace, to scrape the bottom of the hole down to the right depth. Turn the body over again, clear the shavings dfrom the bench, and drill out the holes in the front to size. If necessary, drill undersize and file out to the scratched circles. The size of hole for the switch is quite critical. Look carefully at the half-recessed fixing nut.

Most commercial guitars of this type have a big hole under the cover plate at the back. In fact you need only enough space to fit the components and wire them up comfortably. Place the body face-down on a clean bit of bench. With a mallet and a sharp chisel remove enough wood from between the large holes to make this possible. Some smaller holes drilled into the waste will help to break it up. Except for the area around the switch chassis it is not



necessary to cut *quite* as deep as the bottom of the 1/4 inch holes. Try the electrical bits for a fit and then remove them. If the main holes are not quite deep enough, **SCRAPE** them deeper with a sharp chisel and/or a flat-bit in a carpenter's brace. Particularly, never try to re-start a flat-bit in a hole which has in any way been modified, except very slowly, *in a carpenter's brace*.

The body plan shows two wiring channels through the body. These are made with a 'spear-head' drill beaten out of a bit of silver steel rod. This is not difficult to make. With normal safety precautions, heat the end of the rod to a bright red heat and squash it a bit with a hammer on an improvised anvil. As it cools down, tap it a bit on one side or the other, until the flattened end is symmetrical, and in line with the rest of the rod. It only needs to be about 8 or 9 mm across the wide end. Now let the rod cool slowly until it is safe to handle, and file the flattened end into a neat wedge shape whose cross-section starts circular and ends at a rectangular edge 8 mm by 1.5mm. File two flats on the cutting end of the drill to make a point including an angle of 90 to 100 degrees and put a bevel on each of these flats so that it will cut like a primitive drill when rotated in the usual direction.

Heat the last few inches of the drill until bright red and cool quickly in a bucket of water. Clean the metal bright with Emery, or Wet and Dry paper, and heat again behind the edge, watching the colour changes. When the whole end of the drill is between purple and dark straw, quench it in water again. Try the drill against a sharp file. The metal should be difficult to cut, but there should be no place which is too hard for the file. You will easily recognise such areas, from the strange 'glassy' sound the file makes as it slides over the hard surface.

If you have any over-hard patches, your drill could snap inside the guitar, so repeat the entire hardening and tempering process and try again. If you don't fancy your chances as a blacksmith, a general Engineer could make a drill accurate enough for your purposes in about 10 minutes. Equally, with a big enough hammer, and rather more work with a file, you could probably make a drill tough enough for one or two holes, without any heat.

Instructions for drilling the wiring tunnels are on the body plan. Tunnel A should start roughly in the middle of the body thickness and aim to pass just below the bottoms of the pickup recesses. Before you start the tunnel, drill a hole in the floor of each pickup recess approximately 15 mm dia. by 15 mm deep and aim the tunnel so as to link these two holes. If you put a bit of tape on the long drill as a depth stop, you will know if you have missed the second hole. This is not likely to happen, but if it does, follow the line of the long drill with your eye, both sideways and through the depth of the body, and extend the 15 mm hole to meet the tunnel. It is not likely to be far away!

You can start tunnel B just below the bottom of the bridge pickup recess, by drilling another 15 mm hole, about 3 or 4 mm deep at the side of the recess. Such a crude drill may tend to 'walk' up the side of the pickup recess as you start the hole and the shallow starting hole will give you a safety margin. Tunnel B should be aimed to come out about halfway through the depth of the control cavity.

You can use a slow-speed Electric Drill after the tunnels are started. Do not force the drill, and withdraw it every 10 or 15 mm to clear the compacted shavings. Rub the drill frequently with a bar of soap. If it does jam in the hole, you are probably not clearing the shavings often enough. File a small flat on the shaft and attach an Engineers' Tap Handle. If you can't twist the drill out with this, try a Mole Wrench. Now you understand why the drill must not be brittle!

When the holes are drilled, poke the remaining shavings out with a piece of stiff wire. If necessary, run the drill through again, until you can see light through the holes. Check that a piece of screened cable will pass through the holes and enlarge the mouth of the tunnel B as shown on the plan. If necessary, enlarge the back cavity, so that the pickup wires do not interfere with the selector switch, when fitted in place.

Now it is time the body was sanded and the neck fitted. Then it will start to look like a guitar! Sand the neck and body, taking care not to



*It is essential to use a secure clamp when drilling with a 'Flat-bit'.*

narrow, or round over, the joint edges and ends.

Start with medium sandpaper on a cork block and work down to fine paper on a block. Don't use sandpaper without a block: if you do, you will pay for it when you start rubbing down coats of Lacquer. If you don't have blocks to fit the shaped parts, make them! Cork blocks are cheap, and easy to shape with a rasp and coarse sandpaper.

#### Sanding

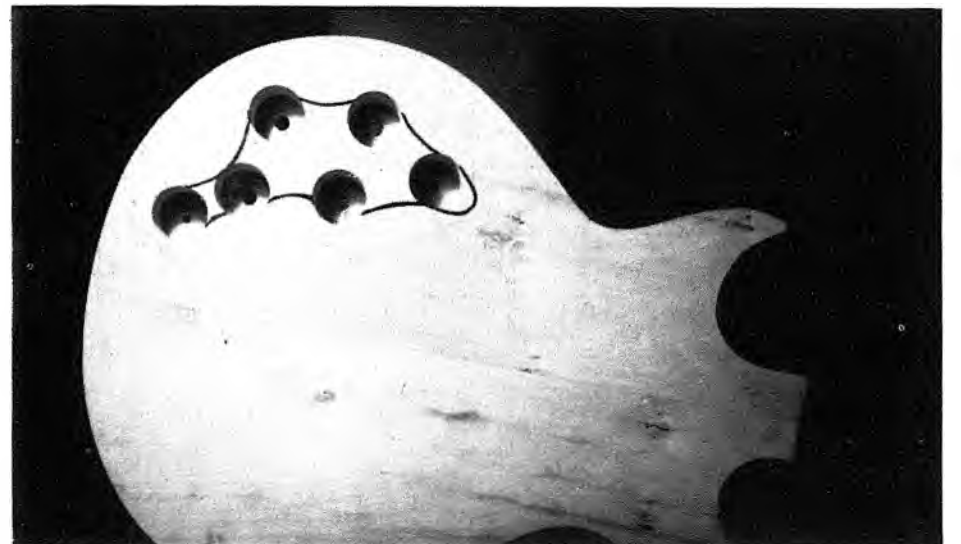
If you want the corners of the body rounded over, this is the time to do it. You should leave sharp edges on the front of the body where the fingerboard fits over it. Let the rounding of the corner develop slowly from just beyond the end of the fingerboard. You can always trim off a little more when the neck is glued in place. At this stage the body part of the neck-joint should still be just a shade wider than indicated on the plan. This surplus should also remain until later when the neck has been glued on. In any case, round over the end of the body at the back, where it joins the neck. (See plan.) Small curved sections, such as slightly rounded body edges can be sanded smooth with several sheets of paper over your fingers. This is for *smoothing* curved bits only—not for shaping them. Without backing, use one grade finer paper than you would use, at that stage, with a block. For instance, if you are using medium paper on a

block, and you have to do some part with sandpaper over your fingers, use fine paper for this. Unsupported abrasive paper cuts faster, but leaves an uneven surface with deep scratches—hence the finer paper. Even a piece of thick Hide leather or very hard felt makes a better flexible backing than fingers.

If Sanding with a backing block leaves some patches of the surface un-touched, then you have dents in the surface, and you will have to keep sanding until you have cut down the high spots level with the dents. If this is slow, you can use *coarse* paper first on large flat surfaces, but not on curves or edges. If you do, you will never get the scratches out, without re-shaping the guitar.

When you are happy with the finish on the body from medium paper assemble the neck and body without glue, and clamp in place. If you have shims in the neck joint, I shouldn't go advertising the fact, but at least make sure you have them in the right way round! Using some scraps of body wood, cut two wedges which will just slip into the gaps under the end of the fingerboard. When pushed fully into place they should project between 1/2 and 1 mm beyond the sides and end of the fingerboard. Mark which side they fit and which way round.

There, that should keep you busy until next month!



*Back of guitar*



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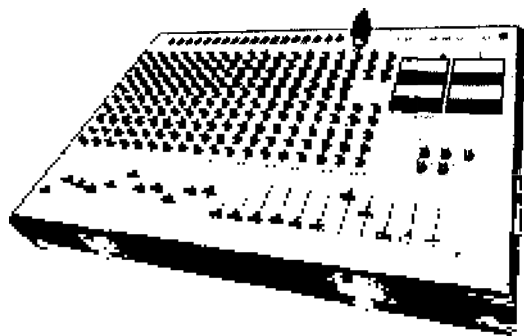
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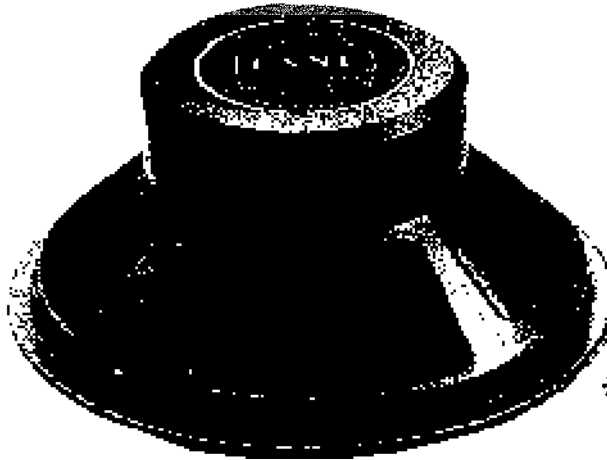
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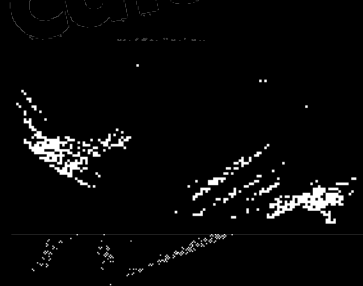
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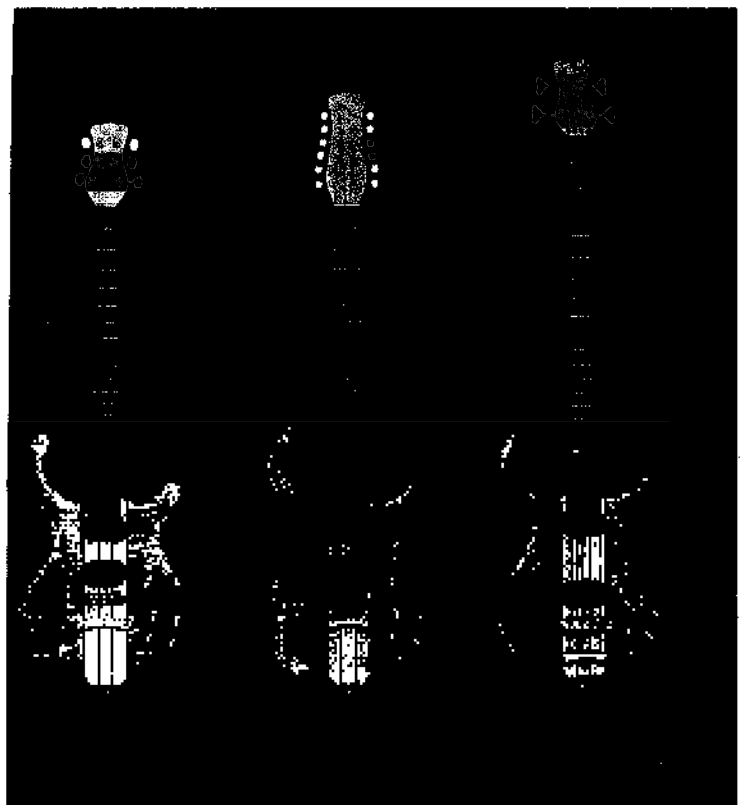
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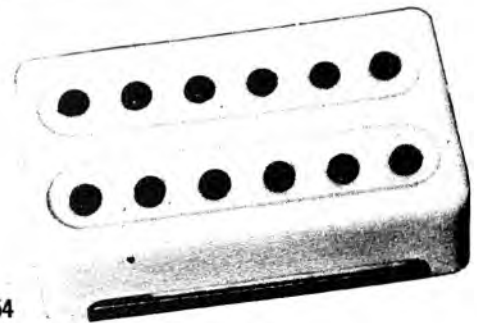
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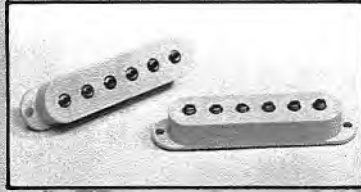
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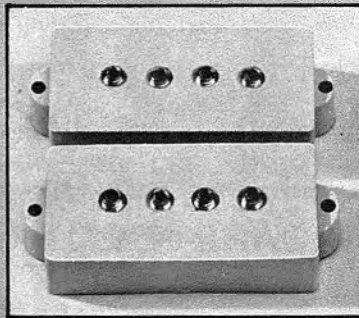
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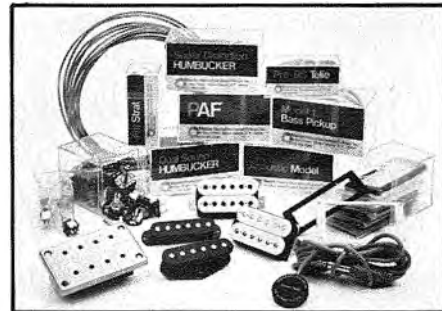
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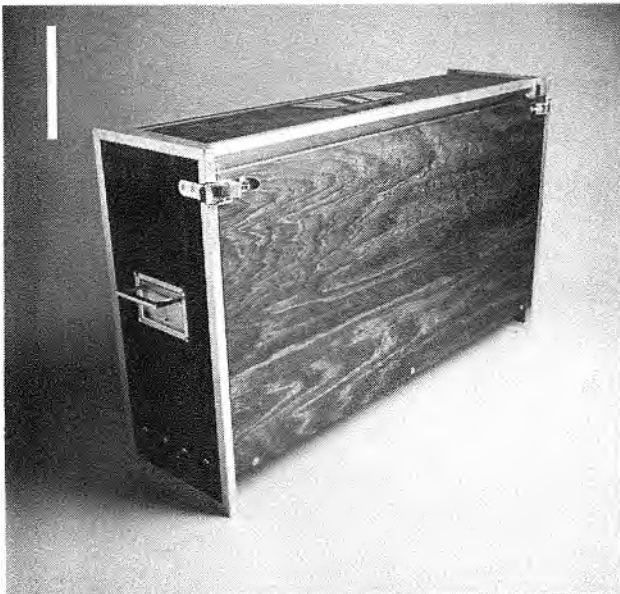
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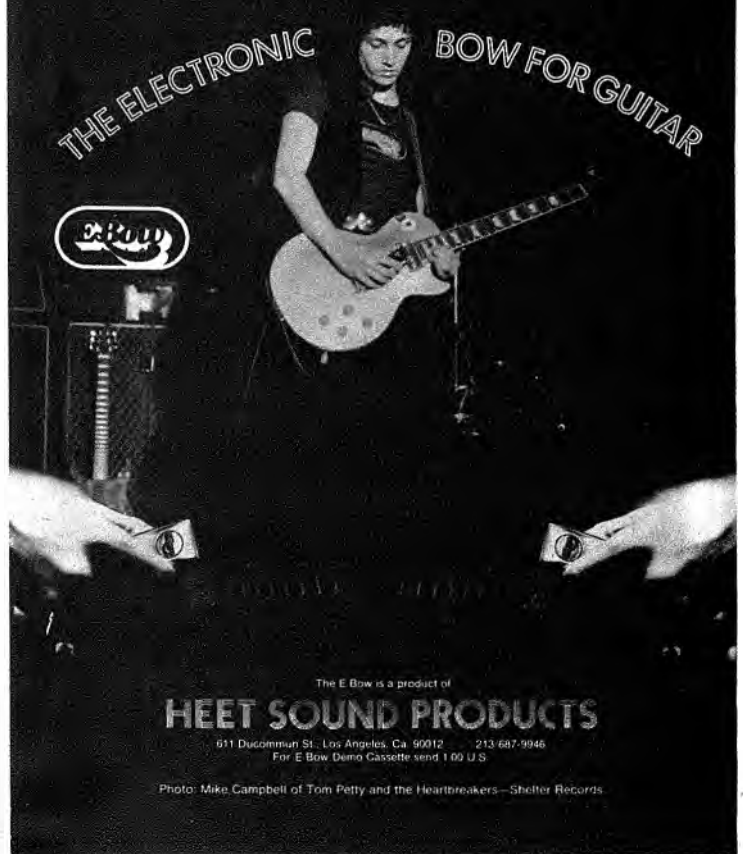
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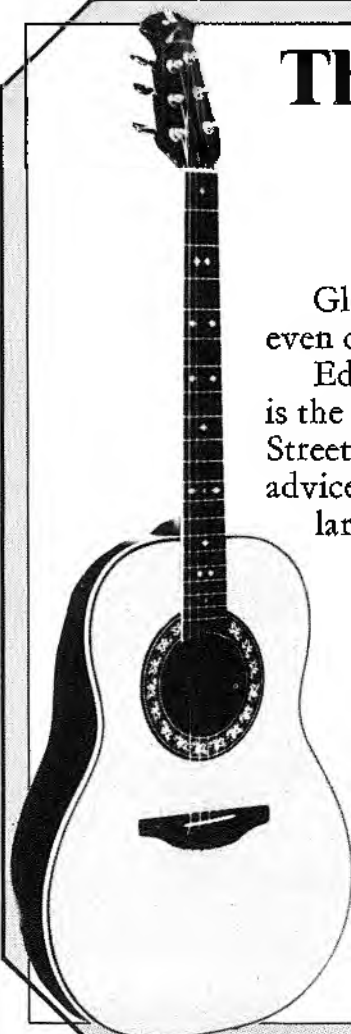
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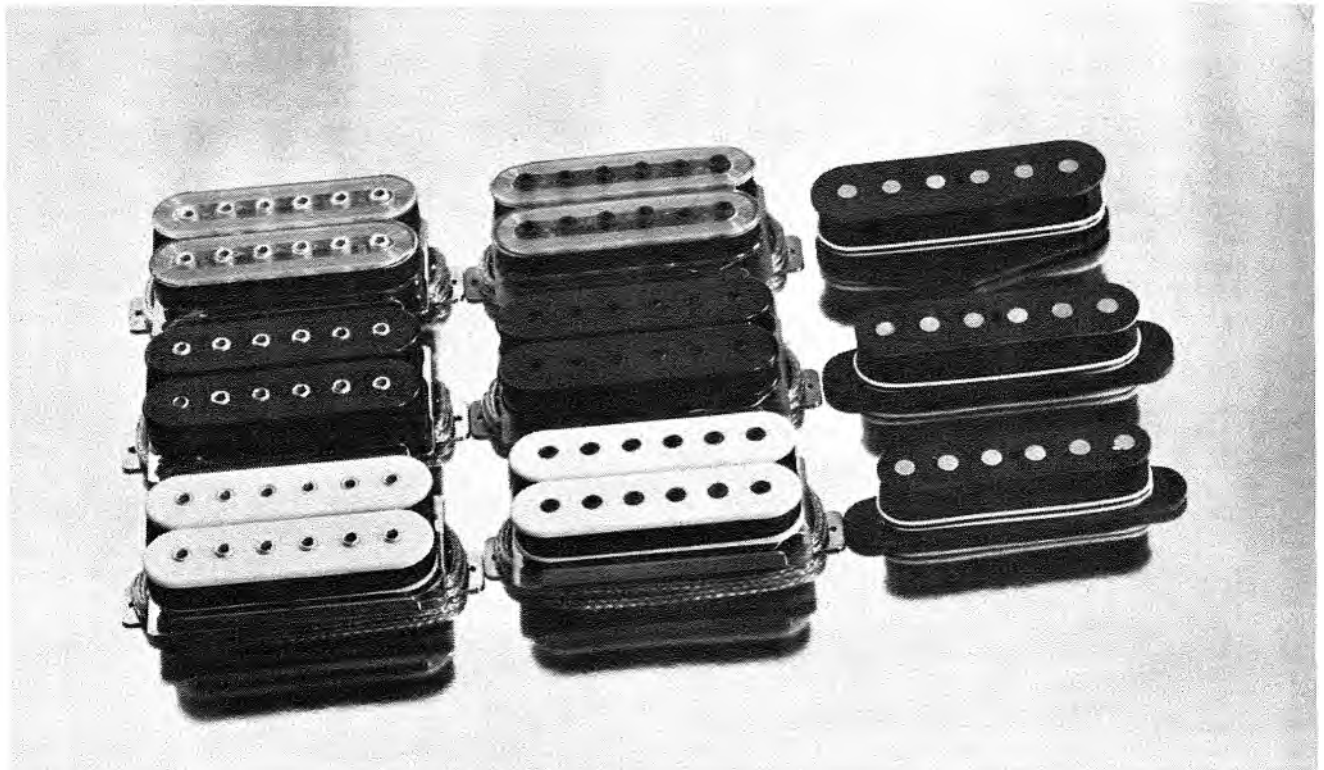


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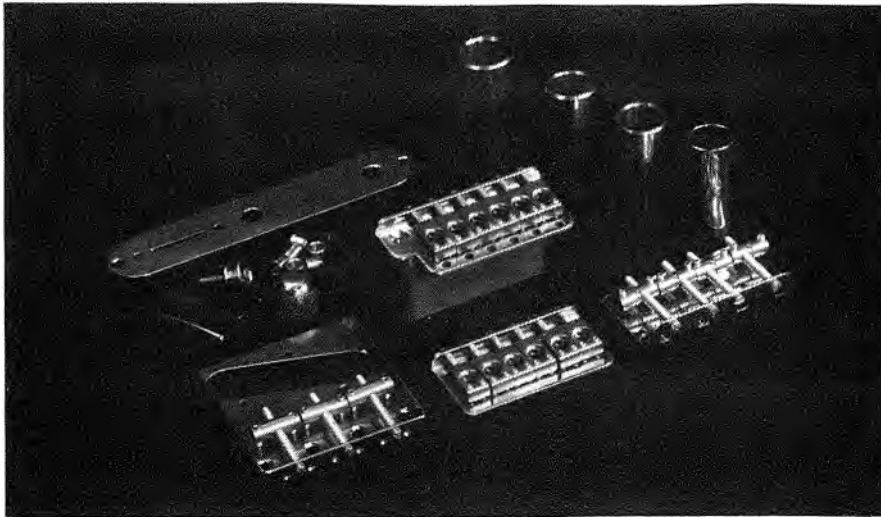
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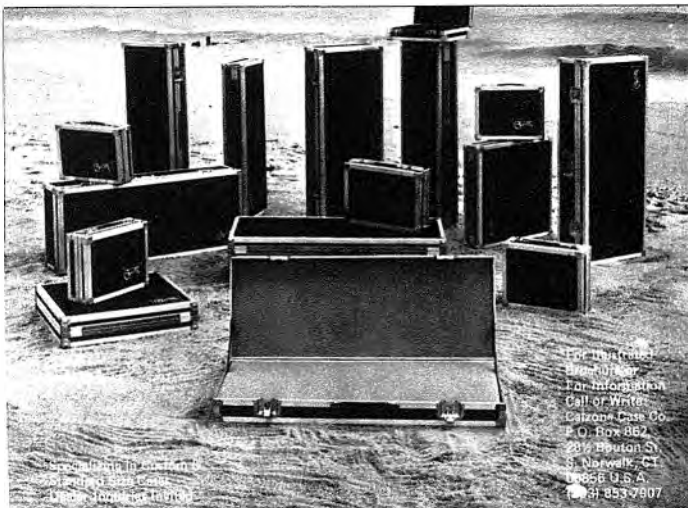


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# BUILD A MIXER Part 3

by Mark A. Sawicki, M.Sc. (Eng.) Assoc. M.I.E.E., M.A.E.S.

The Pre-amplifier and Tone Control circuits form the Channel Input Stage — one of the most important parts of the Mixer. The quality of the final effects depends largely on the quality of your assembly work at this stage, therefore, this month we will consider very carefully this section of the mixer, concentrating in the main on one channel only, as the other four are identical in construction.

A complete circuit of the Pre-amplifier and Tone Control Stages is shown in Fig. 1. The main function of the pre-amplifier, apart from its initial amplifier role, is impedance matching. Each Input Channel has a slide control potentiometer acting as a Channel Fader, which controls a whole dynamic range and can be set to individually desired levels according to various situations. Each Input Channel incorporates two input sockets: a ¼" jack as well as an XLR CANNON for overall system flexibility, however, if you are building an economy model, use only the cheaper jacks.

As mentioned earlier one of the functions of this stage is the impedance matching and to ensure a wide range of various microphone impedance acceptances — simply select the value of resistor R1 by which you can set the desired input impedance. (For details see table below).

Type of I/P Impedance	Input Impedance	Selected value of R1
Low	150. ohms	150. ohms
Low	200. ohms	220. ohms
Standard	600. ohms	680. ohms
High	50. K ohms (47.) K ohms	82. K ohms (75.) K ohms

Also the relative gain level can be set by a specially provided miniature rocker switch (D.P.D.T.) with a biased centre OFF position, allowing the user to switch off the channel when not in use — an important feature when signal/noise performance is concerned. At the non-inverting (+) input of IC 1, resistor R4 provides the test 1.0 KHz sine signal, controlled by push-button Pb1, and it is advisable to use a screened cable for this purpose, as I have shown in Fig. 1.

The function of the pre-set potentiometer RV4 will be explained later on and the IC 1 and 2 pin configuration is also shown in Fig. 1 (top view).

Turning to the Tone Control Stage, based on an inverting (–) feedback amplifier application (IC2), with two rotary BASS/TREBLE potentiometers (RV2/RV3) of 100 K ohms Lin each — we find a simple circuit allowing boost as well as cut to be applied to the desired part of the mixer frequency spectrum. Each Channel Input Stage has 6 basic inter-connections: (a) Test Sine 1.0 KHz signal, (b) to the PFL (Selector switch), (c) The Channel Output, and finally (d) (e) (f) the power supply for Ov and ± U<sub>s</sub> respectively.

To assemble all five Channel boards use Fig. 2 as a basic proposition showing the generally layout that I employed. Each Channel's mounting board was cut from universal VERO STRIPBOARD (0.1 inch pitch holes 0.040 inch dia.) and each board's size was 100mm in length and 35mm in width.

As mentioned earlier and you can see in Fig. 2, all individual Channel controls are fitted directly on to the chassis and the stripboard plates house only the small circuit items, i.e. IC's, resistors, capacitors, etc. All inter-connections between each channel module and the rest of the system are soldered to the boards via single side soldering pins (available from DORAM — Electronics Ltd., P.O. Box TR8, Wellington Road, Industrial Estate, Leeds LS12 2UF. The component overlay on the stripboard is not given as the circuit is relatively uncomplicated. All wiring should preferably be colour coded and be routed down one side (components side) of the board.

This allows the board to be moved sideways whenever servicing is necessary. As far as the rest of the wiring goes, it is wise to take precautions when soldering the delicate IC's, and to solve this, I would suggest the use of an 8 pin D.I.L. IC holder (ICs sockets) to ensure the maximum protection for these fragile components.

## POTENTIOMETERS:

- RV1 10. Kohms Lin single gang "RUWIDO" slider type
- RV2 100. Kohms Lin) carbon
- RV3 100. Kohms Lin) rotary potentiometers
- RV4 4.7 Kohms Lin pre-set carbon potentiometer.

## CAPACITORS

- |     |            |               |
|-----|------------|---------------|
| C1  | 0.33 µF    | Polyester     |
| C2  | 4.7 µF/25v | Electrolytics |
| C3  | 4.7 µF/25v | Electrolytics |
| C4  | 0.0033 µF  | Polystyrene   |
| C5  | 4700. pF   | Silvered mica |
| C6  | 0.0033 µF  | Polystyrene   |
| C7  | 0.022 µF   | Polyester     |
| C8  | 10. µF/25v | Electrolytics |
| C9  | 50. µF/25v | Electrolytics |
| C10 | 50. µF/25v | Electrolytics |

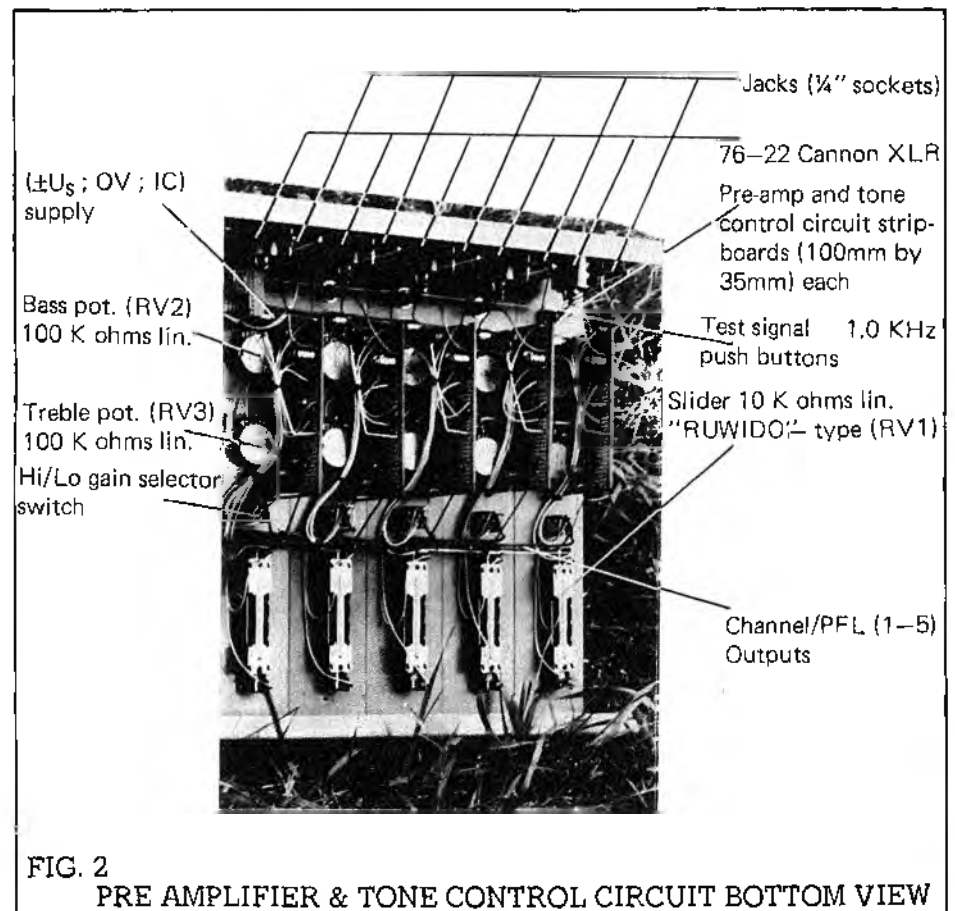


FIG. 2  
PRE AMPLIFIER & TONE CONTROL CIRCUIT BOTTOM VIEW

## RESISTORS (All 0.5 Watt @ 5% tolerance)

- R1 see Tab. 1
- R2 27. Kohms
- R3 100. Kohms
- R4 27. Kohms
- R5 1.2 Kohms
- R6 27. Kohms
- R7 10. Kohms
- R8 200. Ohms
- R9 5.6 Kohms
- R10 33. Kohms
- R11 6.8 Kohms
- R12 3.9 Kohms
- R13 5.6 Kohms
- R14 100. Kohms

## SEMICONDUCTORS

IC1 and 2 uA 741N

MISCELLANEOUS — One Channel Only  
0.1 inch stripboard (each board 100mm by 35mm) Miniature D.P.D.T. rocker switch (biased in centre position) CANNON XLR socket (option for the economy model) ¼" jack socket  
Miniature single pole push-button  
Two 8 pin DIL IC holders  
Nuts, Bolts, Washers, knobs, coloured wires etc.



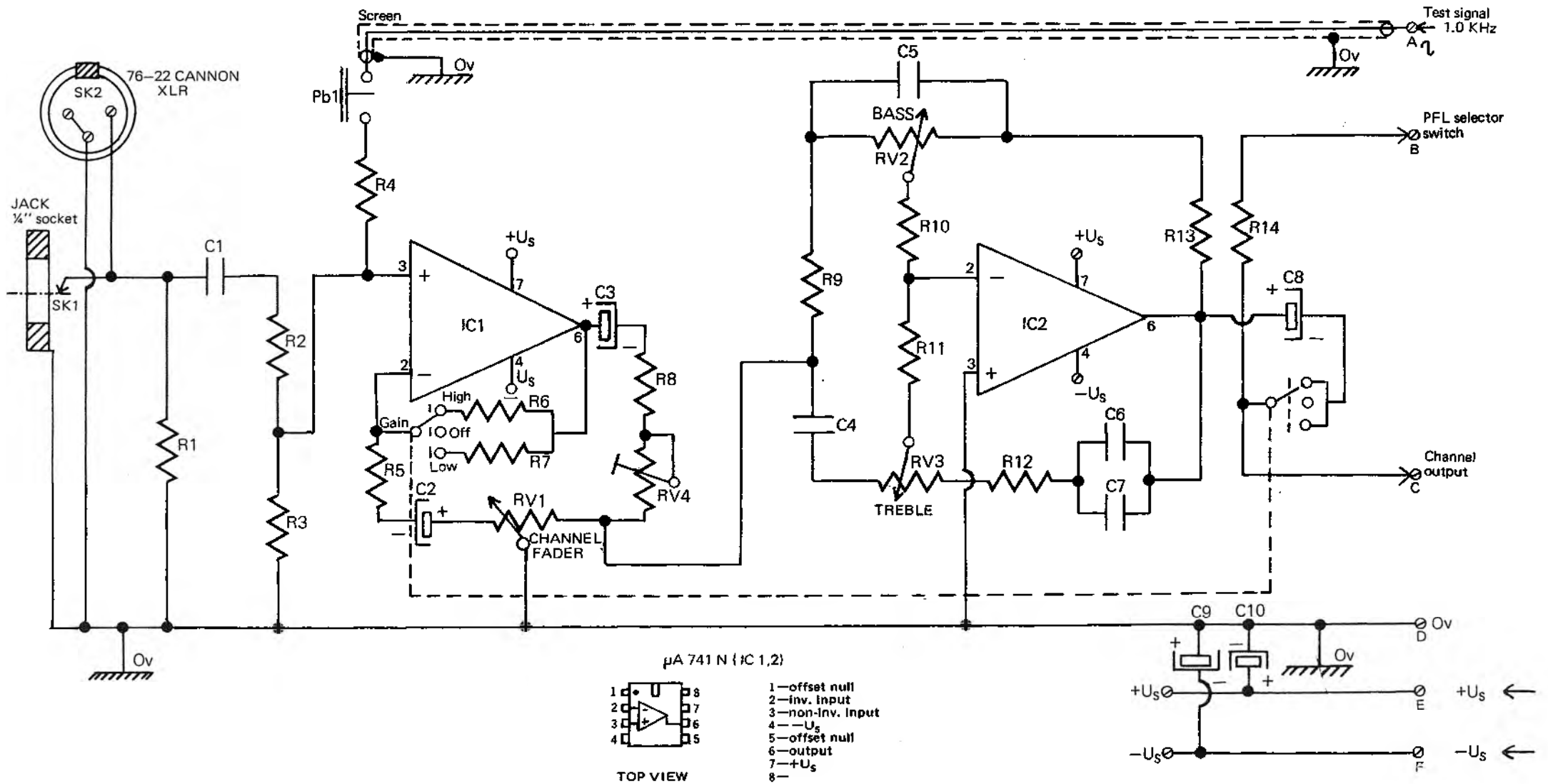
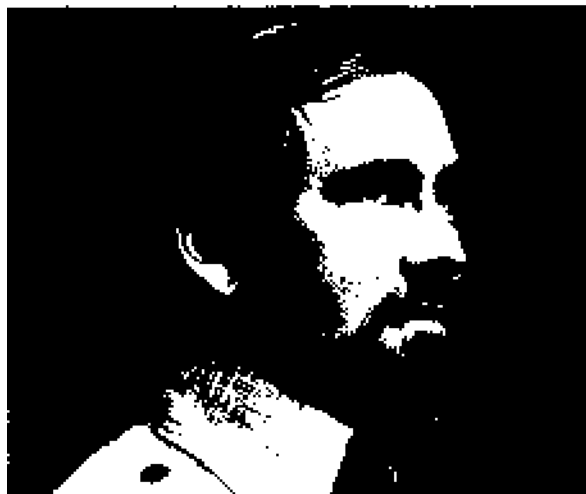


FIG. 1 PRE-AMPLIFIER & TONE CONTROL CIRCUIT

# When one of today's finest musicians needed a pickup, he picked out the finest.



See Roy Buchanan on his upcoming 1977 tour and hear his soon to be released album on Atlantic records.

When Roy Buchanan wanted to change his sound, he came to the Pickup People - DiMarzio. Roy now uses a Hamer (not pictured) equipped with two DiMarzio Super Distortion Humbuckers.

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They use DiMarzios in the guitars they record with, and in the guitars they play on stage. The same DiMarzios available to you in your store.

We're extremely proud of Roy's satisfaction with our pickups. We're certain you'll be satisfied with them, too.



For a catalog with full specifications of our products for guitar, bass & keyboards, including a complete list of endorsers, contact:



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Musical Instrument Pickups, Inc.

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Available at Macari's, 102 & 122 Charing Cross Road London W.C.2. and other fine music stores throughout the world.

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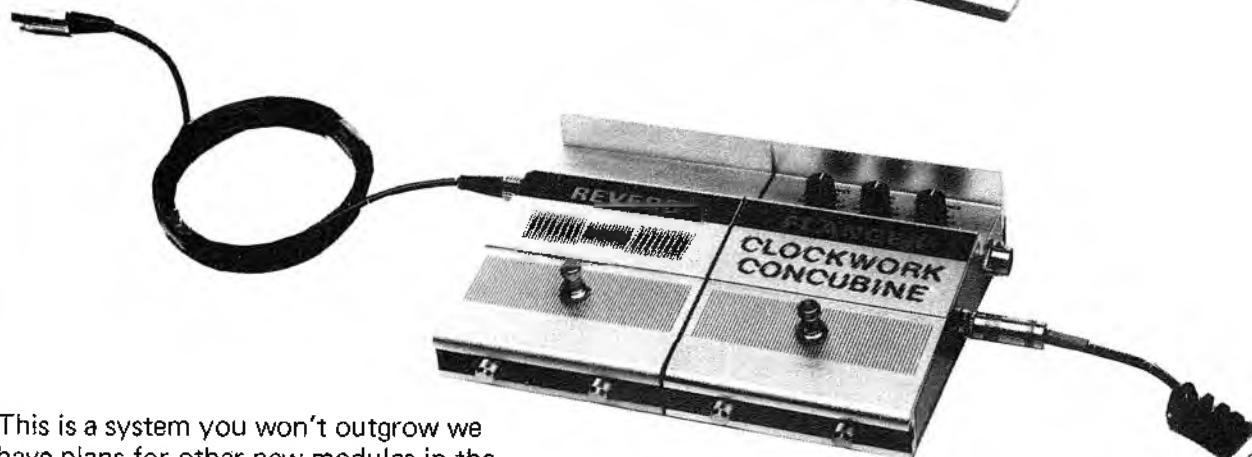


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# EFFECTS *part4*

## Vibrato and Tremelo

To begin this month's article we must first correct a mistake in terminology which has existed for many years! Basically, tremolo is defined as amplitude modulation (that is the gain of an amplifier is controlled by a sine wave oscillation, the audible effect is well known). However vibrato is defined as frequency or pitch modulation (that is the pitch of a note is varied slightly around its basic tuned frequency).

Therefore it is obvious that the tremelo arm on guitars is not in fact tremolo but vibrato, because it varies the pitch of a note! Exactly how this misnomer evolved I must admit that I haven't a clue, so let's move on to examine the background of these aged effects.

Electronic vibrato was unfortunately unconvincing for electric guitar because the pitch vibration was insufficient for the ear to detect. Therefore very little difference, if any, can be heard between old type vibrato and tremolo.

In electronic organs however, where the notes were derived from master oscillators, vibrato could be applied to good effect. Then the Leslie speaker arrived, a rotating speaker system of considerable bulk which utilised the doppler effect of frequency shift to obtain a stunning spatial vibrato effect.

The doppler effect is easiest explained by considering a moving express train! The train approaches you, on the station platform, with its whistle blowing. When it is approaching, the whistle is high in frequency and changes rapidly to a lower frequency as the train moves past. It is a function of the velocity of moving sound relative to your own velocity, or inertia, as you stand waiting seemingly endlessly for British Rail to get it together. I have heard several bands maximise the potential of the doppler effect by speeding up and slowing down their Leslie cabinets. Possibly they had their Leslie's modified to do this. Whatever the case, the effect

was startling.

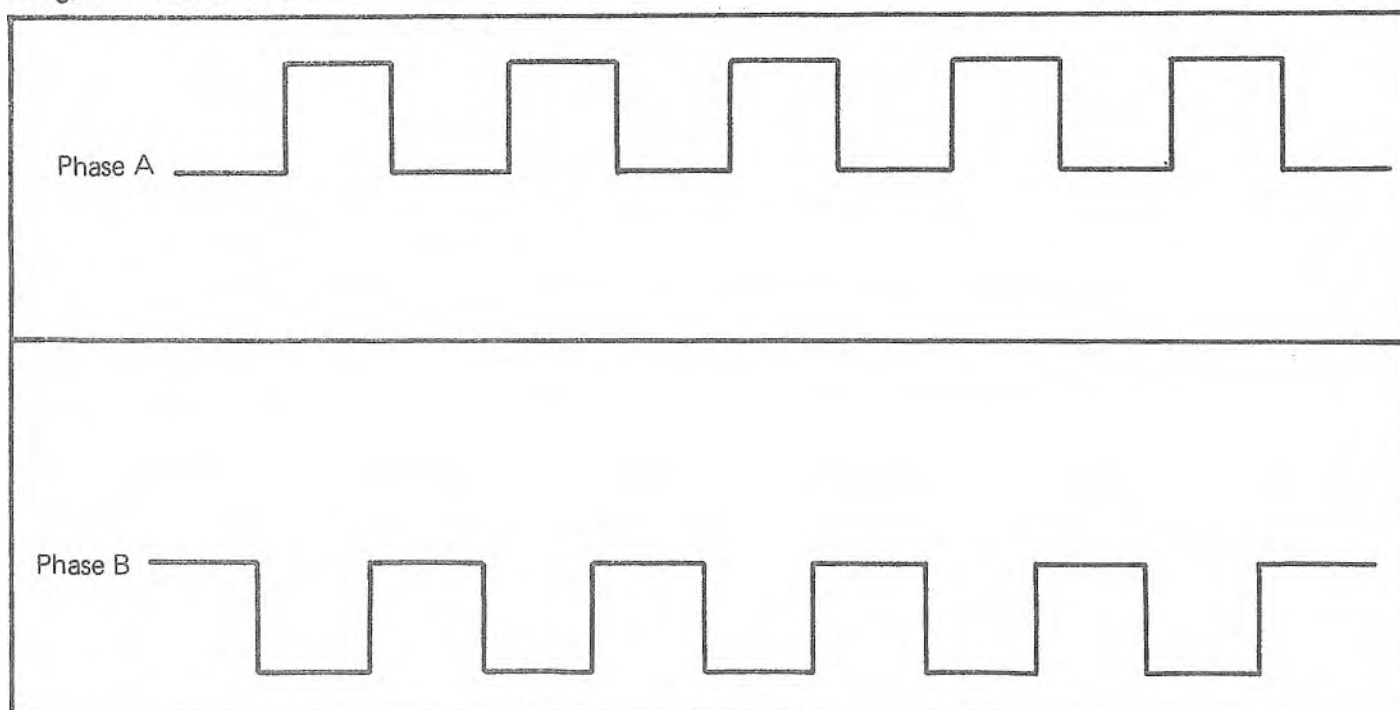
In electronic terminology speeding up and slowing down an effect is referred to as frequency modulation. Now we have to relate to the last article on flanging in which we examined that magic artifact of IC technology the analogue delay.

In very simplistic terms, the analogue delay is used in a similar manner for true vibrato, chorus tremolo, solid state Leslie as in the flanging effect. The clock waveform is still a square wave *diag. 1* but the IC is set up under different operating conditions which we will now investigate. **Vibrato** (*Diag. 2*)

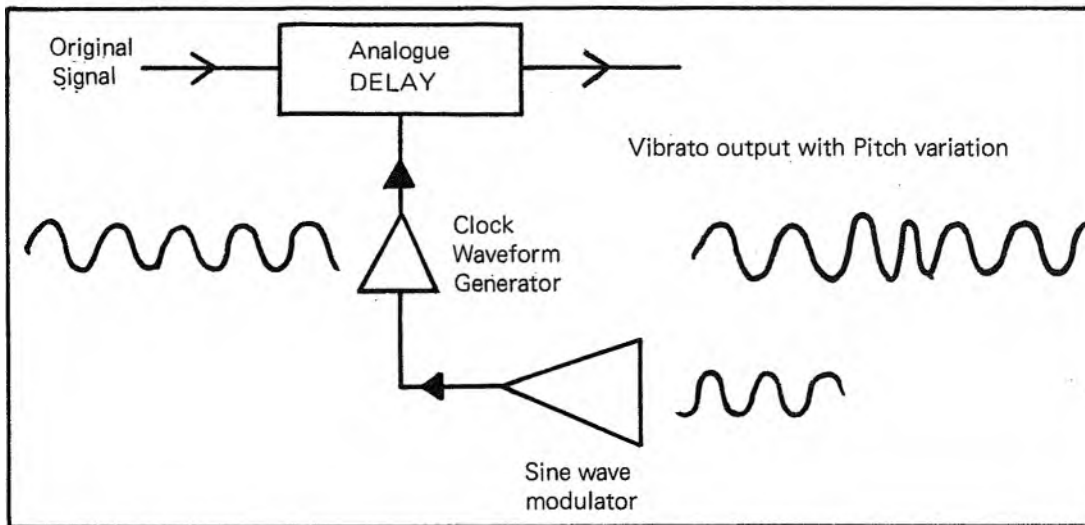
The analogue delay is used as follows the clock waveform is frequency modulated by a sine wave. (A triangle or sawtooth is used in a flanger). There is no feedback of the signal as this would produce, in the case of vibrato, an undesirable effect.

The original signal is not remixed with the processed signal as flanging

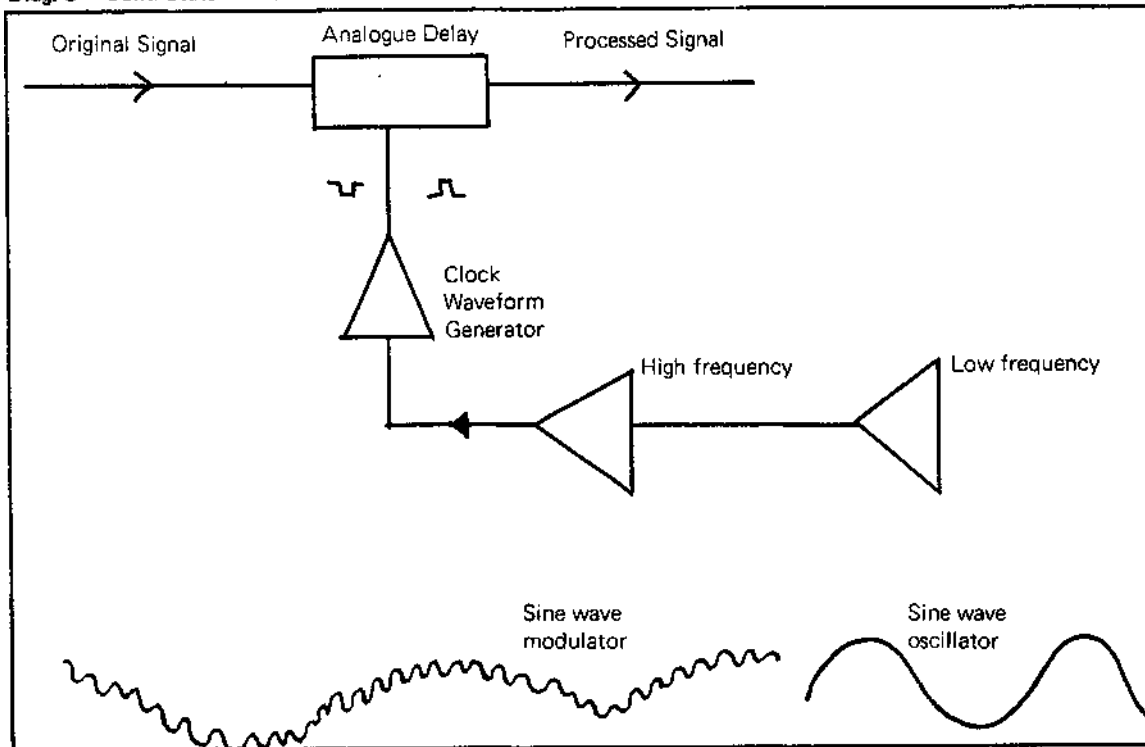
**Diag. 1 -- Clock Waveform**



Diag. 2 – Vibrato



Diag. 3 – Solid State Leslie or Chorus Tremolo



would occur at certain clock waveforms and modulation frequencies. The doppler pitch change is achieved by the sine wave modulation, that is on alternate halves of the waveform the signal is processed by the IC at a faster or slower rate. Hence at the output of the IC the signal varies in pitch.

#### Solid State Leslie (Diag. 3)

The 'magic' IC's control waveforms are even more complex to obtain a Leslie effect. The clock waveform is still our two phase square wave but the modulation frequency is composed of two sine waves. One sine wave is of a higher frequency which is superimposed on a low frequency sine wave, refer to the diagram to make this situation clearer.

Once again there is no feedback or remix with the original signal. Obviously the doppler effect is more complex than in vibrato because the rate of variation in pitch change is being altered!

#### Chorus Tremolo

This effect is basically a junior

Leslie with added delay i.e. a small amount of reverberation. Pitch change is subtle because the clock waveform is frequency modulated by a sine wave of different frequency to the Leslie effect. In a certain combo amplifier this effect is further enhanced by stereo! The amp has two channels and the output sweeps between the chorus signal and the original signal. However, because the speakers are very close together, this stereo enhancement is not so dramatic if you are more than several feet from the amp. Stereo obviously does have it's application with all effects and we shall tackle this possibility in the not too distant future.

Now it may occur to you that if all these effects, including flanging and even solid state echo, which we have yet to discuss, use the same IC the analogue delay, why don't manufacturers produce one unit which has them all built in?

The answer is fairly straightforward. The amount of control frequencies, all of differing waveforms, and the switching

involved around our "magic" IC would make the device gigantic and very costly.

However far more serious is the fact that the addition of vastly more control circuitry would increase noise figures and each effect; whether vibrato or flanging would be far less dramatic. Also on hearing all these effects you will obviously establish a preference, and would probably be dismayed, at parting with a king's ransom for a unit which had lots of sounds you personally did not favour.

Incidentally for any of you who possess a voice box you can get a cosmic vibrato by spinning the tube in mid air, which you may find useful in a recording session. Also our old type tremolo and vibrato units should not be forgotten because they can be very effective to emphasize a beat especially when used after a phaser or flanger. You may be sceptical of this statement but as is true of any effect, it's how you use it!

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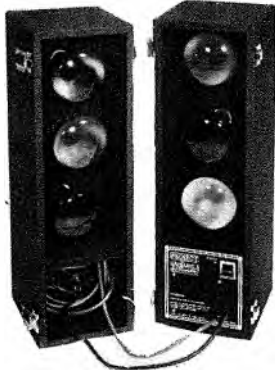
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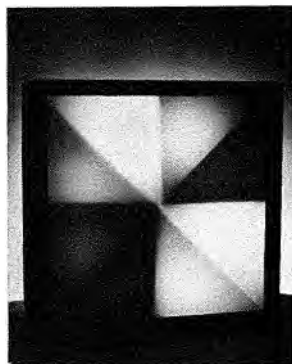
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# Replacing the spring on the Ludwig Atlas Hi-Hat Stand

The Atlas hi-hat stand must surely rate as the most copied of hi-hat stands yet, despite other manufacturers' efforts to emulate this piece of equipment, it still maintains an identity of its own and, as I'm sure most users of this stand will agree, gives many years of trouble free service.

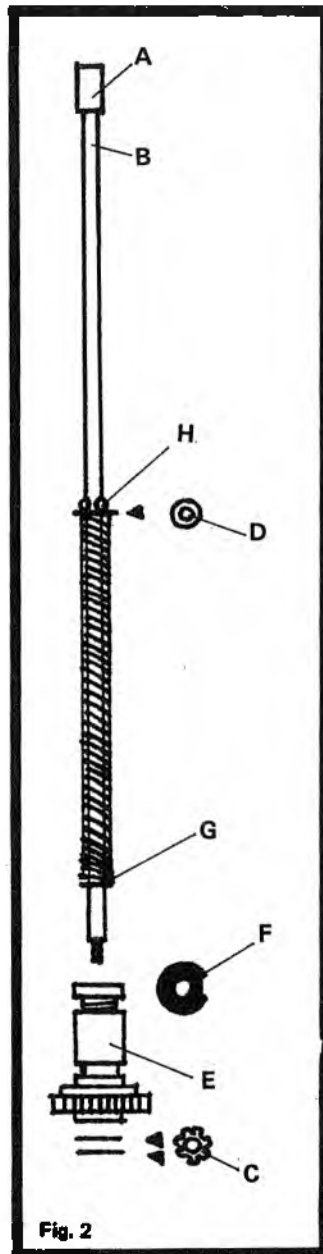
The reason for changing the spring may not be because of breakage, but may simply be due to a lack of response in the spring through constant use.

First remove all tension from the spring. This is done by rotating the nylon knurled adjuster (Fig. 1a) from left to right until all the pressure has been taken off the spring. By using a small spanner on the pull rod coupler (Fig. 2a), it should be possible to unscrew the lower pull rod assembly shown in Fig. 2.

If the pull rod coupler itself unscrews, which is usually the case, you may have to turn the rod using small pliers at a point just below the threads (Fig 2b). The foot plate will now become detached from the pull rod assembly as will the two friction washers (Fig. 2c).

It is possible at this point to remove the spring without removing the tension adjuster, but past experience has shown that a fair amount of dirt can stick to the grease on these internal parts of the stand and can reduce its efficiency to a certain degree. The removal of the adjuster is carried out as follows: remove the two small allen screws (Fig. 1b). Only one of them is shown on the diagram as the second screw lies directly opposite the first but at the rear of the stand.

As mentioned in previous articles, I find it more convenient to remove rather than just loosen these allen screws but make sure you put them in a container of some sort so you know exactly where they are.



Now tip the whole stand upside down and the pull rod complete with spring will come out. In Fig. 2 the washer D will not be fitted. I will come back to this later. The adjuster (Fig. 2e) will fall away from the bottom of the stand. The adjuster is shown in the cut-away diagram (Fig. 3). It consists of two parts: a large internally-threaded nylon unit (Fig. 3a) and an externally-threaded metal tube with a large diameter top fitted with a key way. This is shown as an end-on view (Fig. 2f).

At this point it is as well to unscrew the two parts, give them a good clean and re-assemble. Now re-fit the

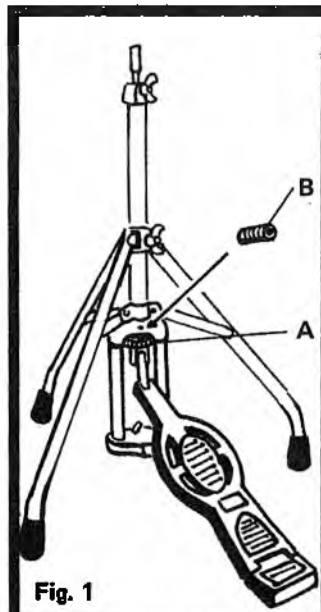


Fig. 1

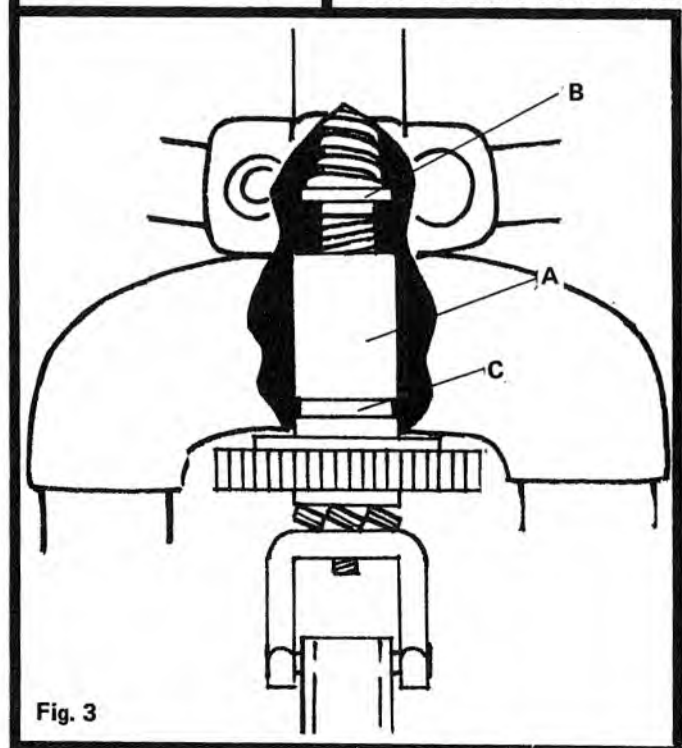


Fig. 3

adjuster back into position. The key way should be in line with the right hand pillar on the base assembly as this will allow the key inside the upright tube to come into line. When the adjuster is in the correct position, re-fit the two allen screws so that they fit within the slot (Fig. 3c). This prevents the adjuster from falling out yet still allows it to turn.

We can now fit the new spring over the lower pull shaft as shown in Fig. 2. At one end of the spring you will notice that it is slightly

conical. This end must be nearest to the adjuster (Fig. 2g). The spring is prevented from riding up the shaft by two small blips (Fig. 2h).

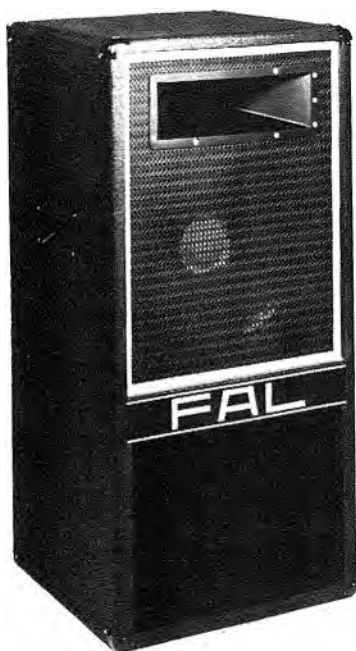
It can happen that, after considerable use, these two blips will flatten. Should this have occurred, it is possible to fit a small washer (Fig. 2d), thus preventing any slipping of the spring.

The fitting of the lower pull assembly complete with spring is next. This is best undertaken with the stand turned upside down. Feed the assembly through the tube and spring adjuster until the threaded end appears. Place over this end the two friction

washers (on some models of this stand a small rubber washer is also fitted) and screw back into the U-shaped unit attached to the foot plate. The stand can now be placed back into its original upright position and the shaft finally tightened by using a spanner on the pull rod coupler.

All that remains is to set the adjuster to the most comfortable playing position.

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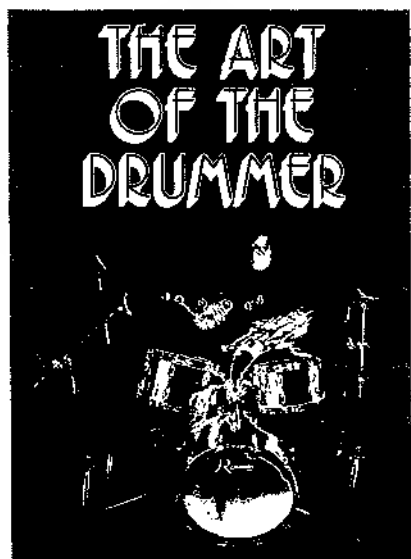


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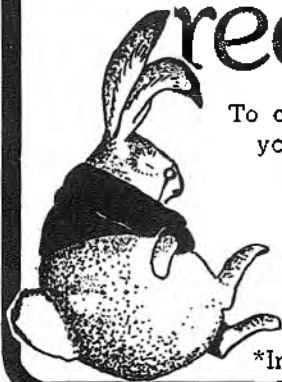


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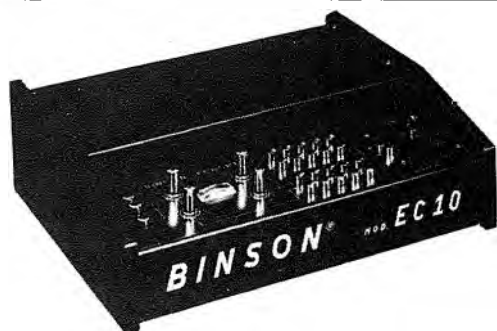
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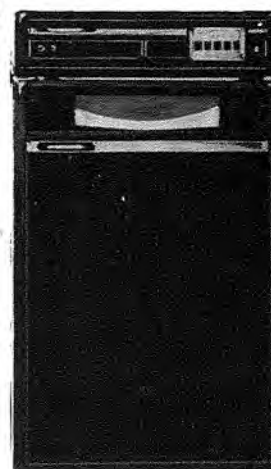
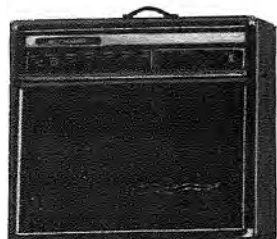
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# Dibble's



Part one in a new series in which our electro-acoustics expert Ken Dibble ventures into the hazy world of loudspeaker design and performance.

How do you go about buying a loudspeaker? Do you know what you are looking for? Do you understand a manufacturer's specification? Do you know what basic characteristics of a loudspeaker are likely to render it more suitable for one application than for another? If your honest answer to these questions is yes, then you are neither in the loudspeaker business, or are among a very small minority of musicians who have taken the trouble to study the matter. More likely, you will select a loudspeaker on the retailer's recommendation (who probably knows less about the matter than you do!) because it has an impressive (and frequently exaggerated) power rating, because you like the colour of the chassis, the design of the magnet cover (often several times the size of the actual magnet underneath!) or because you have heard from friends that a particular make or type is OK.

When you buy an amplifier, you can go into your music store, plug in your guitar and try it for yourself. You can see and hear the amp on stage, being used by name bands and leading musicians. The same goes for mics. You can go into the shop, try them, see and hear them in use. But, when it comes to a loudspeaker, you have no opportunity whatsoever of finding out whether it will be to your liking until you have parted with your cash, taken it home, installed it in your cabinet and tried it out — by which time it is far too late to change your mind.

So, compared with the purchase of any other piece of equipment a musician is likely to require, the loudspeaker is very much a hit and miss affair, full of unknowns and pitfalls and the purchaser is very much at the mercy of the manufacturer's claims and the retailer's salesmanship.

It is into this no-mans-land that International Musician is to tread new paths. After extensive negotiation and planning, for the first time ever in a musical instrument and PA context, we will carry out a series of independent laboratory tests on loudspeaker performance, compare the results with the manufacturers' specifications and with those of other loudspeakers in a similar price bracket and intended for similar applications. We will comment on the results of these tests in a practical and constructive manner as well as looking at important mechanical aspects such as chassis design, materials used etc.

Each month, we shall look at a number of loudspeaker units of similar basic type, the basic product groups being as set out below:-

1. 'Standard' 12" general purpose units.

2. 'Special' 12" units.
3. 'Standard' 15" units.
4. 'Special' 15" units.
5. Discussion on the relative merits of 'Standard' vs. 'Special' loudspeakers. (i.e. how they differ, what you get for the price difference etc.)
6. 18" units — all types.
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9. — onwards. An ongoing review of complete loudspeaker systems i.e. Bose 900, Shure SR system, E V Eliminator, Goodmans DB50 etc.

So, you will see that we have at least a whole year and more of loudspeaker tests and comment in front of us, all with the ultimate aim of telling you, the musician, the unbiased truth about loudspeaker performance.

The expressions "independent" tests" and "unbiased truth" are used with deliberation as this is exactly what we are doing. The tests themselves will be carried out at one of Europe's leading research establishments — the GEC Hirst Research Centre at Wembley in Middlesex — and I shall personally supervise and witness such tests. The equipment we shall be using is among the best available, the total installation being by Bruel & Kjaer of Copenhagen — the world leaders in acoustic measurement instrumentation.

It must, of course, be realised that we can only evaluate loudspeakers on the results of standard test procedures. There is no way that we can advise on the actual sound a given loudspeaker will produce when connected to your amplifier and mounted in your own cabinet. The possibility of subjective tests on the road was considered but, as no two musicians have the same preferences in sound and everyone has their own idea of what is and is not an acceptable sound quality, small sample testing would not really serve any useful purpose — quite apart from the practical considerations of conducting such tests. Despite all the science, trials and tribulations that people like Angus McKenzie have involved themselves in and the unlikely test criteria they have come up with, final selection can only depend on your ears and your cash resources.

The tests we intend to carry out include such factors as frequency response, sensitivity (otherwise given as efficiency), dynamic impedance, distortion-related power ratings and dispersion characteristics. It is impossible to carry out any meaningful test on a loudspeaker chassis hanging in fresh air, as the loudspeaker must be baffled in order to avoid cancellation effects (which would seriously effect frequency response and dispersion measurements) and the cone must be acoustically loaded in some way — no matter how crude this loading might

be. These criteria are always met whenever a loudspeaker is used in practice and the tests must therefore simulate such conditions. For this reason, all 12" units will be mounted in a 50 Litres infinite baffle enclosure (i.e. a closed box) while 15" units will be mounted in 120 Litres of enclosure volume. Whilst this may not be the ideal form of acoustic loading for all models, it is a fairly typical method of mounting, is generally in line with the recommendations of most manufacturers and will ensure that all test samples are similarly treated. In practice, when mounted in a properly designed enclosure of the tuned reflex or horn variety, the loudspeakers can be expected to give better results in terms of LF frequency response and sensitivity than those shown in the test results.

We shall be using crest limited pink noise over a bandwidth of 20Hz to 20KHz as a test signal. This is basically a random noise signal containing no pure tones, covering the entire audio bandwidth and with a controlled peak factor. It closely resembles a complex musical signal in many respects and ensures that the loudspeaker under test is being driven at all frequencies when measurements are made. The alternative would be to employ single frequency testing, but since loudspeakers are rarely used to reproduce single frequencies, the test results obtained would not be representative of field conditions and would certainly be misleading. For measurement of sensitivity and power handling, the whole noise bandwidth is used while, for the frequency response and dispersion tests, the noise is still fed into the loudspeaker under test at the full bandwidth but is then filtered into 1/3 octave bands before measurement and plotting.

What then can be read from test results? In fact, a good deal of useful information is provided, assuming that you are able to interpret the information given and we will devote the remainder of this introductory article to explaining in basic terms, the facts and figures we shall be providing and relating these to practical application.

## 1. Frequency Response

The loudspeaker, mounted in the standard enclosure, will be set up in an anechoic chamber with a measuring microphone positioned 1 meter away on the central axis of the loudspeaker. The loudspeaker will be fed with a wide band pink noise signal at a nominal level — about 1 watt. The resulting output from the loudspeaker is picked up by the microphone and fed, via an auto-ranging 1/3 octave filter unit, to a chart recorder. As the filter unit sweeps through the audio bandwidth in 1/3 octave steps, the paper passes slowly through the chart recorder and the resulting loudspeaker output is plotted

Fig. 2 Typical polar response plots — note that in this instance, the plot for horizontal plane (on this page) is quite different from that for the vertical plane. (overleaf).

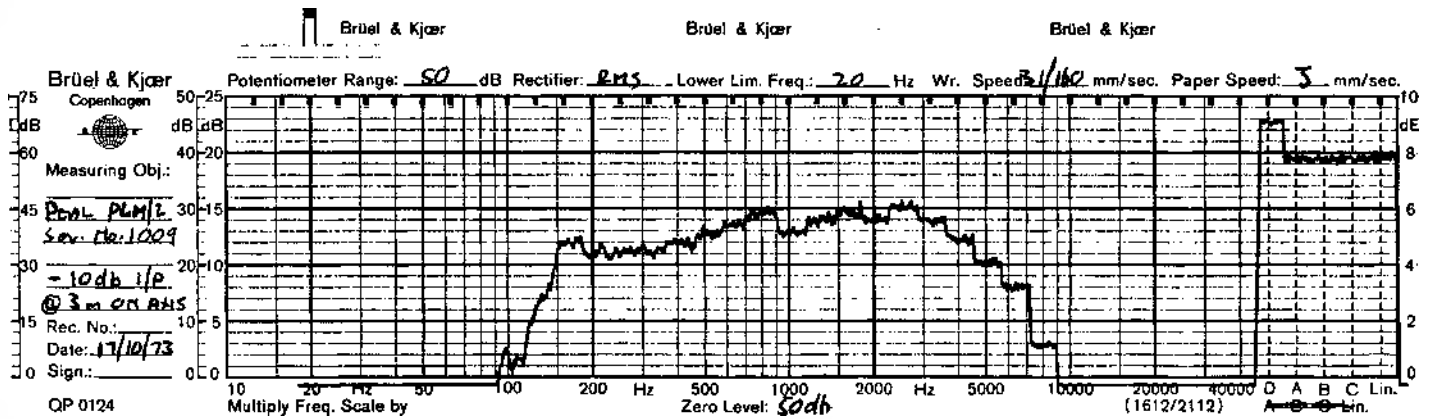
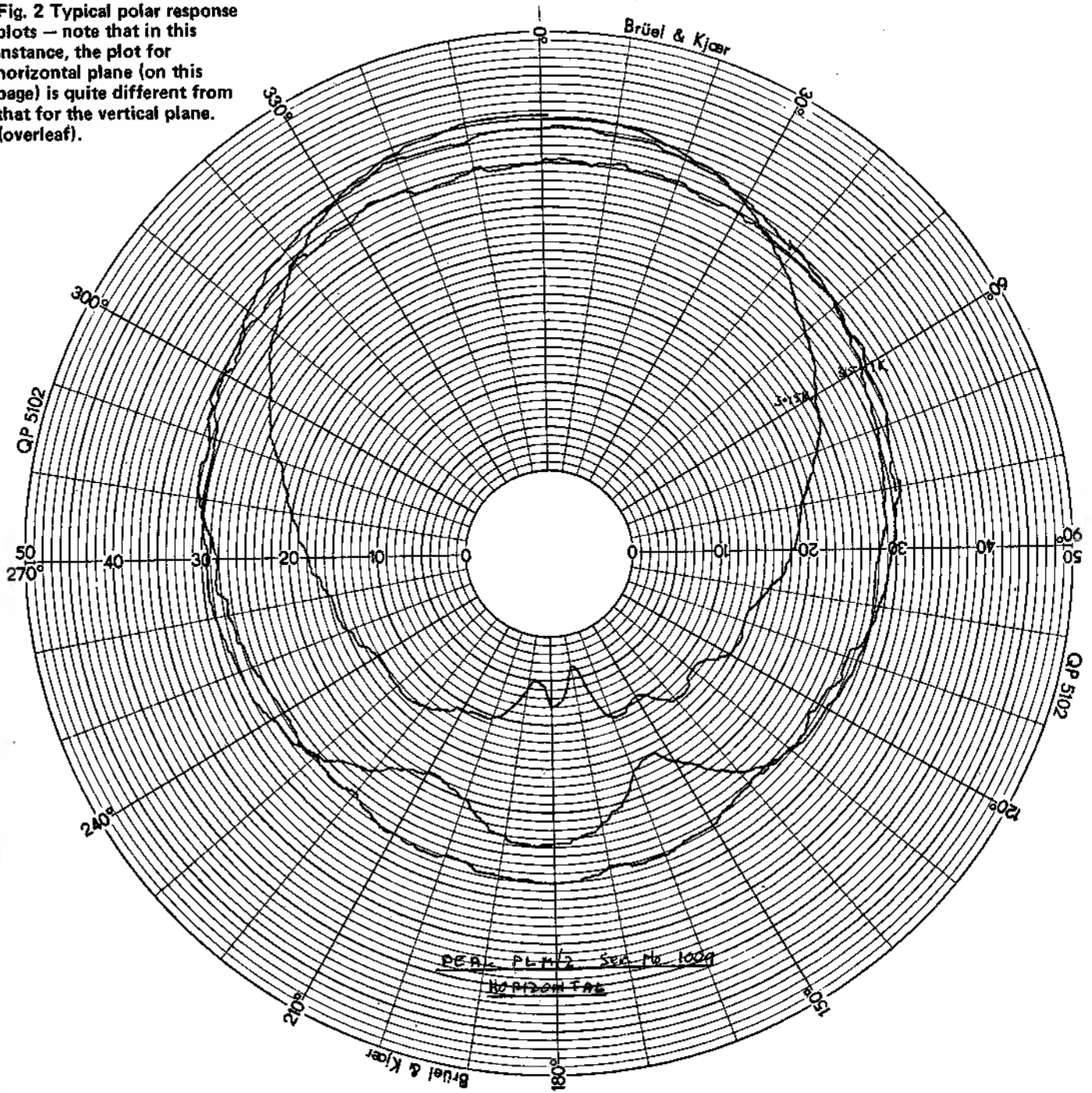


Fig. 1 Typical frequency response plot

# Dibble's



graphically. Fig. 1 shows a typical frequency response curve taken by this method at the Hirst Research Centre and a good deal of useful information about the loudspeaker under test is provided — in this case, a line-source loudspeaker intended for speech reinforcement applications.

Firstly, we can get some idea of the sensitivity, simply by reading off an average level of the plot against the left hand scale (or "X" axis as it is properly known). To read this scale, we must first establish which of the two scales provided are applicable. This is given at the top of the plot as "Potentiometer Range 50db" — so we use the 50 db scale and read off 25 db in this instance. To this must be added the "Zero Level" figure given at the bottom of the plot, under the frequency scale (or "Y" axis) — in this case, 50 db again. This gives a total of 75 db. So we can say that, for an input of -10 db (which in this case corresponds to 10 volts), the loudspeaker has a sensitivity of 75 db. However, in these tests, we will also specify a sensitivity figure separately, measured with a single frequency sine wave input at 1 watt and it can be expected that this will differ from a figure calculated from a frequency response plot due to the fact that different test procedures have been used.

Secondly, we can establish the suitability of a loudspeaker for its task. In the case of the example under discussion, we can see from the frequency scale that there is no output from this loudspeaker below 100 Hz and that the average output level is not reached until 150Hz. This is an essential characteristic for speech reinforcement applications, as it removes any boominess and colouration which would otherwise degrade articulation and mask speech emphasis. The output then gradually rises and peaks between about 800Hz and 3KHz. This is known as the "presence peak" and gives added clarity to the part of the frequency range that contains most of the "intelligibility factor" in speech.

Thereafter, the response dies away and is non-existent after 8KHz and, again, this is a desirable situation for the purpose for which this loudspeaker was designed, as it will prevent sibilance and feedback, and greatly reduce the effects of room reverberation on the reproduced sound. The 4db dip about the 1 KHz point must be considered as detrimental to the performance of the loudspeaker and, upon investigation, was found to be due to the method employed in this particular design, of mounting the actual component loudspeaker units! Similarly, the 4 db peak between 150Hz and 180 Hz was due to a design error and both shortcomings were subsequently changed and the response curve smoothed out. Although such a loudspeaker would have no useful

application in music, it served to illustrate the detailed information available from a frequency response plot and, in fact, for its design purpose, the subject loudspeaker had almost exactly the required response — what is more, it worked very well indeed in practice!

## 2. Polar Response (or radiation characteristics)

For this test, the loudspeaker is set up as for the frequency response test, except that it is mounted on a motorised turntable unit and fed with a set of single frequency signals. The rotation of the turntable is synchronised to that of a special chart recorder and the variation in output levels at each frequency is plotted as the loudspeaker rotates. Such a plot for the line-source loudspeaker used to illustrate the frequency response tests is shown in Fig. 2 and it can be seen that its response varies considerably at different frequencies and at different angles off the main forward axis (0°). Again, the shape of the plot for this particular loudspeaker is in line with the design requirements, but would not be acceptable for use as a music loudspeaker. In the case of our tests, we shall only be publishing a complete plot of this type for the mid range and high-frequency horn units to be tested later in the series. This is because there is very little difference in polar response between cone loudspeakers of the same cone diameter, so instead, we shall publish just one such plot typical of the range of units under test to give a fair indication of how sound can be expected to radiate from that type of loudspeaker at various frequencies. The actual frequencies used will be dependant upon the intended frequency band for that particular group of loudspeakers.

## 3. Power Handling

This is a very controversial subject indeed. It seems that almost every loudspeaker manufacturer has his own views and test procedures in this respect and it has been the subject of many a heated argument. The main problem arises because different types of loudspeaker have differing design factors that govern the maximum power input they can be expected to handle. In some cases, it is overheating of the voice coil, in others it is cone movement. Sometimes, the voice coil bottoms on the back plate of the magnet structure or the feed wires might fracture. Any one of these and other factors could be taken as a basis for power rating at the manufacturer's discretion.

It will be seen that all these factors relate to the point at which the unit can be expected to break down and this, to my way of thinking, is not the criteria that matters. Admittedly, it is necessary to ensure that the unit does not break down, but surely it is the performance

in terms of sound output that matters! After a good deal of thought and consultation on the matter, it has been decided that we base our power ratings on a different factor altogether — "Non Linearity".

Within the normal operating range of a loudspeaker, the degree of cone movement is directly proportional to power input. As input power is increased, a point is reached where this no longer applies and due to mechanical shortcomings, the cone is no longer able to keep pace with the energy of its motive force — i.e. the voice coil. When this occurs, the loudspeaker is said to be in a non-linear condition and this can be detected as a sharp and abrupt increase in measured total harmonic distortion. It is this point that we will take as the maximum realistic power input that the loudspeaker can be expected to handle, and it will be evident that this single determining factor will take all other considerations into account, with the single exception of voice coil overheating.

## 4. Impedance

You may well be wondering why we bother with impedance, since this is a factor pre-determined and published in the manufacturer's specification. However, impedance varies widely with frequency and it is not always measured at the same frequency by all manufacturers. It is not unusual to find that a loudspeaker with a stated impedance of 8 ohms varies in practice between say 4 ohms and 50 ohms at various frequencies. Also, the impedance when the loudspeaker is mounted in an enclosure is often different to that with the unit in free air. We shall therefore at least state the lowest and highest measured impedance and the impedance at 400Hz as a standard measurement point. If space permits, we shall go further and publish a complete admittance curve, and this will show the impedance at all frequencies.

These then are the four tests we shall be concerned with. The results will be tabulated so as to allow easy comparison between units and with the manufacturers' specifications. We will comment on the results, interpret the response plots, examine the engineering aspects of the construction and consider retail price when results are analysed. As this issue goes to press, we shall be well under way with the first set of tests and the items submitted for test at the time of writing were as follows:— Celestion G12H, G12/50M and G12/75, Fane G65/E, G65/ELT and Disco 80, Goodmans Audiom 12P/G and Audiom 12P/D, RCF L12/10, L12P/03 and L12/14 and Stagesound GP/8 and TC8.

It is recommended that you keep this introductory article for reference as the series progresses. It might well come in useful.

Fig. 2 Typical polar response plot for vertical plane

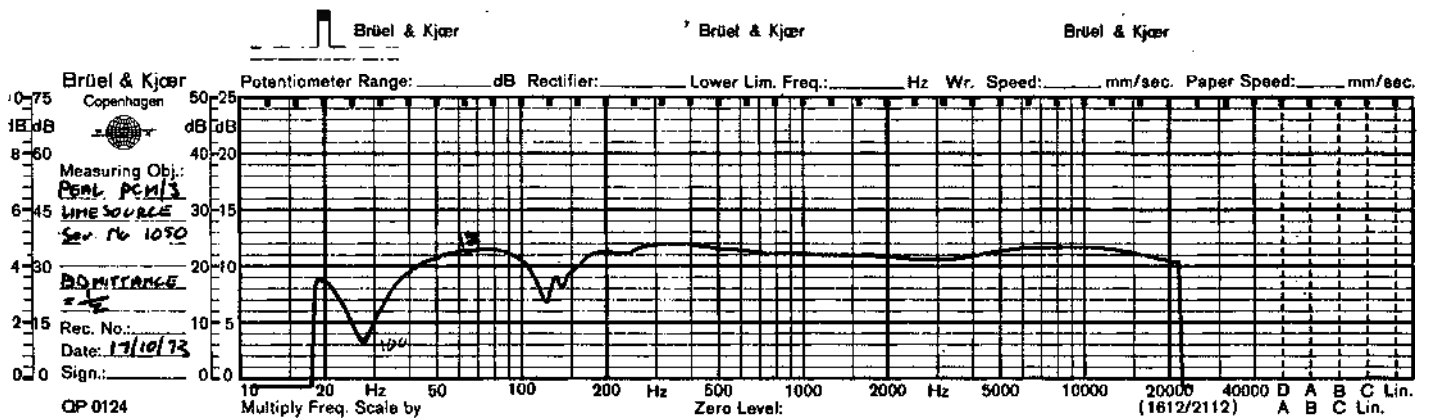
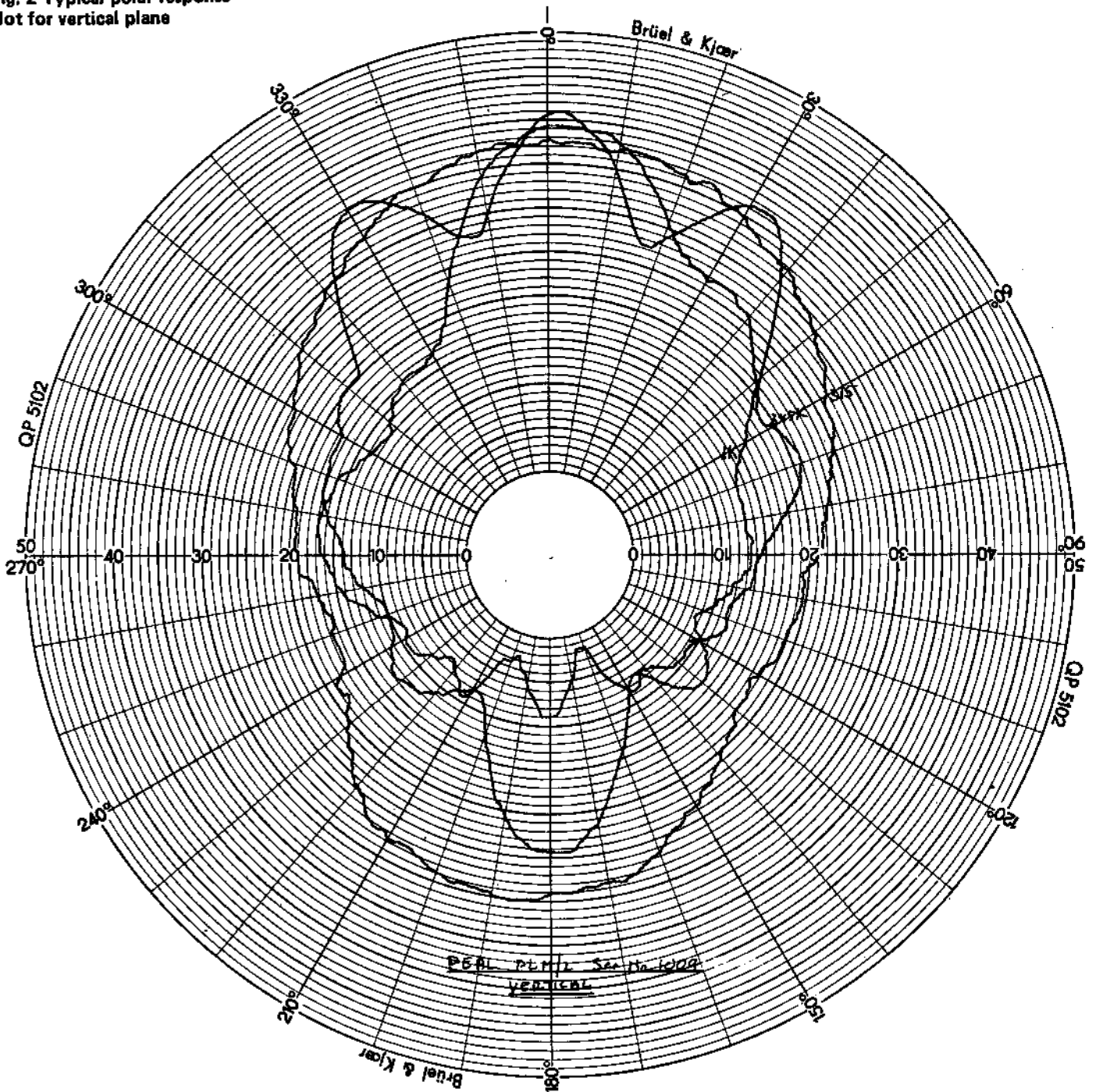
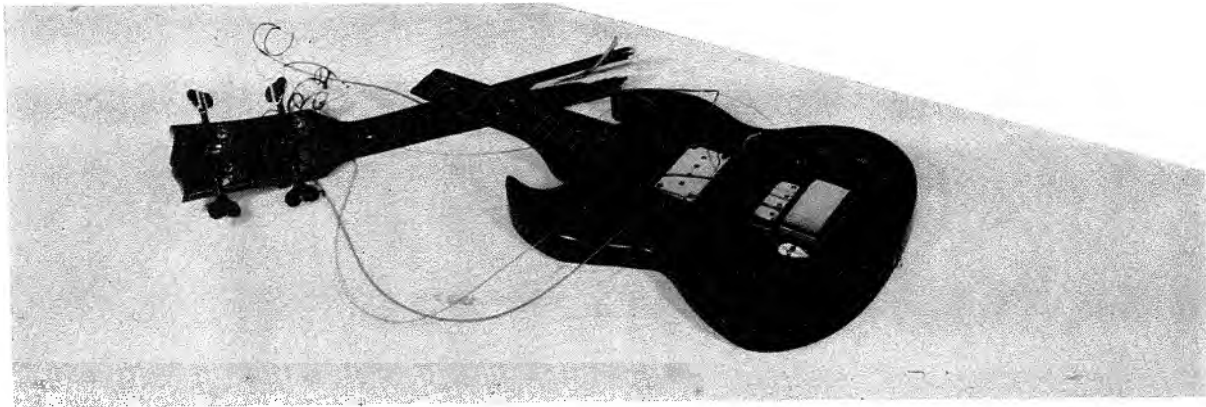


Fig. 3 Typical admittance plot showing loudspeaker impedance in the form  $\frac{1}{Z}$

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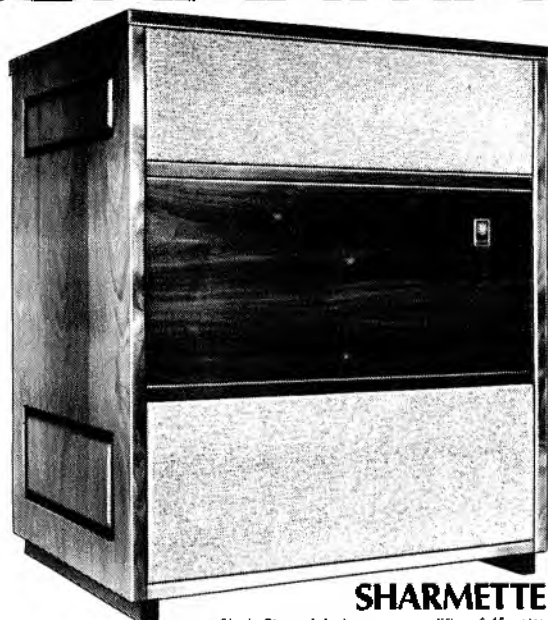
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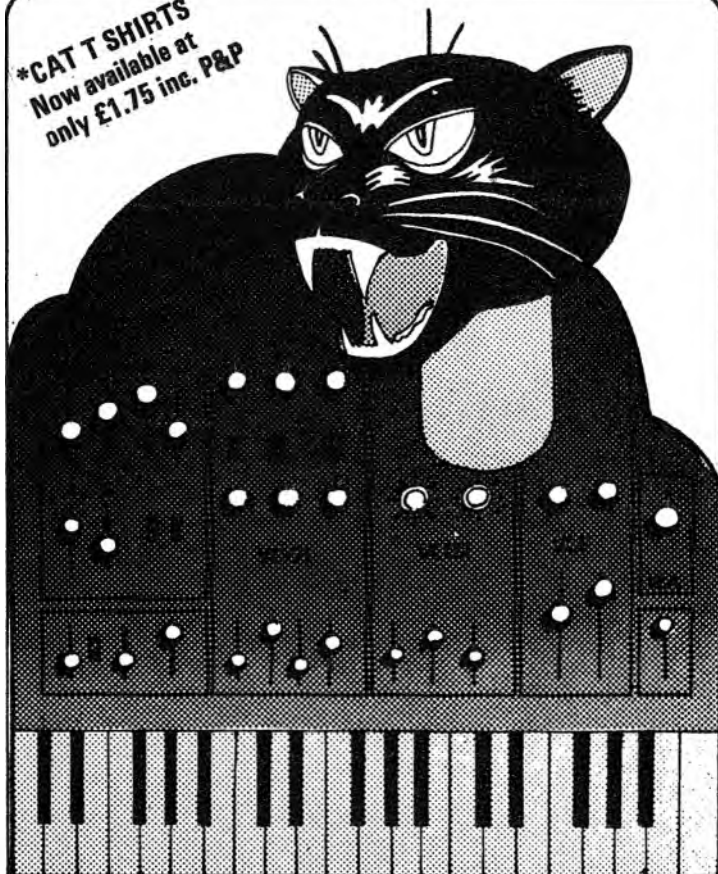
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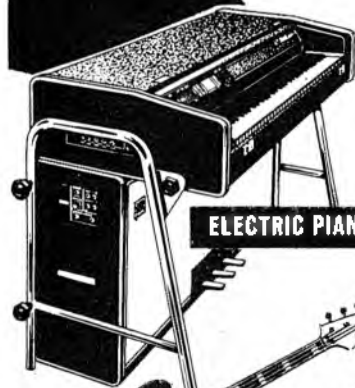
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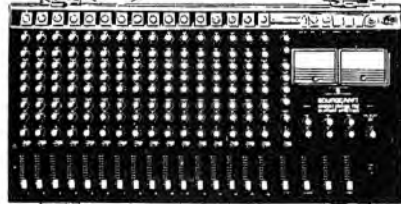
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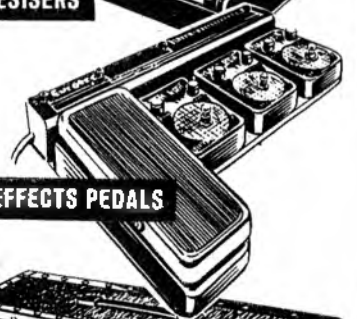
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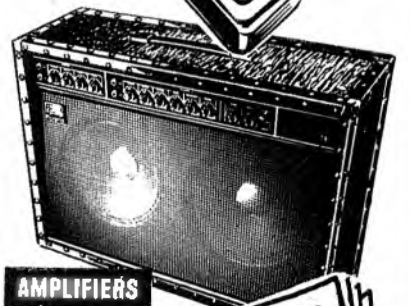
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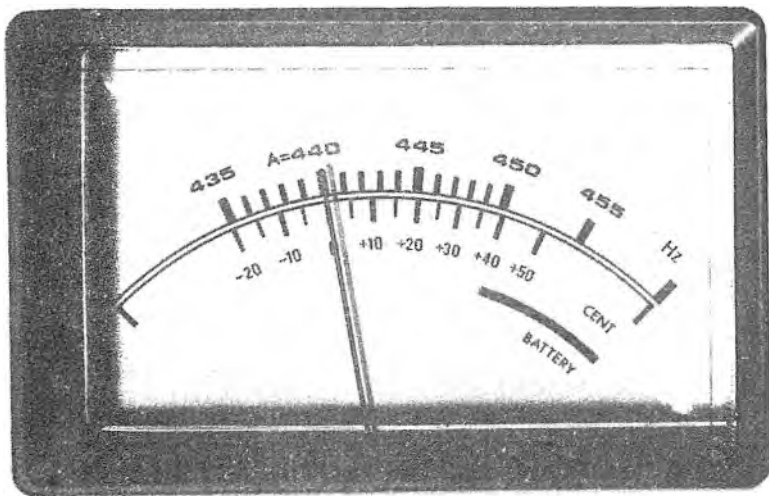
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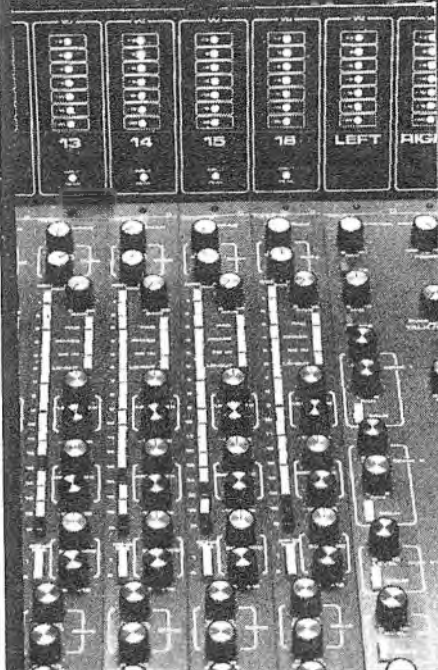
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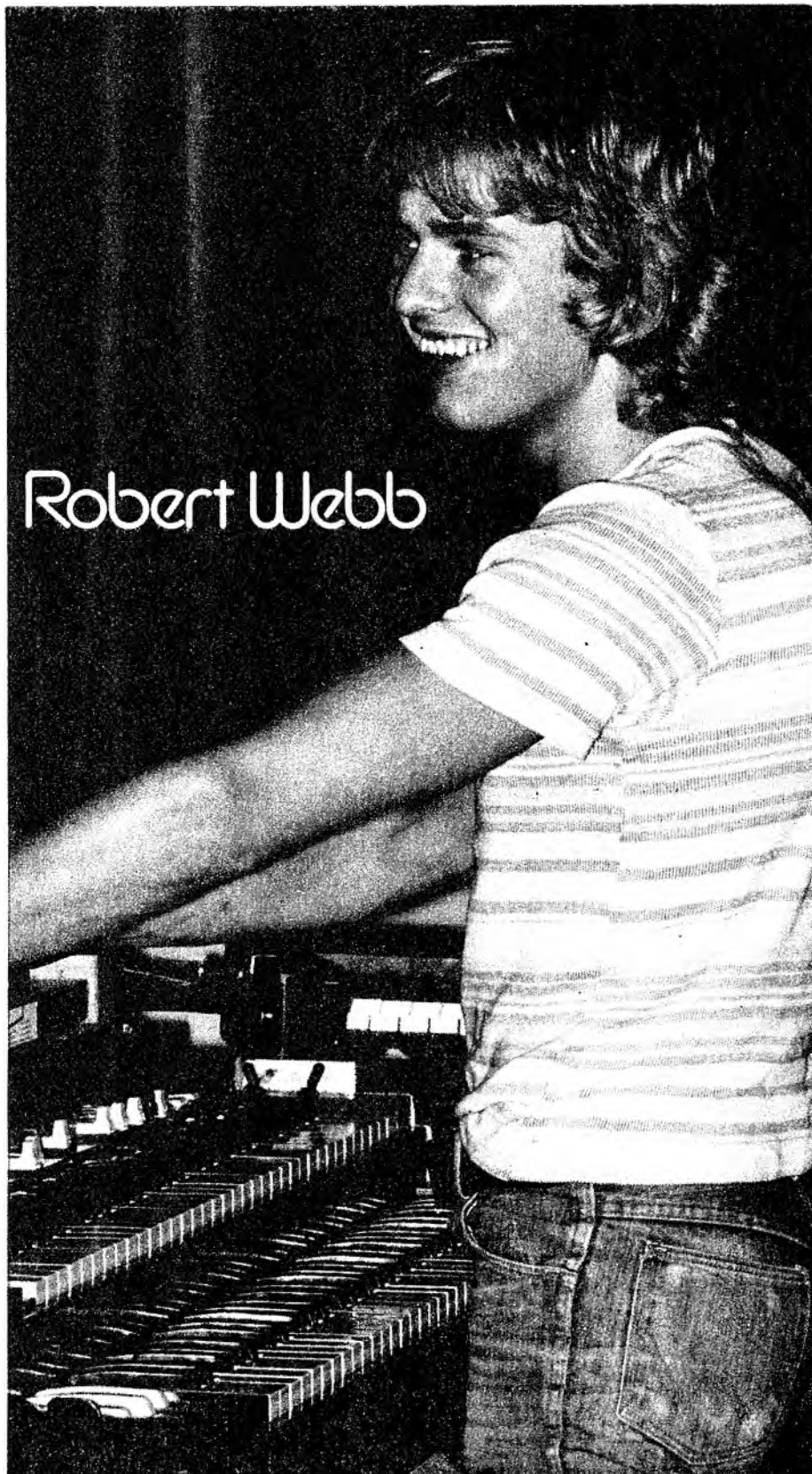
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# The Man who Chop



Robert Webb

Robert Webb is keyboards player with the band England. He also chops Mellotrons in half in his search for the perfect keyboard.

Robert's knowledge of the Mellotron is even more surprising when you realise that he has only been playing keyboards for less than three years and had never clapped eyes on a Mellotron before he joined the band.

'The drummer had a Mark II Mellotron and since then I've been collecting the Mark II. They only made 120 and I've got three of them. This is the model that bands were using in 1966 and 1967 and it was used on the intro to 'Strawberry Fields' and was on two of Manfred Mann's early albums'.

Robert Webb doesn't have much time for synthesizers. In fact he can't stand them and he swears by his Mellotrons. He bought a Mini-Moog four years ago and at first liked it. But as time went on he found it couldn't deliver everything he wanted on stage. Robert then began his first dramatic attempt at customising.

He 'stitched' two Mini-Moogs together and worked out a way of playing them both from one keyboard.

This experiment in joining two different keyboards together was taken a stage further when he sawed two Mellotrons in half and put them back together so they became one piece of equipment with two keyboards. One keyboard he used for playing rhythm and the second for playing the backing track.

The biggest problem in this amazing modification was having to cut the Mellotrons' capstans in half and fitting another flywheel which had to be especially obtained from Mellotron.

'The Mark II has got 18 sounds on each keyboard arranged in groups of three. There are three sounds in six stations on the keyboard. I wasn't getting the best out of Station Five so I edited down some tympani and choir tapes and, after quite a difficult splicing I got them into the machine'.

Robert has spent a staggering £6,000 on modifying his keyboards and the whole Webb set up is insured for £24,000.

His onstage equipment includes a Hammond organ played through two Leslies; the two halves of the Mark II Mellotrons and a Clavinet that has been cut away to fit into the Hammond.

# ped Up Mellotrons

by Ian White

The gear is amplified through a network of very early Hi Watt amps and Robert claims that the amps made by Hi Watt back in 1968 have a sound that is not equalled by current models. He reckons the early amps have more presence and a different sound.

A Fender Rhodes is also in his inventory and basically Robert hates the thing.

'I'm into aggressive sounds and there's not a lot you can do to make a Fender Rhodes sound ballsy. I've tuned it up an octave and it now sounds more like handbells hitting milk bottles. I'm always taking it to bits and putting dampers on the tone bars'.

For a contemporary keyboard Robert Webb is not at all into synthesizers.

'There are so many ways of interpreting what a synthesizer should be and

sound like. When you first get a synthesizer it sounds great. But to get the sounds you want takes a long time to set up on stage.

'On each of my Mini-Moogs I have six presets. I've made a complete duplicate of the fascia in miniature and I've got a total of 22 different preset sounds grouped in pairs which are available'.

Mention the Poly-Moog to Robert Webb and his face fills with scorn.

'I tried a Polymoog for a week and I threw it back. The sound quality is deplorable and it is a cheap-sounding instrument. I spent a week on it at home and I was pretty disgusted with it.

'The Polymoog is already two years out of date. Electronics are advancing at such a rate that, by the time you get a product on to the market, it is already out of date.

'The Mellotron principal will always be to the fore and soon there is going to be a way of reproducing a recordable sound without the use of tapes.

'That is why I've stuck with the Mellotron. A synthesizer can only do what the name implies, synthesize a sound. The Mellotron gives you the actual sound of what has been recorded.

Robert sees a time where tape will become obsolete and it will be possible to record sound direct on to tiny IC's. When this happens it will be possible to build a Mellotron-type machine which will be the size of a small synthesizer yet will be able to store thousands of 'taped' sounds.

Robert Webb may not be a synthesizer manufacturers greatest friend, but you won't find a better public relations man for Mellotron anywhere. Even if he does chop them up.



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# CENTRAL RECORDERS

There can't be many studios that can boast two number one singles in the same week on both sides of the Atlantic. Freddie Packham, the flamboyant owner of Central Recorders studios in London's Denmark Street is adamant that no other studio has achieved this feat. For the record, (groan) two Central Recorders recorded numbers were number one in the British and American charts in the same week. They were Maxine Nightingale's "Right Back Where You Started From" and the Eurovision monster "Save Your Kisses For Me." Freddie is also very proud that Olivia Newton John landed the studio the record of the year award with "I Honestly Love You".

So much for Central Recorders' laurels. Now down to business. Freddie Packham, Central Recorders' boss, is one of Denmark Street's "characters". He started in London's Tin Pan Alley in 1958 as a 78 RPM disc cutter and went on to work his way through the Beat boom recording such bands as the Bee Gees, Easybeats, Fortunes, and Honeybus.

Central Recorders closed a couple of months ago while it was being reconverted to 24 track and the closure was marked by another Central Recorders-recorded number one with Brotherhood of Man's "Angelo".

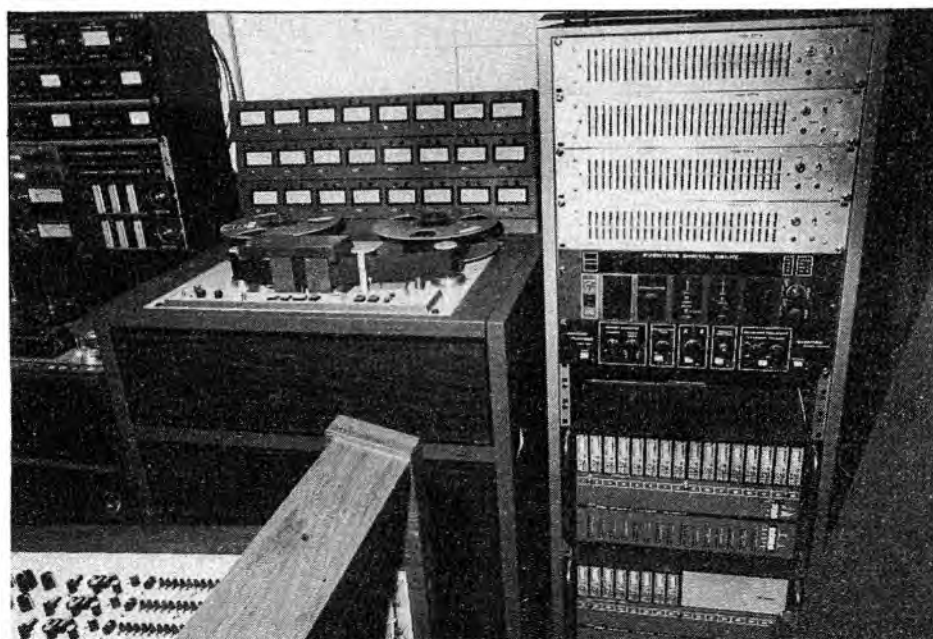
Freddie has worked as engineer, producer and disc cutter throughout his career. Central Recorders went four-track in 1963 and has constantly expanded until the current position where there are now 24-track facilities.

The studio's foundation equipment is all MCI: a 24/4 mixer and 24 track tape recorder. These are supplemented by four graphics, four DBX's, an Eventide digital delay system and Flanger and three Ampex tape machines and two UA limiter compressors, and two Pye limiters.

The studio also has an EMT reverb system and three Amcron amps. All sound is monitored through JBL studio monitors and the entire set-up is dolby-ised. An MCI auto tape locator has recently been installed and the whole operation will be automated within six months with the addition of a \$15,000 modification which will make the MCI desk into a computer-controlled wonder.

As part of the policy of expansion and improvement, Central Recorders has also totally rebuilt its studio and added 56 per cent more floor space. The studio has also been given a complete face lift and the acoustics have been re-designed.

One feature about Central Recorders is that there is no visual contact between the control room and the studio. Freddie



reckons this is a good arrangement because artists don't want engineers and producers looking at them while they are working. All contact is through cans and a PYE video system.

As Central Recorders is on the publishing industry's doorstep, Freddie has had to do a lot of bits and pieces work for publishing companies that bring in a song one week and come back a few weeks later for spots of overdubs.

"We're looking for more MOR bands rather than doing work for music companies who want to come in and do strings and so on on basic tracks recorded before. We want a band to go into the studio and be in control from start to finish. I want a band to book time for, say, a month and then finish.

"We want something which is an entity in itself and we're into long-term bookings. This gives an interest to the engineers who can start a job and see it through to the finish."

Apart from the actual studio and the control room, there is not a lot more room at Central Recorders. Granted there is a barbershop and cafe in the same part of the building. But there are probably not many bands who will want a haircut and sandwich at the same time. Not to worry, Freddie says there will be an extra 500 square feet for "layabout" space and reception area.

Central Recorders' full-time chief engineer is John Rollo who spent time with Decca as an engineer. He is partnered by Terry Yeadon, the studio manager, who has worked for Kingsway.

Apart from John and Terry, everybody else who works at Central Recorders will be freelance. Central Recorders rates are currently £32.50 an hour with £5 an hour extra overtime after 6pm and on weekends. And if you get a number one hit on both sides of the Atlantic in the same week from recording there it can't be bad value.

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“Ampex is one of our greatest hits” says Mr. Freddie Packham of Central Recorders. “We have always used Ampex 406 tape and we have had masses of hit successes. In fact we have broken the world record by having two different number one hits each side of the Atlantic, in the same week. Both recorded on Ampex tape. What else can I say?”

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Cherry Sunburst,  
Brown Sunburst,  
Cherry, Brown,  
Black

**SG-1500**  
Cherry Sunburst,  
Brown Sunburst,  
Cherry, Brown,  
Black

**SG-1000**  
Cherry Sunburst,  
Brown Sunburst

**SG-700**  
Cherry Sunburst,  
Brown

**SG-500**  
Black,  
Cherry

## ELECTRONIC PIANO

Feel and Sound of an Acoustic Piano

The Yamaha Electronic Piano CP-30 has the touch and sound of an acoustic piano. The feel is traditional and action easy and fast. When you strike a key harder the note gets louder. The CP-30 features a full 76-note keyboard and all the dynamics and expression of an acoustic piano.

In addition, you can select the sound colour you want. Numerous controls such as PITCH controls, TREMOLO controls, tone selectors, etc., put the artist in command.

Play this new voice in keyboards for yourself. Feel its responsiveness and hear its wide variety of sounds. Then you'll understand why Yamaha is the new leader in contemporary keyboards.

**CP-30**  
Keys 76 (61 + 15)  
Tone Selectors: Ch. I 4, Ch. II 4  
Effect Controls: Pitch, Decay,  
Tremolo Speed and Intensity,  
Bass, Treble



## SYNTHESIZERS

Polyphonic, Portable Synthesizers

Yamaha CS-Series Synthesizers are designed for stage use and offer undreamed of freedom. Select any of the many pre-programmed tones by merely pushing a switch. Or create any sound that enters your imagination on the programmable section. With a Yamaha synthesizer, you are in total command.

All 3-CS Models are extremely versatile and polyphonic. 8 notes can be obtained simultaneously (4 notes with CS-50) and the sounds produced can be given varying degrees of sustain, brilliance, resonance and vibrato. The slide controller on CS-60/80 can continuously change the pitch of the depressed keys when you move your finger up or down the black felt strip. These two models also feature memory bank(s) for retaining your original sounds. In addition, the CS-80 has the touch of a traditional acoustic piano.

But a synthesizer, more than any other musical instrument, must be played to be understood. The touch, the versatility and the portability of these synthesizers will let you create the sounds you have yet to imagine.

**CS-80**  
Keys 61 (C - G)  
Tone Selectors: Ch. I 11, Ch. II 11  
Programmable Section Levers: 24 X 2  
Memory Bank: 4  
Effect Controls: Ring Modulator,  
Touch Response, Sub Oscillator,  
Sustain, Portamento/Glissando,  
Slide Controller, Resonance,  
Brilliance, Keyboard Controls,  
Tremolo/Chorus, Feet Selectors



**CS-60**  
Keys 61 (C - G)  
Tone Selectors: 12  
Programmable Section Levers: 20  
Memory Bank: 1  
Effect Controls: Ring Modulator,  
Touch Response, Sub Oscillator,  
Sustain, Portamento/Glissando,  
Slide Controller, Resonance,  
Brilliance, Keyboard Controls,  
Transposition Selectors



**CS-50**  
Keys 49 (C - G)  
Tone Selectors: 13  
Programmable Section Levers: 20  
Effect Controls: Ring Modulator,  
Touch Response, Sub Oscillator,  
Sustain, Portamento/Glissando,  
Resonance, Brilliance,  
Transposition Selectors



Your Yamaha Pro' Centre For Birmingham

# Woodroffe's

Woodroffe's (Musical Instruments) Ltd  
5-8a Dale End  
Birmingham B4 7LN  
Tel: 021-236 4992/3

# Woodroffe's Musical Instruments

Ever wondered where bands like Black Sabbath, Slade, ELO and Led Zeppelin go to buy their latest eight-neck Gibson or direct-inject cello? There's a good chance they would call in to Woodroffe's in Birmingham's Dale End. Strangely enough, for a metropolis the size of Brum, Woodroffe's is the only music shop specialising in group equipment. And specialise they certainly do — virtually anything you wish to name is there in abundance.

Mike Woodroffe is the man in charge and he takes up the story: "My father Jack Woodroffe started the business in Birmingham 25 years ago. It was a smallish shop in John Bright Street and was mainly selling band instruments. It then moved in to group gear at the beginning of the beat boom and also into classical guitars during that era.

"Five years ago, I took over the business and expanded it from then on until we moved to our present premises a year ago. I started Drumland three years ago as a specialist drum shop next door but one to our former shop but we're now moving Drumland to here so we can have it all under one roof."

The one roof Mike refers to in fact covers 6,000 square feet, of which

4,500 are for retail, the other 1,500 used for storage. Drumland will still retain its name and will be run by Mike Evans and Gary Alcock. There are departments for amps and electric guitars and a separate one for acoustic guitars and these are staffed by Peter Oliver, Craig Fenney and Paul Forrester. Dave Bristow runs their specialist group keyboard department which, although situated on the ground floor along with the amps and guitars, is acoustically sealed off with double glazed doors.

As well as Drumland moving into the basement, there will also be a new PA demonstration area downstairs alongside their in-house electronics workshop, where Stanley Evans works. Stanley is a fully qualified electronics engineer also and can do anything from re-winding pickups to fitting master volume controls on amps, the latter being a popular modification among many local musos. If you want a custom-made multicore cable or nearly any electronic repair, Stan's your man.

Another new departure for Woodroffe's is the Rockex '78 show planned for January at Birmingham's Top Rank Suite. At least 30 manufacturers and distributors will have their

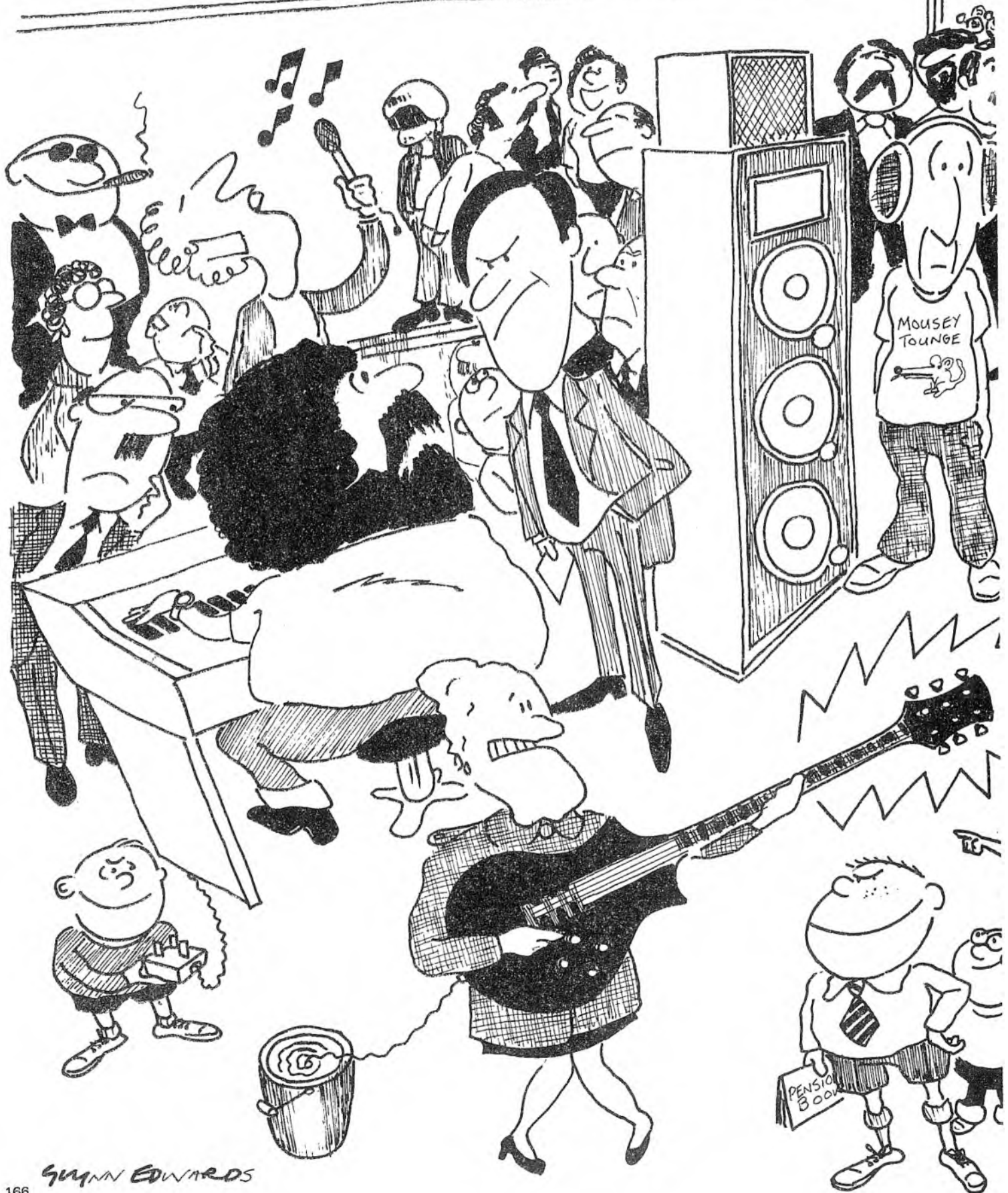
goods on display and the show will be open to the general public.

"It's not a trade show," insist Mike, "It's for musicians to see what equipment is available from a lot of manufacturers and it will cover all aspects of group equipment. It'll be a mammoth retail promotion with demonstrations throughout three days in January. It's so people can see what's available because it's physically impossible to carry all that gear in one shop. We're also hoping that some manufacturers will use the opportunity to launch new "Frankfurt" lines."

Woodroffe's are also import agents for the range of Cerwin Vega professional PA products. They sell at wholesale prices and don't supply other stores. For example it's possible to purchase a 600-watt rig with mixer for under £2,000. Similarly, a 1,000 watt rig plus mixing console would cost about £2,500. Mike also has a 10k PA rig for hire consisting of 7k for the front PA and 3k for foldback. A soundcraft Series II 24/8 console mixes out-front while a 16/2 (modified into four output groups) handles foldback. As for future plans, Mike says "I've always planned developments a year ahead. Next year, who knows?"



# Woodroffe's



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# DRUMLA

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Sunday 8th January 3pm - 10pm,  
Monday 9th January 1pm - 10pm and  
Tuesday 10th January 1pm - 10pm.  
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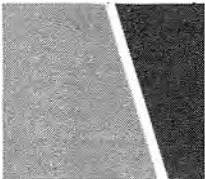
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Maynard builds it from feelings, ideas, crescendos, rhythms, harmonics, and layers of raw sound. Shure's professional SR sound equipment performs superbly even in Maynard's most demanding sets. It projects his trumpets to everyone—whatever the size or shape of the hundreds of clubs and halls he works. Take it from Maynard . . . Shure performs. That's the up-front information. And the backstage story, too! Shure . . . the Sound of the Professionals.



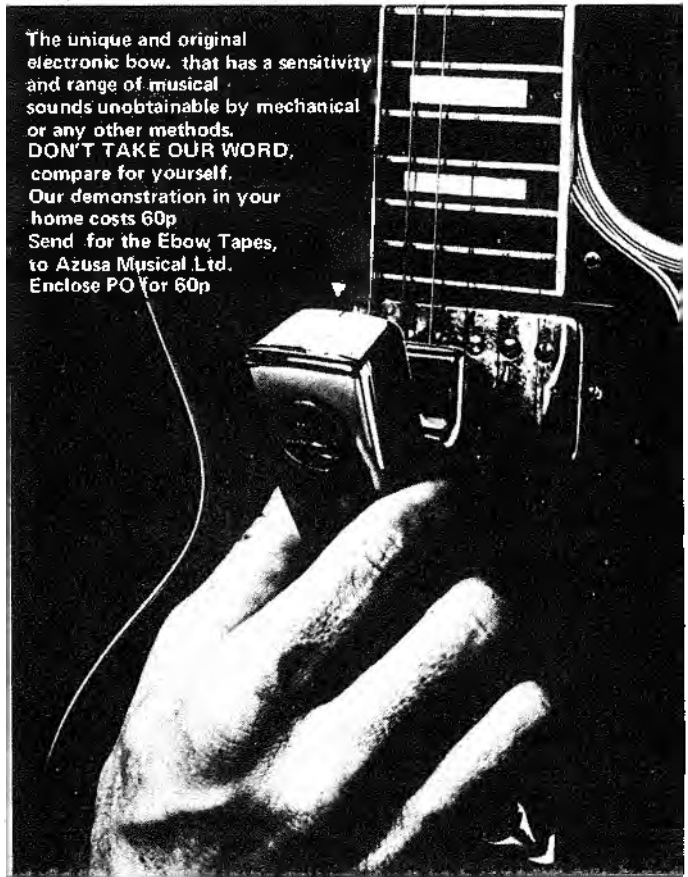
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SG700	£351.00	£40	CP30 piano	£ 857	£ 93
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Come in and try the YAMAHA SG range from the SG500  
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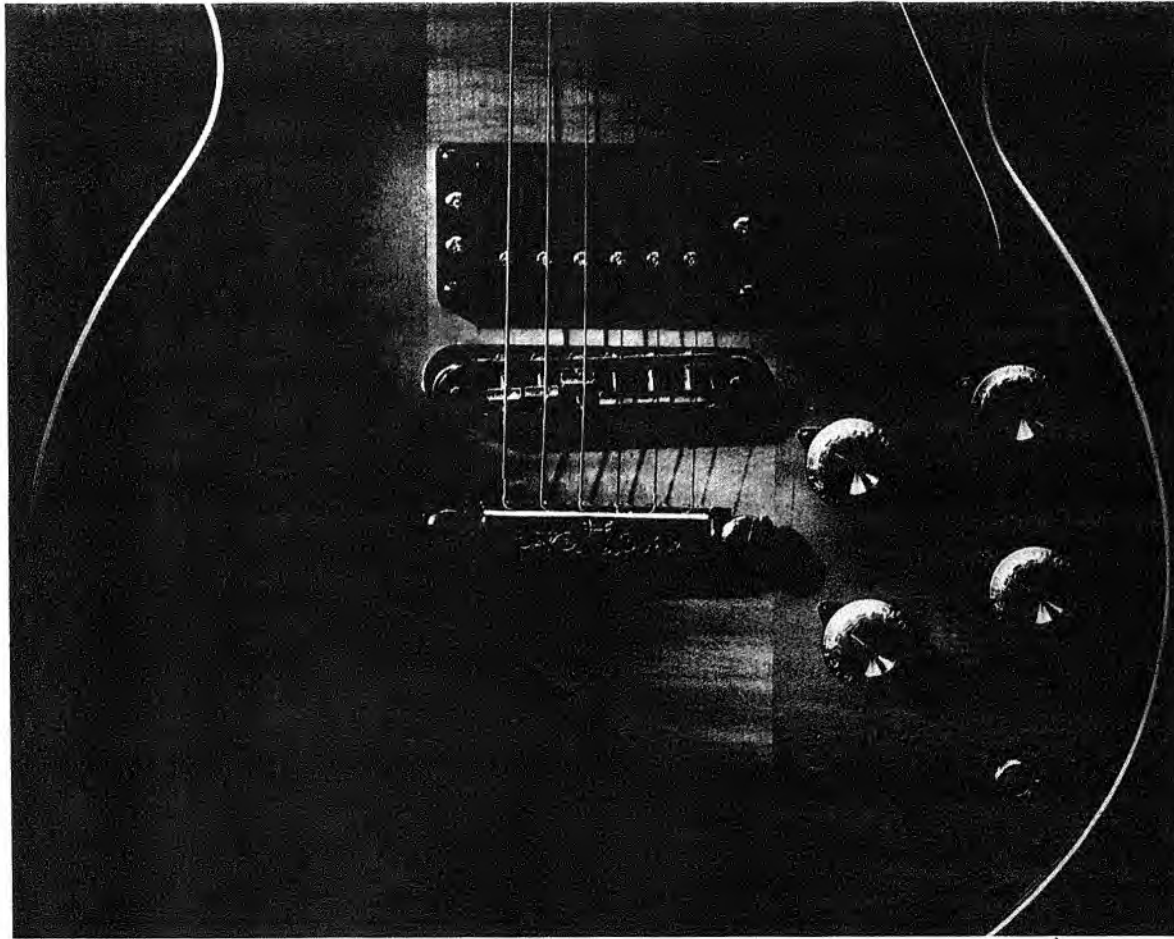
THE MUSIC STORE FOR MUSICIANS



# YAMAHA

NOW IN STOCK

# market report



## yamaha electric guitars

For many years, Japanese-made electric guitars were relegated to the cheaper end of the electric guitar market. It was either an American-made guitar or nothing as far as discerning musicians were concerned.

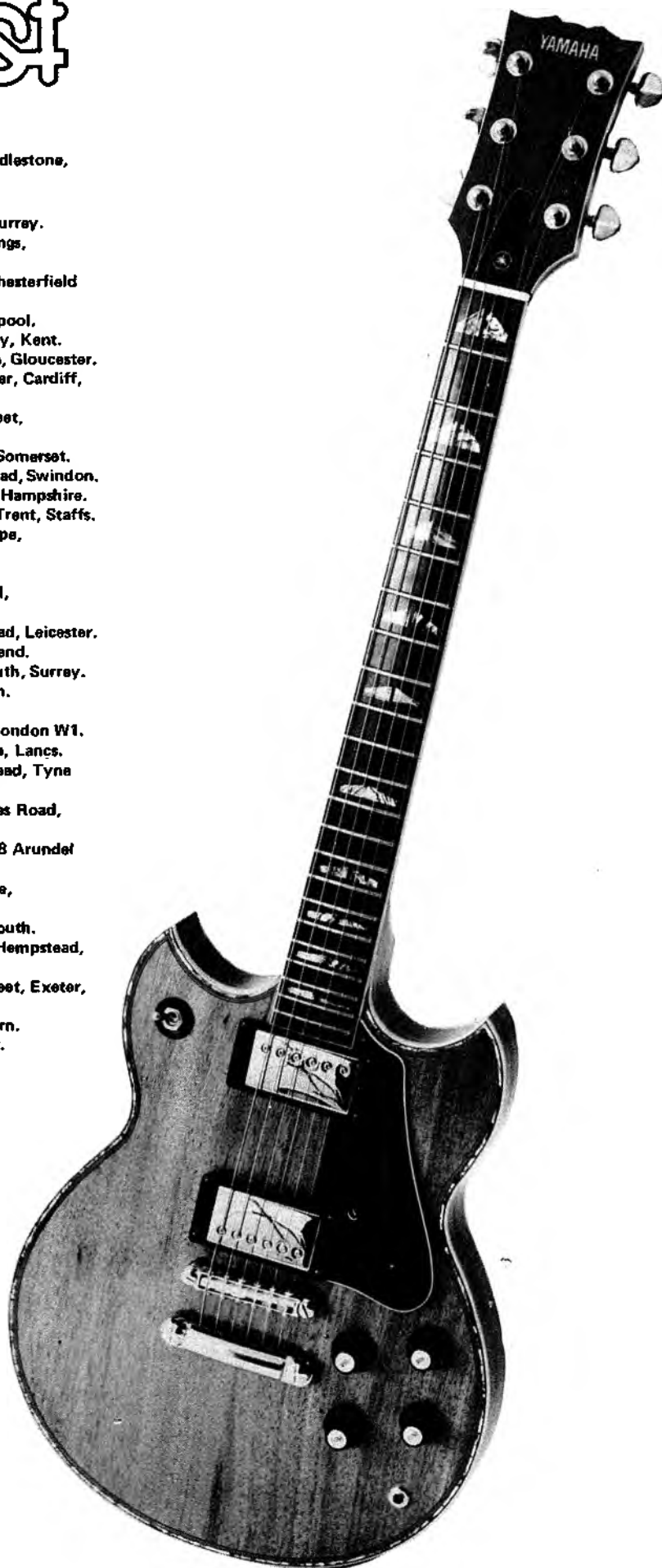
Yamaha have now changed all that with their revolutionary new series of solid guitars which were released on to the market only after Yamaha had spent years researching and building a product that would not be second best to anything. To convince guitarists that a Japanese guitar was as good as, and sometimes better, than its American counterpart was obviously no easy task but Yamaha appear to have done the impossible with the SG series.

The two important models are the SG-2000 and the SG-1500. They have been built to satisfy the most exacting guitarist and among the features of these instruments are: humbucking open pickups with Alnico magnets, one-piece body and neck, and a special sustain plate which helps transmit string vibrations to the body.

The guitars are not cheap and are as high up in the quality price range as Les Pauls and their ilk. This is where most of the marketing problem seems to be occurring. Musicians will happily pay out large sums of money for an American guitar but are reluctant to part with a similar amount for a Japanese product. Our market report seems to establish that guitarists who do pay high prices for a Yamaha electric guitar will get a product that can easily hold its own with the Americans.

# dealer list

1. Chris Hodgkinson, ABC Music, 14-16 High Street, Addlestone, Surrey.
2. Mrs. Mellor, A1, 88 Oxford Street, Manchester.
3. Steve Wright, Andertons, 5 Stoke Fields, Guildford, Surrey.
4. Nigel Robinson, Assembly Music, 25 Claverton Buildings, Widcombe, Bath.
5. Malcolm Jennings, Carlsbro Sound Centre, 182-184 Chesterfield Road North, Mansfield.
6. John Plunkett, Curley Music, 58 Stanley Street, Liverpool.
7. Barry Mitchell, Wing Music, 15 London Road, Bromley, Kent.
8. Terry Burton, Gear Box, 3 Queens Circus, Cheltenham, Gloucester.
9. Ed Noble, Peter Noble Ltd., 11 Station Road, Llanisher, Cardiff, Glamorgan.
10. Stuart McGowan, Chappel and Co., 50 New Bond Street, London W1.
11. Barry Denman, Hamlyns, 35 Bridge Street, Taunton, Somerset.
12. Dave Payne, Swindon Music House, 22-23 Victoria Road, Swindon.
13. Colin Fisher, Kingfisher Music, 20 Kings Road, Fleet, Hampshire.
14. Mr. Hale, Abbey Music, 5-6 Market Place, Burton-on-Trent, Staffs.
15. Mr. Strangleman, John's Music, High Street, Scunthorpe, S. Humberside.
16. Cliff, Rock City Music, 48 Cloth Market, Newcastle.
17. Dave, Roundhouse Music Stores, 73 Chalk Farm Road, London NW1.
18. Graham Pell, Sound Pad Music Centre, 64 London Road, Leicester.
19. Chris Stevens, Chris Stevens, 11 Queen's Road, Southend.
20. Barry Neil, Simon King Music, 240 Tolworth Rise South, Surrey.
21. Craig Fenner, Woodroffes, 5-8a Dale End, Birmingham.
22. Guy Mason, Top Gear, Denmark Street, London W1.
23. Jude Dawson, Music City, 114 Shaftesbury Avenue, London W1.
24. Arthur Bird, Rock Island, 10 Waterloo Street, Oldham, Lancs.
25. Bob Hall, Bob Hall Music, 218 Durham Road, Gateshead, Tyne and Weir.
26. Ray Smith, Norwich Sound System, 80 Prince of Wales Road, Norwich, Norfolk.
27. Mr. Bolger, U-name It, Arundel Way, Arundel Street, 8 Arundel Street, Portsmouth, Hants.
28. Rick Devlin, Live Music and Piano Centre, 16 Westgate, Peterborough, Cambs.
29. Mr. Curtin, Allens Music, 24 Broad Row, Great Yarmouth.
30. Dennis Fowler, Free 'n' Easy, 57 High Street, Hemel Hempstead, Herts.
31. Andy Greenhalgh, Bill Greenhalgh, 12 5-127 Fore Street, Exeter, Devon.
32. Steve Uttley, E.D. Brown, 55 Darwen Street, Blackburn.
33. Mr. Harrison, Music Ground, Station Road, Doncaster.
34. Kitchens, 27-31 Queen Victoria Street, Leeds.



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PRICES SLASHED	LIST PRICE	OUR PRICE
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Also in stock the full range of Yamaha P.A. amps guitar amps, bass amps and combo's and now an extensive range of Yamaha guitar strings  
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2 x 12" dual concentrics for only £145.00 pair  
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	Retail Price	Deposit
SG2000 in cherry sunburst		
with plush case	£585.00	£58.00
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SG700 in cherry red with single bobbin control with case	£420.00	£42.00

NEW ACOUSTIC RANGE

FG110 Acoustic folk style maple back/spruce top	£67.00	£6.00
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# HOW DO YAMAHA ELECTRIC GUITARS COMPARE TO FAMOUS AMERICAN MAKES?

1. They compare very favourably.
2. Production and quality extremely well, and in many cases better.
3. They are much better.
4. Very well.
5. They are tremendous value for money and in some cases better value than American guitars.
6. Better workmanship.
7. Value and quality sound — all excellent.
8. Very favourably..
9. Very favourably. The finish is more consistent.
10. Very, very well indeed.
11. Better.
12. Very well.
13. Very well.
14. First class — better quality.
15. Quality a lot better.
16. They have got a raunchy sound and sustain well, nice finish, a heavy guitar.
17. They're set up like Gibsons. Playing wise, they are a lot like Gibsons.
18. They seem better made.
19. Difficult to make comparisons, equal value for money — the Americans had better watch it!
20. Better finished, generally nice and consistent.
21. So much better.
22. Very well.
23. Very favourably.
24. The SG range compare very favourably, same quality of workmanship.
25. Very favourably.
26. They are comparable.
27. They're a better finish, more sustain, wider tone range and better intonation.
28. So many per cent better.
29. At the price they are better.
30. At least as good and probably better than most.
31. Equivalent and better for the price.
32. Better finished off — they take a lot more care.
33. Value for money, far better finish especially with case etc.
34. Very well, very good value for money.

# DO YAMAHA ELECTRIC GUITARS REQUIRE MUCH SETTING UP WHEN THEY ARRIVE?

1. No more than other makes — very little.
2. No, that's one of the pleasant things.
3. No, very very little.
4. No.
5. No, they're quite well set up.
6. None at all.
7. None at all.
8. Pretty well set up.
9. We usually re-set them up.
10. Fine adjustment occasionally.
11. No.
12. No, infallible.
13. No.
14. Absolutely none — they are usually even in tune when they arrive.
15. No.
16. They are all spot on when they come in.
17. Not as much as some others — very minor adjustment if any.
18. No.
19. No more than any other guitar.
20. No, perfectly set up and in tune. Back up service is terrific.
21. None at all.
22. No.
23. No — about the most well set up.
24. No.
25. Very rarely.
26. No.
27. Already well set up.
28. The only guitars that arrive in tune — perfect.
29. Just a small amount.
30. Never had to set one up, and we use that as a selling guide.
31. No.
32. It varies.
33. None.
34. None.



# WHAT IS THE MOST FREQUENT CRITICISM OF YAMAHA ELECTRIC GUITARS?

1. No real criticisms.
2. None.
3. We have had none, some people prefer frets lower.
4. Haven't really had any, a little dear maybe.
5. Some think they are too expensive, but we think they are worth every penny. Nobody has criticised their quality.
6. None at all.
7. The price differences between models is confusing, as a lot look similar at first.
8. Never get any.
9. Nil so far.
10. None.
11. Nothing.
12. Don't have any.
13. No criticisms.
14. No criticism. Everyone who plays them says they are magic.
15. None.
16. I think a lot of people are surprised at the big fat neck — closer to classical size.
17. They play well — not much criticism at all, the guys who play them like them.
18. Resale value is the biggest criticism, they do not go up in price.
19. I do not know of any.
20. Have not had any criticisms.
21. No criticisms ever.
22. Only one — the fact that the fretboard is flat.
23. The SG 2000 has high frets.
24. Don't know of any.
25. No criticisms apart from high price.
26. Price — people are used to spending a low price on a Japanese guitar.
27. No criticisms.
28. None at all.
29. None at all.
30. Once played, no criticisms.
31. Had none.
32. None.
33. Some people do not like the weight and also the machine heads, but much less criticism than any other guitars.
34. No direct criticism, but possibly too heavy.

# HOW MANY YAMAHA ELECTRIC GUITARS DO YOU SELL IN A MONTH?

1. One/two.
2. About four.
3. About ten.
4. Varies.
5. About two.
6. About three.
7. Between two and four.
8. Two.
9. About four to six.
10. Only been selling them for a month, but I've bought an SG 2000.
11. Six.
12. Varies.
13. Two.
14. Two to three.
15. Four.
16. Four or five.
17. —
18. Varies — not so much as expensive ones.
19. Not had them long enough to say.
20. Couldn't tell you, but they're fast selling — couldn't praise them highly enough.
21. Three.
22. Only just started selling them.
23. One to two.
24. Three or four, the 1500 is very popular.
25. Three or four.
26. Haven't done them long enough to know.
27. Varies.
28. Two.
29. About one a month.
30. Two to three.
31. It varies — more than famous American makes.
32. Two in the first three weeks.
33. Three or four.
34. None as yet.

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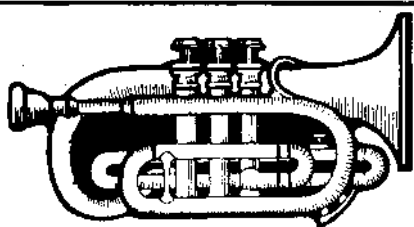
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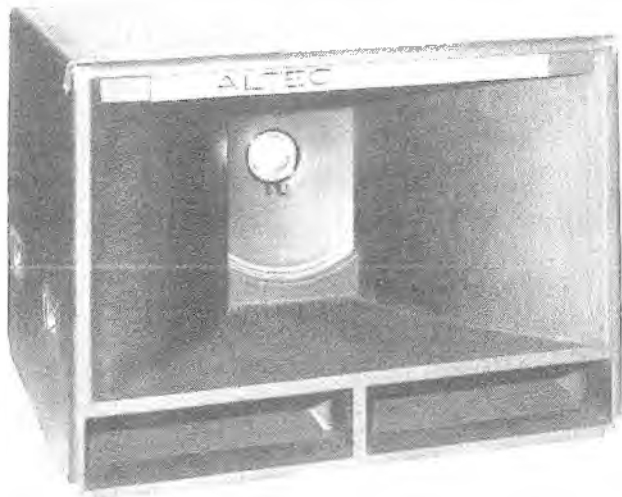
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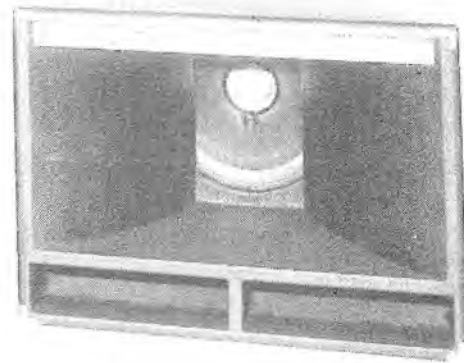
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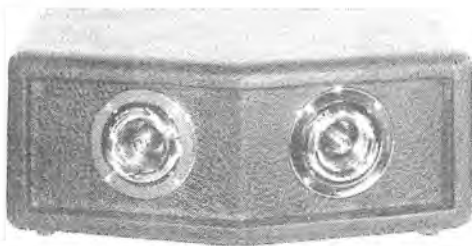


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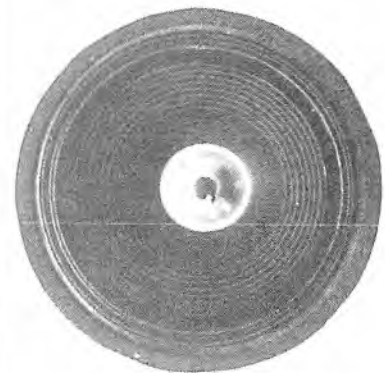
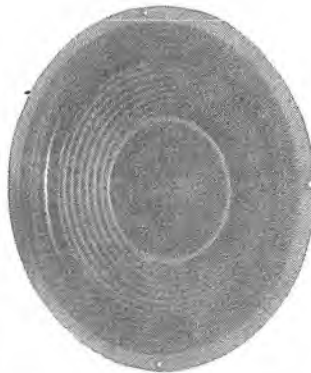
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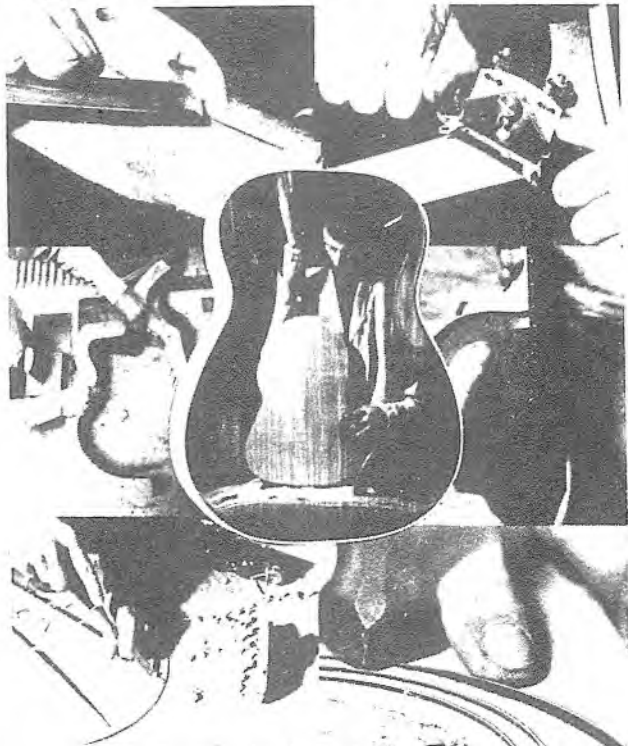
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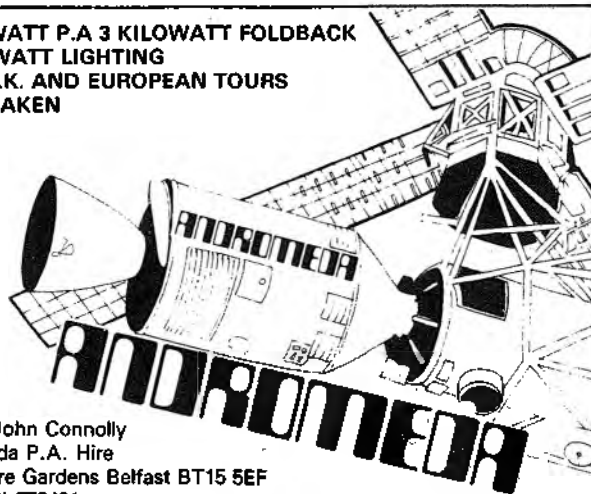
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**Andromeda Hire (Belfast), 1 Thirlmere Gardens, Belfast 15. Tel: 0232 772491**  
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**Backline Hire, 11-15 Lillie Road, London SW6. Tel: 01-385 2409 (moving to new premises 99 Church Road, Barnes, London SW13. 01-748 8151 mid Dec.)**  
Specialising in drums, combos, Latin American, guitars, keyboards etc. full range of synthesisers every major make, e.g. of prices: Twin Reverb with JBL's £8 a night, Fender Rhodes 73 £10 a night, Les Paul £10 a night. Used by many name bands. Contact is Tony.

**BAN Management, 39a Rawstone Street, London EC1. Tel: 01-278 2270**  
Provide systems ranging from 200-4,000 watts in addition to back line equipment and keyboard hire. Do pubs, clubs and tours, recent work includes Wilko Johnson, X Ray Spex, Al Stewart. Equipment is mainly JBL and Gauss speakers, Phase Linear, Hill and Yamaha amps and Hill and Midas desks. Prices range from £10 a night for a 200 watt PA to £75 plus 15 pence a mile for a 2,000 watt rig, contact is Angus Boucher.

**Biggles Music, 85 West Street, Old Market, Bristol. Tel: 0272-552147**  
Offer a comprehensive instrument and equipment hire service including PA's from a small 100 watt system through to a 500-watt (MM) system, a 1Kw system up to 2½Kw rig. The larger package includes transport, experienced engineers and roadies. Clients include Wurzels and Jenny Haan's Lion. Contact men are Kevin, John and Keith.

**Big Vu, 31 Bonham Road, London SW2. Tel: 01-733 0369**

Have 2Kw, 16 channel JBL Gauss systems, larger rigs available by prior arrangement, 500-1,000 watts foldback. Have worked with London, Heavy Metal Kids, XTC, prices average £80 per night in London including transport. Contact Chris Ayres.

**Britannia Row, 35 Britannia Row, London NW1. Tel: 01-359 5275**

Two branches (one in States) British firm specialise in hiring out studio equipment and instruments. Sound equipment includes Midas mixers, Phase Linear amps. Clients include Queen, Pink Floyd. Contacts are Robbie Williams (UK), Mick Kluczynski (USA).

**Cascade Hire, 42/44 Upper Tooting Road, Tooting, London SW17. Tel: 01-672 3997**

Have a 1,000 watt system and a 2,000 watt system which can be linked together if required. Usually work in the London and the South East, The Darts have been using their equipment for the past year, do both pub and club gigs. Man in charge Mike Phillips says his rates are "very reasonable."

**Cerebrum Lighting, 168 Chiltern Drive, Berrylands, Nr. Surbiton, Surrey. Tel: 01-390 0051**

Solely concerned with lighting systems, offer low price packages for up and coming bands e.g. 6Kw system can be as little as £15. Largest system being used by Horslips and Boomtown Rats, hire out by the day instead of exclusively by the week. Contact John Lethbridge or Steve Prince.

**Cerwin Vega UK, 281 Balmoral Drive, Hayes, Middlesex. Tel: 01-573 1566**

Deal solely in 1,000 watt rigs for small club and disco work, use their own speakers with Monogram amps and mixers mainly in the London area, man to contact is Don Perkiss.

**Colac, 212 Carlisle Lane, London SE1. Tel: 01-261 1705**

PA rigs range from 4,000 to 15,000 watts. They also do lighting, specialise in tours and festivals here and on the continent. Equipment includes Martin bins, JBL horns, Midas and HH amps. Clients have been Black Sabbath, Dr. Hook, JJ Cale. Contact Keith Davies.

**Complex Sounds, 33 Devon Road, South Darenth, Nr. Dartford, Kent. Tel: 0322 863 693**

Mainly tours both in Britain and worldwide, worked with John Miles, Ike and Tina Turner, Cliff Richard, Shadows, biggest rig 8kw. Man in charge Brian Hatt.

**CP Cases, Pier House, Strand-on-the-Green, Chiswick, W4. Tel: 01-994 7135/7136.**

Have recently launched a scheme for the hiring of CP flight cases for day, week, month or as long as you like, are probably the leading company in Europe, cost as low as £1.80 a day. For quotation contact Mick Martin.

**Electrasound, 11 Marshalsea Road, London SE1. Tel: 01-407 6781**

One of the biggest companies handling top acts e.g. Uriah Heep, Bob Seger, Tubes, Graham Parker, average system is 10,000 watts using Crown amps and JBL speakers. An average rig including lighting and PA would cost about £3,000 a week. The man in charge is Brian Croft.

**Entec, Shepperton Studio Centre, Squires Ridge Road, Shepperton, Middlesex. Tel: 093 28 66777**

Another of the big companies handling top rock acts like Wishbone Ash, Caravan in addition to MOR artists, Carpenters, Gary Glitter. No limit to the size of system, the price of which is negotiable. The man to speak to is John Denby.

**Europa Concert Systems, 11a Sharples Hall Street, London NW1. Tel: 01-586 3848.**

Specialise in PA systems from 500 watts to 10Kw and above. Quality components used for the PA systems include JBL and Gauss speakers, Crown and BGW amps. Offer a comprehensive touring service covering all logistical aspects of touring. Recently worked with Bryan Ferry, Blondie and Neil Sedaka, competitive prices on application. Contact Richard Saunders.

**Ground Control, 7-9 Wood Close, London E2. Tel: 01-739 1448**

Have three 4Kw rigs which are used mainly for tours, currently working with The Stranglers, do a lot of work with French artists. Use JBL and Gauss speakers, Turner and Crown amps with Turner mixers. A rig for a week would cost about £900, the man to contact is Robin Mayhew.

**Henrit's Drum Store, 112-114 Wardour Street, London W1. Tel: 01-734 7121**

Vast range of drum kits for hire, transport available, many big name clients including Keith Moon, Stones, The Clash. Have one of the leading West End Studios e.g. £15 for complete kit per day, contacts Mac, Pete, Tommy and John.

**HHB PA Hire and Sales, Unit F, New Crescent Works, Nicoll Road, London NW10. Tel: 01-961 3295**

Have 4Kw and 5Kw systems with 32, 24 or 16 channel Amtek mixers, Amcron amps, ATC and JBL speakers, clients include Brand X and Van Der Graaf, competitive prices available on application. Contact Ian Jones.

**HW Audio, 156 Gradshaw Gate, Bolton, Greater Manchester Tel: 02 04 26639**  
Deal mainly in providing equipment, PA, lighting for semi pro bands in the North, provide everything from a single mike to 3,000 watt concert PA, for clubs, cabaret etc., charge would be £125 for a good concert sound system. Man to contact is Chris Harfield.

**Julians, 2 Churchill Road, London NW2. Tel: 01-459 7294/5**

Specialise in providing instruments and amplifiers for studio work, say they have the most modern equipment; have own demo room. Emphasis is on good personal service, clients include: Paul McCartney, David Essex, Gallagher and Lyle. Hire is by the day or for longer periods, cost of which is negotiable. Contact Shirley Leigh.

**Keyboard Harmony, 82 The High Street, Redhill, Surrey. Tel: 91 68821**

Have a wide variety of back line equipment and instruments for hire plus PA up to 1,000 watts, for places up to 100 miles away will cost £60 per night. Require only a low deposit e.g. £10 on equipment valued at £400. Gear recently used by Woody Woodmansey's U Boat, The LeRoy Williams Band. Contact Steve and Gregg.

**Lairhurst Prods, 7 Wood Close, London E2. Tel: 01-739 7543**

Deal exclusively in lighting and often have five rigs out at any one time, have worked with Genesis, Joan Armatrading, Chris Spedding and concentrate on tours. Prices are completely negotiable, man in charge is John Coppin.

**Lamplight Hire, 16 Beechgrove Terrace, Aberdeen, Scotland. Tel: 0224 24256**

Deal Solely in lighting, have a 29,000 KW system which is the biggest in Scotland, been recently working with The Damned on tour, minimum charge is around £75 a night. Man in charge is Sandy McRobbie.

**Loughborough Music Hire, 18 The Rushes, Loughborough, Leicestershire Tel: 0509 30398**

Have 100 and 200 watt PA rigs catering mainly for local semi-pro bands, back line equipment in the shape of combos and bass stacks is also available. A 100 watt PA would cost £7.50 per night.

**Lowland Music Services, 9 West Richmond Street, Edinburgh 8. Tel: 031 667 8316**

Work the clubs and pubs around the Edinburgh area with systems between 1,000 - 1,500 watts for semi pro group work and any kind of function, also have a small lighting rig as well as a range of back line equipment. The price of a small system would be around £8. Contact Dave Clark.

**Maurice Placquet Hire, 69 Jeddo Road, Shepherds Bush, London W12. Tel: 01-749 3232**

Provide back line equipment as well as PA's which start at 200 watts to just about anything. Have worked with the biggest names including Eric Clapton and The Bee Gees, cover tours, large concerts and small clubs.

**Muscle Music, 74 Great Suffolk Street, London SE1. Tel: 01-928 6649**

Have systems ranging from 200-10,000 watts, Martin JBL enclosures, RSD and Crown amps. Have worked with The Drifters, Heavy Metal Kids, Chi Lites, Hawkwind touring both Britain and Continent, can supply all the needs of a band from a back line to lights. Contact is Mark Hardy, prices negotiable.

**The PA Company, 7-9 Market Road, London N7. Tel: 01-607 0087/8**

Run by partners Ralph Harrison and Doug Beveridge who concentrate on providing quality sound for artists such as Three Degrees, Tavares and specialise in reggae bands. Work in pub, club and concert fields with wide range of equipment.

**PASE Hire, c/o Upstairs Downstairs, Lees 12. Tel: 0532 632402**

Have a 5,000 watt rig which is used for concert gigs all over the country it is made up of 10 DC 300 Amcrons and has two 24-channel mixers. Have worked with Renaissance and Smokey Robinson Price of the rig is negotiable. Contact is Derek Smith.

**Powerhouse, 300-320 Acton Lane, Chiswick, London W4. Tel: 01 995 4713**

A unique collection of four separate companies covering the whole range of hire equipment. Cover the whole spectrum from small clubs to large concerts; have worked with Sutherland Bros and Quiver, Frankie Miller, Four Tops; range from 1,000-12,000 watts; use Crown amps and JBL speakers among others. Contact is Mike Cuppage. Prices are negotiable.

**PROfessional PERCussion, 2 Highgate Road, Kentish Town, London NW5. Tel: 01-485 0822/4434.**

Have a vast collection of percussion instruments including Bergerault tuned percussion. Clients include Music Activity, who have used equipment for Diana Ross and Sammy Davis tours; being used for Charles Aznavour world tour. Contact Chris or Duncan.

**PSL, 12 Buxton Road, Hazel Grove, Nr. Stockport, Cheshire. Tel: 061 456 6100**

Maximum 3,500 watts, JBL horns plus Crown and various other amps, concentrate on local bands but cover a variety of outside events and have worked with JALN band. The starting price is £6 for a 150 watt PA, contact: Harry Demack.

**Rent a Rig, 2a Coolhurst Road, Crouch End, London N8. Tel: 01-348 6302 (24 hr answering service)**

Provide everything from 200-watt rehearsal rig to 3,500-watt concert system using Soundcraft mixers, RSD, Peavey, Crown power amps and JBL components among others. Do small pub and clubs gigs as well as concerts and tours have worked recently with Moon, Gonzalez with prices negotiable. People to contact are John Ryan or Geoff Beadman.

**Standish Light and Sound Hire Company, 358 Preston Road, Standish, Nr. Wigan. Tel: 0257 421603**

Their average rig is about 3,000 watts and they mainly work in the North-West but have done major halls such as The Apollo, Glasgow with the Drifters. Crown amps, HH speakers, a Hill 20 channel mixer cost of hiring begins at £50-80 for 1,000 watts, the man in charge is Roy Calderbank.

**Studio Instruments Hire, 7-9 Market Road, London N7. Tel: 01-609 3041**

Supply only back line equipment for concerts, studios, recently provided equipment for The Tubes and Gregg and Cher Allman but supply anything to anybody.

**Zenith Lighting, 115-125 Lambeth Road London SE1. Tel: 01-582 3717**

Have nine lighting rigs but also have a sub contract with a PA company for sound equipment. Cover the whole range of concerts and tours, recently worked with The Jam, Tom Robinson Band, Blondie, competitive rates. Contact Paul Turner.





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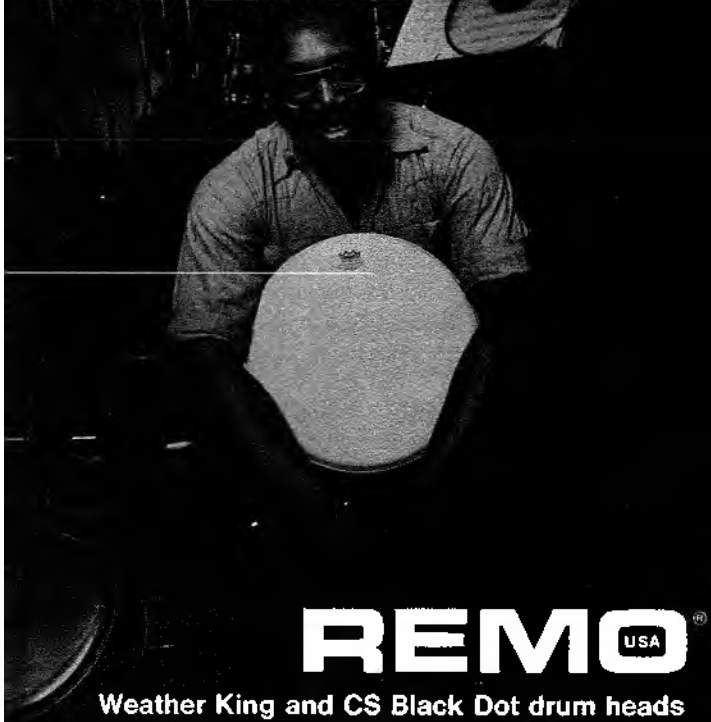
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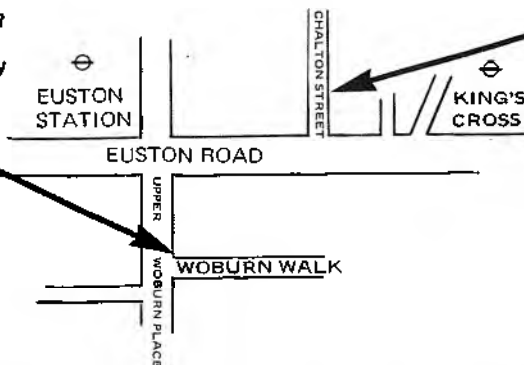
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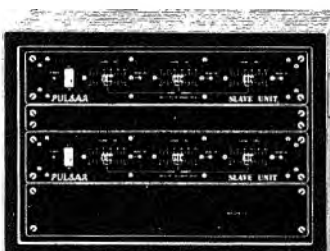
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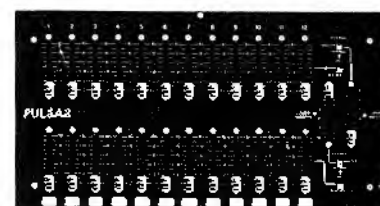
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11 Castle Street, Rugby, Warwickshire  
0788 74566  
RCN.O.IR.Syn.G.A.D.S.S/Hnd.MA.RS.ERS.EK  
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Yorkshire  
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PROFESSIONAL MUSIC CENTRE  
13 Netherhall Rd., Doncaster  
0302 68157  
G.A.B.W.K.T.

**KEY FOR DEALER GUIDE**

EC	Echo chamber
RCn	Re-Coning
O	Organs
IR	Instrument Rental
Syn.	Synthesizers
G	Guitars
A	Amplifiers
D	Drums
S	Strings
S/Hnd.	Second Hand
MA	Main Agents
RS	Repair Service
Spec.	Specialists
ERS	Electronic Repairs
EK	Electric Keyboards
K	Keyboards
B	Brass
W	Woodwind
L	Lighting
H	Hire
Ac	Accordions
SFI	Special Fretted Inst.
T	Tuition
M	Mikes
RC	Reconditioning
SM	Sheet Music
PA	Public Address
PSG	Pedal Steel Guitars
CB	Custom Building
DI	Disco

# ★ STUDIO GUIDE ★

**ALVIC STUDIO**  
13 All Saints Road, Wimbledon, SW19.  
01-542 5696  
4 T Cap. 8 £5.00 p/h. ba, tf. R-R, CP  
R-C Piano, M.S. SM ba. Drums Amps

**ANEMONE SOUND FACILITIES LTD**  
D'Arby House, 10 Poland Street, London  
W1V 3DE  
Tel: 01 439 9611/2  
8T £12 p/h £100 p/d 4T £7.50 p/h Cap 10  
KA Synthesiser and amps. D & DBX CP  
R-R R-C-d-t D & DBX M.S. cassette high-  
speed duplication.

**ARROW SOUNDS LTD.**  
6-10 Jacksons Row Manchester 2  
061-833 9417/832 8457  
16T Cap 35 £25.00 p/h p/d ba. D. R.-R  
CP. R-C. R-Cr. d-t Ka O. OTC  
after 9.00 pm MS SM

**BASING ST. STUDIOS (ISLAND)**  
8-10 Basing St., London W11.  
01 229 1229

Studio 1 24 T £38p/h Cap 80  
Studio 2 24 T £38p/h Cap 20  
R-R, C-Cr. £10p/h OTC

**BIRD SOUND STUDIOS**  
Wedgcock Industrial Estate, Warwick.  
0926-45123  
8T £10p/h Cap. 20 DC/ba. R-R-C DBX OTC  
£2 p/h

**CBS RECORDING STUDIO**  
31-37 Whitfield St., London W1  
01 636 3434  
Studio 1 £45 p/h 24T Cap 75.  
Studio 2 £45 p/h 24T Cap 25.  
Studio 3 £43 p/h 24T Cap 12.  
DC, R-R-Cr. D. All studios multi-track.

**ESCAPE STUDIOS**  
Island Farm, Edgerton, Kent  
023 376 259  
16 T £350p/d Cap 10 D Ac

**GOOSEBERRY STUDIOS**  
19 Gerrard Street, London W1  
01 437 6295, 01 734 2257  
16 T £16p/h  
8 T £10p/h Cap 10  
D, TF. (ba, R-R, CP, KA, R-C, dt, T.M.S.)

**HORIZON STUDIOS**  
Horizon House, Coventry CV3 60S  
0203 21000  
16T £19 p/h 8 T £14 p/h 4T £10 p/h 2T £6 p/h  
20 DC/ba R-R-C Ka SM/ba Special rate  
day bookings

**IMPULSE RECORDING STUDIO**  
71 High Street East  
Walsend NE28 7RJ  
Tyne & Wear  
0632 624999  
8T Cap 25 £12 p/h DBX if R-R CP Ka R-C d-t  
OTC SM

**R G JONES RECORDING STUDIOS**  
Beulah Road, Wimbledon SW19  
01 540 4441  
24T £34 p/h. 16T £24 p/h. Cap 40 R-R-C D  
OTC. Studio 2 - Stereo only £7 p/h

**KINGSWAY RECORDERS LTD.**  
129 Kingsway, London WC2  
24 T £38p/h Cap 35  
16 T £34p/h Dc/ba D 01-242 7245

**MAJESTIC RECORDING STUDIO**  
146 Clapham High St., London SW4  
01 622 1228/9  
24T £28p/h Cap 50 R-R-C DBX CP OTC £5p/h

**MANOR STUDIO**  
Shipton Manor, Shipton-on-Cherwell,  
Kidlington/Oxford.  
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West Drayton 01-897 9670  
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**MORTONSOUND.**  
13-15 Carlisle Square,  
Newcastle-Upon-Tyne.  
0632-26902  
8T £5 p/h Cap. 10 DC R-R-Cr.

**MUSHROOM STUDIOS**  
18 West Mall, Clifton, Bristol.  
0272-35994  
8T. £10.50 p/h Cap 17.  
R-R-C-Cr CP DBX D Ka  
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6 Bedrooms, Self Catering.

**OBIDEC RECORDING STUDIOS.**  
Dorvic Building, Quarry Lane,  
Chichester, West Sussex,  
0243-63265  
8T £8 p/h £65 p/d (10 hr.) £250 p/wk.  
Cap 16 if R-R-R-C-d-t, CP, M.S. Ka.  
Dc/Ac/SM/ba.

**PATHWAY STUDIOS.**  
2A Grosvenor Avenue,  
London N5.  
01-359 0970  
8T £8 p/h. Cap. 6. R-R, CP, R-C, d-t.

**PHOENIX THEATRE**  
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16T £16 p/h 8T £14 p/h Cap 5 Otl R-R-R-C  
Ka

**PIPER SOUND STUDIOS**  
50 Cheapside, Luton Beds.  
0592 605875/27195/26693  
8T £8 p/h 16T £10p/h inc. tape Cap 10  
R-R-C D, DBX, Comps/Lims, Sm, tf, CP.  
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R-C R-Cr d-t SM ba

**REGENT SOUND STUDIOS**  
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16 T £16p/h Cap 20 R-R-C OTC Sound  
Techniques Desk 18 x 16

**RIVERSIDE RECORDINGS**  
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8 T £14p/h. OTC £2p/h. if R-R CP  
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**SOUND CONCEPTION'**  
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Tel: 0272-554721  
4T £5.00 p/h Cap 10  
R-R R-C Ka

**SPACEWARD SOUND SYSTEMS**  
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Studio 2 8 T £20p/h Cap 10  
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**WINDRUSH RECORDING STUDIO**  
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Gloucester.  
(0451) 20172  
4T £5.50 p/L. £50.00 p/d. Cap 7. af.  
R-R-R-C-d-L-CP. (K.A.G.D.ba) Ac.  
ba. M.S.S.M.ba.

## KEY FOR STUDIO GUIDE

T	Track
Cap	Capacity
p/h	per hour
p/d	per day
D	Dolby
If	Transfer facilities
R-R	Reel to Reel
CP	Copying
tba	to be advised
Ka	Keyboards available
R-C	Reel to Cassette
R-Cr	Reel to Cartridge
Dc	Disc Cutting
d-t	Disc to tape
Q	Quad
OTC	Overtime charge
M	Mono
S	Stereo
lct	Fully coated film
VS	Video Studio
Ac	Accommodation
ba	by arrangement
SM	Session Musicians

# ★ HIRE GUIDE ★

**ANDROMEDA**  
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T & C	Transport & Crew
RHR	Rehearsal Rooms
SL	Stage Lighting
Sc	Security
Di	Disco
CM	Channel Mixer
CTM	Concert Tour Management
PA	Public Address

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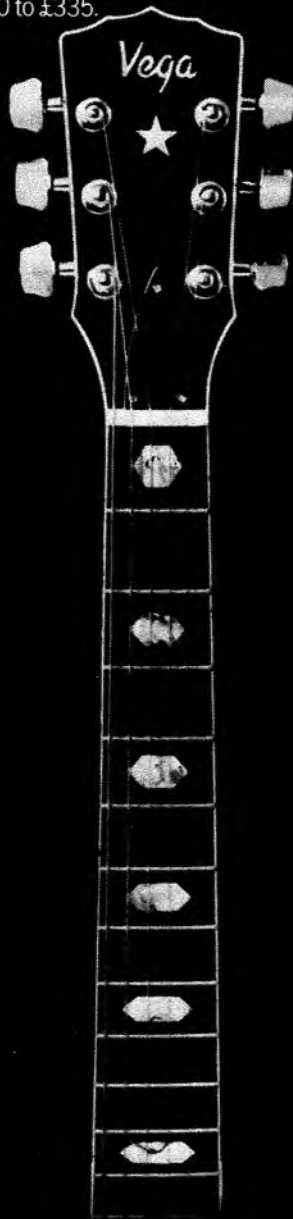
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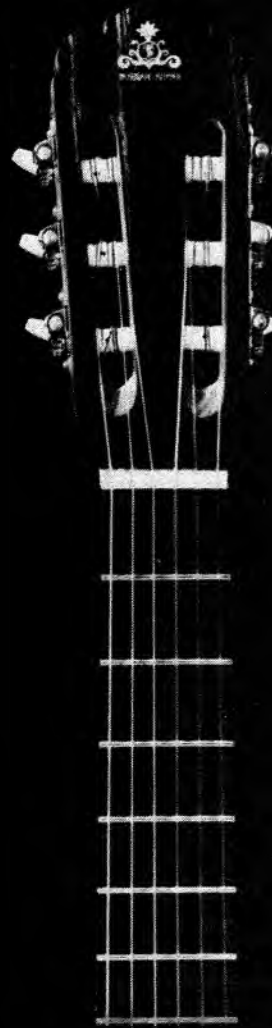
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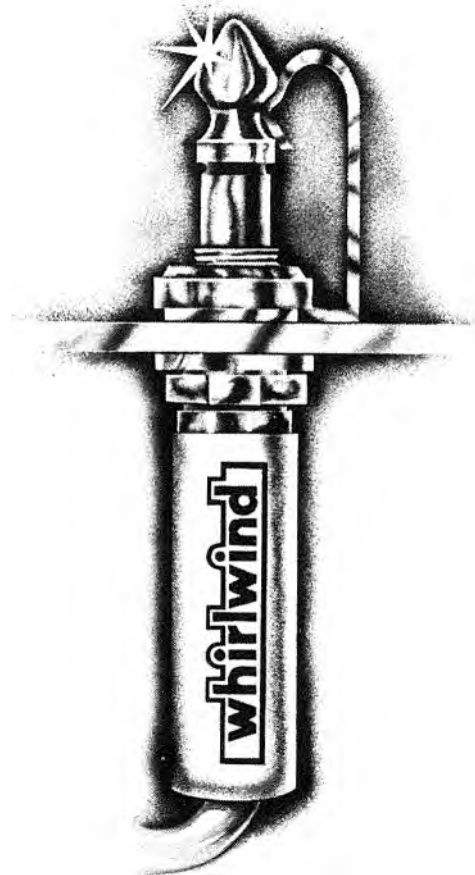
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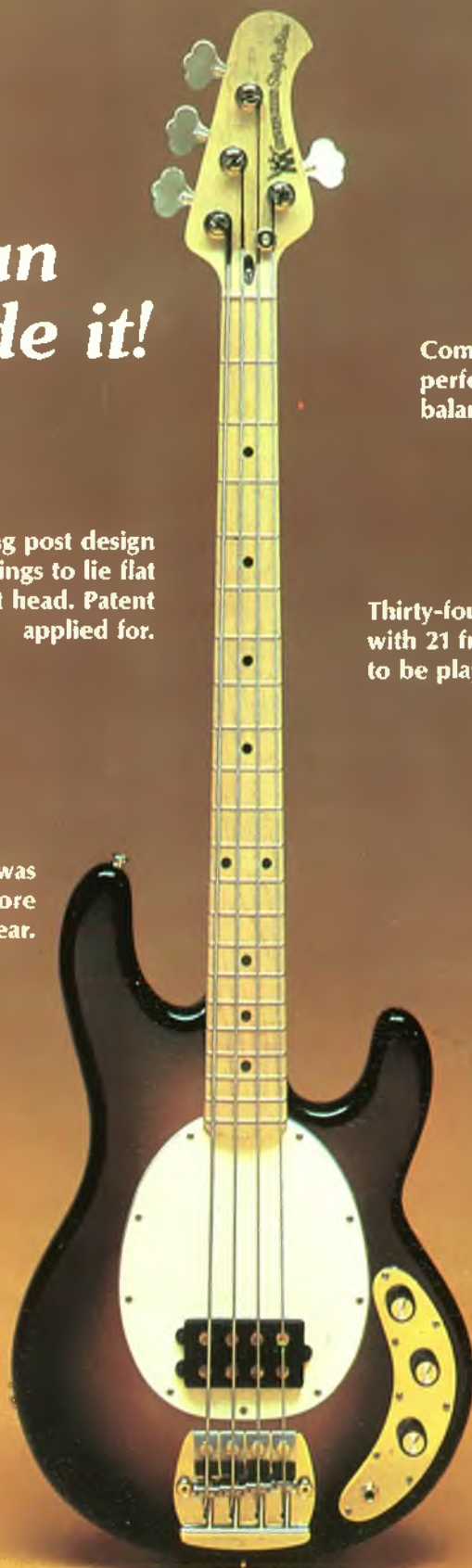
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