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JANUARY 1976 25p

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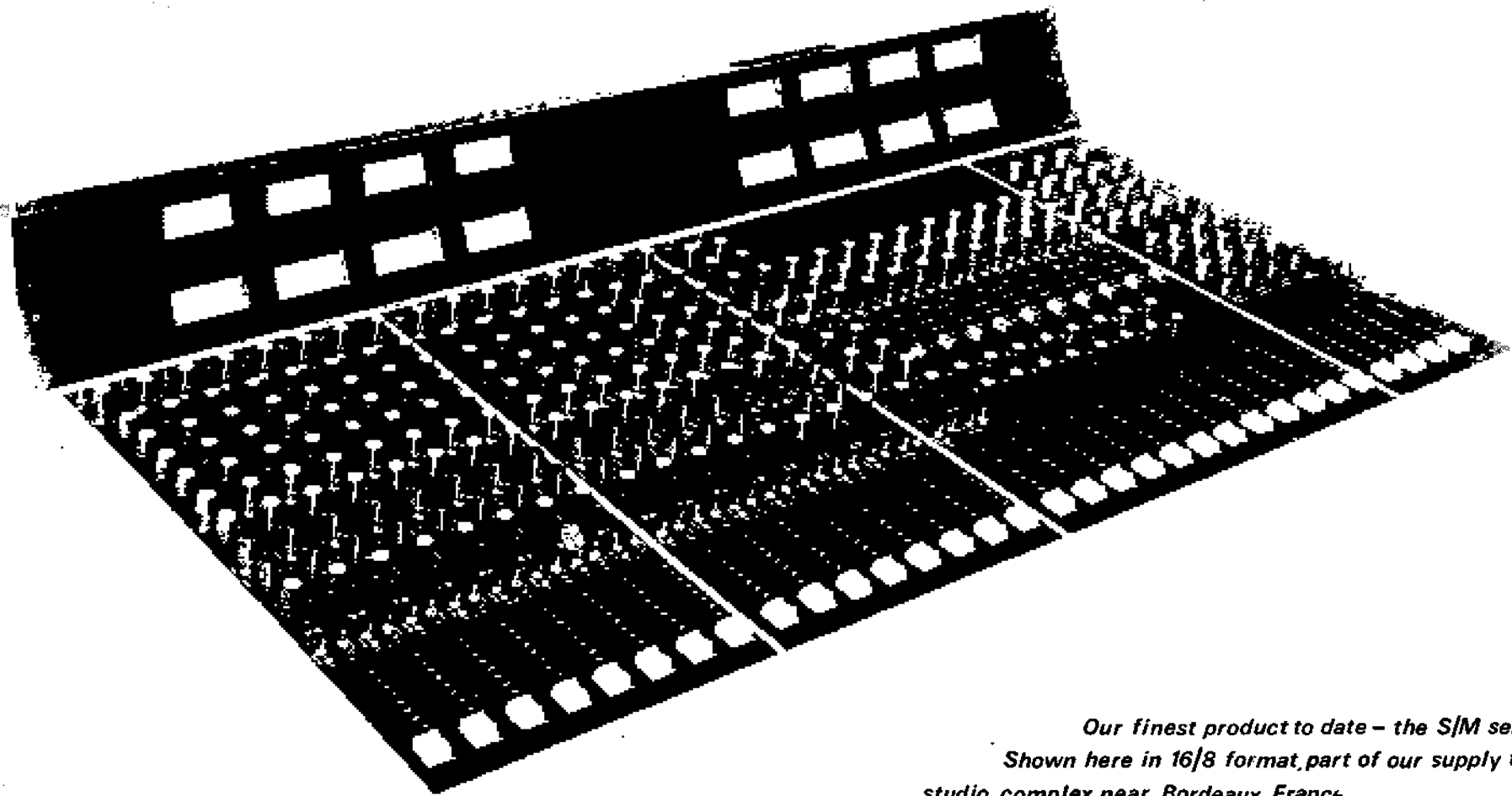
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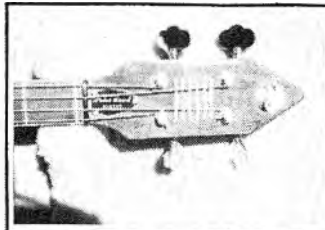
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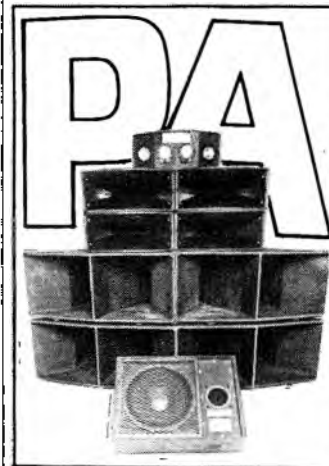
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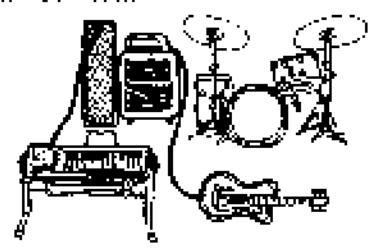
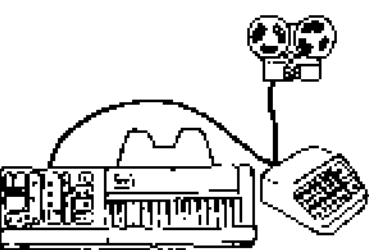

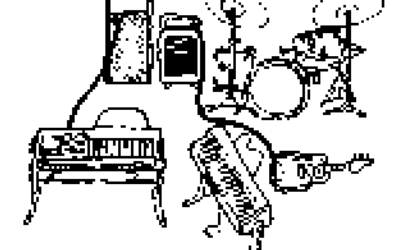

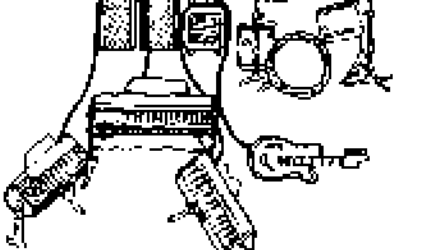
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	ENVELOPE	Envelope Sustain Hold — ADSR	Envelope Sustain Hold — ADSR	Envelope Sustain Hold — ADSR
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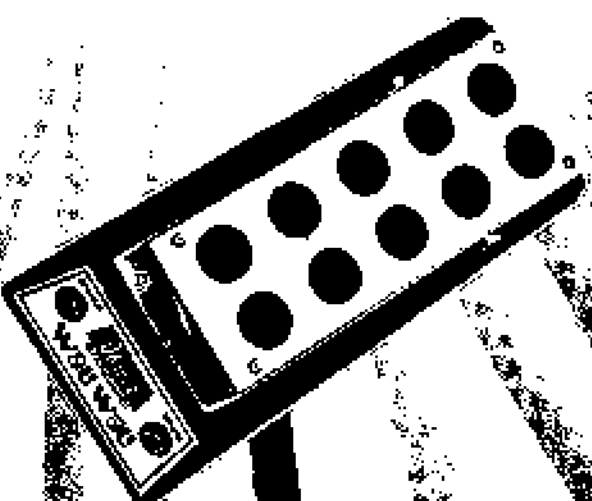
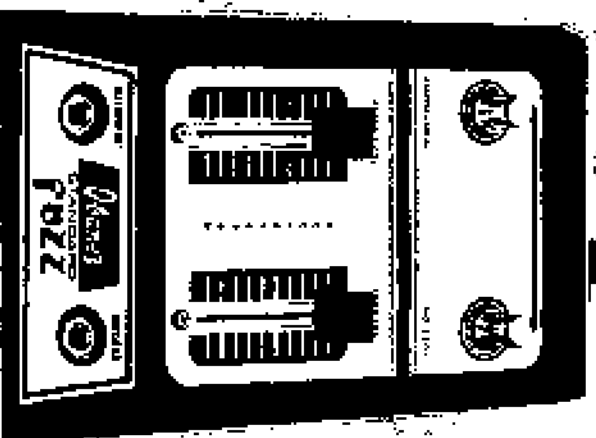
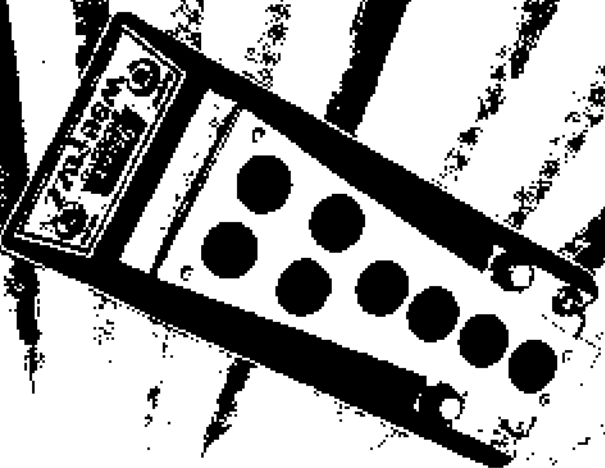
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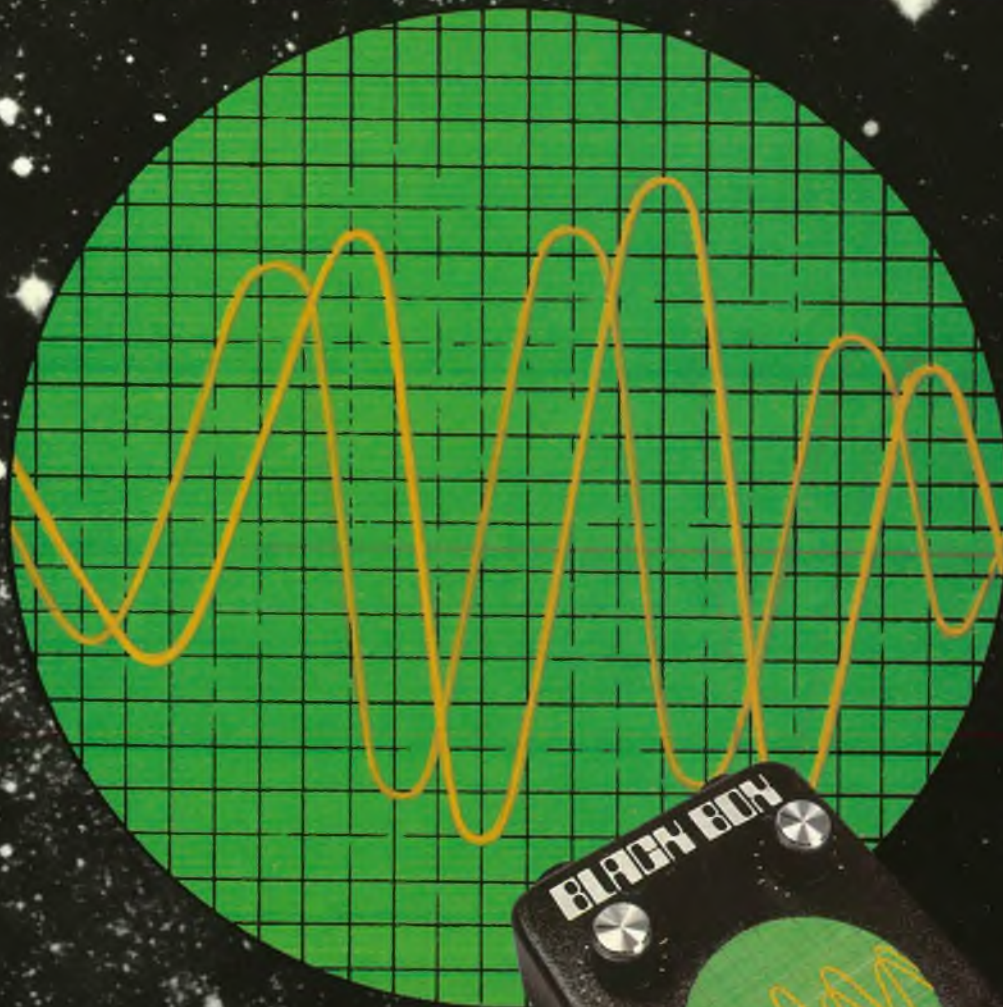
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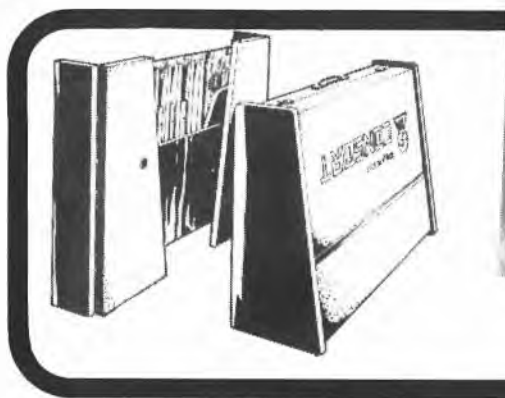
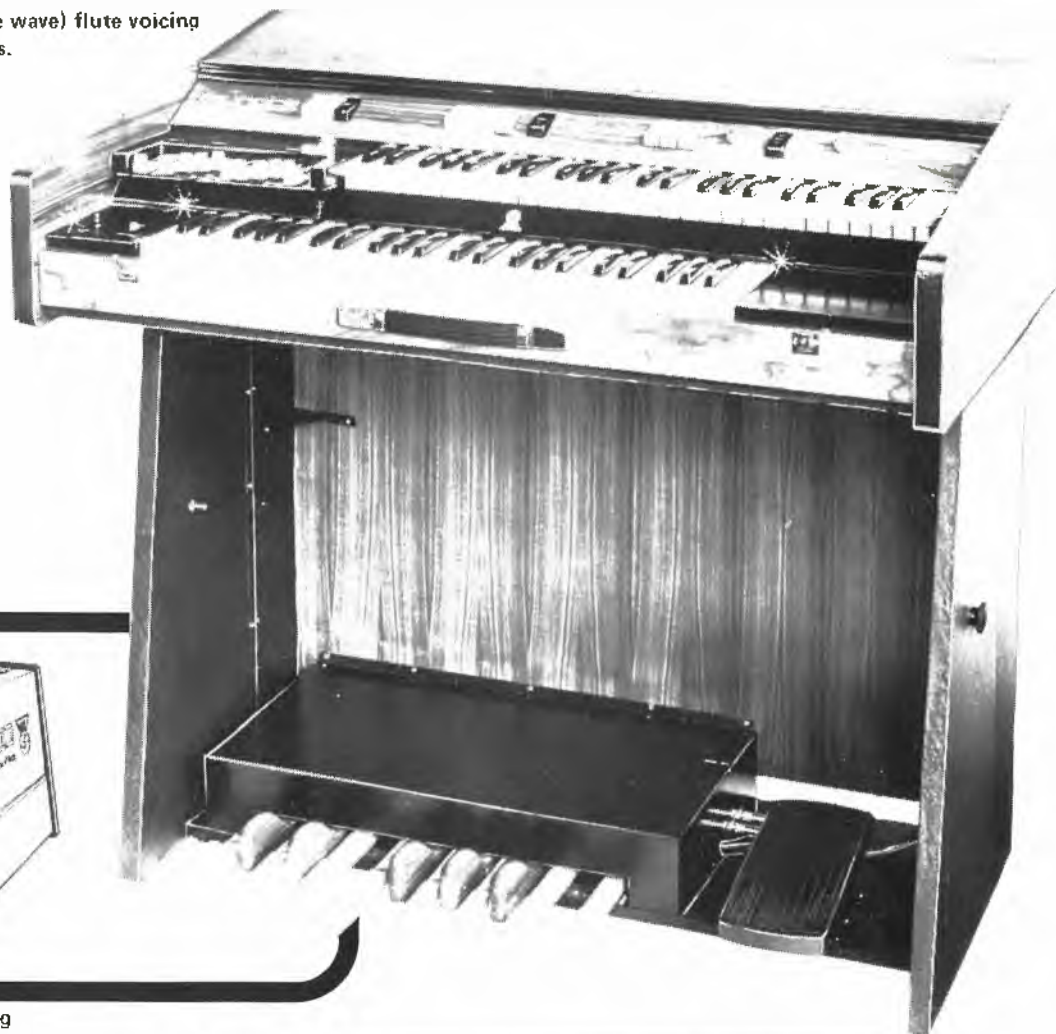
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LETTERS

edited by
Eamonn Percival

Our recent "London Pubs" gig guide (November, '75) and "National Gig Finder" (December, '75) features have prompted many readers to send in details of a variety of venues around the country. We publish these herewith and will continue to do so occasionally, but it must be understood that International Musician in no way recommends the venues or attests to their suitability. On the other hand, we ain't knocking them, either.

Dear Sir: I have taken this opportunity to inform you of gigs on the North East Club Circuit. All of these are working men's clubs and will only suit rock bands.

Ashington Central Club (Northumberland); bookings via Birchall Entertainment, Tel. Newcastle 21362; gigs three nights a week, three half-hour sets, £35. Ashington Lamp-Glass Cellar Club (N'land); bookings via Birchall; Saturdays, two half-hour and one 45 minute set, £25.

Whealey Hill W.M.C. (Near Durham, City); bookings via Birchall; Sundays, three half-hour sets, £35.

Hartlepool Lions Clubs (Cleveland); bookings via Birchall; Thursday and Sunday, sets up to band, £30.

Barmston Club, Washington (Co. Durham); bookings via Mel Unsworth Agency, Tel. South Shields 61434; Thursdays, three half-hour sets, £30.

Clint Hand
Chester-Le-Street

Dear Sir: I thought I'd send you details of the pubs and other gigs around Oxford.

Corn Dolly, Cornmarket, Oxford; bookings via landlord (Colin), Oxford 44761 after 7.30; gigs nightly, and Saturday lunch time, 1½ to 2 hours £12-£25 depending on days.

The Boot, Stonesfield, Oxon.; bookings via landlady (Marion Leaves) 099 389 577 during opening hours; gigs Friday and Saturday nights, 1½ to 2 hours, £15. Easington Hotel, Bloxham Road, Banbury, Oxon.; bookings via landlord (Terry) 0295 3808; 2 hour sets, £25.

Julian Ladbury
Iffley, Oxon.

Sir: Enclosed are some details on the Wokingham Rock Club.

Wokingham Rock Club, 31a Broad Street, Wokingham, Berks.; bookings via Jane Clemetson, Wokingham 782439, and George Rawlings, Eversley 733762, both after 5pm; Friday nights, one to two hours, rates vary from 2/3 to ¼ of profit. Most of the bands are local but we hope to expand our horizons. While the majority of bands are semi-pro, they range from amateurs doing their first, and occasionally last, gig to bands on the brink of turning professional. I must add that the promoters don't take any profits, but bank them for later use in promoting larger concerts with "Name" groups.

Jane Clemetson
Wokingham

Sir: May I offer my congratulations on what must be the most worthwhile and practical feature ever run by a rock magazine, namely your "National Gig Finder". I am the bass player in a Brighton band called Krakatoa. We play four regular venues in the Brighton area, interspersed with gigs all over the rest of the country.

While our national bookings are usually obtained through agencies, we manage our own co-operative and run the local gigs ourselves. These are run on a purely percentage basis (90% of the gross door takings) and average between £20 and £50, and more on exceptional nights. We can organise and promote a run of one to four gigs (Wednesday, Friday, Saturday and Sunday, all at different venues) in exchange for a similar arrangement in another part of the country. The gigs are run on a very professional level thoroughly organised, and we would obviously expect the same standard from any band who respond to this offer.

I would be grateful if any interested bands would send full details of themselves and equipment, together with any blurb and photos, at the address below.

Dave Poxon
Flat 2, 26 Vernon Terrace,
Brighton, Sussex.

Sir: I don't suppose anybody can help, it is not a technical or instrumental question, but a record question. I would not have bothered you, but I don't know where to get the information I require. On a certain electricity commercial, there is an acoustic guitar track playing called "Blue Roots" (the title was given to me by the ITV). Can you tell me the artist and album it is taken from? The music publishers are called Inter-Art Music if that is any help. I don't know their address I'm afraid.

G. Fletcher

"Blue Roots" is written and performed by Pete Phillips, and published by Inter-Art Music Publishers, 10-16 Rathbone Street, London W1P 2BJ. Unfortunately, it has not been recorded for commercial release.

Sir: Congratulations on producing your finest issue yet (October) and a special thanks to Stephen Delft for his brilliant guitar check on the Yamaha SG175. I play lead guitar on a one-off guitar I built myself. It started as a good Avon Les Paul copy. I fitted Schaller machine heads and made my own humbucking pick-ups which use metallic magnets and the coils read 10 Kc each giving a very high output. The pick-up mountings are damped with silicon (sic) rubber to prevent handling noises. An ivory nut was fitted, the frets stoned and surprisingly I found the original bridge of better quality than on most American models. It gives a nice feeling playing a box that you had some say in building, and it also saved me around £120 which can't be bad.

R. Paris
Stirlingshire

Sir: In your November issue, you mentioned an import album called *Teach Yourself Rock Guitar* by Charlie Daniels. Unfortunately, I have not been able to obtain the album in my area. Could you please give me the address so that I can ask for details.

P.S. Keep up the good work.

John Gallagher

Gateshead

These albums are now being distributed by CBS Records and will soon be available at most retail outlets. Any reader experiencing difficulties obtaining the album should write to Stallion Records, 87 Brewer Street, London W1 enclosing a cheque or postal order for £2.99 + 30p post & packing.

Sir: I wonder if you can help me. I have a Binson Echorec Baby echo unit and am hoping someone somewhere has a few spares and information on these excellent units. I hope you can help me.

Mick Betts

Norfolk

All Binson spares are available from ESE (Binson Sales) Ltd., 2 Upper Fant Road, Maidstone, Kent.

Sir: I have an Antoria Les Paul Custom copy and a Mighty Atom 25 watt amp. I am very interested in music by Status Quo and Free and the fantastic sound they get out of their electric guitars. The sound is so electric and all I can get out of my guitar is the acoustic sound. I have a wah-wah and fuzz combo and a phazer but I still cannot get the required sound, so I am writing to you to ask how I can get the required effect.

Richard Sewell

London E11

I imagine the "required effect" you mean is the dirty, sustain sound common to both these bands, and I'm surprised you can't get it from the equipment you mention. The sound is basically a mixture of distortion and high volume, and by distortion I mean the effect produced by overdriving the pre-amp stage as opposed to fuzz-box distortion which is quite different. By turning the volume controls on your guitar up full and using a fair amount of volume on your amp, you should be able to obtain something similar. Of course, technique does come into it as well, and this comes with practice and experience.

Sir: Re: Guitar Check— your December 1975 Issue.

You show the Zenta model HES 5000 at a retail price of £34. This is the price excluding V.A.T.

The recommended price on the shop floor, including V.A.T., is £42.50. Perhaps you could kindly publish this letter in your January issue to prevent any misunderstanding.

Thank You,

Yours sincerely,

Rex Fleetwood

John Hornby Skewes & Co. Ltd.

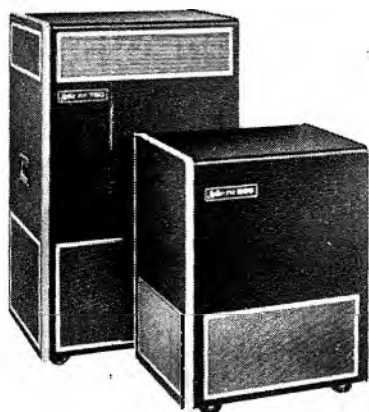
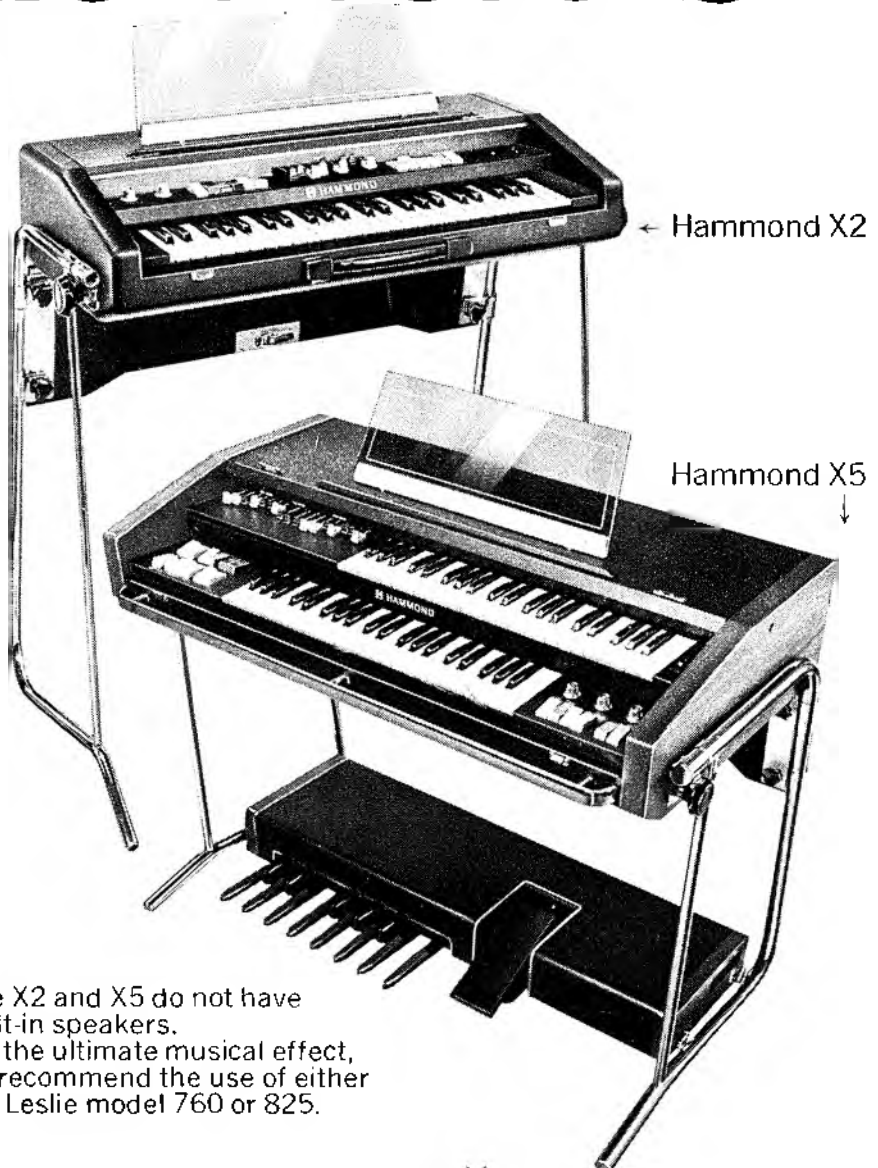
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GREG LAKE

The massive ELP tour machine is about to start rolling again. By the time the band play their first date there will have been only silence from the trio for two years, a period in which music has moved on and into new areas.

At their peak, ELP were perhaps the most successful techno-rock band to emerge from the ashes of the flower-child revolution of 1967. The three offered excitement on every level, musical, visual and technical and if critics complained about a certain lack of feeling, or soul, in them, the punters didn't seem to mind too much. America quickly followed Britain's acceptance of the band in 1970 and after that hurdle the world submitted. Japan, Australasia and most of the non-Communist bloc fell under the band's spell and the golden period of 1970-1973 brought Emerson, Lake and Palmer immense wealth and power.

The seeds of ELP power were sown from 1966 onwards when Emerson first started attacking his Hammond organ. Until that time, he'd been an accomplished but otherwise unnoticed organist playing in a variety of small bands, but his treatment of the Hammond earned him considerable attention.

One London organ showroom refused to service the battered instrument on the grounds that Hammonds shouldn't be treated in that way. *Melody Maker* pictured Emerson under his Hammond on its front page and the movement had begun.

The Nice had begun as backing band to the American chick singer P.P. Arnold and their warm up set proved so popular that they were soon out on their own. Around this time, the acrobatics Emerson was later to become famous for began to develop.

Emerson and the rest of the band — they really were "the rest", for after The Nice split several tried to form their own bands and failed — really succeeded on outrage. The outrage other organists felt at the way Emerson abused his instrument was totally eclipsed by the outrage expressed by the musical establishment when in June 1968 the group were banned from performing at the Royal Albert Hall, after setting fire to the Stars and Stripes during the performance of their single "America", an adaptation of Bernstein's theme from *West Side Story*. The band were also heavily criticised

for using pictures of John and Robert Kennedy and Martin Luther King to promote the single. Whether from a standpoint of musical outrage or political outrage, Leonard Bernstein reacted violently to the bunch of English scruffs pounding their way through one of his most memorable themes. He managed to ban the record's release on American soil.

He was, in fact, only fighting a rearguard action — Emerson was destined to swamp America so completely that it made the term overkill an understatement.

The re-arrangement of classic tunes started by The Nice was the start of a trend that still persists today. Other musicians who lack the skill of original composition can still find acceptance. From the Beatles onward, it became necessary for the really big bands to write their own material and Emerson and the band were the first group to break through this barrier and still retain "underground" acceptance.

Emerson's ability to adapt classic tunes was well illustrated in *Nice*, released in 1969. From this point onwards, the band were dominated by classic melodic themes and broke them up with long and (some would say) highly intricate improvisational sections which were necessary to make that music their own. In these passages, Emerson developed the superb showmanship that was to hoist him to world superstardom and focus sufficient attention for him to form ELP.

At about the same time that The Nice were capturing one element of Britain's fanatical underground, King Crimson had cornered another. Their music was frighteningly tight and all original. They were perhaps more deserving of acclaim than The Nice, as leader Robert Fripp pushed the band into areas of musical cohesion previously uncharted. Bass player and vocalist Greg Lake responded well to the water tight arrangements, but didn't feel his own form of songwriting had sufficient room to develop. He was with the band for the superb *In The Court Of The Crimson King* which astonished musicians on both sides of the Atlantic and lent respect to all those involved with the project. Soon after, while recording *In The Wake Of Poseidon*, Lake left to form ELP with Emerson.

Lake was under the mistaken impression that his songwriting would find more room to expand. As it turned out, technology almost denied Lake expression in the early years of ELP.

Carl Palmer was drummer with a third "underground" band at the time. Atomic Rooster were smaller in stature than both The Nice and Crimson but organist Vincent Crane's antics attracted considerable attention to the group. Palmer and Crane formed the group following their split from the Crazy World of Arthur Brown and showmanship was naturally enough an integral part of their approach to live work.

Palmer had the easiest ride to ELP. He emerged from a comfortable family background to join The Thunderbirds at 15. Because he was basically a very fine drummer, he was always in reasonably well paid work until he joined ELP and this is probably a major factor contributing to his personality. You could call him self-confident.

Last year, this magazine was fortunate enough to talk at length with both Emerson and Palmer and learn something of their lifestyle off the road. Lake has proved elusive, particularly so recently. For that reason, we track some of his activities over the last year or so.

At the end of 1974, Lake moved into a new home near Windsor in Berkshire. Previously he'd been living in a flat in Cornwall Gardens, London. Emerson already had his country manor house — now unfortunately destroyed by fire — and it was natural that Lake should desire the seclusion and tranquility of a country retreat. The desire on the part of all three to remain in Britain despite an increasingly oppressive tax climate made such a purchase highly desirable and the fact that the move was quickly followed by the birth of Lake's first daughter Natasha, added to the domestic bliss. 1975 was a period of re-assessment for ELP. Everybody spent the year waiting for the band to split — at least, everybody whose livelihood depended on their continuance did.

After three years of gruelling world tours and album promotion, the time had come to rest, spend the money before it was removed by force and enjoy a little home life.

For Greg Lake this meant the acquisition of a Tudor Manor house set discreetly in 15 acres with "a fair number of bedrooms." Now the problem is to winkle him out to undertake recording, interviews and the usual promotional requirements.

The release of his Christmas single "I Believe In Father Christmas" six weeks ago marked the culmination of over three years of effort. The recording was carried out in a leisurely manner over the last 12 months in a closely planned way. Plans had been laid for the record to be rushed out for Christmas 1974, but it was felt that there was insufficient time for promotion

continued on page 16

from page 15

and in the way that only immensely secure and confident companies can do, Manticore planned for a 1975 yule-time release. This time there was plenty of time for promotion.

A three week romp in Israel was staged in November, the excuse being location work for a film that Greg made to promote the single. No one's really sure why Israel was chosen, but Manticore's Andrew Laine has travelled extensively in the country and likes it.

The result was a short film shown all round the world of a chubby sun-tanned Lake — the team stopped off for five days beforehand to give Greg a sun tan ("he doesn't tan that easily") — behaving moodily in the very cave in which the Dead Sea Scrolls were found, somewhere in the middle of the Gaza Strip. When the idea of filming in this area was put to Greg, he was a little nervous about venturing into an area ripped apart by war but he was quickly reassured about his safety. Perhaps he considered the significance the setting would lend to trite lyrics, but whatever the reason, a small party descended on Israel. The mayor of Jerusalem was happy to be pictured receiving Greg — ELP are big in the Middle East — and all the local papers carried lengthy reports on the rock star's progress through the desert.

Manticore had great faith in the single. Perhaps that's a rather obvious statement (like saying Prince Charles believes in the Monarchy), but the excitement in the office in Curzon Street was intense. One Tuesday early in December, the disc chalked up 8,000 sales, the Wednesday they did 5,400. Britain fell to the seige. But America stuck out. The home of the Christmas single seems to have turned its back on seasonal success and despite all efforts, interest was "marginal." The amount of money spent recording the single — a 100 piece orchestra, massed choirs and so on, and the amount of money spent on promotion is unlikely to be recovered, even if the single is a success in several territories. The official statement on the investment is this: "We believe that 'I Believe In Father Christmas' is going to be a perennial hit, rather like 'White Christmas.'"

Greg Lake doesn't really fit in with the other two in the band. He's a fairly accom-

GREG LAKE

plished musician, of course, but he's more melodic than technical and he's always seemed to be the odd one out. The big question about ELP is why they haven't split up. With a handful of notable exceptions — The Rolling Stones, The Who — bands who have made it super big milk their market and piss off to indulge their own pretensions ad nauseum. ELP have not done this, despite persistent rumour and speculation. Perhaps one reason is that the band don't ever meet socially. When they do get together, it's for business and they're firmly of an opinion that business and pleasure don't mix.

Greg is now beginning the lengthy preparations for going back on the road. The Persian carpet he stands on — perhaps the most absurd of all the ELP props (even more absurd than the phony box of buttons and dials Keith has built on as an extension to his Moog) — will have to be dragged out and hoovered. At one time, a press report suggested that the band retained a roadie whose only job was to vacuum and carry that carpet and there have been all sorts of reasons proposed as to why Greg covers all stages with such a fine piece of art. His management office say that he feels "comfortable" with it and that it gives him a link between different venues. They refute all suggestions, however, that it is a security blanket. (The carpet, which sold originally for £1,500, has climbed to a present value of £7,000.)

Greg's eye to business has been good enough to prevent most of rock's rip off artists attaching themselves to him and today he's expanding his business interests. He's currently allowing music string maker James How Industries to market a set of strings with his picture on the packet, following the company's efforts at making Greg the strings he needs.

He's been using Rotosound strings for a considerable period following flirtations with all sorts of strings for his many and varied types

of guitar. He's got the amazing habit of changing all strings, including those on his bass guitars, after every set whilst he's on tour. As might be imagined, he goes through a few sets of strings.

Mike, a former school teacher, now tour manager for ELP: "Greg likes that really tappy sound you only get with new strings. That's why he changes them after every concert. He's got a high degree of treble response in his equipment to get the top end over and his bass doesn't really sound like a bass."

Greg's usual bass guitar on stage is a Gibson Ripper — he switched from his Fender bass some time ago and he now amplifies this guitar through an intricate set-up. Main power amplification is a Crown DC300 which is delivered through two JBL bins, two lense horns and two high frequency horns. The voicing for the flat response Crown is made by a small Mavis mixer with sophisticated EQ which is shaped for Greg to create his own original sound.

Excluding Mike, a road crew of five is busily engaged getting the ELP gear pile in working order. The massive amount of gear the band has collected is kept in the Manticore cinema in Fulham Broadway. This is the centre of road operations and a glance at the carefully kept lists of equipment tells that Keith's gear alone is worth £35,000, Carl's is surprisingly worth more (£40,000) and the total equipment investment is around £100,000. Attempts have been made to hire the gear during the time it's off the road, but they were abandoned after several unsuccessful attempts.

For guitar amplification, Greg has been using four Fender Concert combos that are around 20 years old, but recently he's been experimenting with the new Yamaha combos which his road crew are very pleased with.

Greg's collection of guitars are well known. He's been a good customer of master guitar maker Tony Zemaitis, he owns four or five made by Tony, and he's got the usual selection of Martins and Gibsons that are reckoned to be reasonable investments.

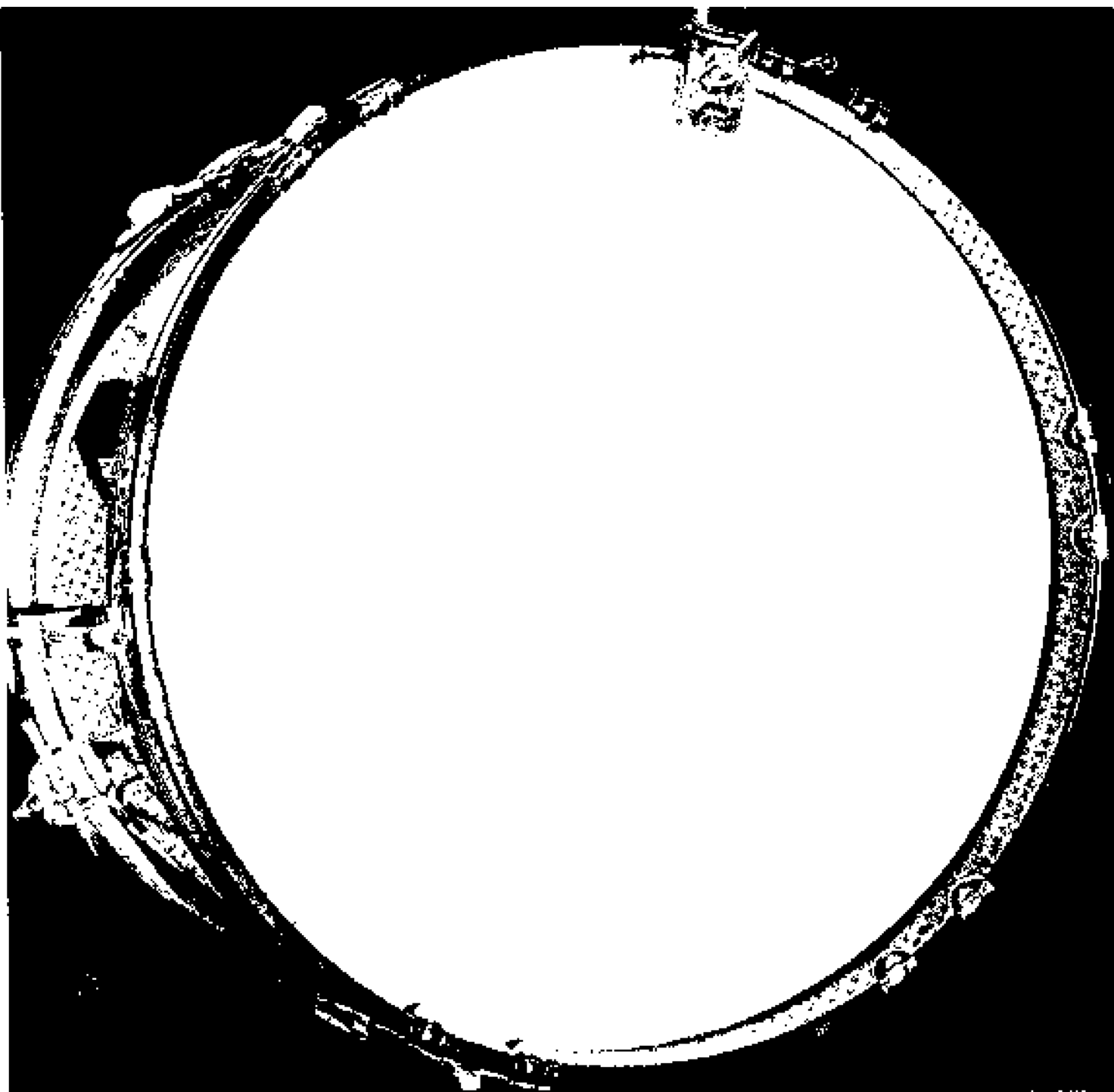
When the band return to live work in the summer — a major world tour is planned — they're stepping into the unknown. Are the ELP fans still there? Perhaps more important, is ELP still there? □

Congratulations

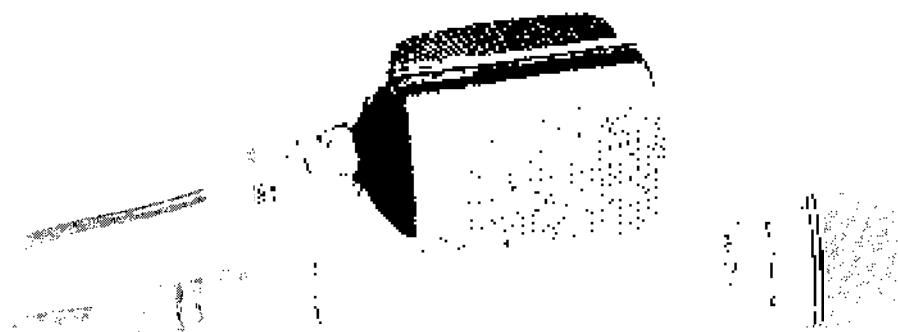
GREG

on your choice of ROTOSOUND strings





Mike up your instruments



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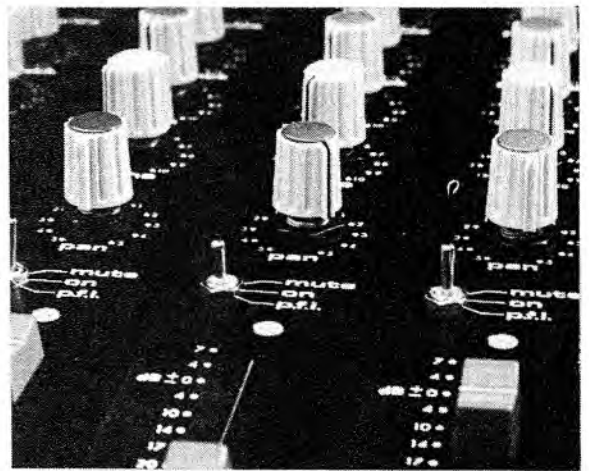
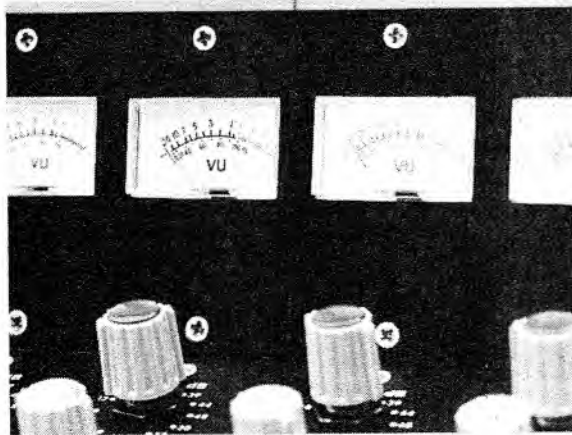
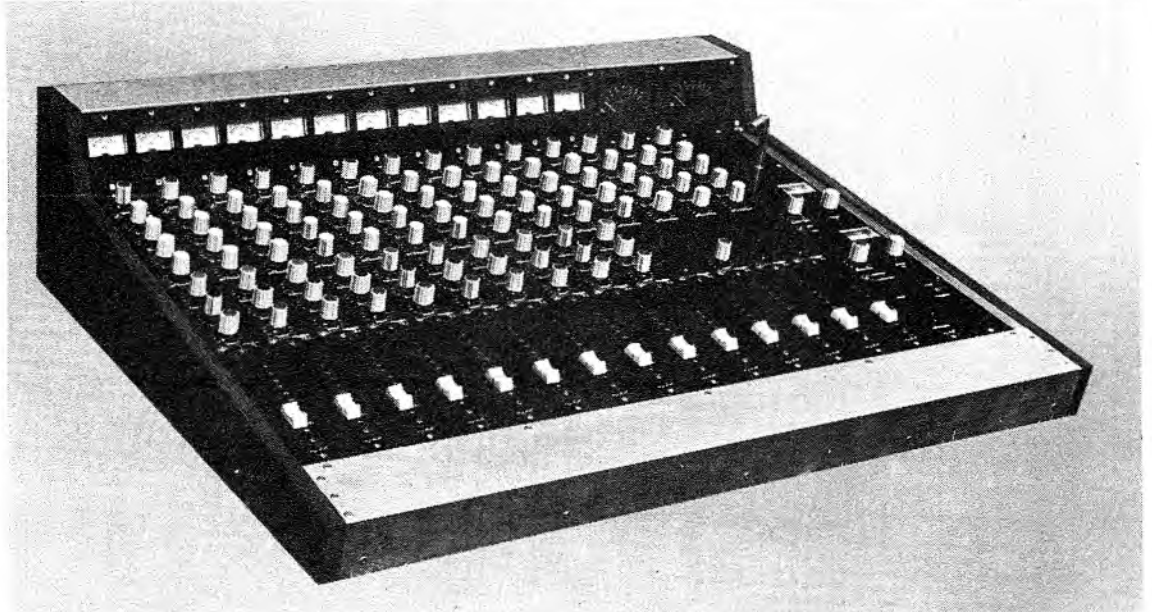
SOUNDCHECK

TEST ON: *Hill 'B Series' 16 into 2 Modular Mixer*

DATE *December 1975*

PRICE *£780.00 Ex VAT*

TEST BY *Bruce Gibbs B.Sc.*



INTRODUCTION

Malcolm Hill Associates produce a range of mixers from very basic, on-stage mixers to sophisticated studio consoles.

The "B Series" are modular stage mixers of medium sophistication. The basic frame can be supplied to accommodate up to 40 channels and any number of modules, up to the maximum, can be added as required.

The mixer we tested was a 16 channel frame fitted with a full complement of modules. The facilities on each input module are a 200 ohm balanced line input via an XLR Connector, an input level control, four band equalisation, two pre-fade send controls (two foldback channels), one post-fade send (Echo) and a Volume fader.

There is also a channel "Mute" and a pre-fade listen switch, a VU meter and a balance control.

Although the mixer is called a 16 into 2, there are, in fact, five channels: two main outputs, two foldback outputs and an "Echo Send". The main and foldback O.P.s and the Echo Return are fitted with four band equalisation.

The remaining facilities are: a large VU meter on each of the two main outputs; a pan control on the echo return; an additional gain control on the main channels so that OVU can be set where required; stereo headphone monitor and talkback facility.

The unit is powered by an external power supply in order to minimise hum, and can be run from four PP9 batteries if required. The 16 input meters and two output meters are all illuminated and shed enough light to enable the mixer to be used in a completely darkened room. These lights do not operate when the mixer is being run from batteries.

CONSTRUCTION

The main tray into which all the modules fit is a rigid frame of "L" section aluminium which is covered in aluminium sheet and fitted with two solid teak end cheeks.

All visible metal parts are anodised and this contrasts against the silk screen printing and the vast array of Collet knobs gives the mixer a very smart appearance.

Each input module has a printed circuit board which carries all the components for that channel, excluding the input sockets and the meter. These are both part of the main frame. A module is fitted in the main frame from the top but they do not plug in. About ten soldered joints have to be made in order to fit or remove a module. The soldered joints have a reliability and cost advantage compared with plug-in connectors, but

some of the advantages of having a modular system are lost.

The electronic construction is good, simple and practical. Components are of good quality, workmanship is good, wiring is tidy and soldered joints are well made. Access for maintenance does not present any problem at all.

The quality of components which effect reliability most, such as the faders, have received special attention. However, some aspects of the design are very economical. For example, the only active devices in an input module are two SN72748 operational amplifiers.

The balance pot uses a log-antilog pot to give a constant output power for all positions of the control. This is only a small point but it is better than the normal system.

PERFORMANCE

Parameter	RESULT	TEST CONDITION	COMMENTS
Max. I.P. signal at max gain	-39.6dBm. (8 mV. r.m.s.)	Tone control level, input gain max, OP gains low.	With input gain turned down, levels of up to 300 mV. can be used.
Maximum OP	+23dBm. (11 V r.m.s.)	At onset of clipping	More than enough
Maximum gain (at normal working points)	59.1dB	I.P. gain max, faders set to normal working point O.P. gain at '+50' marks	A further 14dB. of gain is available with faders at max giving 71.3dB. total.
Residual Noise	-64.7dBm.	O.P. gain at 50, OP fader at 0dB. channel faders at zero	Quite good but could be better.
Input Noise	-121dBm.	Flat frequency response, I.P. open circuit (the noise increases when the input is loaded.)	This is a wide band noise measurement; a slightly better figure would be obtained with restricted band width.
Distortion	0.08%	Total harmonic distortion through whole system	Very good
V.U. meters	O.V.U. = 4dBm.	O.P. gain control at 50	
Foldback Aux and Echo OP levels	The same as main O.P.s		
Tone control ranges	Bass 36.8dB. Mid 30.4dB. Treble 33.7dB. Presence 38.5dB.	@ 60Hz. @ 300Hz. @ 2.5KHz. @ 12KHz.	Very good
Headphone OP		Stereo	Ample power available

CONCLUSION

A thoroughly practical design which has all the normal facilities plus an extra foldback channel, equalisation on both foldbacks, short circuit protection on the outputs and quite a number of other small points in its favour. One advantage of a modular system is that one does not have to start off with the full system but can let the final system grow as finances become available.

The performance is good, although nothing stands out as either brilliant or poor.

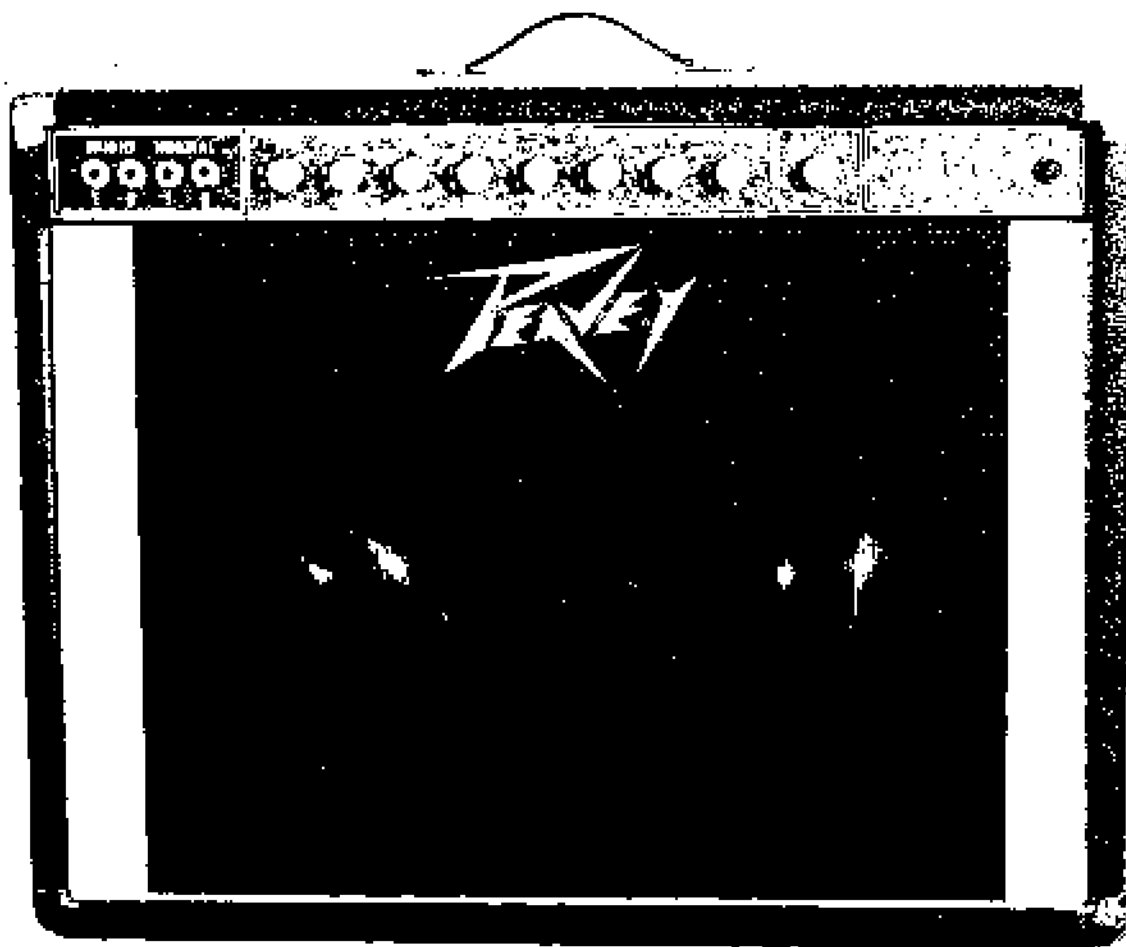
The manufacturers give a five year while-u-wait guarantee on parts and labour but they exclude meters, faders and pots which carry a one year guarantee. At a price of £820, including a flight-case, this mixer is significantly less expensive than the nearest competitor with equivalent facilities.

TEST ON: *Peavey Deuce II Combo Amplifier*

DATE *December 1975*

PRICE *£277.50 Ex VAT*

TEST BY *Bruce Gibbs B.Sc.*



INTRODUCTION

The Peavey Electronics Corporation of Mississippi produce a wide range of amplification equipment, which is very popular on their home market, owing to good performance at a moderate price. Even with the price disadvantage American manufacturers suffer when competing in the U.K., Peavey remain competitive.

The Deuce II combination amplifier has reverb, tremelo and an output rating of 110 Watts r.m.s. Hybrid electronics have been used to obtain a valve sound. Transistors are used for the pre-amplifier

and driver stages, but four 6L6 valves are in the parallel push-pull output stage.

There are two input channels, each with its own volume control and high and low sensitivity input sockets. One channel has treble boost, and is labelled "bright" and the other is "normal". The bass, middle, and treble controls are common to both channels, as are the reverb and tremelo effects.

A master volume control is provided. This permits the input to be overdriven and the volume to be controlled with the master to give fuzz.

CONSTRUCTION

An open back cabinet constructed in $\frac{3}{4}$ inch plywood and covered in an unusually good quality of vinyl has been used to house the Deuce II. The corners are protected with metal corner caps and a single handle is fitted in the centre of the top. The amplifier is too heavy to carry more than a few yards using this handle.

The control panel is a plastic moulding with all the markings standing proudly. This, together with the satin silver knobs, the metal Peavey sign and the metal centres of the speakers showing through the black speaker cloth, give the unit an attractive, manly appearance.

Two heavy duty 12 inch speakers are fitted in the lower part of the case. These successfully handle the full output power, when used with guitar, and give a nice clean sound.

The electronics are constructed on a steel chassis which is mounted upside down in the top of the case, with the valves and two large transformers hanging from the underside. Inside, mounted on two printed circuit boards, are all the small components. The front of the chassis is the control panel and the back carries the off/on switch, a fuse, the output sockets into which the speakers are plugged, and a foot switch socket.

The quality of both workmanship and components is very good. Soldered joints are well made, the wiring is tidy and the components are correctly mounted.

Peavey deserve credit for fitting a correctly coloured mains lead for U.K. use and also for clearly marking "240 V, 50 Hz, A.C. supply" on the back panel.

PERFORMANCE

Parameter	RESULT	TEST CONDITION	COMMENTS
Power OP	159W	At 10% total harmonic distortion	Rated O.P. is 110 watts into 4 ohms.
	101W	At onset of clipping	
	6.1%	@ 110 watts	Reasonable for a valve amplifier
	1.8%	@ 10 watts	
0.24%	@ 1 watt		
Tone control range	Bass -28.8dB. @ 50Hz. Mid -19.1dB. @ 3KHz. Treble -24dB. @ 10KHz.		Good
Residual Noise	78.3dB.	Below 100 watts	Very good
Noise referred to I.P.	-105.5dBm.	Referred to normal I.P. 1	Good
	-106.1dBm.	Referred to bright I.P. 1	
Sensitivity	8.6 mV. (-39dBm.)	-Bright I.P. 1	This is the input required at 1KHz. to give 100W output.
	17.5 mV. (-33dBm.)	-Bright I.P. 2	
	7.8 mV. (-40dBm.)	-Normal I.P. 1	
	17.3 mV. (-33dBm.)	-Normal I.P. 2	
Capacitive Load Test	Good	1KHz. square wave, 4 ohm and 2 uF load	Good stability margin
Short Circuit Test	OK	2 mins. short circuit at full drive	
Open Circuit Test	OK		
Tremelo depth	50%	Tremelo frequency range 4Hz. to 11Hz.	OK

CONCLUSION

The Deuce II sounds good, looks good and worked well on test. The only points which deserve comment are the mid-range tone control has maximum effect at 3KHz., which is not really mid-range; and even when the master volume is at maximum, the pre-amplifier started limiting very slightly before the output stage. In every other way,

the performance is exactly as one would like.

The quality of engineering is good and it is clear how Peavey have become so popular in the States and why they are gaining popularity in this country.

It is also an achievement for an American company to price their equipment within spitting distance of the British competition in the U.K. market.

Erratum and Addendum December, 1975 issue: in regard to the Matamp Soundcheck, on page 18, read "trade mark" for "trade work" in the first paragraph of the introduction, "amplifier top" for "valve top", and "correct tap" for "correct top" in the second paragraph.

In regard to the PA:CE Soundcheck, on page 21, read "control markings" for "control workings" in the first paragraph of "Construction", and "Noise referred to input" for "Noise referred to signal" under "Parameter" in the "Performance" section. Also in this section, it should be understood that the comments "Excellent", "Nice and symmetrical", and "Good square wave response with tone control" refer to the entire tone control range, and not to separate test conditions. The photographs which accompanied the PA:CE soundcheck illustrated an XLR input option. The standard model (that reviewed) has jack inputs.

Finally, the Keyboard Check on page 30, wrongly attributed to Bruce Gibbs, was conducted by George Gibbs.



GUITARCHECK

Yasuma Tiple

Retail Price £31.42

One of the instruments offered at last year's Music Trade Fair was a tiple from the Yasuma Musical Co., imported by Barnes and Mullins. The tiple is a small guitar-like instrument, with ten or 12 steel and covered strings, arranged in octave pairs and/or *triples* (hence, apparently the name.) It is best known, in one shape or another, in Portugal and Spanish-speaking South and Central America where it is, I believe, used to produce a persistent and lively rhythm, in the same way as the Charanga. (There is a related instrument called Bandurria, which generally has six pairs of strings like an octave 12-string. In some parts of the world the only real difference lies in the grouping and tuning of the strings.)

This instrument is based very closely on the Martin-pattern tiple, which is probably derived from Mexican instruments: it has the two outer courses as pairs and the inner ones as triples, and consequently only ten machine heads. As far as I know, the tuning is roughly one fourth higher than a 12-string with some strings duplicated.

I have not yet managed to come to terms with the triple stringing (I think the problem is likely to be unsuitable bass strings, but they are easily enough changed). With various combinations of unison and octave pairs, and using "guitar" or "mandola" tunings, it appears to be an interesting alternative to mandoline for a lead melodic instrument in acoustic and folk bands. It is pretty, it looks (not surprisingly) like a little Martin guitar, and it is very loud — in fact, its volume and tone compare very favourably with most mandolines. Its closest competitor here is a little copy of a Martin "Pear-shape" flat-back mandoline, imported by Stentor Music. There is such a close similarity of tone that I suspect they may have the same maker.



by Stephen Delft,
M.I.M.I.T.

As with any small instrument which has many steel strings, the tiple's performance depends on how much care you take in adjusting the nut and saddle to their optimum settings. If this instrument was available with fittings for 12 strings, it would have additional uses as an octave-guitar for both adults and children. The strings could also be arranged as four triples, using an "octave and sub-octave" tuning to further enrich the tone of the lower strings. Nice one, Mr. Barnes, and good value for money — but it would be even more fun with two additional strings.

Takamine D.F 400S

Retail Price £115.74

This guitar retails for £125, including V.A.T., and from any angle must be placed in the category of good to very good value for money.

It compares favourably with similar guitars sold under names such as Tama, Ibanez and Hokada, and in spite of having a different maker, it is still similar to these guitars and shares some of their characteristic faults and features. If you decide to buy a Takamine, you will have to buy it from Ivor Mairants. This has the obvious disadvantage if you live out of London, that your new guitar may have to take its chances with United National Crusher's delivery service: it also has the advantage that you are buying from someone who is a sole supplier and has complete control of the pre-sale checking and adjusting of these guitars. As a result, you can reasonably expect and demand the same standard of quality which appears in this review sample.

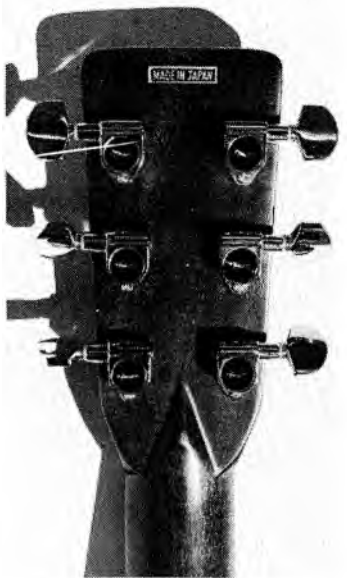
The construction is generally of a high standard and the whole instrument has a clean appearance, which makes a very pleasant change. The soundboard is solid spruce of unspecified origin, and back and sides are laminated with rosewood and the fingerboard is inlaid with some nice abalone markers. Frets are well fitted and finished, although they are a little loose where they pass over the bindings on the fingerboard edge, and this makes the fret ends sharp in places. The decoration around the soundhole and body is a rather clever plastic imitation of abalone, and not the real thing, as one might think at first sight. In common with most better Japanese copies of Martins, the struts which are visible through the soundhole are much better finished than those which are out of sight.

The action as supplied is reasonable, but could be improved noticeably by adjusting the saddle and (particularly) the nut. I also feel that the strings are too close together at the nut, leaving more space than necessary at each edge. I

would also like to see the bridge pins holes reamed out a little more, so that the purchaser is not tempted to force them down into the bridge and crack it across.

The machine heads work well and appear to be gold plated copies of Schallers or Grovers (Gotoh Gut possibly?). The guitar sounds pleasant (though not entirely like a D.45) to the player, to listeners at the front if they are at a distance, or in a large upholstered or audience-filled room.

In a small room, it is not, in my opinion, well balanced when heard from in-front. It seems as though the bass end "flows" around the sides towards the player, and the treble goes straight forward. This is of course one of several possible solutions to the composing guitar/performing guitar dilemma, but it is a solution which exposes any deficiencies present in the guitar's treble end. To put the matter more simply, it is difficult to make a guitar which sounds good loud and sounds good played quietly. This one will play loudly, but it sounds better played quietly, and it is likely to please you, more than your audience. By the way, the truss rod adjustment is inside the soundhole.



* ALL PRICES EXCLUSIVE OF V.A.T. *

FC & N Victor Garcia No127

Retail Price £30.78

Assuming you want a nylon string guitar and you haven't much money to spare after the rent, you have two basic choices: an old second-hand one or a cheap new one. There are often quite a few nearly-new instruments for sale privately at low prices, and a few of them may be bargains, but a large proportion of them will be instruments which have never quite worked properly for one reason or another.

If you have access to someone with experience of musical instruments, you may be able to find a nearly-new guitar with no serious faults, but try to look beyond any obvious small problems: they sometimes conceal more serious ones.

Now I am not suggesting that serious faults are only found in recently made second-hand guitars, and are quite absent from new ones and really old ones; that just isn't true. However, if a guitar is ten or 12 years old and it still works properly, it is likely to continue working, and if it is cheap only because the finish is scruffy, you are likely to get good value.



It is still possible for such a guitar to have serious faults and, in any case, you will be competing with other knowledgeable musicians to find the same few real bargains. Good luck, but if you have tried and failed, read on.

If I was searching second-hand shops and the *Exchange And Mart* for a cheap, second-hand Classic, it would be because most cheap new guitars are either unpleasant, oriental, or both. Which brings me to your other possibility — buying a low or middle priced new guitar, and in this price range, some batches of any model of guitar are likely to have problems. I don't want to bring down a hail of retribution on the few things we can export to Japan, but there are quite

a few European guitars which I prefer to their Japanese equivalents at the same price. Unfortunately, Japanese instruments dominate the selection of instruments in many shops, and you may have to travel some distance to find a wider choice.

You should also bear in mind that if you buy a guitar privately, it is up to you to decide whether it is fit for use; the seller will not be interested in your complaints a week later. If you deal with a reputable musical instrument shop, you are to some extent protected from faulty goods under English Law, and in many cases also by the A.M.I.I. scheme (look for the A.M.I.I. label).

If you should need to complain, start off on the assumption that the retailer is going to be helpful, and only make a fuss later, if you are sure he won't be. This way, you can both save some time and ill feeling. In any case, you must be sensible and you just can't expect "Hand made" quality for £30.00.

You can certainly expect that anything called a guitar and not "Toy Guitar", will play sensibly in tune on all its frets, and have an action which any ordinary competent guitarist could at worst cope with, and at best, find enjoyable.

You may decide, however, that a nice instrument with, for instance, rough frets, is a better buy than another which has a poorer tone but nothing actually faulty. The main problem which holds back low and middle price European guitars is poor finishing of wood and/or frets. On the other hand, Spanish guitars in particular are often made from reasonably

good solid wood for the same price as a laminated (plywood) oriental one. If you have followed our "Improvement" articles and you can cope with smoothing and levelling rough frets, and perhaps adjusting the slots in a nut, you may find a Spanish (or East German) guitar offers better value.

In the September issue, I reviewed the Barnes and Mullins "Classic", which is representative of one way in which Spanish guitar makers are fighting back. (Plain, utilitarian, accurate factory production and obviously ideal for the Educational market). The better models from Victor Garcia, such as this model, seem to represent a rather different philosophy, and one which he has adopted only quite recently. First, he has dyed the front yellow, so that it looks like all the Japanese guitars which try to look like expensive Spanish guitars. Secondly, he has apparently brought in modern lacquers and a spray plant and is now getting a clear and attractive appearance from the same woods which used to look dull and muddy. Thirdly, the neck (and in fact the whole instrument) is of a lighter and more graceful shape. Finally, the frets, nut and bridge are correctly placed, at least on my sample and on others which I examined at the Trade Show.

In the past, some of Garcia's frets seemed to have been measured out with a piece of knotted string and a stick of chalk. Also, if my sample is anything to go by, Garcia has stopped using mahogany for bridges and fingerboards, and is using a much more suitable rosewood substitute.



Unfortunately, the frets appear to have been polished with a handful of barbed wire and although they are level enough, they grate unpleasantly on the strings and cut into them. I doubt whether most retailers would wish to polish the frets on this guitar, but I think it is still well worth considering if you can do the job yourself. Of course, if the frets were right to start with, then this guitar would probably receive the success it otherwise deserves! To be fair, all but the very best Spanish Guitars have the same problem from time to time.

This Garcia model is a conventional Spanish-made Classical guitar with traditional construction and decoration. It has a scale-length of 655 mm, 25 13/16 in. String spacing at the bridge is 58 mm./ 2 1/4 in. String spacing at the nut is 41 mm./ 1 1/2 in. Fingerboard width at the nut is 51 mm./ 2 1/16 in.

The action, as delivered, was 4.5 mm. bass and 4.2 mm. treble at the twelfth fret. This is acceptable but the guitar has a relatively long scale and the action could certainly come down a bit, particularly the top strings. Careful adjustment of nut and saddle could easily reduce the action to 4.2 bass and 3.0 treble. This should even be low enough for people used to high quality steel-string acoustics, and the tone seems to be a little brighter than average and should suit folk guitarists who want a softer sound. The front is some form of pine or spruce and has a simple fan-strutting system below the bridge. Back and sides are mahogany, and the bridge and fingerboard are made from a useful but anonymous hardwood, which seems a perfectly good substitute for rosewood. The soundhole rosette is cheerful, and bright enough to compete with its Japanese cousins, without having that tasteless quality which often comes from one culture trying to copy the work of another.

All the strings played slightly sharp at the octave fret, but with the exception of the third string, all were within the range of adjustment of the saddle. If adjusted, this would be perfectly acceptable; the third string is rarely used high up the fingerboard. The machine heads fitted, are "middle-of-the-road" quality, as one would expect, but they are nicely plated and, on my sample, they all work surprisingly well.

In conclusion, it appears that Garcia is trying very hard to reclaim Spain's traditional superiority in making good, cheap unpretentious guitars, and that this guitar represents a critical change of production policy. If you are handy with minor adjustments, it offers good value, but I would like to see changes in fret finishing, and modifications to the soundboard to reduce the thickness slightly and to counteract its tendency to sag across the soundhole. This last point applies to most lower priced Spanish guitars, but could easily be put right.

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IN BRIEF **Crumar Piano**

Retail Price £194.44
(£210 inc. 8% VAT)

Two versions of this little piano are available. One is a standard model, offering piano and clavichord sounds and the other offers sustain in addition. We tested the model with sustain and like the others in the range, it represents incredible value for money.

Being able to buy an electronic piano for around £240 (there's only eight per cent V.A.T. on portable keyboards) means that in certain areas musicians are still being offered an amazingly good deal.

You can't expect this piano to be a Fender Rhodes or a Wurlitzer, but it's a highly portable little unit that makes an ideal add-on to a keyboard array. It's also useful as an additional sound for a band who don't usually feature keyboards.

Assembly is simplicity itself, with two chrome legs with a cross member held by two rotary knobs. One of the knobs supplied with the piano we tested had an incorrect thread for the job, so it's worth checking that the right knobs are supplied. The piano is supplied with a carry bag fitted with two strong handles and the total of the parts would add very little weight to a van full of gear.

The piano sounds like a piano. Perhaps it's a little lacking in depth, but the general sound is very acceptable. It's always interesting for a pianist to try his hand on an instrument that is not touch sensitive. It can be a great aid to technique, as it does not easily forgive scuffed notes and mis-timed passing notes; they are reproduced at the same volume as the main notes. Naturally, a lengthy period of playing the Compac piano only (for any other similar electronic piano) will temporarily lead to a hardening of technique, but playing one of these in conjunction with an acoustic instrument can be very rewarding.

Vibrato is provided — obviously to give the clavichord sound an ethereal effect — but unless used carefully it can produce a sound that sounds more unstable than vibrating. Perhaps the most peculiar feature of the keyboard is that the slide faders controlling the sound, vibrato and overall volume, are mounted upside down. They have to be pulled downwards to get an increase rather than pushed up. It takes a little getting used to.

The clavichord sound is highly effective. It's that sharp sound that is so familiar and will always be associated with the arpeggios that backed the opening to "Lucy In The Sky With Diamonds." Adding a little vibrato to the sound produces an attractive trembling tone and a particular delight of the instrument is that it's possible to mix the piano and clavichord sounds by cross fading. This means that an infinite variety of sounds is possible from full blooded piano to high squeaky clav.

The piano stands firmly on its legs — which is more than can be said for some — and it is constructed solidly. The keys are standard sized and strong and the touch action is light without being sloppy.

Rubber feet are fitted so that keyboard can be sat atop an organ without harm and this is probably the way it's most likely to be used.

It's an excellent little instrument — perhaps a little lacking in tone below 350 cycles but, considering the price, it would make a worthwhile addition for any keyboard player.



Roland Rythm 77 Retail Price £181.04

I was very interested to see what the latest electric rhythm machines could do so I checked out the new Roland 77. The rhythms provided include Rhumba, Beguine, Cha-cha, Mambo, Samba 1 (brushes & bongos), Samba 2 (full samba), Bossa-Nova, Baion, Bolero (ala Ravel), Tango, Latin (select first set of buttons — above), Rock 'n Roll 1, Rock 'n Roll 2, (Funky), Slow Rock (in triplets), Western (operating via the "2 Beat" and "4 Beat" buttons), 6/8 March, Jazz Waltz, and Waltz.

Western, 6/8 March and Waltz are coloured white and are connected to a sub-section which runs the "European" rhythms. This sub-section comprises two push buttons labelled "2 Beat" and "4 Beat", which can be used separately or together; and a rotary switch which selects the following rhythm combinations.

Two Beat Rhythms: 2 Beat (Bass drums), Foxtrot 1, Swing 1, March, and Parade (C); 4 Beat Rhythms: 4

Beat (Bass drum), Bass & Snare drums, Foxtrot 2, Swing 2, Swing 3, and Shuffle.

The rhythms are all very full and Roland have managed to lose the "Metronome" feel that many rhythm units have.

The tone of the various instruments varied from an almost perfect snare drum, bass drum and hi-hat to a not very realistic Guiro. On average, the majority of the tones were good and better than those found in earlier electronic drummers.

A steel touch-bar on the top left hand corner serves as a start-stop control. A "remote" footswitch can be plugged into the appropriate socket if required.

The Bass drum, Snare drum, Guiro, and Maracas + Cymbals + Hi-hat are controlled by four slider volume controls; and so is the master volume level.

A very useful "quick/slow fade-out" button and slider control allows one to instruct the machine to fade-out near the end of a tune. Another (adjacent) button selects the metronome pulses, thus enabling one to start in time with the unit. This effect automatically cancels itself when the rhythms start.

Another useful feature is the "Double Tempo" switch, which enables one to double up and then return to the original tempo with the flick of a finger.

The output sockets are jacks and are labelled Hi-Z and Lo-Z, thus enabling the Roland 77 to be used with almost any amplifier. An alternative version with a built in amp is also available at a higher price.

The power switch is on the front panel but no power-on indicator light was evident, so care must be taken to ensure that the device is not accidentally left on all night after being used.

The mains supply is fed into the device via a long two core mains lead coded with the American style Black & White inner insulation code. This means that the machine is not earthed and that confusion could arise from lack of familiarity with this colour code. This is most undesirable.

The machine was set to work from 220 volts A.C. at 50/60Hz., but I could see no fuse from an external examination.

The mains voltage selector enables one to change the input voltage to 110/125, 90/109, 220/250 or 200/219 volts. The exact purpose of having this range available escapes me, as some of the ranges are not, to my knowledge, used anywhere in the world. Finally the machine draws 5 watts.

The unit is very robust constructed in veneered plywood and black finished steel. It has "Tarnished Bronze" music rack hinges and a lovely carved wooden music board. The rubber feet will stop it from damaging the instrument upon which it is to be used.

All in all, the 77 is a very workmanlike machine which does its job well and without any undue fuss. The voicing is superb and the controls very sensible.

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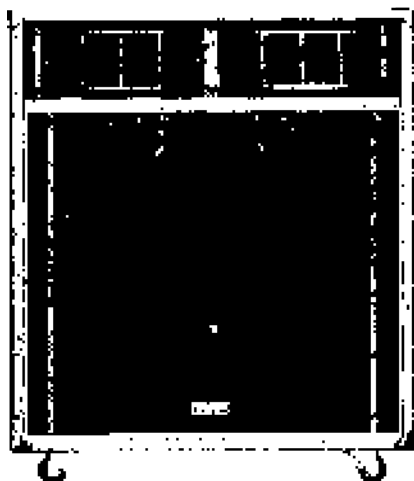
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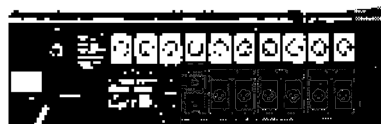
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Smooth and effortless power to well beyond the audible range. Built in slaves and 3-way crossover for easy slaving and acoustic balance.



The Mixer—PM 400

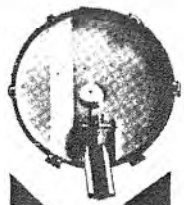
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DRUMCHECK

TEST ON: *Sonor Wood Finish Kit*

DATE *December 1975*

PRICE *£500 Approx.*



Until now the U.K. has never apparently been part of Sonor's plans to market drums in their usual efficient manner. However, some of this magazine's readers will at odd times have come across Sonor drums that somehow do not fit into the slot that we have reserved in our minds for Sonor drums.

Consequently, I did not really know what to expect when Sonor invited me to test their "new for 1976" Drum Kit. Believe me, I was pleasantly surprised, as I believe you will be.

Materials

All the shells on this kit are a "monster 9 ply thick". This is at least 2 ply more than your average good quality drum kit from the States. I expect many drummers to agree that heavy solid shells mean a heavy solid sound and I think that the shell thickness is an important good point on this kit. Couple this with Remo Weatherking heads as standard and a good sound should result.

Drum sizes available are 22" Bass Drum, Tom-Toms 12 x 8, 13 x 9, 14 x 10, 16 x 16, 18 x 16, as well as a 14 x 5 metal snare drum.

Bass Drum

Large chromed double metal rods coming out and meeting at the screwed spike for rubber feet are a feature on this bass drum. They fold away well and in actual use, they held the bass drum as well as any on drums today. An internal bass drum damper is also fitted to the batter head.

Tom-Toms

The spurs also have a dual role because this kit has a Tom-Tom fitting that is second to none. Sonor have decided that double mounted and double floor Tom-Toms are not enough for the creative drummer of today. Therefore, the standard double Tom-Tom holder can now take an easily bolted-on third Tom-Tom. The triple cluster of Tom-Toms consequently needs a good set of bass drum spurs for stability,

and I found that this was indeed the case. The actual fitting is ratchet based but the adjustment was superb. Couple this with a massively strengthened bass plate bolting to a 9 ply shell supported by excellent spurs and even three mounted Tom-Toms (12", 13", 14") had only natural stress movement which was minimal. Also, all three mounted drums were within easy reach.

Snare Drum

A steel snare drum with a 20 strand snare is fitted as standard, although on the model I tested a 42 strand snare was fitted. Response was good and the Snare (and Tom-Tom) screw on dampers worked well. The snare has a throw off lever and snare adjustment can be done at both ends.

At the lever end, the adjustment was very fine indeed and ought to satisfy the most fastidious of drummers. Each tension rod incorporates a thumb tightened locking screw which Sonor claim will eliminate gradual loosening of tension rods under heavy playing.

Accessories

The Sonor cymbal stands are as big as the really large stands that are now on the market. They have good clamps and tilters and also a top locking nut to the wing nut. A boom stand is also an available extra.

The bass pedal is adjustable in so many ways that I won't even try to explain, but I believe that it has more adjustment than the American model that is generally used in comparisons of pedals. Three springs of different tension come with it and like the American model, it leaves a plate on the hoop of the Bass drum. It also is a strap action, not linkage. The hi-hat was not quite as heavy duty as the cymbal stand, but well made and none the less adequate. Each tripod leg had the spur/rubber feet and this facility also covered the stands and Bass drum spurs. I do not believe it could creep even under the heaviest foot action. It has double springs, one of which is adjustable. At its slackest setting, it was still slightly too strong for me but to be fair, after the spring has stretched and bedded in, I believe it would probably be acceptable to all drummers. The non-slip foot pad was made of rubber,

but unlike a certain English model which uses "short life glue", this kit had rubber push-in grommets which I expect would hold for ever. Replacement, should the pad wear, would be a simple push-on operation.

The cymbal clutch was very simple and yet worked very well. The bottom half had a hexagonal hole which fitted to the hexagonal down rod. Obviously, this could not rotate. The top half had the usual wing screw and when this was tightened on to one of the eight sides of the rod, the two halves could not rotate. Consequently, no tightening of the top hi-hat cymbal could occur and so lock nuts are unnecessary.

The snare stand was fully adjustable with a double lever to lock the angle adjustment. It has the modern single adjustment to tighten the cradle, but to lock the cradle it uses a type of hand brake idea. I have used an Italian snare drum stand with a similar hand brake and after three years, I would vouch for this method as being very good indeed. In all a well designed snare stand.

Conclusion

It would appear that with this kit, Sonor have now come into the "Top of the Range" bracket and at this "Top of the Range" price, it must be compared with certain "Prestige" English and American kits. In terms of quality and sound, I expect it to come out more than favourable but strong brand names that have become household words to drummers are very difficult to forget. With this in mind, I understand that Sonor are arranging drum Clinics, so watch out for them in your area.

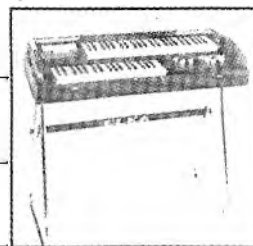
So, if you do not like to change kits every six months, this particular Sonor kit should last you many years.

TEST ON: *Elka Orla X55 Portable Organ*

DATE *December 1975*

PRICE *£730.87 Ex VAT.*

TEST BY *George Gibbs*



INTRODUCTION

This new model was first introduced into the U.K. for the 1975 Musical Instrument trade fair and is now reaching the shops. It is a two manual portable with a separate pedalboard and free-standing swell pedal. There are a whole collection of electronic organs which set out to copy the sound made famous by manufacturers using mechanical "Tone-wheel" generator systems. Few of them have successfully achieved the "Sound" they seek, but in the case of this model, The Elka-Orla X55, they have been most remarkably successful.

UPPER MANUAL

A four octave (49 note) overhanging keyboard. C to C.

U.M. Voices

9 drawbars voiced as pure "Flute" tones and arranged in the natural harmonic sequence. 16ft., 5 1/3 ft., 8ft., 4ft., 2 2/3 ft., 2ft., 1 3/5 ft., 1 1/3 ft., and 1ft.

U.M. Preset Voices

Clarinet, Trumpet, Full Organ, Theatre, and the Drawbars can be selected by means of five push buttons. Only one preset can be used at any time and the right hand button will take precedence if more than one button is depressed. The selection is then displayed on an LED indicator near the upper manual.

Percussion Voices

"Harmonic" percussions are provided on rocker tabs at 8ft., 5 1/3 ft., 4ft., 2 2/3 ft., 2ft., and a "Noise-Attack" button can add a switch-click effect separately.

Sustain

Adjacent to the "Noise-Attack" button are the sustain buttons. The one that gives "sustain" to the upper keyboard effects the Drawbar voices or preset in use and the percussion voices. This is unusual but does give one the opportunity to create some lovely chime and music box effects.

LOWER MANUAL

A three octave (37 note) keyboard ranges from the bottom C normal to a 61 note keyboard. This means that the L.M. does not cover the central zone where many organists play their "question and answer" phrases. A four octave L.M. would solve this problem.

L.M. Voices

Five "Flute" drawbars voiced at 8ft., 4ft., 2 2/3 ft., 2ft., and 1ft., gives the lower keyboard a very reasonable range of voices.

L.M. Presets/Percussions

*None
None.*

L.M. Sustain

L.M. Sustain is available separately from that on the upper manual allowing one to create some nice electronic piano sound with the L.M. drawbars.

OTHER FACILITIES

Vibrato

Available on the entire organ in two different depths, the vibrato gives a fairly shallow pitch variation combined with a selectable volume modulation.

Tone Control

The only equalisation control provided is the brilliance tab which enables one to add the extended harmonics found in string tones.

Mains power

Power is fed into the organ by means of a non-reversible "Euro-Plug" and a removable mains cable, which was correctly colour coded on the particular organ we tested.

Fuses

A 500 milliamp 20mm fuse is fitted to the rear panel next to the Euro-plug.

Power switch

One of the illuminated neon variety is fitted, which gives a nice, bright indication of whether power is reaching the organ and whether it is still switched on.

Swell Pedal

A separate "Free Standing" swell pedal is provided. It connects to the organ via a standard three pin DIN plug and socket.

BASS PEDALBOARD

The organs three pedals are one of its best features. They consist of a free standing 13 pedal note assembly connected to the main organ cabinet by a military quality 15 pin Paignton plug and socket. It is very unusual for organ manufacturers to use such high quality plugs. Being a standard NATO component, these plugs are readily available all over the world, should one ever need replacing.

Pedalboard Voices

16ft. Bourdon and 8ft. Flute voices are selectable by pushing the foot-buttons on the pedal unit. A third button switches on the bass guitar "Attack". In addition to the voice buttons, the pedals also have their own foot-operated volume wheel and a sustain duration wheel (Edgeways mounted potentiometers).

CONSTRUCTION

The organ is built in a very strong vinyl covered box with steel corners and a clip-on lid. The fascia surfaces are covered in "Wood Grain" formica laminate and the metal panels are finished in black.

Two large diameter chromium plated tubular steel heart shaped "legs" are fixed to the main organ body by means of two man-sized screw-on knobs. The top can be set to any one of five different angles and the chromium legs are kept spaced correctly by a black steel spacer-bar.

Music Rack

An extremely attractive translucent grey plastic music rack is also provided with the X55.

Weight

*Nett. 30 Kg.
Gross 39 Kg.*

Size

PERFORMANCE

No objectionable hum or interference was apparent at all during this keyboard check.

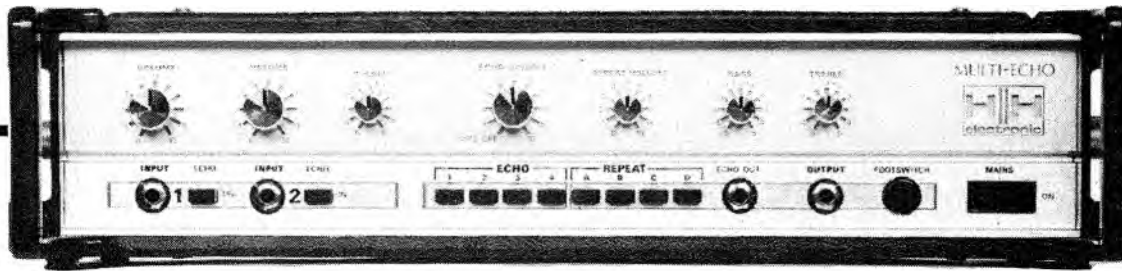
CONCLUSIONS

The Elka-Orla X55 is a very nice sounding instrument with a wide range of tone colours and other effects available. It is strongly constructed in good quality materials and great attention to detail has resulted in a flawless finish and a nice feel to the controls and keyboards.

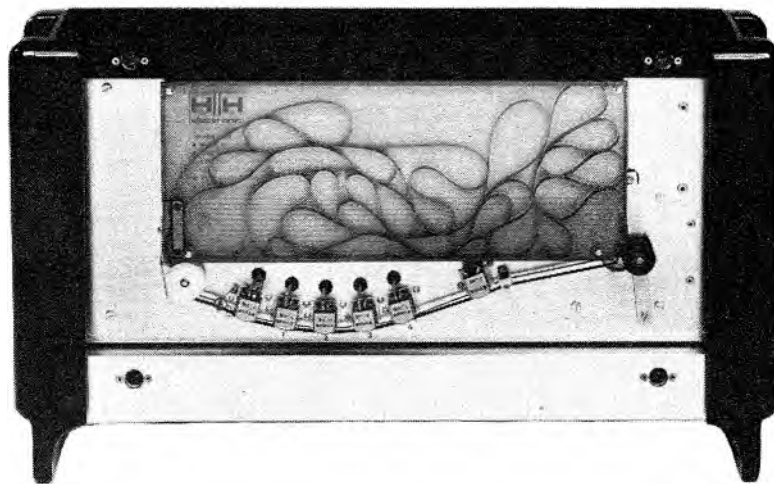
I must criticise the layout of the controls, however, because the putting of the drawbars on the right hand side of the lower manual makes them almost impossible to reach, except by the unusual expedient of playing the melody with the left hand. While I'm being critical, I would like to air my personal dislike of the drawbars which are made of flexible plastic. They seem to work well but do not engender (in me, at any rate), a feeling of quality or class.

In conclusion, this is a really beautiful piece of electronic design and engineering which performs well and is considerably lighter and smaller than any of its competitors, but which does not look, externally, like a top quality organ. If Elka-Orla reshaped the layout and styling of the X55 I would be happy to give it a "Rave" revue because it is, electronically, a terrific instrument.

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MICK BOX



Five years ago, an album called *Very 'Eavy, Very 'Umble* was released, introducing Uriah Heep to the world. Nine more albums followed, as did numerous world tours and a policy of sheer hard work has paid off handsomely. After a number of drummers and bassists, Heep now have a permanent line-up of David Byron (vocals), Mick Box (guitar), Ken Hensley (keyboards), John Wetton (bass) and Lee Kerlake (drums). During the American stint of their recent World Tour '75, guitarist Mick Box fell off stage and broke his right arm. Undeterred, he carried on to complete their most successful tour to date, and International Musician's Eamonn Percival caught up with Mick on the opening night of the European tour.



Is your arm better now?

No (laughs). It's just that I haven't given it time. You get this sort of jelly that's supposed to form and knit the bones together, but it hasn't happened. Occasionally, they crunch together and that can be a bit painful. It's just because I haven't rested it. The day after I did it, we did Detroit and went right through the tour. I was taking pills during the day, and I was having three pain-killing injections while I was on stage. The more I was using my arm, the more I was bruising it. It'll get better though. It just needs a rest.

Did you learn anything by having to use your fingers?

Yeah, I did. I use it a bit now. You can get a different sound with the texture of your fingers. And not the sort of picking you do normally. Sometimes, I bring my little finger into it and that way, you can do things quicker without changing the shape of your right hand.

What guitar are you using now?

Well, I carry three with me on the road — an SG., a Melody Maker and a Les Paul. Every night, we go into the tune-up room and I have a blow on each one and see what feels right for that evening. *Do you bring an acoustic guitar on the road with you?*

Yes, I cart round an old Levin acoustic to play in hotel rooms and things. I bring that because it doesn't matter if it gets bashed about too much.

I know you're a bit of a collector. What guitars have you got at home?

It's a bit of a job to remember them all, really. I've got two Strats, a Telecaster, a Martin D35 twelve-string, a Martin D28 six-string, a 1956 National steel guitar, and a bass and a few other things I use for recording at home. I've also got a guitar, which was given to me by Acoustic. They were going to introduce a model called the Black Widow and they gave me one to try out and send in any ideas I had. They just wanted someone who was on the road a lot, to see if the guitar stood up to the trials and tribulations of touring. They never brought it out in the end — I think the guy who got it all together left the company, so it was left in limbo. *You're using Acoustic amps aren't you?* Yeah, I've got a 271 with a 270 cabinet. I've got two onstage, but I only use one. The other's a spare. There's another one there which is like a monitor. The organ goes through it, so if I get any problems tuning, I refer to that.

Do you suffer from tuning problems?

Occasionally, yeah. A fresh set of strings are liable to slip a bit under the lights. At the moment, I use a mixture of Clifford Essex and Rotosound strings and they're both good strings, but even the best strings take a while to settle.

Have you got a regular pattern for changing your strings?

Yeah, every three gigs — sometimes after two shows, but on average, every three. *You mentioned recording at home. What equipment have you got?*

I've just got a four-track Teac machine, which I use with a Revox, so you can mix it down and then put it onto the Revox and then back onto the Teac and so on. I normally put little ideas down on a tiny Sony cassette player which I carry on the road, and when I get home I sift through the tapes and see what comes out. I might have about an hour of recording on the cassette, and pull just one idea off it. *Uriah Heep are, to say the least, a loud band. Have you experienced any problems with your hearing?*

No, none at all. You see, your ears aren't picking up the sound from the speakers straight on. It's like if you face a speaker towards the wall, you just get a muffled sound.

Do you find time to practice a lot?

Not an awful lot. In spurts really. Because we work so much, it's difficult to find time. Sometimes I practice a bit if we have a day off, if I'm not lying in bed getting over the last five days.

On the rare occasion when you get some time off, have you ever looked at your guitar and thought "I don't want to see that again for a while"?

No, I never feel like that. In fact, the only time I felt like that in my whole life was when we had a couple of weeks break on the last American tour. I'd been so frustrated with the cast on my arm and not being able to play what my brain wanted me to play. We had a quick holiday in Jamaica, and that's when the cast was taken off, and I wasn't going to use my arm at all. I was going to play it dead safe, but then after a day of that, the old bug comes through and you've got to play.

It's obvious that John Wetton has made a difference to the band. Has it made a difference to your playing?

Only that now I can concentrate on my playing. I used to have to concentrate on what Gary (Heep's former bassist) was playing, because he went through a bit of a bad patch. Also, John doesn't play quite as loud as Gary, so it must make a difference.

Have you any plans in a solo direction?

No, not at the moment. There's not a lot of time between what we're doing as a band. I probably will get round to it sometime. It's the obvious path to take at some stage.

Have you ever fancied doing something outside Heep, playing with different musicians?

Well, we do it a lot when we jam with people. Lee and me usually go to a club

sometimes after a gig and ask the band if we can have a blow. It's important to play with other people. It opens you up. Like a solo project, it's a chance to do something different and divorce yourself from the band for a while, then you come back very fresh.

What do you use in the studio?

Lately, I've been using a new Vox AC30, and it's really good. Sometimes I'll use maybe a wah-wah for a bit of extra tone, but it's really just the AC30. I've also got one at home, so I virtually predetermine the sounds I want in the studio, at home. Guitar wise, it varies. In the studio there's room to bring out a Fender for a cleaner sound, and then a Gibson for the "dirty" sound it gives you when you wind it up.

Do you get very involved in the mixing after everything's recorded?

Yeah, I do. I'm not one of those people who can leave it completely to someone else. I'd probably sit at home worrying about it, and not get anything else done anyway. It's a bit of a bore and a slog sometimes, when you're just getting a rough sound before you start building it all up, but it's worth it. You can make sure your parts come through right, which is important to everyone.

Which studio do you prefer to work in?

Well the last album was recorded at Lansdowne. In actual fact, most of the albums were done at Lansdowne. We did some stuff at the Chateau in France, and we also went to Munich for recording but we came back to Lansdowne and it was great. We tried to move away but it didn't work. This time round, we're going to try the Roundhouse studios.

Vocal harmonies are one of Heep's strong points. Who works them out?

Generally, when the track is being played back in the studio, anyone who has any ideas just sings them out. Then when you get an attractive line that everyone likes, we just take the harmony from there. On stage, it's all worked out so we know automatically which one we're doing. I'd probably panic if I had to think about it. *When you do a solo, do you work from a shape or chord position?*

Not really. I find there are certain solos you tend to do the same every night to a degree, and there's others where you just blow to your heart's content. I guess you do look down at certain shapes. If the solo sounded right in your ear for it to be in a certain register and it was in A, I'd play the A with the D shape all the way up using the second string A as the root. I suppose you do unconsciously have shapes up the fingerboard that you work to, but I don't look down and think that. You know what things are going to sound like before you play them usually, if you're proficient at all. Therefore you

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from page 33

know what's going to come out to a degree.

If the song has a lot of bassy weight to it, it's silly to play anything down in that register, because it's just going to get swamped anyway. So you've really got to screech away up high. You normally work to positions to a degree. If you're in A, you usually work from the fifth because you've got all those A's there to float about on.

You work a lot abroad with the band. How do you find the standard of musicians in other countries?

Well the States have got some fantastic players — a country that size must have. I think the standard in London is pretty high because it's such an intense situ-

ation. It's all based round London from the whole of England and there's this big competition thing. If you're in a London band, you're trying to make a name out of all the thousands of bands in that area. I think because of that healthy competition, you get a lot of good players out of it. Like the days when I was in a group called Spice and we were doing the Marquee and places, we were forever looking over our shoulder to see who or what was coming up. In Japan, it's really strange. The musicians seem to be well-schooled but they don't have any feeling in what they're doing. They're obviously very talented because you'll go along and see a band, and the guitarist will be vamping away on a chord and playing a trombone or something with the other hand doing all these amazing brass lines. It's like a bleedin' circus act or something. The drummer will be doing the same with a sax and the bass player will have a trombone (laughs). It's like a normal five-piece band and yet there's this great brass section going on at the same time! They're talented certainly but totally without feeling.

What about Australia?

Well, we haven't been over there for about a year, but when we were there the standard was pretty low. They just seem to play the notes in front of them and that's as far as it goes. This is obvious from the amount of success that bands from England and America are having over there. They're bringing a whole new wave of music over to them. We had a couple of jams with a few of the bands and they did seem pretty rigid. We tried to get them to jam and move off a bit and it was really difficult.

What guitarists do you like?

Well, initially I kicked off with all the jazz guitarists like Barney Kessel, Tal Farlowe and Django. I used to be very hung up on the technique side of things, and it was good grounding. It gives you a great knowledge of chords for a start and you get to use your little finger a lot which helps you with fast stuff. I went through a Chet Atkins phase after that, which I still love — all those parts he used to play. It was all a big challenge then. Nowadays, it's got to be Beck. I mean I'm still playing *Blow By Blow* all the time. He's got all that great humour in his playing. He still does it for me on that last album. I read all the reviews on that, and they all slagged it — I thought they must have been deaf. Apart from Beck, I really like Steve Cropper. He's playing on that Stewart album, isn't he? I love all that backing chord work. Lately I've been listening to Julian Bream a bit as well — I love all that stuff as well. □



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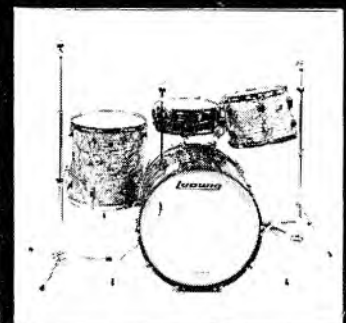
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Graham Pell Sound Pad

It's the best shop around. The guys are more interested in getting you what you want, rather than selling you what they've got. —Local Leicester musician, referring to The Sound Pad.

The Sound Pad has been the centre for musicians in Leicester since last July, when manager Graham Pell secured the new premises in London Road, after outgrowing the original shop in King Richard's Road which had been going since 1972.



"Looking back on it," explained Graham, "it was a bit of a joke, compared to where we are now. I was playing in a band semi-professionally, and two partners and I opened the shop, just as a spare-time thing, really. Six months later, my partners went pro, so I really got stuck into the shop. It was very difficult then.

"We really only had a few second-hand cabinets and amps, and a few of the cheaper guitars. Some of the other local shops had all the franchises and, apart from Dallas/Arbiter, we didn't have any accounts. We had a lot of enthusiasm though, and so we set out to beat everyone. Now, from the stock point of view, we can hold our own with most in the country. We're fairly central in location, so we pull from all round. I suppose our nearest competitors are Watford and London, or, further North, Nottingham."

A glance round the shop verifies this. There is a massive range of amplifiers and cabinets including Orange, Fender, Altec, WEM, Vox, Peavey, Carlsbro and Ampeg. Virtually every type and make of guitar is on display and the keyboard section includes Fender-Rhodes, Hohner and Crumar. At the back of the shop, there is a large drum display where kits by Rogers, Hayman, Ludwig and Pearl are much in evidence.

Of the stock situation, Graham observes "We don't do 'toys'. We're aiming at the upper end of the market. We do the full range of all leading

makes. In fact, we've probably got a dozen Les Pauls in the stockroom."

On the subject of drums and percussion: "We carry about twenty-five kits in stock, as well as all the nuts, bolts, skins and spares. We do everything from the kiddie's kits to the full double jobs."

Graham emphasises the importance of a good back-up service. "We always carry a full range of spares for everything. We've got stacks of pick-ups, knobs, pots, frets, scratchplates — you name it, we've got it."

The staff of Sound Pad consists of Dennis Stansall, Barry Grant, Graham's wife Evelyn and his brother Phil. With the exception of Evelyn, all the staff are musicians to some degree. Dennis plays with a group called Mint, who were winners of T.V.'s *Opportunity Knocks* and Graham occasionally plays guitar although as he explains "I'm not committed to playing every night now. I'd only be there in body because I would be thinking about an amp that's got to go out tomorrow or something."

The Fender Soundhouse design, equipment stacked on yellow scaffolding, is employed on the ground floor and, in keeping with the friendly atmosphere in the shop, humorous price tickets are fixed to certain items like the Altec mixer which has a tag saying "Talk over the wife's mother with power to spare" while we are informed that a WEM Bandmaster mixer is "Rapidly out-selling the Kenwood Chef."

The basement houses second-hand amplification, disco equipment and a repair and service department, which is run as a separate unit under the name of Croxford Custom Equipment. The disco department is quite extensive. It represents about 25% of The Sound Pad's business and includes decks, amps, sound-to-light units, rope lights, dry-ice and bubble machines.

continued on page 41



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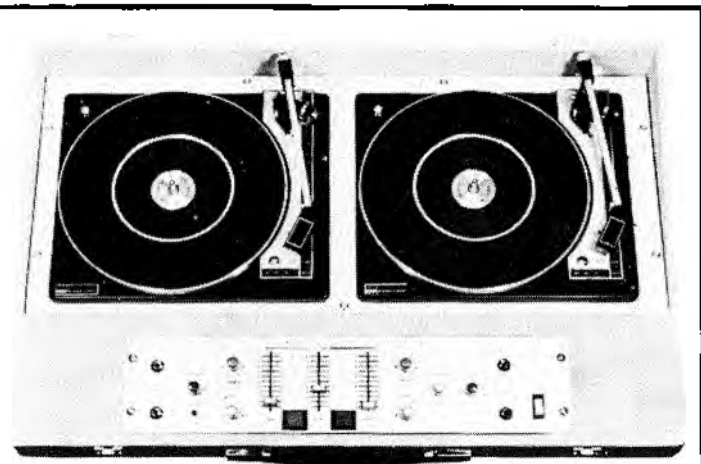
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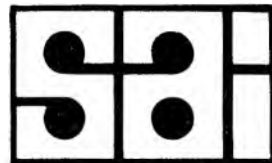
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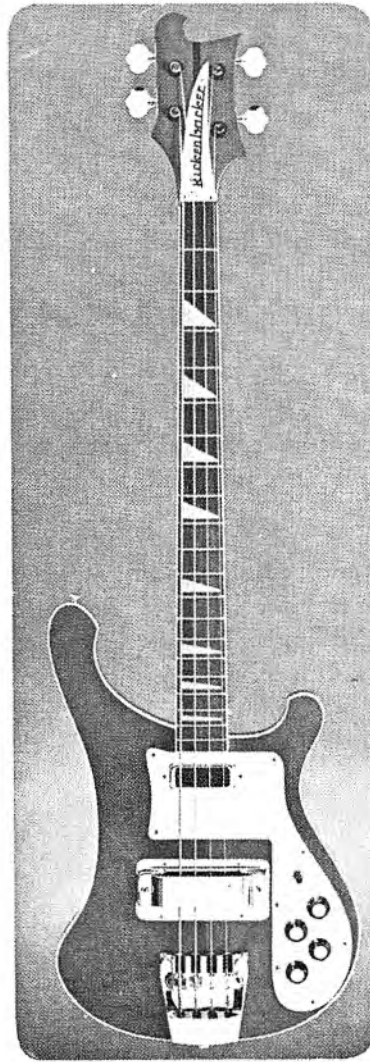
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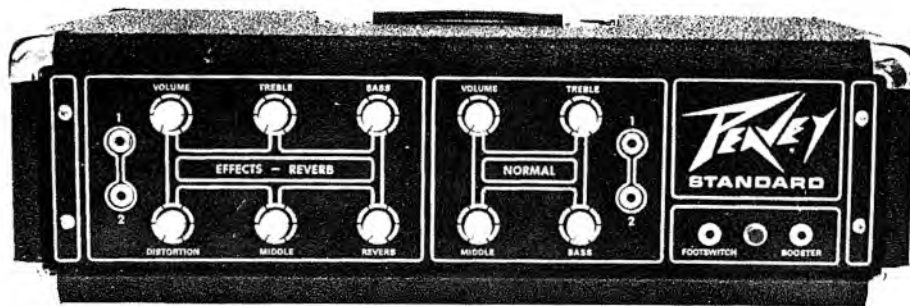
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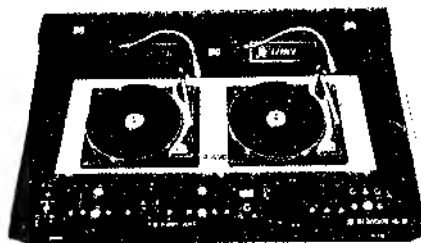
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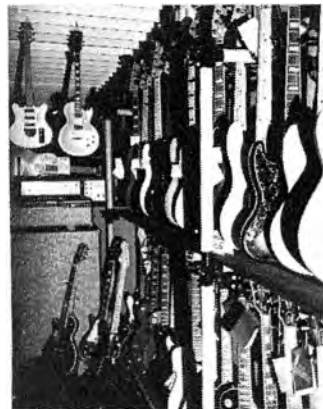
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Sound Pad



As well as many local Leicester-based bands, Sound Pad's customers have included names like The Who, Showaddywaddy, Polly Brown, The Drifters, Black Widow and Del Shannon. "We've had a lot of 'names' in here," explained Graham, "and for two out of the past three years we have supplied gear to the acts who have won the national Players No. 6 Competition. We also do a

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lot of club installation work in the local working men's clubs and bingo halls.

"The club scene is quite healthy in this area," he continued. "There are a lot of working men's clubs and pubs and the (Leicester) University obviously use a lot of support bands for their concerts." The Sound Pad has also got quite an active Mail Order service for supplying anything from strings to guitars to synthesizers. Their export and import business is also very healthy. "Most of the equipment we export is disco gear, but we do a lot of other stuff as well. We do a lot of importing. For instance, we have a full range of Martin guitars. Virtually anything is obtainable via the import side of things."

With regard to keyboards, Sound Pad are mostly concerned with portable instruments. "We're not really into the concert organ market here," Graham explained. "Synthesizers are going particularly well. We do virtually

anybody's who are any good like Arps, Moogs and Roland."

Graham Pell and The Sound Pad have come a long way in four short years and he explains his success thus: "I only applied to this business the efficiency you would expect from a large industry. A lot of people treat this business as a bit of a joke, but the most important thing to the guy whose amp has broken down is that night's gig. To be successful in the business, you've got to offer service, efficiency and stock everything that's available on the market. Not only that, but you've got to do it with conviction. That way, even if a customer comes in and doesn't buy from you, he will know where he can get it in the future. We're all young enough to be in touch with the customers, and keen enough to know where it's at, really. This was started from very little capital so we must be doing it reasonably right to be where we are now." □

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Peter Cook talks to Eamonn Percival

"He used to make the Ned Callan guitars and then he started making custom guitars, and he made some of my custom basses for stage. He's really good." — John Entwistle talking about Peter Cook, the man who does all John's guitar work for him.

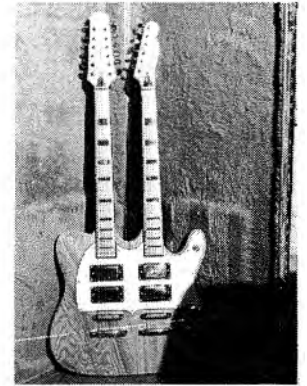
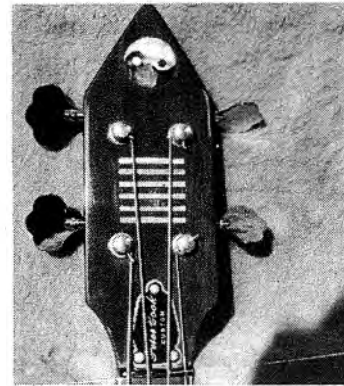
Like most guitar makers, Peter started out playing guitar and occasionally doing his own repair work and modifications. He was playing in a group full-time and, to earn a bit of extra cash, started to build a few guitars for friends. Things grew from here until Peter began to make a line of guitars under the name Ned Callan, which were marketed by Simms-Watts. This was at the time when there weren't too many good Japanese copies on the market, so he began to sub-contract the work to "get into the bigger league". It was an uphill climb to get Ned Callan guitars recognised as instruments in their own right.

Peter explained: "This time last year, we decided that there was too competition. I couldn't make the guitar as good as I wanted it to be and keep it at a reasonable price. Also, it was very difficult to bend people's ears away from Gibson and Fenders unless you go down to the Japanese price bracket. I wanted to make much better instruments and use selected woods and better shaped necks and everything else, so I thought it would be better if I "left" Ned Callan and went out on my own. Since then, I've been known as Peter Cook rather than Ned Callan. I do it all myself now and that's the way I prefer it to be. I'm totally in control now, and all the experience I've picked up during the production years has stood me in good stead."

Peter names John Entwistle as one of his best customers. In the past year alone, The Ox has had eight basses built for him. "I'd done a lot of work for John before," he explained "when I was working as Ned Callan, and I got to know him so I ended up doing all his work on guitars. Recently, I've been doing all Townshend's work — repairs and setting up and things. I deal with a lot of bands but I don't know who most of them are because it's usually the roadies who come round."

Apart from the occasional advert in the music press, Peter's

Continued on p45



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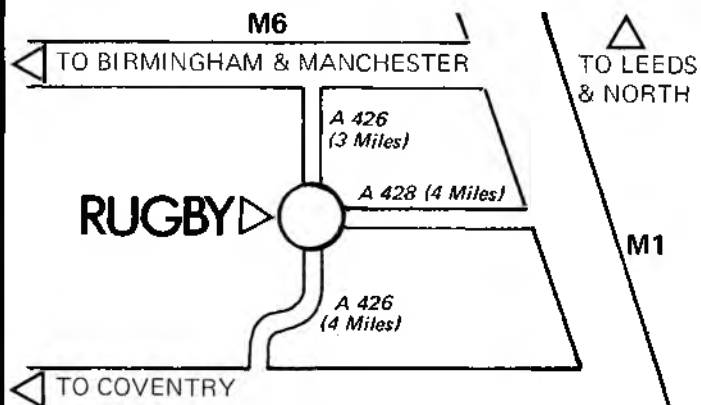
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reputation has come about almost purely by word of mouth. It's been a natural progression and he now finds plenty of work coming his way. "If someone comes to me for a custom job," he emphasised, "it's going to take about three months. If people come for repairs it would be about three weeks — that's for a complicated job, but of course, if it was just a case of rewinding a pick-up or something fairly simple, then it would only take a couple of days. The main problem is that if people come to me and want something done, I'm not the kind of personality to turn them away, so I do it and I end up with a great pile of guitars. I'm slogging away all day and into the night, and all the custom work which I'm building on will suffer because it hasn't got a ticket that says 'by Thursday'. A custom job is probably estimated for three months time, and then I'll look round and it's suddenly on top of you. So every now and again, I have purges when I'm working absolutely frantically and then occasionally I'll stop all that and spend a comparatively leisurely time doing custom jobs and work on my own models. I'm a bit of a worrier and I'd go mad if I didn't stop every now and then."

Peter will do repair work on acoustics if it's just a case of a broken neck or re-finishing, but he doesn't actually build acoustic guitars. "I wasn't brought up with acoustics," he explained, "and I don't believe in tackling anything unless I can do a near perfect job on it. I could probably do a reasonable job on acoustics, but I wouldn't be as happy as I am doing solid electrics."

Peter's most requested guitar "shapes" are Thunderbird basses and Firebird or Flying V guitars. "I think most people tend to like the Gibson shapes for guitars," he noted, "but a lot of people come along to me with their own designs, so I sometimes work from them." On the subject of machine-heads, he uses Schallers as a general rule. "Obviously, there's a price that I work from using my fittings and in with that standard price would be Schallers.

"People come to me and they want, for example, Gibson pick-ups and Grover machine heads and really, anything goes. I never try to tell anyone what they should have. When you're in production, i.e., when I was doing the Ned Callan line, you've got to say 'This is the instrument. This is what you've got to have,' but now I can give people exactly what they want. If they ask my advice, I'd give them the benefit of my experience. But Schallers are pretty good. I do prefer Grovers myself, but they are a bit more expensive."

Peter also builds heavy-duty guitar cases for his instruments and he stresses the importance of having a sturdy case. "I would always recommend that a guy has a case. If somebody is spending a lot of money on a guitar, he doesn't want to carry it away in a paper bag. Secondly, my cases are flight cases and they can be thrown about in vans or aeroplanes, whereas with the cheaper cases you buy, one boot through them and you've got a broken guitar. It's so important."

Peter makes a lot of the metal parts himself. "Depending on what I'm doing, I make up the parts sometimes. I find the Japanese micromatic bridges and tailpieces very good value.

They're a pretty good price and I think they're as good as the Gibsons. Obviously, if I make a guitar for someone who particularly wants Gibson fittings, then I'll use Gibson fittings. I like using everything of my own, but in the case of micromatic bridges, it's just a bit more convenient to use them.

"The engineers that I use to make the parts up are a bit over-worked at the moment, so they're having problems, but hopefully I shall get those made up as well. If I do Thunderbird copies, for example, I usually make up the bridge parts myself, but the micromatics need a milling machine to mill out the recesses. It's not something you can do by hand. If it can't be done by hand, I have to put it out to engineers. If it can be done by hand, then I'll do it by hand."

Peter uses a wide selection of woods, each of them obviously having their own characteristics. "My favourite for a neck is Honduras mahogany. If the body is going with a Honduras neck, I like to use Utile mahogany. If it's a maple neck, an ash body is normally used. If you want a hard, attacking sound, then you need a dense wood like mahogany or ash, and then it depends on the colouring you want. Ash is good for a natural finish. For a cherry-red finish or a nice wood colour, mahogany is good. On fingerboards, if it's a maple neck I would use a maple fingerboard; if it's a Honduras neck, I normally use ebony for the fingerboard. I don't use rosewood very much at all."

Peter normally uses a three-piece splice on necks for sturdiness and stability. He feels this is necessary, as woods available today are mostly very unstable. "Once upon a time, you could pick a piece of wood that had been standing for ten or 15 years and it would be pretty stable. Nowadays, you can't get the quality of woods — they can still move about, so I use a three-piece splice. Then if there's a weakness somewhere along the grain, it's being reinforced by the glue lines."

In the past year, Peter has built over 20 guitars for various people, but he doesn't consider this a "colossal amount". "The custom work takes a little longer for word to get around. A lot of the people who have custom work done, initially brought round a guitar for repair — quite often a major repair — and they've seen the results and thought 'Christ, I didn't think that could be repaired'. People have come along with necks or heads broken off the guitar and have been amazed that they could be repaired.

"A guy brought along a Rickenbacker not so long ago with the head completely shattered off and thought he would have to have a new neck built for it. He couldn't believe it when I told him I could repair it. Now, that's the sort of guy who sees the results and maybe sees a guitar of mine hanging around here, and decides he wants one built. But, until word spreads around a bit, people aren't quite as happy to come along to someone like me who they may not have heard too much about.

"That's why people like John Entwistle are good for me because as soon as they know I do John's work, that gives them the confidence in me to come along for a guitar or repair. Apart from being a fantastic bass player anyway, John is a perfectionist and he likes something, then it's got to be good." □

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Screening

By Stephen Delft

If you have read some of my guitar reviews, you may have noticed references to some electric guitars which have inadequate screening (or none to speak of). It may have occurred to you that either screening is important, (in which case, how can the makers continue to sell guitars without it?), or alternatively, that screening is unnecessary (and so why do I make a fuss about it?).

It is probably fair to say that a guitar with inadequate screening will work tolerably well most of the time, and occasionally collect electrical interference and hum to annoy both audience and performers. It may also suffer from uncontrollable feedback at high gain settings on your amp, and at best will always have a tendency to dilute your favourite riffs with a mixture of hum, buzz, hiss, and public service radio transmissions.

It is easy to forget that the space in which we live is nearly saturated with radio transmissions and similar radio interference signals from motors, refrigerators, television sets, electronic lighting controls, fluorescent lights, mains electricity supply cables, and even loudspeaker leads from high power amps. There are many more sources of interference, and while it can (and should be) suppressed at source, in many cases this is not done. Some equipment manufacturers find it inconveniently expensive, some equipment was made or installed before sensitive amplifiers were used by musicians, and in some cases thorough suppression is virtually impossible, (for example a long temporary cable supplying several thousand watts of Theatre lighting from an S.C.R. dimmer.) In any case, 50 cycles per second radiated hum is present wherever mains electrical power is supplied, and there is little chance of suppressing that! Any reasonably sensitive amplifier, of the sort commonly used for amplifying PA, guitar, organ, etc., with a few inches of bare wire in the input socket, will pick up some of this radiated mush, and if you are unlucky, the end result will be unwanted noises from the loudspeaker. Fortunately, it was long ago discovered, that if the input wire, and anything connected to it, was put in a metal box, connected to earth, then the input was "screened" from interference and no longer caused unwanted noises. In practice, an electrical input from (say) guitar to amplifier, needs a wire there, and a wire back, and these wires must be fairly long. The screening "box" evolved into a flexible tube of fine braided wires, and also acts as the return wire, and the in-



Cavities lined with foil, note overlapping tabs

put wire is insulated and runs down the inside of the braiding screen. Add an outer plastic sheath, to keep it all clean and protected, and you have a standard guitar lead. If you look at the jack plugs on the end of a guitar leads, you will see that the maker has gone to quite a lot of trouble to keep the input contact inside the outer screening sleeve as much as possible. Better quality plugs even have a metal sleeve to enclose the small length of inner wire which is exposed to the plug terminals.

Now this may seem a bit pedestrian to some of you, but there is a point to it all. The makers of audio leads and connectors are in business to make money, and they could make a lot more money if they gave up all this business about efficient screening. (Certain cheaper coiled leads do in fact have a very rudimentary screening braid, and if you connect one of them to a high impedance guitar amp and hold it anywhere near a mains lead, you'll discover why I don't like them.)

Most reputable manufacturers have accepted that audio leads for high impedance use, need thorough screening, and try to maintain this screening all the way from the amp to the input signal. Unfortunately, the input signal does not come from the jack socket on your guitar; it comes from the pickups, and there may be several inches (or even feet) of wire and assorted switches and controls between them and the jack socket. If the inside of your guitar is not screened, then all these inches or feet of wire will pick up interference just as well as if they were connected directly to the amp, which seems a bit silly after all the care which has gone into screening the lead and plugs. Of course you will get away with it most of the time, but good audio engineering, and professionalism in the Music Business, require that

equipment works properly all the time. (Try telling the entertainment manager of an American Aircraft Base that you can't go on, because his lighting board is badly suppressed!)

There is another way in which your guitar can pick up hum: — the power-supply transformer in some amps can radiate a fairly strong magnetic field which changes in strength at 50 cycles per second (and harmonics of this frequency) in time with the changes in the mains supply. If a single-coil, (non-humbucking) pick-up "sees" such a magnetic field within its receiving angle, then it will produce the sort of hum which changes as you turn the guitar about and is much worse as you approach whichever amp is causing the trouble. Humbucking pick-ups were originally designed to eliminate this source of hum, but if you prefer the Fender sound, for instance, there is very little you can do about this problem except stand yourself and the amp so that the hum is at a minimum, and have your own (and all nearby amps) fitted with "low external field" transformers. This applies to most Fender guitars, many Guilds and vintage Gibsons, as well as many cheap electrics, and from the performances of famous musicians it is obviously possible to beat the problem.

The problem of electro-magnetic and electrostatic interference described earlier, is a more serious one, but fortunately easy to cure with nothing more complicated than a roll of strong aluminium kitchen foil and a tin of Thixofix. It is not really necessary to screen all wires individually and lining the wiring cavities in your guitar with earthed foil will work very effectively. You will need to be able to dismantle the electrics of your guitar, if possible without disconnecting any wires, and to be able to unscrew and replace the con-

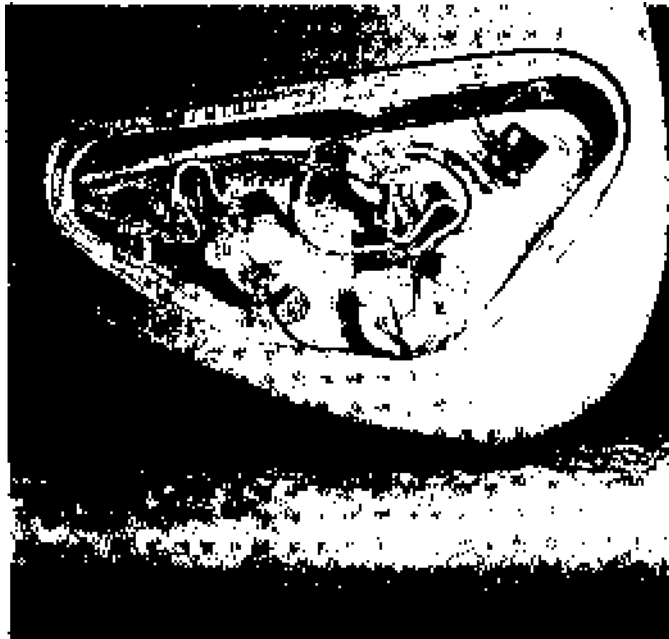
trols and switches without slipping and scarring the laquer. If you are not sure, why not experiment on a very cheap and/or broken solid guitar first?

You will also need a small cheap paint brush (about ½" or ¾", from a decorating shop), lots of old newspaper and enough table space to avoid getting Thixofix on the guitar finish or the front of the scratchplate; it doesn't come off easily and it will probably burn the surface. Solid guitars generally come with two wiring methods: either the guitar is hollowed out from the back, (Les Paul type) leaving a thin layer of wood at the front for mounting the controls, or the body is hollowed out from the front and the controls are mounted on a separate scratchplate (Strat type). With Strats and similar copies, the screening job is relatively easy, because almost everything is mounted on the scratchplate and the wiring lies in slots, not tunnels (see photograph). This is perhaps as well, since some of the copies are not really screened at all. If your guitar has a sheet metal liner at the bottom of the wiring and pick-up recesses, and a metal lining to the scratchplate, then it is probably screened well enough. If either is missing then you will need some glue and foil. If you have access to really thin copper foil, then just cut it to size, glue it in place and solder a wire between it and the screening connection on the jack socket. However, you will probably have to use aluminium cooking foil, and this is virtually impossible to solder in the usual way. The simplest way of obtaining a connection is to first line the plate on which the controls are mounted. You must remove them first and trim the foil neatly around all holes, before they are replaced. The metal body of at least one of the controls should effectively connect to the foil, and the control covers are linked to the screen tag on the jack socket, thus earthing the foil. If you now line the body recesses, leaving a small margin of foil folded over onto the front of the guitar, when the scratchplate is screwed down, both lots of foil will be pressed into contact. I know that aluminium makes poor contacts, but this very rarely fails to work, and if you do have trouble, smear a little contact oil on the opposing bits of foil and roughen them lightly with sandpaper.

To keep the gluing process under control, put plenty of glue on the inside of the cavity, wait according to the instructions, and then place the pre-cut foil in

place. Do not put glue on the inside of the scratchplate, it will get in the holes and onto the front. Spread it very thinly on an over-size piece of foil, and, when tacky, press this onto the inside of the scratchplate. When everything is lined and trimmed, leave unasssembled if possible for one or two days so that any surplus glue can dry thoroughly. If you ignore this, you may fix the scratchplate permanently to your guitar. To be on the safe side, continue the foil as far as all pick-ups, and above and below any wiring which is not obviously screened.

If your guitar has access to the wiring at the back, remove the coverplate and look at the wiring. If the main wiring runs to pick-ups and switches are already screened, and the inside of the controls cavity and back panel are lined with metal or metallic paint so that the lining joins up when the back panel is fitted, then the guitar should be well screened (see photo.) If not, you should add foil where necessary, again removing the controls first. Do not disconnect any more wires than absolutely necessary: you can slit



Example of well screened control cavity – Firebird

the foil to get around wire bundles as long as it is not actually in separate pieces. In this type of guitar, be very sparing with the glue around panel holes, or you will glue the controls permanently in place.

Some guitars have combinations of these wiring methods and may need a little ingenuity. Remember that you cannot easily

reconnect two pieces of foil which have torn apart: it is easier to start again. If the leads from the pick-ups are not screened, and yet pass through tunnels in the body, disconnect them, and temporarily remove each pick-up and its attached wires. Glue a strip of foil and wind it around most of each wire bundle leaving a long tab at the controls end. If the

ends are likely to touch any other bare wires or tags, cover them with insulating tape. The long tabs can be trapped between the body and the back plate when it is replaced. This will extend the screening "box" through the holes in the body, to the pick-ups, etc.

This should give you enough ideas to cope with most instruments. If you must disconnect any wires, draw a plan of the wiring first and label any wire, both on the plan and with a numbered tape "flat", before you unsolder it. Don't try to do any part of this job without a proper working surface; if you drop a guitar halfway through, you could easily tear some of the wiring out, and ruin the pick-ups.

If your amp hums, crackles, or ticks when you touch the strings, it may be that the earthing wire to the bridge or tailpiece has broken – try duplicating it. On the other hand, if the hum stops when you touch the strings, have your amp and mains wiring checked at once – you may be the only thing which is earthing the amp!

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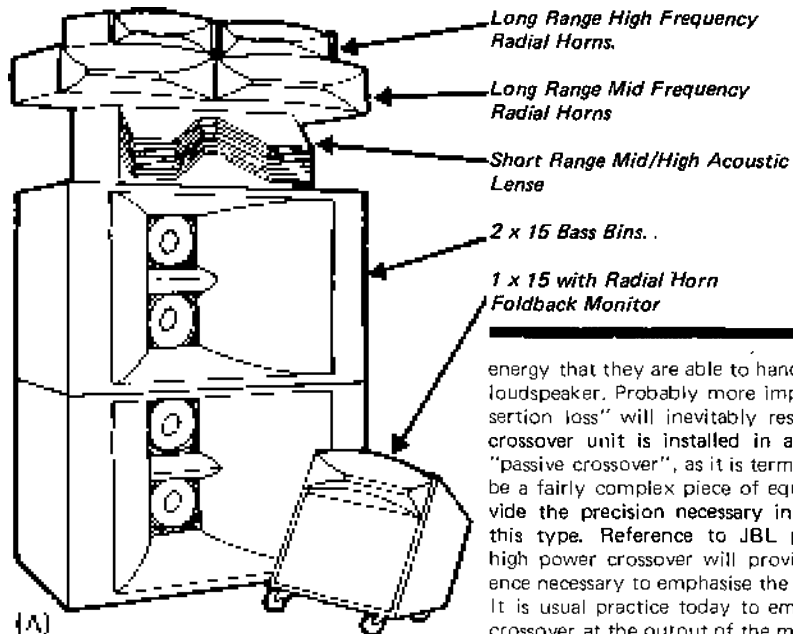
BY KEN DIBBLE

When really high power levels are required for a large auditorium or outside stadium, the answer is not to stack columns, infinite baffle or reflex cabinets to the ceiling and drive them with as many 100 watt amps as can be laid hands on. All that will be achieved in most cases is acute distortion and deterioration of quality due to phase differences between the multiple amplifiers and loudspeaker units.

That was how last month's feature (part two in a series) covering loudspeaker systems concluded. If sound quality is to be maintained or (ideally) improved, the first problem must be to reduce the number of loudspeaker drive units and amplifiers to a sensible level. As increasing power is the object of the exercise, it follows that the output power in acoustic terms from each loudspeaker used must be increased substantially. It is a fact of physics that doubling the amplifier power fed to a loudspeaker system will produce only three decibels of extra sound. There is also a limit to the power each loudspeaker can be made to handle. This, therefore, is not the answer. The answer is to design the loudspeaker system so that it makes better use of every watt that is fed to it — in other words, to increase the efficiency of the loudspeaker system so that for the same feed power, it will produce far more sound. Using a really efficient drive unit is a step in the right direction, but this alone will not provide a sufficient increase in sound level. It is also necessary to assist the loudspeaker unit by using a cabinet design that keeps the loudspeaker cone under supreme control and, additionally, provides further acoustic amplification of its own to further increase the sound output from the system. Such a cabinet is the horn loaded enclosure, or "bass bin", as it is usually termed. The actual efficiency of a bass bin will depend upon its design, but it can be up to ten times the efficiency of a 4 x 12 column, depending upon the size of the cabinet, the "air column length" and the units fitted. Using modern units, powers of up to 500 watts can be fed into a single 2 x 15 bin. With powers of this magnitude, coupled with the high efficiency, we are getting somewhere near the performance necessary to achieve the power levels needed. The bass bin is by no means a new development exclusive to the music industry. The cinema division of the old BTH company were manufacturing super efficient 2 x 18 bins and installing them behind cinema screens back in the 1940's, and firms like Vitavox, Altec and Westrex have long been making similar items for the cinema industry. So really, we aren't doing anything radically new, merely adapting old ideas and practices to meet today's needs.

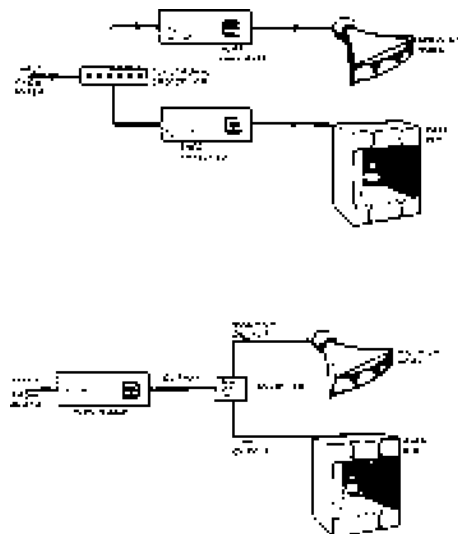
If four large 500 watt bins are stacked on each side of the platform, we have a system that will handle up to 4000 watts of bass in only eight cabinets. Provided that the crossover takes place at a frequency where the wavelength is still greater than the effective cone diameter of the separate loudspeaker units used, there will be no problems with units interacting and causing the spurious beams or distortion referred to in part two last month.

The next question must surely be — Yes, but where do we get a 500 watt treble horn to match? A good question, but fortunately, treble horns are even more efficient than bass bins, and in many cases, only a quarter of the



bass power is needed to feed the associated mid-range/treble, so one 125 watt horn unit will usually be adequate for a 500 watt bass bin. On some of the larger rigs, it has become common practice to employ a slant-plate acoustic lens in addition to the horn unit and to cross-over a second time to feed sets of tweeter horns to reproduce the very high treble with added clarity. When this technique is used, the mid-range/treble horn is usually selected to have good long range projection, and is used in conjunction with the acoustic lens, which directs the same part of the frequency range downwards on to the front rows of the audience, thereby providing both long and short range coverage. Fig. A shows a typical P.A. speaker stack.

Crossing over from one loudspeaker system to another then becomes a major problem at these power levels, as crossover networks contain capacitors and inductances, and these components have limits in terms of maximum voltages and



energy that they are able to handle, much like a loudspeaker. Probably more important, an "insertion loss" will inevitably result whenever a crossover unit is installed in a system, and a "passive crossover", as it is termed, will need to be a fairly complex piece of equipment to provide the precision necessary in a crossover of this type. Reference to JBL price list for a high power crossover will provide all the evidence necessary to emphasise the point!

It is usual practice today to employ electronic crossover at the output of the mixer to split the actual mixer output into its bass and treble components, and to feed these separate signals to separate amplifiers, so that the bass bins are fed from one set of amplifiers, and the mid/treble horns from another set. There are a number of advantages to be gained from this approach. Not only are all the problems associated with passive crossovers solved, but valuable flexibility of control is provided, as the output level of bass and treble can be separately controlled from the mixer. Also, the dynamic range of each amplifier is improved, as it only has to handle its own part of the frequency range, resulting in more power and an improved transient response from each amplifier. This technique is generally known as "bi-amplification". Fig. B shows a block diagram of both passive and electronic crossover systems. On some of the really large P.A. rigs, three-way electronic crossover is employed, where the mixer output is split into low, mid, and high frequency components and fed through three sets of amplifiers to bass bins, combinations of mid range horns and acoustic lenses, and high frequency radiators. So much then for the loudspeaker system for the audience. But with so much noise being made on stage from amplifier stacks delivering hundreds of watts, and some guy thrashing hell out of a set of skins and cymbals, it is necessary to provide a further set of loudspeakers on stage for the benefit of the band itself so that each musician can hear what the others are doing, and stay with them. This is known as the foldback system and consists of two or more powerful loudspeakers fed via a separate foldback amplifier from a separate mix on the mixer and separate equalisation or tone controls. Often, talkback is also provided, to enable the guy at the mixing desk to give instructions to the band from a microphone feeding through the foldback amplifier and loudspeakers. The loudspeaker systems used for foldback usually consist of reflex or infinite baffle bass sections, with a really good mid/treble horn fed through a first class passive crossover. Hundreds of watts can be, and are used for foldback on a well engineered sound rig before feedback dictates the ceiling level.

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Queen: A Night At The Opera. EMI EMTC 103

After "Killer Queen", I couldn't imagine Queen capable of bettering that amazing single. That is, until "Bohemian Rhapsody" was released. I also thought *Sheer Heart Attack* unsurpassable until *A Night At The Opera* came along. Quite frankly, it's frightening. The care, the attention to detail, and the very imaginative arrangements have resulted in what must surely be the album of the year. Don't be misled by the title — it's neither a rock-opera nor a concept album, but simply a collection of great songs, all performed with (seeming) ease and (definite) dexterity. The album kicks off with a Freddie Mercury song "Death On Two Legs" — a bitter, aggressive number with Brian May's guitar punctuating particularly nasty lyrics. The mood changes instantly with "Lazing On A Sunday Afternoon" which features a thick backdrop of vocal harmonies behind a megaphone lead vocal effect. This in turn leads straight into "I'm In Love With My Car", written and sung by Roger Taylor with very clever double-entendre lyrics and spine-tingling guitar lines. "You're My Best Friend" follows, and features bassist John Deacon playing electric piano on a number very reminiscent of early Miracles. Brian May takes lead vocals on "39", a very melodic song with little more than acoustic guitar, and double bass in the backing, and an Eagles-like harmony on the chorus. "Sweet Lady" is very heavy Queen, with power chords and bass riffs creating a wall of sound before they break into a swing tempo at the end of the number for a furious guitar solo. "Seaside Rendezvous" is a camp, 'twenties-style number with brass and woodwind vocal effects, in a way the "Leroy Brown" of the album. A longish track, "The Prophet's Song" sustains interest throughout. Penned by May, it is destined to be a classic Queen number with excellent lyrics, good melody and an intricate repeat echo effect on the vocals halfway through the track. Mercury's slow, ballady "Love Of My Life" comes next, followed by "Good Company" written by May and again excelling lyrically. The album's penultimate track is the brilliant "Bohemian Rhapsody" of which enough has already been said; further comment on an album review is superfluous. The album finishes with the fifty guitars of Brian May doing "God Save The Queen" and I certainly endorse that plea.

Recorded at Sarm, Roundhouse, Olympic, Rockfield, Scorpio and Lansdowne Studios. Produced by Roy Baker and Queen, engineered by Mike Stone. Eamonn Percival



Solution: Cordon Bleu. Rocket OC062 97136

Gus Dudgeon's new Rocket offering, Dutch band Solution are going to become international giants before this year is out. Their music is so tight and melodic it's a joy and the audience that accepted the music of Chicago and Blood, Sweat and Tears will love this as a natural progression. Solution are actually tighter in a small group way than either of those American bands. Their music is inventive within a deliberately defined framework that finally offers more by virtue of that fact. The standard line-up is sax, keyboards, drums, bass/guitar. Great importance is attached to the instrumental ability of the band on this album and vocals, — mainly by bass player Guus Willems — are pushed to the background. That doesn't leave the listener unsatisfied, however, as the band never relapse into "stone" music but are continually pushing ahead, offering counter rhythms and improvisation against their main theme. At no time are they self indulgent, however, and they are mature musicians who have lived through the ego-trip of recently accepted music who plays music beyond the listener's acceptance limits. Because they're new to British audiences — they've been huge on the Continent for several years — it's necessary to make some comparison and perhaps in addition to comparing them to Chicago for tightness — in no way can their music types be compared — one might refer to such artists as Deodato and Focus which only really serves to illustrate the difficulties of comparison. Every instrument played on this album — and there are many — is played by a master (only one session man is used) and the production is just as you would imagine from Gus Dudgeon.

Recorded at Rockfield Studios, engineered by Pat Moran Phil Dunne; remixed at Marquee with Steve Holroyd and Gus Dudgeon working the board. Ray Hammond

Uriah Heep: The Best of . . . Bronze ILPS 9375

Well, they could hardly title it *Greatest Hits*. Sadly, Heep have yet to score in the singles stakes, although they have released some excellent 45's. Their album sales say it all. All too often slagged by the press, Heep are a GOOD heavy band and this album presents a selection of material taken from eight of their previous albums, all thoughtfully laid out in chronological order. Starting with "Gypsy" from the *Very 'Eavy* album and finishing with the title track of *Return To Fantasy*, one can trace the musical and aesthetic progression of the band over the years. Outstanding cuts include "July Morning" (from *Look At Yourself*) and the powerful "Easy Livin'" (from *Demons And Wizards*) and my only beef is that I would have preferred the title track "Wonderworld" rather than "Suicidal Man". Tastefully packaged, it's a very valid album for first-time Heep listeners.

Recorded at Lansdowne, Chateau d'Herouville and Musicland Studios, Produced by Gerry Bran and engineered by Peter Gallen.

Eamonn Percival

Ace: Time For Another. Anchor ANCL 2013.

A beautiful album; country rock so rich and so tight that it's difficult to accept that this is only their second album and that Ace have not yet been acclaimed by the (British) public and media as they deserve to be. Ace gig furiously and incessantly both here and in the States (where they seem to be appreciated). The result is a band whose components make up the whole without any problems of integration. Their instrumental and vocal harmonies jigsaw together so smoothly that it's hard to distinguish the individual talents of each member with the result that Ace come across as a very united whole. Ace are English but there's a strong, yet unpretentious, American influence apparent in everything they do. Vaguely reminiscent of The Grateful Dead, in the best possible way: That sort of American. They've recently returned from a successful tour in the States and have now made their first positive break away from the British pub/college circuit. Their music is fundamentally relaxing, sometimes with sad song themes, but always with a strong and rhythmic enough percussive (Fran Byrne) undercurrent to avoid melancholy. Rusty Young contributes steel guitar on "Does It Hurt You"; apart from that, minimum use has been made of studio advantages. On stage their music is exciting and refreshing and the studio hasn't suppressed any of the atmosphere they generate live. Bam King, guitars and vocals; Paul Carrack, keyboards and vocals; Tex Comer, bass and vocals; Phil Harris, guitars and vocals, Fran Byrne; drums and percussion.

Recorded at Rockfield and Advision. Produced by John Anthony, engineered by Ted Sharp. Elaine Cooper

Spud: The Happy Handful, Philips 9108 003

Philips? I thought the label was dead. Superseded almost everywhere by Phonogram, this Philips record furthers the career of Dublin band Spud. It's a bit like an Irish Fairport, an electric band with fiddle and that sort of thing; the reason the album graces these pages is that the band are surprisingly good. Eire has a group scene healthy beyond the wildest dream of a British M1 starved groupie and Spud are certainly a fine product for the export market. They've married Irish traditional music to electric guitars and basses (drums still don't figure in the line-up but it's early days yet) and managed to evolve a unique sound. The band are good in their own right as musicians. They play well and very tightly and lead singer and guitarist Austin Kenny has a voice that might belong in the Ian Campbell Folk Group. Some delightfully unusual instruments like recorder and Jew's harp are used to great effect in the recording and as well as delighting every young expatriate Irishman, the band could develop into an international identity.

Recorded at Sound Techniques, London and Dublin Sound, engineered by Simon Nicol and Pat Morley; produced by Simon Nicol.

Ray Hammond

Pedals for '76

Eamonn Percival talks to Larry Macari



Larry Macari

For more than ten years, Larry Macari has been spearheading the production of quality effects pedals. In the mid 'sixties, The Yardbirds released a single called "Heart Full Of Soul" featuring a young guitarist called Jeff Beck. The guitar sound immediately enraptured all the hundreds of Telecaster-toters who were looking for a distorted, fuzzy sustained tone which they couldn't previously get. Beck had used an invention called a Tonebender to get that much sought-after sound. It was a light-weight pedal linked between guitar and amplifier, which produced a flat-topped wave of sound as opposed to a symmetrical one. The guitarist of the day could pull amazing sounds from the pedal just by stomping on the switch. He could also pre-set the amount of distortion required via a rotary control on the Tonebender. From here, things moved very rapidly. One of the big groups of the 'sixties — Dave Dee, Dozy, Beaky, Mick and Tich — scored with a single called "Hold Tight", which also featured a Tonebender, and a host of other bands soon followed suit.

The wah-wah pedal followed soon after. This was basically a tone-filter operated by a foot pedal. As the pedal was pushed down, the treble or, in some cases, the bass was boosted, giving a "crying effect". The next important innovation must have been the phase pedal. This was introduced after the success and subsequent demand for the sound achieved on The Small Faces "Itchycoo Park" single. The phasing sound was actually produced in a studio by running two identical tapes together, but slightly out of synchronisation with each other.

The Tonebender is still available in the Colorsound range and in fact Gary Hurst, the man who designed the original, is working with Larry Macari on the design side of Colorsound. Colorsound now market many variations of fuzz, phase, wah-wah, swell or virtually anything required, and although they are a relatively small company, export to more countries than any other firm. Colorsound will be introducing a number of new effects units at the Frankfurt Trade Fair next month and Larry explained "We're now trying to aim more at the professional market. When we started ten years ago, we really wanted to give the kids a chance to spend about a tenner and get something near a recording sound or the sound they heard on records at the time. We were very successful with our pedals, and we were and still are very cost-conscious. Our pedals were good quality, very light weight and extremely durable and so far, we've managed to keep the stuff right down in price. We decided, over the past year, that there has been a demand for the more professional type of pedal, but still inexpensive.

"We've been very lucky. We've been producing the sounds the groups want, and now export is our thing. We export to places like South America which, up till now, have been impossible to get through to. We also deal a lot behind the Iron Curtain, which speaks for itself. After ten years of doing effects pedals, we feel we're 'growing up' and so we'll be introducing a rather exciting range of effects at Frankfurt. We've really got a heavy, professional job in mind.

"For one thing, we're going to be marketing effects units that are mains driven, because we've found that roadies hate battery changing. They will be able to be changed to 110 volts as well, because a lot of the bands take them to the States for tours and things."

One of the new items will be the Eurotec Black Box. Larry explained. "It's a complete modular systems of sound effects, and it's the first time it's been done. It's like a control centre, and a guy can plug in as many effects as he likes. I personally think they're going to revolutionise the whole effects scene. This time next year, I think the whole effects department will have changed completely."

Other new lines include a fuzz pedal with phasing built-in, a new sustain unit, a new phaser and a form of "mini-phase" called the Eurotec Micro Phase. The new units will also have a "facelift." "We're going Jumbo", explained Larry. "We're restyling all our old stuff as well. Generally they will be a bit bigger and more sturdy. We're also working a lot on eliminating breakdowns. We'll be restyling the whole pedal so it works much better and will be heavier and more robust.

"When you decide to do a really professional job, then you can use better components. Another point is that you can't run a specific line for too long, as it can become outdated. With new and better components coming along all the time, you've got to constantly update things."

New ideas and designs for Colorsound come from a wide variety of sources and Larry is always keen to pick up on new innovations. "We'll listen to anyone's ideas," he explained. "In fact, our Supaphase unit was designed by EMS. We have four regulars on development and design, but we'll go outside for ideas as well. I'd like to stress that we're always open to either buy ideas or to sell on a royalty basis."

Larry explains that his success with effects units is due to the fact that he is closely in touch with the needs of today's musicians. "I'm out to make money just like anyone else in business," he said, "but I've always been potty about sound and it gives me a real kick to hear an effect that is commercial and that you know people are going to like."

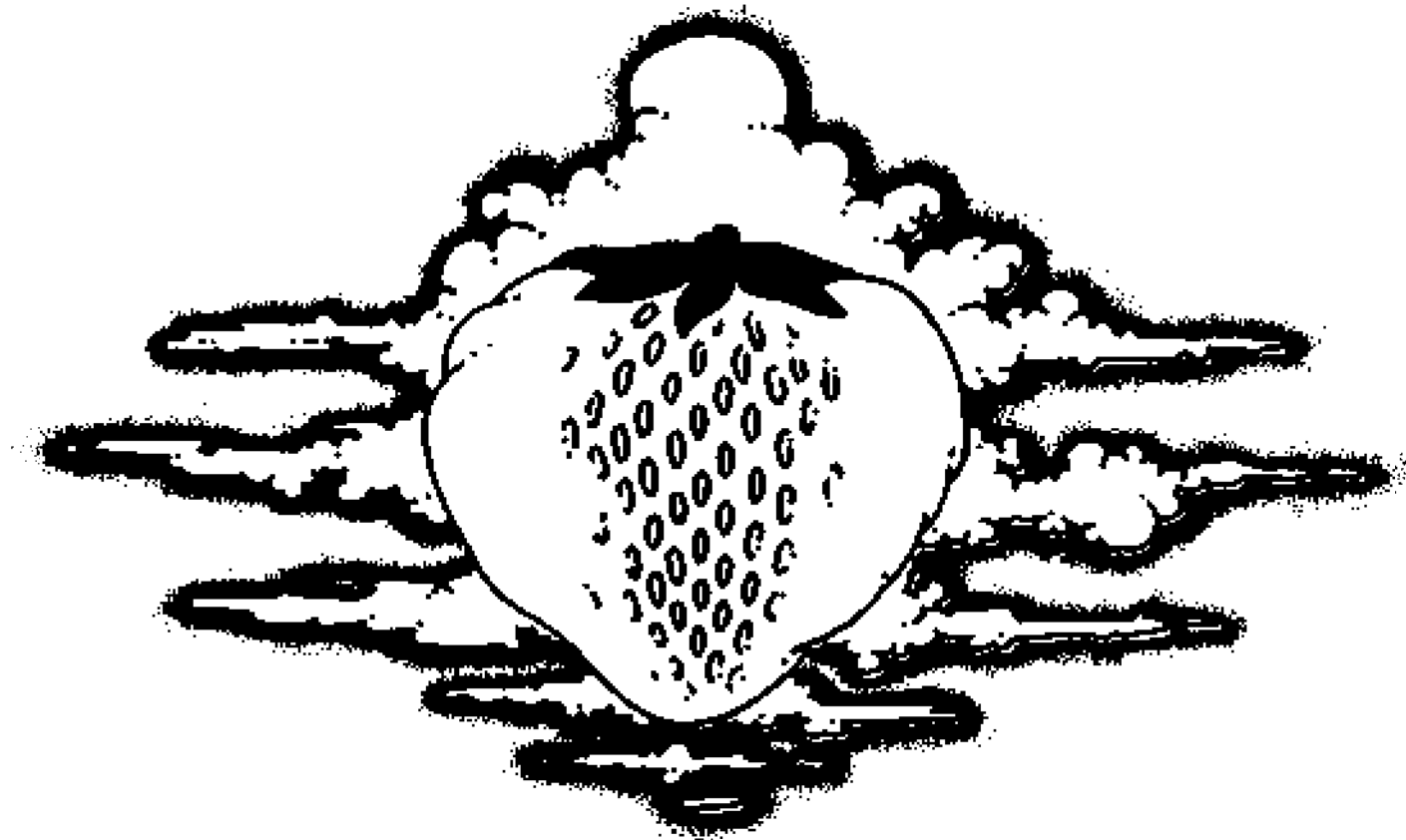


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Strawberry Studios

In a less than salubrious part of Stockport, a sign over a doorway reads "Strawberry Recording Studios" but the austere surroundings belie the comparative internal splendour of Strawberry. The studio started in 1969 as a modest four-track operation.

Before that, 10cc's Eric Stewart and Strawberry's Pete Tattersall had a small demostudio until Graham Gouldman (also of 10cc) joined the partners and they decided to "do it properly". Their policy of "doing it properly" has culminated in the recent updating of the studio from 16 to 24 track. The decor and layout of the control room has also just been re-designed by Westlake Audio.

Pride of place in the control room is taken by a beautiful custom-built Helios 26-channel, 24-track console. Its layout was designed by Pete and Eric, and the electronics by Dick Swettenham of Helios. The desk seems to have everything on it and, more important, just where you want it. All the controls are within arm's reach, as the desk is angled round in a semi-circle. It even has a built-in cigarette lighter because, as Pete says, "If it's four in the morning and nobody has any matches, where do you get a light?". There are two Studer A80's and a B62 plus a 24-track Studer set into a recess in the wall. Additional extras include a Cooper time-cube, Aengus EQ unit, full Dolby system and EMT stereo echo plates.

The studio itself measures 42' x 30' and includes a large vocal booth. There is also direct access to the studio via a goods lift, so loading problems are minimal. Pete describes 1975 as very busy. "Last year was excellent. We've got bookings right into '76, which is great because we only went 24-track in summer, when 10cc recorded their last album. Now we've had the control room done, we're 'officially' 24-track."

Pete is very pleased with the way the control room has turned out. "We wanted to get the perfect room when we went 24 track. I'd seen a lot of Westlake rooms and thought they had incredible ideas. They're so advanced in studio design. The decor was pretty good as

it was, but it doesn't compare to the finished result now." That last statement certainly rings true when you look round the control room. Half of the walls and the door are covered in tree bark on cork, and the front walls are chunky brickwork, giving the room the appearance of a Swiss Chalet. Set into the wall at either side of the window are two giant Westlake monitors, which are driven by Crown DC300A amplifiers.

"The only thing you can go on is your ears," said Pete, "and when we switched on the monitors, I thought 'Jesus!'. I'm told, as a Westlake room, it's very good. Apparently, we're only ½ dB short of an ideal listening situation. If you put mono through two speakers, you should, theoretically, get a 6dB rise in level at Central Listening Position. Our rise was 5½dB and I'm told Westlake haven't yet achieved a 6dB rise anywhere. I'm well pleased with it."

Visitors to Strawberry have included 10cc, Neil Sedaka, Paul McCartney, Mike McGear, Scaffold and big bands like The Million Airs and the Syd Lawrence Orchestra. "It's great doing big bands," Pete enthused. "The day before we closed for renovations, we did a thing with a big band for EMI and they recorded it in straight stereo — the first time I'd done that for years. You use a multi-mike technique and everything comes through at once, but it turned out great. You get more involved with the thing when you're recording a group because you see it all being built up from start to finish, but at the same time, it's good doing big bands because it's all happening at once, apart from where they overdub various solos."

Most of the vocals and mix on the Bay City Rollers' *Once Upon A Star* album was done at Strawberry and, according to Pete, they were "The nicest guys to work with on that session. There were no temperaments or hassles. In fact, each of them took turns to make coffee throughout the session. Neil Sedaka was great to work with as well. He's tremendous. Such a professional."

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Strawberry Studios

from page 53

Apart from Pete's involvement with Eric and Graham, 10cc are among his favourite bands. "They're tremendously talented guys. They take the trouble and time to get things just right. What I like about their writing is that the words make sense even without the music, which in itself is great."

The success of a studio, according to Pete, is all down to atmosphere. "It's vitally important," he stresses, "and that should include the people involved in the studio. The engineers have got to be friendly and helpful, and good equipment helps as well. Although even if you have all the best gear but no atmosphere, it wouldn't work."

Pete is working on plans at the moment to offer a "package deal" to bands. "We're in the planning stages of it at the moment," he explained. "I'm in touch with various hotels and country clubs locally, so we'll be able to eventually offer a recording and accommodation situation to bands who perhaps want to come in for a month to do an album."

With the completion of the control room, I wondered what future plans Pete had for Strawberry. "Well, we'll always be constantly adding to our equipment. We have parametric EQ on part of the desk, and I may extend that. We won't be going quad. At least, not until the quad situation is sorted out. The other thing is that we're currently looking at automation — computer mixing. There are a few on the market, but it won't be in the immediate future."



As far as extending or enlarging the premises, Pete told me "There are a lot of possibilities. We have the use of the basement, which houses a workshop and echo plates at the moment. We also have options on the floors above so we could make use of that. There's some land next door as well, so we could even go sideways. There's enough room all round really to build on to the studio. We're contemplating building a large echo chamber."

"Now we've finished the control room, we may re-do the studio. It's being discussed at the moment. Even as it is now, it goes well with the control room, and it's comfortable and has a nice sound." □

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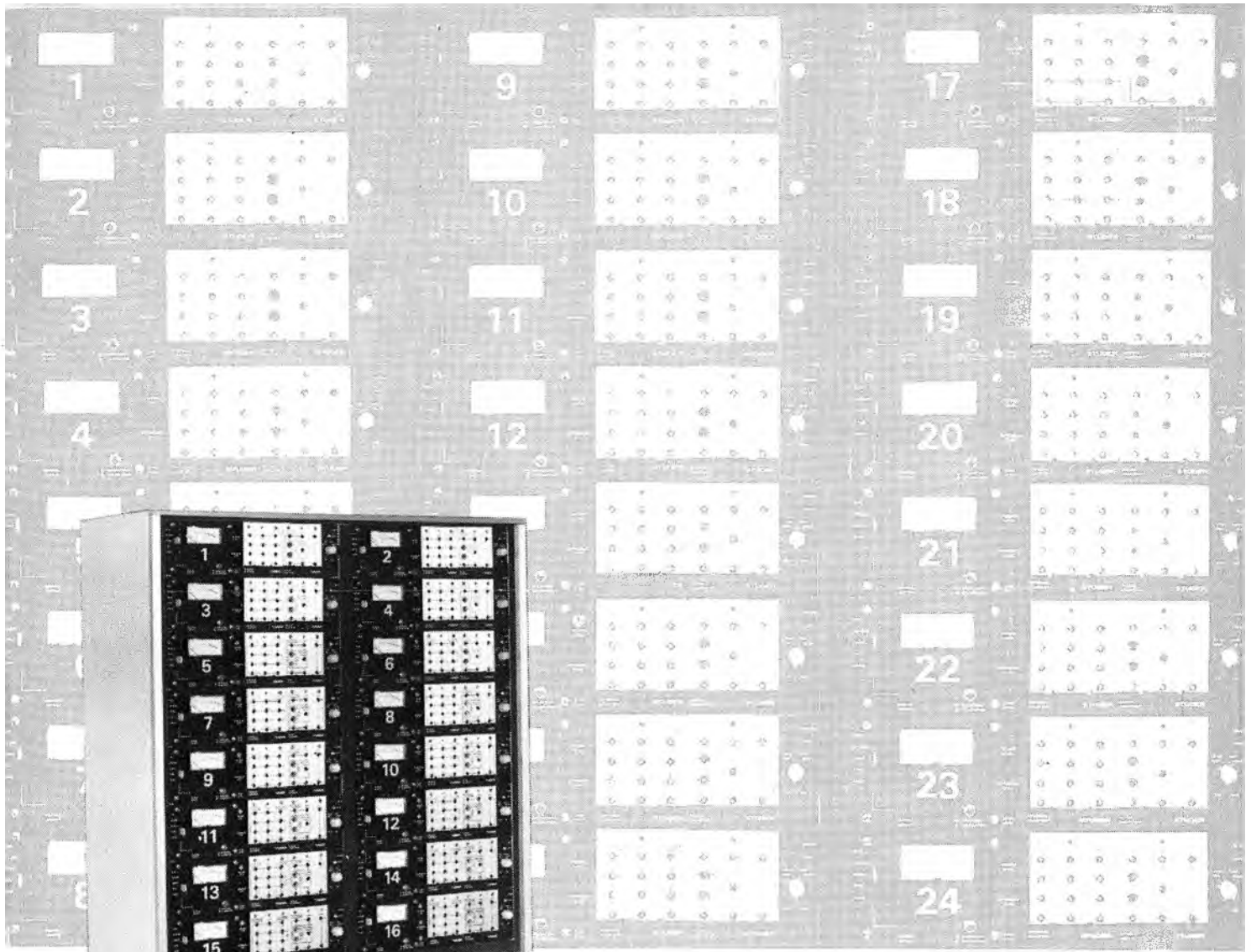
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Manchester is the most important cotton city in the World. Over half a million people live in the area and a high percentage of them make music. The city grew rapidly in the 18th and 19th centuries and in addition to the Manchester Ship Canal, another growth factor was the city's fortunate setting on the rivers Irwell, Irk and Tib.

You can still smell that prosperity in the city today. Yes, there are still uncleared bomb sites, but there's an enormous new building movement continuing in the city which includes the much vaunted Arndale Shopping Complex which will be the biggest enclosed shopping area in Europe when it opens in a couple of months.

The music scene in Manchester hasn't slowed down since Herman and the Hermits first gave the town a musical identity. 10cc carry on the tradition — there've been countless bands in between, of course — and the band is certainly one of the most musical and most respected in the world. At the other end of the scale, Manchester is the home of the Halle Orchestra and the Free Trade Hall is a traditional venue for the finest music. Slightly more subtle, but perhaps even more relevant, The Guardian originated from the city and has done much to shape its external image.

Music in Manchester is big business. There's Granada television — progenitor of such rock classics as Disco 45 — and Piccadilly Radio to represent the dreams and there's shops, studios, manufacturers and agents galore to service the aspiring musician. In this, the second of our regional Buzzes, we take a look at what's happening, musically, in Manchester.

Amek represents all that is good about free enterprise. Two lads are having a go and the results they are achieving have made their second anniversary celebrations extremely relevant.

Readers of *International Musician* are already familiar with the fine range of Amek mixers that have caught the market's attention in the last year, but the story behind Amek goes back to the school days of Nick Franks and Graham Langley. They're both natives of Stockport in Greater Manchester and just over two years ago they got together to start manufacturing.

At college age, the school friends separated — Graham to go to the Bolton Institute of Technology and then on to be a design engineer for Audio Developments, and Nick to Manchester University from which he graduated with a degree in politics in 1973.

A short spell mending motorways convinced Nick of the need for ambition, and after a meeting, the old friends decided to combine Nick's musical knowledge with Graham's technical knowledge and produce mixers.

The first Amek product to see the light of day was a small solid-state six channel mixer with independent gain and little else. Today, the company can produce studio desks with 16 output channels and up to 24 input channels and they're still knocking out the six channel jobs when required. The 24 in 16 out jobs can be delivered in 12 weeks and the smaller desks in proportionately shorter times.

Other Amek products like electronic crossover units can now be found and the company is planning a series of graphic equalisers and digital effects units.

Amek's market is a combination of recording studios and groups and the company is prepared to adapt their desks to individual

needs. The Amek production line is becoming highly organised. An outside metal working company has taken the construction of mixer cases off the company's back and this leaves Graham and Nick free to work on marketing, design and electronic construction.

Gong have been using an Amek board for some time and have been so pleased with the results that they have influenced a major French recording studio to re-equip with an Amek desk. Shapes of things to come?

Plug into a 4 x 12 cabinet, or a 2 x 12, or a 4 x 10, or a bass bin and it's an even money bet that the shell has been made by Leech.

Leech are one of those companies that musicians never hear of but who are the life blood of the industry. Leech are cabinet makers — nothing else. Most amp makers have discovered that a specialist cabinet maker can do a better and cheaper job than they can and so give their requirements to Leech who obligingly knock out a couple of hundred cabs from the finest materials in a few days — or hours, or weeks, depending on the conditions prevailing at the time.

Leech is tucked away in a back street in Salford, an area that once had its own identity but now is merely a place up the road from Old Trafford. Unusually, all the lads putting the cabs together are, or were, musicians and the difference this makes to the jobs turned out is a principal factor in the Leech success story.

Started only two years ago, the company today have all the work they want in the U.K. Even the largest amp builders were not slow to realise the potential that Leech could offer their business and it is true to say that a high percentage of cabinets on sale in Britain today originated in

the Leech workshop.

Leech is the project of Dave Slinn, Keith Whittaker and Joe Olenki, all Manchester boys who've been through the musicians mill. Dave looks after the selling, Keith attends to production and Joe administers the whole show. This partnership grew out of the group days. Joe had been making his cabinets for years, so the friends decided to go into the business properly.

"Lots of our lads here work part time for us at first," explained Dave. "They're working in a band and they come to us to learn about cabinet making and before long they've signed on full time with us. Quite a few of our staff came that way."

Dave puts in about 70 hours a week and at this stage in the game, his fellow directors and most of the staff do the same. It's that kind of hard work that has established Leech so quickly.

Exports are now the biggest thing ahead for the company. So Dave loads up a truck, climbs in and takes his cabinets to Europe. Orders are coming in because even after the cost of shipping, Leech can turn out a better cabinet at a better price than the European competition.

"We've got our own truck and we do all our own export documentation," explained Dave. "We've actually been doing a bit of export for some other companies — taking a few amps across and that sort of thing. In that way, we can do some of our customers a favour."

The new year brings a move of premises for Leech. Expansion creates its own problems, but this kind of rapid success makes mockery of people who put down effort with words like "recession" and "economic climate."

continued on page 58



BUZZ: MANCHESTER

WINDMILL ST.



Success has been such that plans are being laid for the studio to move to larger premises later this year.

Current rates in the studio are eight-track, £12 an hour and stereo £10 an hour.

Tyas celebrated its third birthday last month. But Dave Tyas didn't celebrate, in fact, the event came and went without notice really because the company's so busy. Celebrations were saved until Christmas.

Situated a few miles outside the City Centre in Oldham, Tyas started out dealing principally in lighting units and associated items such as sound to light units. The firm also built some sound equipment as a sideline and today that side of the industry has become of major importance to them.

After dropping out of college in Newcastle, Dave Tyas concentrated on building lighting units for the infant lighting industry as it was six years ago. When he established Tyas, he had learned a considerable amount about the requirements of professional users and he quickly gained sub-contract to the Rank organisation to install major theatre sound and lighting systems. The result is a range of equipment that spans from a major sound system to a little disco light unit.

account executive with a client requiring sound advertising will pass a brief over to Pluto who will then write the jingle, the voice over and complete production and return it as a finished tape to the agency. Their success in this field has meant that the company has been able to continue to improve their studio at a steady rate. Because of this, the studio has been able to accept full music sessions from outside clients.

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A. The Mamelok shop
 B. Graham and Ann Mellor of A1
 C. Indigo's Dave Rohl
 D. Fantasy
 E. Graham Langley and Nick Franks of Amek
 F. The Leech gang, Dave Slinn far right
 G. Nigel Briggs and Terry Sraith of Tony Saville.



"Our business was really founded during the 'twenties and 'thirties," says Bob. "So when people complain about the recession, I think it's really funny. If you can build up a business during the 'twenties and 'thirties, you'll manage any time."

The staff at Mamelok are encouraged to handle all types of sales, although they are specialist instrumentalists themselves. The manager is Harry Jones; he's a drummer and organist Peter Bind and guitarist John Blackledge make up the staff rota.

You can buy brass in Mamelok. "I stubbornly refuse to give up the brass showcase," said Bob. "There's lots of things I could use the space for but who knows when brass instruments are going to get really popular again."

Another specialist item is the accordion section of the shop. It's a hangover from pre-war music crazes, but because of their range, accordions sell in steady numbers.

There's a heavy second-hand stock at Mamelok because the shop try hard to get only the best used equipment, but it's hard to spot the old amongst the new: only the price is the give away. Other lines stocked in the shop include accessories, keyboards

(mostly portable), sheet music, tutors and general educational instruments.

A1 is amazing. At first sight it's an un-prepossessing corner shop just on Oxford Street near the city centre. You'd say it's 8ft by 15ft and as you edge through the door between the piles of HH amps and Martin guitars you're aware of hoards of people occupying the little gangway that exists in front of the counter, behind which musical Graham Mellor and his vivacious wife Ann face the world.

People are continually coming into the little shop and it's only after a while that the first time visitor realises that people are continuing to arrive but the shop gets no fuller. Customers keep vanishing through a hole in the floor. Inspection reveals impossible steps leading into blackness. Courageous negotiation reveals a passage below which hold the promise of light at the end of the tunnel. At the end you emerge into a warren of workshops and cellars which sport displays four or five times as large as the shop and 40 feet below it.

Down here there's a hushed reverence for the stocks of amps and guitars that line the wall. Occasionally the silence is broken

by the hard clang of an HH or the slick sound of a Fender Dual showman as the visitors who have slid down into the depths from the innocent looking shop above ground level try something out. Even stranger is the staircase that leads down from the basement to a subterranean chamber that houses drums, and more drums in old cellars that may once have been an abattoir but were certainly in use during the 18th century for storage. Here there are drum kits, disco units and associated equipment and beyond these deep recesses is a double door that opens into a huge warehouse currently used for stock storage.

A1 is certainly far more than it seems. It's a meeting place for bands and a certain bet for anyone who wants to lay hands on second-hand gear. The shop has the Martin guitar agency and it's the only place for miles around that these exotic guitars can be found. The HH franchise is another major plug in A1's favour and bands come from miles away just to try out the guitars and equipment.

The shop started over 10 years ago with the princely capital sum of £14. Graham had been working as a guitarist in a C. & W. band for some time and opening the shop seemed a good way to escape the syndrome. His wife Ann didn't join the business until 1967 when the shop moved into their present premises. They started just selling accessories because of a lack of capital but rapidly built up to greater things.

Ann is unique in that she handles the technical side of her business as ably as any male could. She admits that there was a problem at first. "Groups would come in and when I appeared they'd ask for Graham," she re-

called. "I realised that the only thing they'd respect is knowledge so I learned as much as I could from Graham about the technical background to the stuff. Today I think I probably know as much about amps and similar equipment as any group."

Ann's now very popular in the shop. She regularly looks after the servicing requirements and general sales and has carved her own niche in the male bastion of the music business.

One Fine Morning are a Manchester band who know A1 inside out. The main reason is that leader Brian Webb and keyboard player Nigel Gass work in the store in an effort to supplement the kind of living a harmony band expect from the area.

They've been together two and a half years and in that time have built up a repertoire that includes a great deal of original material. The band's got a huge line-up, with a vocal front line of two girl singers and four male singers. Personnel is Brian Webb, 12 string guitar and vocals; Nigel Gass, keyboard and vocals; Stuart Stead, drums; John Cunliffe, bass and vocals; Martin Handley, lead guitar, flute and vocals; Angela McKeever, vocals and percussion and Bernadette Moran, vocals and percussion.

Up until now the band have found their work mainly in the working mens clubs and cabaret gigs but they're slowly beginning to break into the college circuit. They've a female manager, Beryl Davis, who looks after the business side of things for them.

Four members of the band write material and they've gained valuable broadcasting recording experience at Radio Piccadilly. A K registered Ford Transit is needed to ship them and the gear about, but they have to load 2½ tons of gear in it, well above the weight for which it was designed.

Rehearsals are held once a week and a lack of suitable rehearsal venues is a continuing problem. The reason they stick together? "There's a spark in the band, we all love being on stage and when we're together, it all works."

You learn a lot over the years when you're on the road with groups. Apart from learning how keen people are to con you, you also learn a lot about the technical side of things — you have to, if you're going to rely on your equipment night after night. The problem is how to make use of that knowledge when you're tired of bad food and life on the road. Clem Lee has found the answer.

Clem was a pro musician for 15 years and you learn a great deal in that time. Today he's converted his knowledge, energy and enthusiasm for music into his own project, Countdown Studios, by the old Smithfield Market near Piccadilly.

"During the years I was on the road I reckon I must have worked in every decent studio in this country — Advision, Lans-

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As manager Ken Heald explained, "We weren't entirely happy with the location of this shop because it's on a busy corner and it's difficult to park near by. We opened 18 months ago and it took a while for the shop to become known, but now I'm not so sure that it's a bad position. Things have been good this year."

The head office of the Dawson chain is in Warrington and the company has a history going back over 80 years. Other branches exist in Warrington and Wigan, and Dawson's are the kind of company who research an area carefully before trying their luck.

"When we arrived, the only thing we didn't know was what lines were going to prove popular. We stocked a bit of everything and waited to see. Now we've got a balance of stock that is about equal between keyboards and drums."

Keyboards form a major part of the whole Dawson's operation. Some fine lines are stocked in Stockport and these include console models and portables by Lowrey, Conn, Yamaha, Gulbransen, Farfisa, National and Moog.

In amplification, Dawson's are fortunate in having an HH agency and they sell an enormous number of these fine amps. In recent months, the company have noticed Carlsbro selling extremely well and the new Marshall transistor amps have also been leaving the shop regularly.

Other amp lines stocked in the large and spacious showroom — the shop was originally three small units which have been modernised and knocked together — include Fender, Simms-Watts, Sound City, Elgen, and WEM.

An equally wide range of guitars is displayed. The expensive Gibsons and Fenders are freely available for trial and there's a wide range of acoustics in the cheaper price ranges.

There's a large accessory counter and a wide range of Premier spares are carried — a few drum kits are on show — and there's quite a bit of educational stuff available. There's several makes of microphones displayed — Shure, Calrec, AKG and Reslo — and the general impression is of a very well stocked shop.

Most people open a recording studio and that is the end of the affair. They sit back in their swivel chair on the mixing dais, smile benignly at their massive capital investment and wait for the business to arrive. That's why so many of them see their equipment ending up in the second-hand equipment lists published by Malcolm Jackson.

The Pluto Studio in Stockport was formed as a tool to aid the business of two local lads, Malcolm Rowe and Keith Hopwood: Ex-group members in and around the City, the two teamed up together to form a music writing company harnessing their creative abilities to the requirements of the media.

To deliver their art, Pluto studios was set up in 1968 and Keith and Malcolm concentrated on developing their contacts in the advertising world. Today Pluto is busy turning out complete jingles and commercials for clients from all over Britain.

"We're not really a public studio," explained Malcolm. "It's only recently that we've started taking in outside recording work and that side of things has started to develop very quickly."

Pluto is situated in a large building in Stockport (above Strawberry Studios; see elsewhere



Dawson's amp corner

in this issue). It operates independently of big 24-track Strawberry downstairs and offers eight-track recording on an Ampex machine which gets its mix from a Sound Techniques desk.

The engineer is Ray Buckley and his work is very varied because of the mixture of ad jingles and usual group recording.

Pluto work by offering an ad agency a complete package. An

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Getting out from under is one of the prime motivations of the music making industry. Music attracts the independent type, but Indigo's Dave Kent-Watson had to wait a few years for his chance.

Indigo is the best equipped studio in the City Centre. It's a 16 track affair which has grown rapidly in the last few years and today handles a variety of work for Granada Television, commercial radio and top bands making masters. The studio still undertakes the kind of demo work they started out on, but because of the equipment installation, prices are not the lowest.

D.K.-T. is an ex-Beeb man — need we say more? After an adolescence dominated by making Ferris Bueller recordings of local jazz and classical concerts in his rather conservative home town of Portsmouth, he entered the BBC to learn their way of balance engineering. A few years of noisy valves and Dave was ready for better things. During his stay with Auntie, he met Bob Auger, a fellow sound man who later joined him in a move to Granada Television and thus also into Indigo.

Granada was Dave's reason for coming to Manchester. Everything agreed with him when he moved. His childhood asthma vanished with the marginally damper climate and, co-incidentally, work conditions improved, with Granada TV offering such exciting opportunities as the mixing of current affairs programmes and Disco 45. The lot of a sound man in television is, however, a hard one.

"If an actor fluffs, they'll re-shoot. If a camera fluffs, they'll re-shoot, but there's no second chance for the soundman." Who knows how many missed cues, how many duff mikes, how many level drops were born to produce that remark.

But from adversity came tranquility. Well, not exactly; rather the opposite, actually. For two years, Dave and Bob plotted the start of their own studio. They had everything but money. A recent issue of *Hot Flash* Manchester's only alternative paper — claimed that Peter Adamson (Len Fairclough) supplied some dough, but wherever it came from, Indigo started.

The studio has seeped through a Georgian building that stands defiantly in the path of a planned inner ring road. Look along a North-South line in Gartside Street and you can see a space that wanders between the new buildings of the city, an area about the width of a new road would need that has been left fallow by the developers. In the middle is Indigo.

A 16 track studio, Indigo has everything except a Dolby system and the desk is a fine Sound Techniques desk with a 16 out facility. Monitoring is by JBL and in Studio One it's possible to record 25 musicians whilst Studio Two is more suitable for a small group.



One control room serves both studios and sound proofing is sufficiently good to allow Studio One to be used for rehearsals whilst Studio Two is recording.

Studio rates are £19 an hour, but a special deal the studio offers to groups is a three hour session for £60, including all tape charges except the copy the band take away. This means that the very expensive multi-track tape is used free of charge.

Perhaps it's no accident that the Tony Saville Music Centre is just two doors away from Scrivens Hearing Aids — Saville sell some mighty heavy gear.

The shop started out two years ago last month. Tony Saville and Terry Smith, both ex-musicians, stock a highly specialised kind of hardware, although things didn't start that way.

"When we first started, we were doing a bit of everything," explained Terry, "but over the first year we found out the kind of thing the customers wanted and we've been steered into very much a hard group shop."

The small shop is stacked high with almost every conceivable make of amp and guitars. Very few keyboards or percussion is on show purely because of a space problem. Amp lines on show include Peavey, Fender, Carlsbro, Marshall, and most of the standard ranges. Most of the stuff on show is new, as the high demand for second-hand equipment has led to a drying up and most turn-over is now in the new area.

"If we get a good used amp in it is usually out inside 24 hours. People are always keen on good second-hand equipment and our problem is that we just can't get enough of it."

Some of the more elaborate pro gear can usually be found in the Saville shop. There's usually two or three mixers on display and there's a nice range of Saville bins which are available at very competitive prices.

The guitars on display represent an unusually comprehensive cross section of the industry and of special interest during our visit was a black 1958 Les Paul custom which Terry had just hung on the wall. A guy just walked in off the street and sold it to the shop. The price Saville's had on it was round £600.

GSG guitars sell well in this shop as they do in many shops throughout the Manchester area. The GSG stands for Gordon Smith Guitars, although that is a corporate name for a small company that turns out hand finished guitars in Manchester. The price of the instruments range from



£170 to £350 and naturally the company can turn out special items to order.

Assisting Tony and Terry in the shop is Nigel Briggs who's deep involvement with the Manchester rock scene has led him to form his own band, Fantasy. The line-up in the band is Nigel, lead guitar and vocals, his brother Mike on bass, guitar and piano, Lee Preston, lead vocals, and Graham Shaw, drums and percussion.

Fantasy have been getting a lot of work because they're different. Comedy, the hardest of all arts, is a major part of the bands routine and funny man Lee throws in a host of impressions to back up the fine music the band produces. The band's been together for a year and were six months in rehearsal before doing their first gig in Nottingham.

Things have progressed to the point where the band are now proud possessors of a G registration Ford Transit and they are reasonably well equipped — obviously, Nigel has an advantage in this direction. Next step for the band is the acquisition of a mixer and a bin and horn P.A. system to replace their existing Carlsbro column set-up. There's a couple of residencies available to the band and their future looks rosy.

Mamelok is one of Manchester's "straight" shops. It's clean, large and tidy and every item on show is clearly marked with a V.A.T. inclusive price.

The shop — in Deansgate — sells every conceivable kind of musical instrument and is im-



portant because many hard to find items are stocked in significant numbers.

Mamelok are proud of "having traded in Manchester since 1897" and today's current Managing Director Bob Mamelok is conscious of the traditions of trading laid down by his father and his grandfather and he's one of those professionals who have forgotten more about selling than most people ever learn.

In Mamelok you can find an £8 guitar and a £500 Gibson, a recorder and a 200 watt P.A. system. There's a really incredible array of percussion; Premier, Ludwig, Rogers, Olympic, Pearl etc. — in fact, almost every name you can think of.

There's a large showroom in the basement of the shop as well and here all the different brands of amplifiers can be tried out. Once again almost every type is on display.

The first Mamelok music shop opened in Manchester in 1910 — it had been a book shop until that time, with sheet music making the transition — and that shop was in Oxford Road. Originally in number 31, the shop spread to take over 33 and 35 until the new BBC building caused compulsory purchase in 1969.

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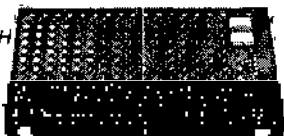
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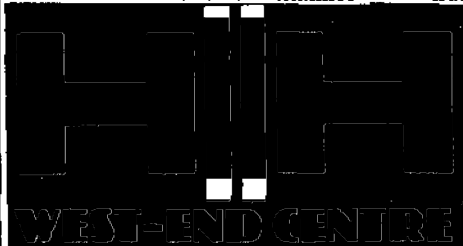
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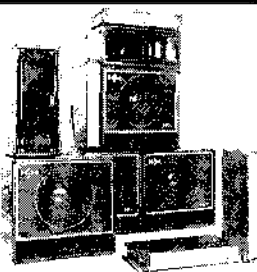
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STUDIO DIARY



ABBEY ROAD . . . Cleo Laine was recording a single with producer George Martin and engineer John Kurlander . . . Saffron were in with producer Bob Barratt and engineer John Kurlander . . . Be Bop De Luxe were recording an album with producers John Leckie and Bill Nelson . . . Ken Dodd was working with producer Nick Ingman and engineer John Kurlander . . . Oliva Newton-John was recording an album with producer John Farrar and engineer Tony Clark . . . Rinky Dink And The Crystal Set were recording with engineer Mike Sheady . . . Pilot were working on some demos with engineer Mike Vigers . . . John Mills was recording a single from the new musical Great Expectations with producer Hal Shaper and engineer Peter Bown . . . Hank Marvin was producing a Flair album with engineer Peter Vince . . . Norman Newell has been producing a charity L.P., the proceeds of which are to go towards the Canterbury Cathedral Restoration Fund; Artists appearing include Vera Lynn, Harry Secombe, Cleo Laine, and Moira Anderson . . .

ADVISION STUDIOS . . . Emerson, Lake and Palmer have been recording together and separately with engineer Paul Northfield . . . Alan White of Yes has been working on a solo album and some concert work, producing Alan Marshall (Zzebra) and Madeline Bell with arrangements by Dave Bedford . . . Jeff Wayne and Barry Ainsworth were recording various jingles . . .

AIR STUDIOS . . . Doctor of Madness were recording with John Punter producing and engineering . . . Robin Trower was working with engineer Jeff Emerick . . . The Walker Brothers were finishing off their new album with Jeff Calver engineering . . . Be Bop De Luxe were mixing tracks with engineer John Leckie . . . Cleo Laine was recording with producer George Martin . . . Marc Bolan was working with engineer Mike Stavrou . . . David Courtney was in . . .

BASING STREET STUDIOS . . . Rock Follies were recording with engineer Rhett Davies . . . Eno was in with engineer Rhett Davies . . . Gary Farr was working with Phil Ali and Rhett Davies engineering . . . John Middleton was recording with engineer Bob Anthony . . . The Ice Band were in with engineer Vic Smith . . . Third World were recording with engineer John Burns . . . Golden Earring were in with John Kriek engineering . . . Jonathan Caudrille was working with engineer Frank Owen . . . Martin Ford was recording with engineer John Punter . . . Russ Ballard was recording with engineer Rhett Davies . . . Cat Stevens was in with Bart Shiate engineering . . . The Heptones were working with engineer John Burns . . . The Mobiles recorded Doctor Feelgood at Aylesbury . . . Sparks with engineer Frank Owen . . . Bruce Springsteen at the Hammersmith Odeon . . . Richard and Linda Thompson at the University of East Anglia and at Oxford . . . the Blue Jays at the Hammersmith Odeon . . .

EDEN STUDIOS . . . Barbara Dickson (of John, Paul, George, Ringo and Bert fame) was working on an album with producer Junior Campbell . . . Norman Wisdom was recording a single . . . Cirkus from Newcastle were working on a single and album tracks with John Etchells producing and engineering . . . Scottie recorded a single with producer Pierre Tubbs . . . Boombaya were laying some tracks . . . The Praetorious Consort were recording . . .

GROSVENOR STUDIOS . . . Ron Anderson was recording a single with John Leckie producing and engineering . . .

IBC STUDIOS . . . Glyder were in with producer Mike Claydon . . . Lee Patrick and Tin-Tin were recording with producer Mike Claydon and engineer Keith Bessey . . . Tina Kemp was in for Aves Records with Mike Claydon and Gary Shepherd producing and engineering . . . Tomahawk were recording with producer Mike Claydon and engineer Gary Shepherd . . .

INDIGO STUDIO . . . Indigo have expanded to 16 track and increased their staff to five . . . Thin Lizzy were recording . . . Barclay James Harvest have been in . . . Guys and Dolls were working on an album and single for Ammo Productions . . . T. Rex were recording . . . Cliff Richard was recording for Granada TV with producer Bruce Welch . . . Stephanie De Sykes and Paul Curtis were in, produced by Pip Williams . . . Chrysalis Records are using the studio's sound and video facilities to promote the Mandalaband album . . . ICE Productions recorded a Paul Stewart single with producer Dave Rohl . . . Stimulators were in with Geoff Gill for G.G. Associates . . .

LANSDOWNE STUDIOS . . . Keith Emerson was in for Manticore Records with engineer Bob Auger . . . Queen were overdubbing some tracks for an album with Roy Baker engineering and producing . . . David Essex was working on some tapes for London Weekend Television . . . Supertramp were recording for A & M with engineer Dave Burns . . . Mike Batt was in with engineer Robert Butterworth . . . Mike Batt was also producing the New Edition with engineer Rob Butler . . . Mac and Katie Kissoon were recording a single for State Records . . . Back Door were in recording . . . Dave Clark was producing a new John Christie single with engineer John Mackswith . . . Hello were recording for Supersonic . . . Gary Benson were working on a single for State Records with engineer David Baker . . .

THE MANOR . . . Alan White was working on an album with engineer Bob Fossett . . . City Boy were mixing an album . . . Mike Oldfield was doing a quadrophonic mix of Ommadawn . . . Tangerine Dream were recording some album tracks with engineer Mike Glossop . . . Supercharge were working on a single with Mutt Lange producing and

Mick Glossop engineering . . . Rinky Dink And The Crystal Set were in with engineer John Leckie . . .

R.E.L. . . . R.E.L. are now 16 track . . . John Cairney has recorded a double album with engineer Chris Giles . . . Dave McNiven has been working with engineer Neil Ross . . . Duncan Brown has been laying some tracks for an album . . .

SARM STUDIOS . . . Pete Solley was in producing Nicky Rolfe, with Gary Langen engineering and Gary Lyons mixing . . . Barry Blue was in producing Patches, with Gary Lyons engineering . . .

Flintock were in with producer Jim Edwards . . . John Sinclair was working with Leroi Wiggins on a Next single . . . Sarm are closed throughout the Christmas period, and will move their copying facilities to the West End; the control room is being enlarged, and the old copy room will be converted into a lounge . . .

STRAWBERRY STUDIOS . . . The control room was recently rebuilt and lots of new Westlake equipment was installed . . . Oscar were recording an album for BASF with producer Geoff Gill and engineer Pete Tattersall . . . The Goodies, The Kursaal Flyers and Arrow have been in working for Granada T.V. with engineer Pete Tattersall . . . The Hillsiders were in with producer Ian Grant and engineer Tony Spath . . . The Charles Barlow Orchestra was recording an album for EMI with producer Bob Barratt and engineer Pete Tattersall . . .

SUN RECORDING STUDIOS . . . new Lockwood Gold Monitors have been installed in Sun's recently re-decorated studio which now boasts a drum booth and increased bass absorption . . . Ballard Abyss from Lancashire were recording with engineers Rob Boughton and Martin Maynard . . . Alan Clayson was in . . . Steve Gresswell has been continuing work on Story of The Gods with producer Peter Cox and engineer Martin Maynard . . . Derek Tibbets was in . . .



Thin Lizzy's Lynott at Indigo



Acoustic

The famous Acoustic range of amplification includes the 850 mixer/amplifier — an eight channel unit rated at 275 watts and featuring reverb facilities on each channel. The 870 mixer offers six channels and produces 170 watts r.m.s. power with the added flexibility of high and low impedance inputs on each channel. Acoustic's Model 300 power amplifier is a slave amp rated at 275 watts r.m.s. and can be linked up to the above models to gain more volume.

Their P.A. cabinets number among them the 804 column, which houses two 12" and three 8" speakers with a high-frequency horn and handles 150 watts. The Acoustic 808 enclosure will handle 175 watts and incorporates two 15" horn-loaded speakers and a high-frequency array of three Hepner-Vega horns.

Altec

Altec are so confident in their H series of loudspeakers, that they guarantee the speakers for life. The H series includes 10", 12" and 15" speakers, all with aluminium voice coil supports. Altec also do 100 watt mixer amps of excellent quality — notably the 1214A, which has six channels each with separate volume, bass, treble and reverb controls. Built-in acoustic equalization switches are also incorporated to help eliminate feedback. Altec columns number among them the 1207C enclosure, which handles 75 watts through the six 8" Altec speakers therein and the smaller 1211A monitor column which handles 50 watts and houses three 8's

and a high frequency horn. Altec's famous "Voice Of The Theatre" systems include multi-port and horn-loaded bass reflex enclosures, all of which employ the aforementioned H series speakers. Larger units include the 1215A folded horn cabinet rated at 150 watts, and the 1225A portable multicell horn which is capable of handling 100 watts.

Ampeg

Ampeg amplification is used by a lot of name bands both in England and the States. The complete system is called the Ampeg SR6 System and it includes an excellent mixer amplifier — Model CSR6 — which is a six channel, 120 watt unit. Volume, bass, treble and reverb controls are provided on each channel, and the master section features Hi and Lo band anti-feedback controls, master reverb and master volume. The S48 speaker columns are rated at 75 watts each, and feature four 8" speakers together with two tweeters. The system can be stepped up by adding extra columns and A-120 power amps, each of which deliver 120 watts r.m.s.

Bose

Bose market many products, each with a variety of applications. Their 800 speaker systems consists of compact, angled speaker cabinets containing eight long-throw 4 1/2" full-range Bose drivers with a handling power of 270 watts. They can be stacked or mounted on an Atlas speaker stand. The Bose 800 Active Equalizer is supplied with each

"Standard Pair" of Bose 800 speakers and the 800 is also available as an "add-on" pair without the equalizer. The Bose 1800 is a dual channel slave amp capable of giving an output of 400 watts r.m.s. per channel into four ohms, or 250 watts per channel into eight ohms. The controls provided are a volume control for each channel, an on/off switch, and an output peak level indicator.

Carlsbro

Carlsbro recently improved their Marlin P.A. amplifier. The Marlin Mk.11 features four channels with two inputs on each channel, separate volume, bass and treble, and reverb/effects send push buttons on each channel. There are also master volume, presence and reverb tone controls and an overriding footswitch for every on/off.

The Carlsbro Slave 1000 delivers 130 watts r.m.s. output into 4 ohms, and can be linked up with other slaves to give 10,000 watts of power.

Carlsbro also offer four versions of 2 x 12" speaker columns. The 80 watt system is a budget-price speaker system featuring two columns each housing two 20 watt 12" speakers. There is also a 120 watt version, with two 30 watt speakers in each column. Both systems are available with a high-frequency horn unit for extra treble response. On the subject of horn units, Carlsbro also do a double horn unit, designed to extend the high frequency handling of any cabinet to which they are connected.

The Carlsbro Mini Bin houses a rear-facing 100 watt 15" speaker together with two high frequency horn units and is very compact weighing only 98 lbs. and measuring 35" x 20". The Carlsbro Bass Bin has two 12" Powertone 60 watt speakers and two H-F horn units and can handle 100 watts with ease.

Cerwin-Vega

Long awaited in Europe, Cerwin-Vega products were released in August. Their P.A. systems are modular in design and incorporate 1000 watt drive units, so a small 2000 watt system can be built up to a massive 50,000 watt system without having to change any of the components. Among their power amps, the A1800 delivers 400 watts, while the A3000 is rated at 700 watts. Of particular interest are their range of chassis speakers which include the ER124 Series 12" units, ER158 Series 15" units and the ER189 Series 18" units. These have power ratings from 100 to 500 watts. Mid range horns include Type MF 50 series, plus high-frequency Piezo-Electric arrays.



A Carlsbro P.A. set-up

continued on page 69

TALK OF THE MUSIC WORLD

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Coliseum Keyboard Amplifier

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A. FRONT PANEL

1. 12 MICROPHONE CHANNELS
 - a. Dual Impedance (hi & lo)
 - b. XLR & Phone Jack Inputs can be used simultaneously
 - c. Board will accept 24 mic inputs
2. SLIDE VOLUME CONTROL (Each Channel)
3. STEREO PAN POT (Each Channel)
 - a. Use for stereo mixdown, or as a separate monitor control with internal power.
4. CUT & BOOST BASS AND TREBLE CONTROLS (Each Channel)
5. REVERB/MONITOR MIX CONTROL (Each Channel)
 - a. Use as reverb intensity control or a separate monitor mix in conjunction with master monitor control and external power.
 - b. In "normal" mode, control is reverb. Simple adjustment changes its function to a monitor level control.



6. COMP-LIMIT (Each Channel)
 - a. Presets maximum level of channel. Allows input to accept up to 10 volts RMS without overdriving the preamp. In this way you can "lock-in" your levels. So whether you scream or whisper, the mix will remain well-balanced.
7. MASTER VOLUME CONTROLS (Left & Right)
 - a. Slide Potentiometers
8. MASTER REVERB CONTROLS (Left & Right)
 - a. Slide Potentiometers
9. MASTER MONITOR LEVEL CONTROL
 - a. For use with Reverb/Monitor Mix Control
 - b. Slide Potentiometer
10. 2 9-BAND GRAPHIC EQUALIZERS
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 - b. Equipped with SUNN-SENSOR This feature is composed of LED indicators over each slide potentiometer on the graphics to indicate which frequency is feeding back. Use when "tuning" the room upon initial set-up.

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C. BACK PANEL

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2. REVERB FOOTSWITCH JACK
3. MONITOR PREAMP OUTPUT
4. SLAVE AMP OUTPUT (Each Channel)
5. 2 TAPE OUTPUTS (IRCA type)
 - a. For stereo recording
6. ACCESSORY LINE OUTPUT (Each Channel)
7. ACCESSORY LINE INPUT (Each Channel)
8. UMBILICAL ACCESSORY PLATE

D. GENERAL

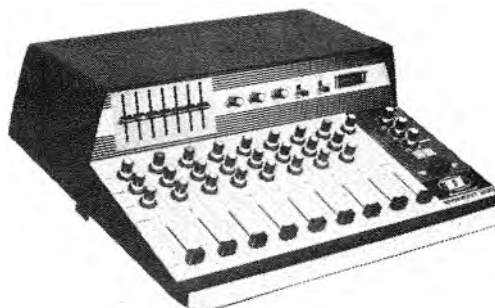
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Dynacord

Dynacord Eminent 200

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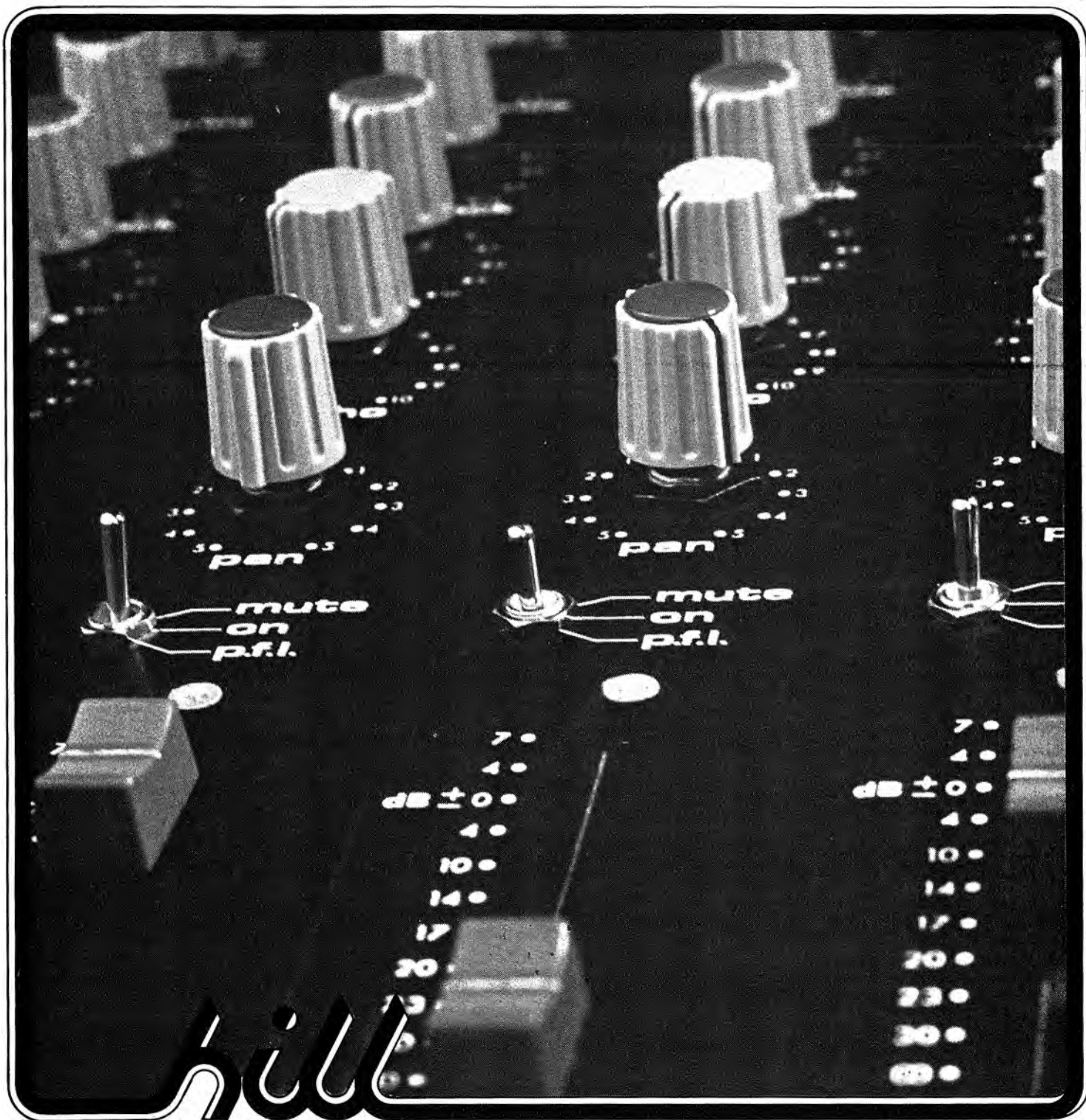


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from page 66

Cetec

The number of companies using Gauss speakers in their cabinets goes a long way towards demonstrating the popularity of these excellent units. There are three basic sizes 12", 15", and 18" and in each size category, there is a further choice of the specific models. Model 41 is described as "Full Range or Lead" while Model 40 is a "Bass Driver", the 15" version of which is now virtually standard equipment with many top bands. Specially developed for horn loaded enclosures are the Model 42 speakers, although they also perform well in open-back or infinite baffle enclosures.



CMI's Maximin bin

CMI

CMI's range begins with the 50 watt P.A. slave, which boasts two equalised inputs and solid-state circuitry. Their 100 solid-state slave is typical of the CMI range, as it boasts a slave link channel. The 250 watt slave is designed for use with cabinets having an overall impedance of five ohms, and boasts a built in safety circuit.

The No.1065 horn cabinet houses three Celestions with H-F crossovers. The Maximin cab, star of the CMI cabinets, is truly versatile, housing a 15" Celestion and two H-F horns. The 4 x 10 columns house Celestions at 120 watts as do the 2 x 12's, at 100 watts, and the 2 x 10's at 60 watts.

Complex 7

Complex 7 can provide a variety of P.A. systems up to 800 watts. Their aim is to eventually supply a complete service for P.A. applications, and also including lighting. Their amplification is largely Fender and HH, and they are clearly aiming towards supplying every need in the market.

Custom Sound

Custom Sound market a wide range of P.A. equipment, including the 700A mixer amp which

has five channels, delivers 150 watts and has the ability to individually select reverberation and set reverb gain on each channel as well as echo or other auxiliary devices. To augment output power, the CS 700C power amplifier has been designed and also delivers 150 watts. Custom Sound are soon to introduce the CS 712WM 50 watt wedge monitor combo, which incorporates its own amplifier with gain, bass and treble controls.

Davoli

Davoli (UK) Ltd have an excellent range of P.A. cabinets including the popular DK120 which handles 120 watts and features a 15" speaker and two horn tweeters. The DK180 handles 180 watts and houses four 12's and four tweeters, while the DK200 has two 15" woofers, two mid-range horns and two horn tweeters. The Titan 100 is a 100 watt bass reflex bin with exponential horn and the giant Exponential cab houses two 12" speakers and exponential horn. There are two Davoli mixer amps - the Clubman 50 and the Mixer 6. The smaller Clubman is a six-channel, 50 watt mixer amp and the Mixer 6 is a six channel, 12 input model rated at 100 watts. It also features a built-in tape echo unit.

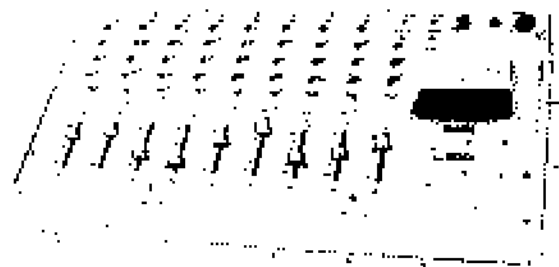
continued on page 70



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Dynacord

Dynacord P.A. equipment includes some excellent mixer amps like the Eminent 100A, which has six channels, a multi-head echo reverb unit and an output of 150 watts. They also do a wide range of speaker columns including the D310, which contains one 12" speaker and a tweeter horn. The D410 has two 12" and a tweeter horn and handles 60 watts, while monitor boxes house four 5" wide range speakers.

Epicentrum

Epicentrum have produced a new range of modular loudspeaker enclosures for use in medium to high power P.A. systems. The emphasis is on portable, economic units, conveniently shaped for compact loading. Two modules make a complete four-way loudspeaker system, capable of 1000 watts r.m.s. Provisions are made for extensions to this basic unit.

Epicentrum also have a selection of reflex enclosures, columns, add on horn units and crossovers.

E.S.E.

Binson speakers are distributed in this country by E.S.E. of Maidstone. Binson make a substantial range of systems, incorporating

amplifiers and cabinets, many of them with built-in horns. They range in price from £300 to £1,500. Main lines such as Carlbro, HH, WEM and Hi-Watt are also carried. E.S.E.'s hire company also manufacture P.A. systems to specification, incorporating Crown amplifiers, Gauss speakers and JBL horns.

FAL

Another company better known for its disco equipment is Futuristic Aids Limited of Leeds. FAL

do a range of speaker cabinets including the Major 4, a cabinet rated at 200 watts with four 12", 50 watt speakers. The Duo Mk11 houses two 12" Bass Crescendo speakers and is rated at 200 watts, while the FAL 100 Mk11 has twin 12" speakers providing a rating of 100 watts. A 50 watt horn unit is also available with associated crossover network. The 120-6P.A. amplifier features six-channels with nine inputs and is rated at 120 watts r.m.s.

continued on page 72



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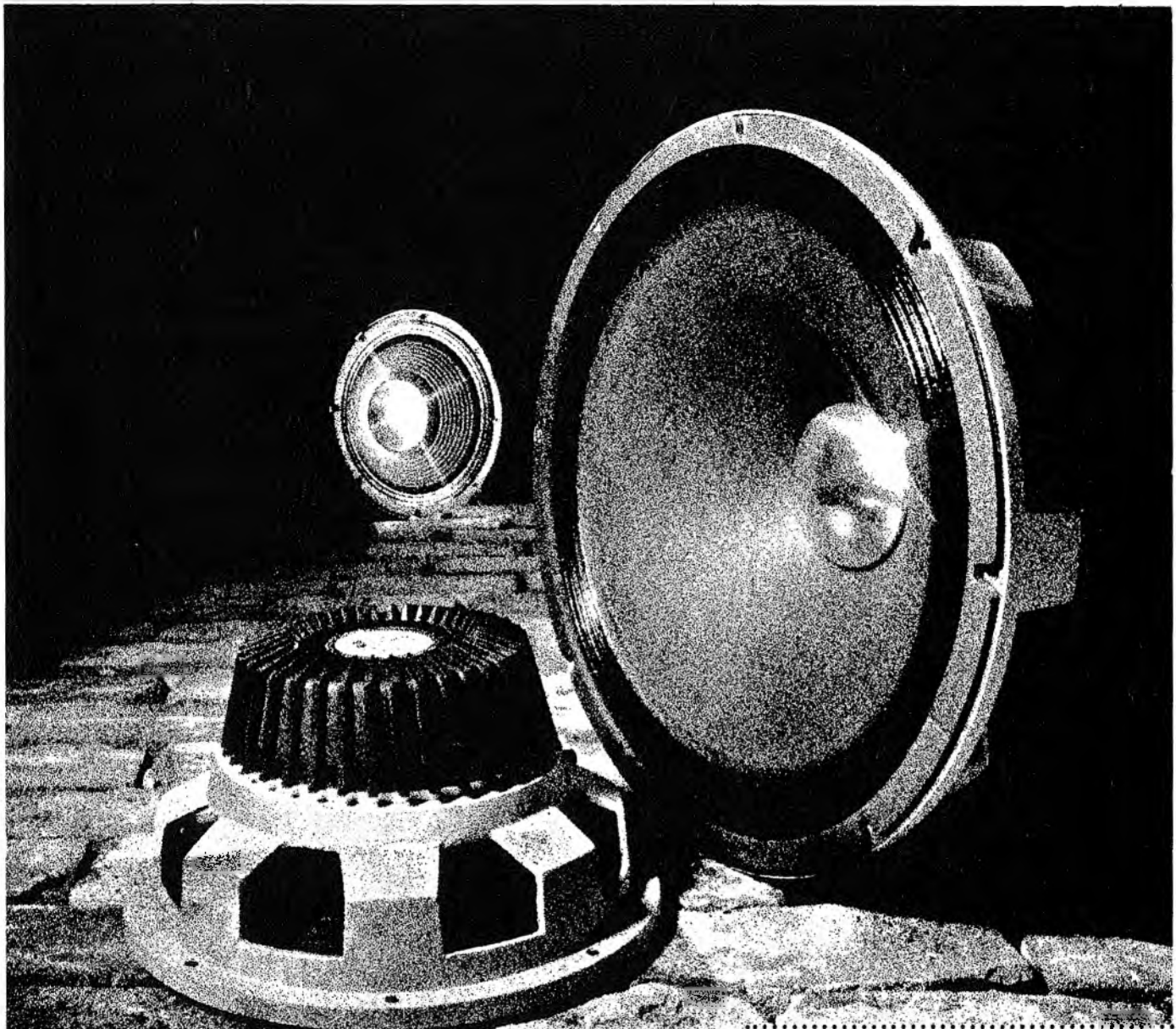
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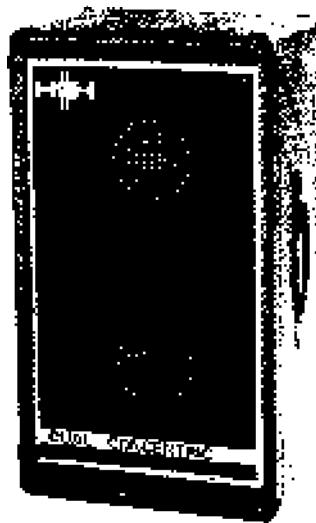
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HH 212DC column

from page 70

Feldon Audio

Feldon Audio will soon be offering a new power amplifier which will rank among the best power amps available in the country. The FM Acoustics 800A boasts LED read outs of level, delayed turn on facilities and a sophisticated fault condition detection facility, as well as high input sensitivity.

Feldon also handle a high grade range of digital delays and

phasing units, such as the Eventide Phaser, which boasts instant phasing, applicable for either live or studio use.

Fender

The Fender PA 100, as the name implies, is a 100 watt system comprising a mixer amplifier with four channels and an output power of 100 watts, together with two speaker columns, each containing four 8" speakers. The larger Fender 160PS is a 200 watt system with a six channel mixer amplifier and four columns, each housing three 10" speakers.

HH

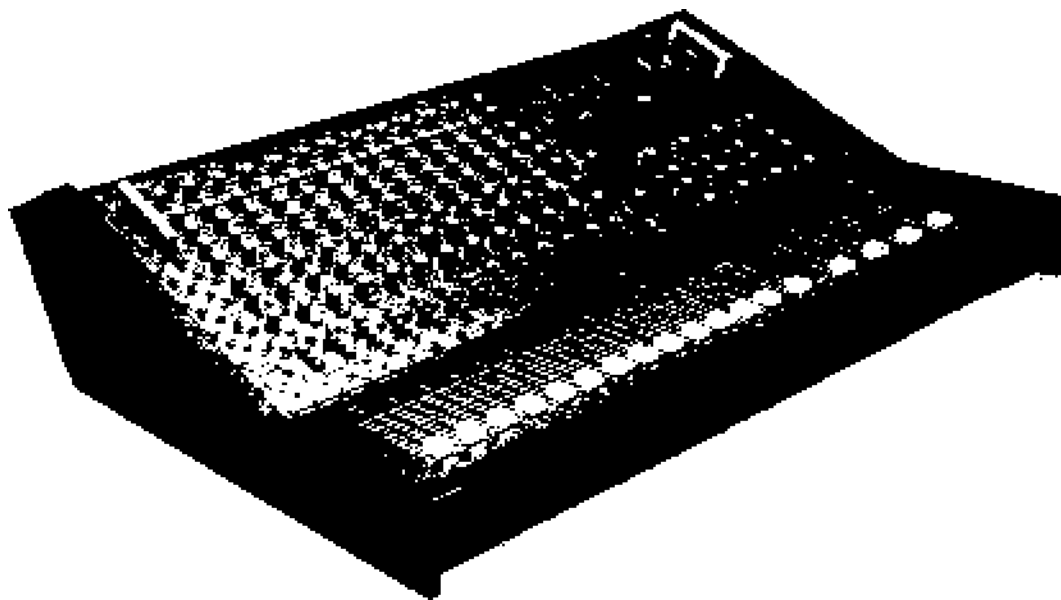
HH Electronics offer two excellent mixer amplifiers. The MA100 is a five-channel amp with two inputs on each channel. There is an overall presence control and Master Volume, and separate volume, bass and treble controls for each channel. Push button switches are provided for the Hammond Reverberation unit on each channel along with a Master Reverb control. The MA100S has the same specification but does not include the Reverb facilities, and both amplifiers are rated at 120 watts r.m.s. The S130 is a slave amplifier designed for use in conjunction with the above mixer amps and is also rated at 120 watts.

There is also a choice of two P.A. speaker columns — the 212DC or the 412DC. With a power handling capacity of 100 watts, the 212DC contains two 50 watt, dual concentric 12" speakers. The 412DC column houses four dual concentric 12" speakers and handles 160 watts. The H/H Mini Horn is a compact, lightweight add-on horn unit designed for use in conjunction with the 212 or 412 columns, and can handle 50 watts of power. The fibreglass horn is designed to cut off below 800 Hz., protecting the pressure driver from low frequency signals.

HH also recently introduced their Unit P.A. System, which consists of any number of 1 x 15" bass cabinets and radial horns used in conjunction with the mixer or slave amps. The 115 P.A. Bass Compact cabinet houses a front mounted 15" high power driver capable of handling 100 watts of power. The cabinet is of a port reflex design enabling two cabinets to be stacked with the ports arranged together, in complement. The radial horn can handle 100 watts and cuts off below 500 Hz., to protect the pressure driver from low frequency signals. The rear of the horn cabinets has outlets to connect the unit to either one or two 115 cabinets.

continued on page 75

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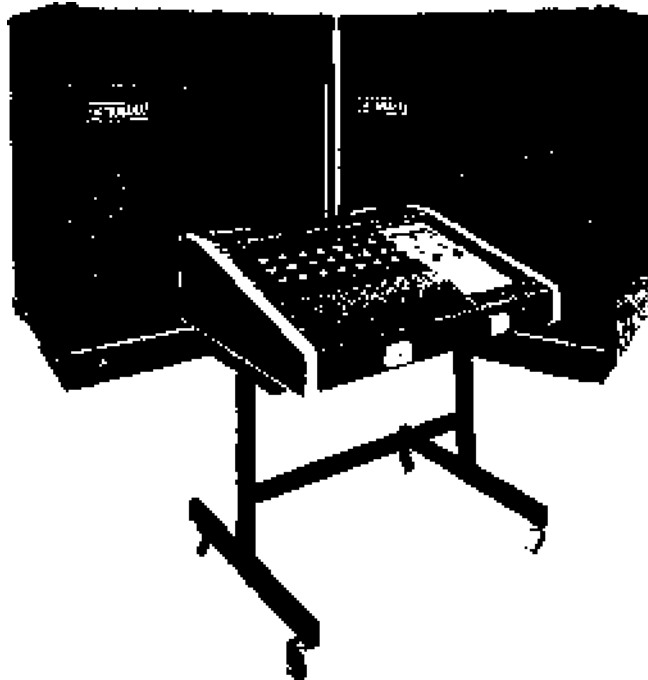
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Hi-Watt

Hi-Watt cover the complete range in P.A. They offer 50, 100 and 200 watt power amps (the DR 512, DR 112 and DR 203 respectively), which all boast six channels, separate volume, treble

and bass controls, and echo send and slave outputs.

The Hi-Watt cabinets include a 4 x 12 horn-loaded bin handling 200 watts at either four or 15 ohms, and the smaller 2 x 12 flared front bin, which is similar in design.



Yamaha's 7PA 800 System

Hill

Hill manufacture sound equipment for all aspects of the entertainment business. With 18 ranges of mixers and 24 ranges of power amps, the star of the Hill stable and the most popular model is the IC208S, a 200 watt r.m.s. slave amp with optional Cannon XLR connectors for inputs and outputs.

Hill's most recent offering is a Bi-Amplifier, a 400 watt into four ohm amp which can drive a bass bin and a horn at the same time.

Hill also offer full systems, incorporating Gauss, JBL and Martin equipment.

JBL

JBL manufacture an extensive range of speakers, horns, cabinets and amplifiers, all of excellent quality. Particularly noteworthy are the low frequency horn enclosures, often used at large concerts. The 4560 is a long-throw directional horn, usually used with a 2220 15" driver, and the larger 4550 is a long-throw directional horn, usually housing two 2220 drivers. Both of these cabs were used in the recent Who concert rigs outlined in last month's I.M. There are three JBL power amplifiers — a 60 watt, a 100 watt and a 200 watt model — and all have built-in protection circuitry eliminating overloads or any other damage.

continued on page 77



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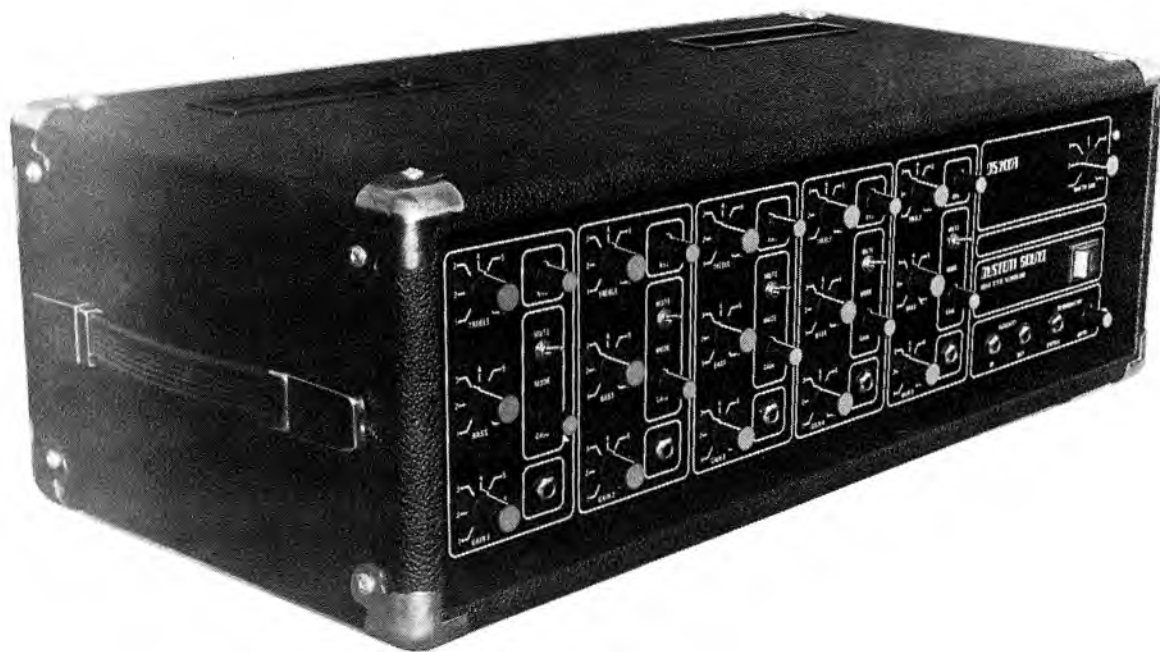


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found on many full scale mixers, yet the CS 700A delivers a clear, clean 150 watts RMS into 4 ohms.

But the CS 700A isn't just facilities, it is probably the quietest P.A. amp you'll hear in operation, noise is virtually eliminated from the power stage and each pre-amp shuts down when not in use. Reliability comes from the use of high quality components, a rugged mechanical construction and six (yes, 6 !) output transistors.

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Jennings

Jennings do a six-channel mixer amp rated at 100 watts with built-in reverb on each channel. The amplifier is a silicone transistor unit with protection for short and open circuit outputs. Each channel has volume, bass and treble controls with a reverb on/off switch and there is a master volume control and a master control which gives reverb time up to four seconds. The PA100 is designed for use with a pair of Jennings P.A. columns, which contain two 30 watt 12" speakers and a high-frequency horn, and are rated at 60 watts per cabinet.

MM Electronics

MM will, beginning in early February, market a new range of bins for P.A. The bass bin is horn loaded and features 15" Powercel speakers. The mid range unit is also horn loaded and boasts a 12" Powercel driver, while the H-F cabinet comes with a crossover fitted in. These will be available in two finishes, leather cloth and black.

MM also do a six channel mixer amp, each channel with treble, middle, bass and echo controls, and high and low in-

put sensitivity. Their 150 watt power slave offers 150 watts into four ohms. They also offer a 200 watt slave.

Nicholls

Nicholls do a variety of amps and cabs, primarily for disco application. Chief is the Nicholls 200 watt disco amp. The 100 watt amp is also popular, and both boast a built-in protection circuit, volume presence and bass controls, and a slave output. Their cabinets include many of the standard permutations, as well as horn cabinets.

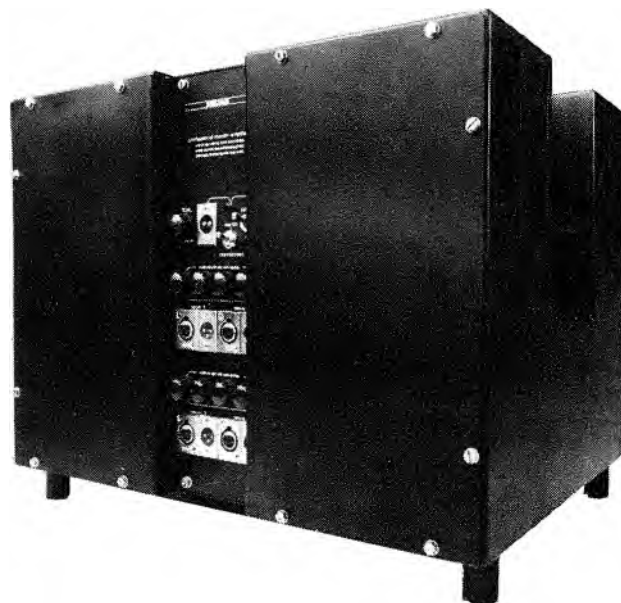
continued on page 78

Macinnes

Macinnes market the top notch Amcron range of amplifiers. The DC300A power amplifier, widely used in vibration and shaking applications, is one of the most widely respected power amps available and widely used in low frequency applications, owing to the versatility of its power band width. The Amcron M600, a single channel amplifier marshalling 600 watts, is used principally in studio applications, and boasts a staggering 1,350 watts into four ohms.

Midas Martin

Midas Martin P.A. systems incorporate the famous Midas 1000 watt slave amplifier. Four 250 watt modules are housed in one rack sharing a common power supply and they can be linked together or driven independently. Cabinets include 2 x 15" bass bins, 1 x 15" folded horns, ring radiator arrays and a multitude of other units. In all applications where 12" drivers are required, ATC speakers are used. Other drive units used include Gauss, JBL, and Vitavox.



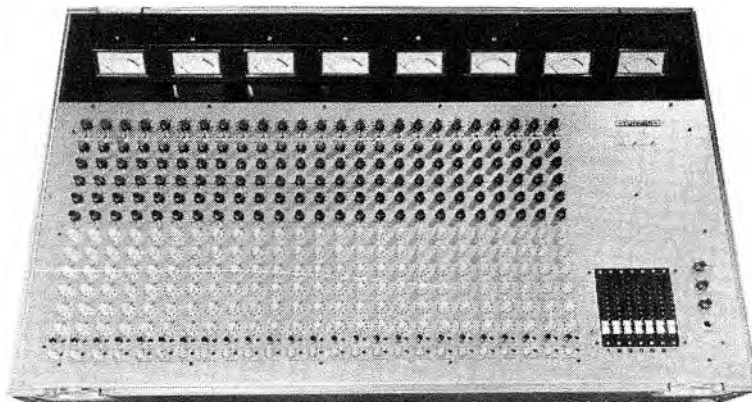
The Midas 1000 watt Power Slave Amp

No.1

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from page 77

Nolan

Nolan amplification offer a good range of amps and cabs for use in P.A. applications. Their 2 x 12 and horn P.A. disco column speakers handle 75 watts a cabinet. The multi purpose combo offers 2 x 12 speakers at 50 watts each. Their 2 x 12 D. Cone P.A. speaker cabinets are ideally compact.

Nolan will soon be unveiling a 100 watt i.c. mixer amp with six channels.

Orange

The Orange Bouncer Bass Cabinet is a folded horn enclosure incorporating a 15" speaker mounted backwards in a sealed airtight enclosure. The Bouncer Horn Cabinet houses a heavy-duty Electro-

voice 15" speaker and works on the same principle as the Bouncer Bass cab, except it has four heavy-duty horn units mounted top and bottom of the unit. Horns are also available separately via the Four Horn Unit, which incorporates four custom horns. The unit can be coupled to any speaker cabinet and, when used in pairs, have a treble handling power of 200 watts.

Orange also have complete P.A. systems like the Super Road Worker P.A. which consists of two 4 x 12" columns capable of handling 120 watts r.m.s. each; two double horn units, a pair of which will handle 100 watts r.m.s.; and an Orange 6-channel P.A. amplifier, which will deliver 120 watts. The Super Compact P.A., consists of a four-channel 120 watt Graphic P.A. amplifier together with a pair of Horn Projector cabinets, each of which contains two 12" speakers and two custom horn units. They are also available in a 15" bass speaker model and can handle 110 watts each.

Orange manufacture two basic slave units. The 120 watt Graphic Slave is based on the valve power amp employed in the Graphic range, while the 200 watt slave is a transistor unit and a successor to the Orange 200 watt valve slave.

continued on page 80



Cerwin-Vega's A-1800

Novanex

Novanex P.A. systems are built on the following principal: a mixer of desired specification is used together with any number of Powergenerators. The latter house a matched system of slave amplifier and twin-coned speakers, and are available in units from 30 watts up to 125 watts. A

further feature is that should a breakdown occur, only one of the Powergenerators will be out of action, while the others will function without interruption. Novanex have also recently introduced two new solid-state echo-reverb units - the E500 and the E300, both of which have duration, repeat and volume controls.



CANARY

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London England Tel: 01 947 0677

Announce the 18 Channel Stereo PA Mixer



INPUTS

MIC, 200 ohms balanced
Sensitivity - 39 dBm
ECHO, 600 ohms unbalanced
Sensitivity - 50 dBm
TALKBACK, 200 ohms
unbalanced
Sensitivity - 50 dBm

OUTPUTS

STEREO LINES & FOLDBACK
+ 10 dBm at 600 ohms balanced
and unbalanced
ECHO, + 2 dBm at 600 ohms
unbalanced

SIGNAL TO NOISE

- 70 dBm (below zero level)
equivalent input noise - 115 dBm

DISTORTION

0.2% at 500 Hz

TONE CONTROLS

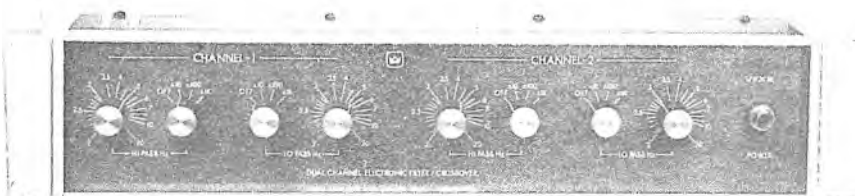
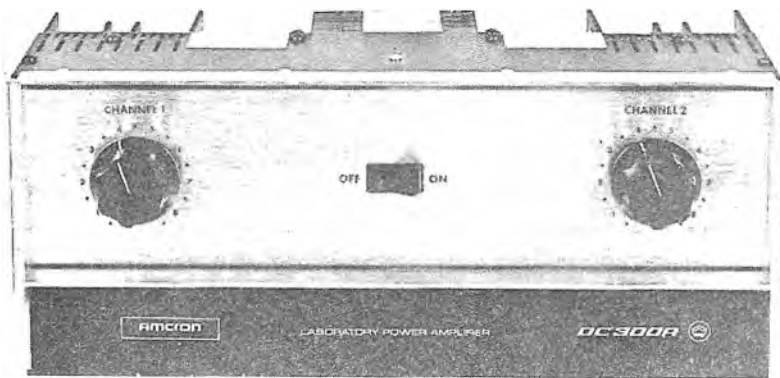
(Channel & Master Foldback)
TREBLE ± 12 dB at 10 kHz
MIDDLE ± 7 dB at 500 Hz
BASS ± 12 dB at 30 Hz

MAXIMUM GAIN

60 dB

TERMINATIONS

JACKS & CANNONS



Invest wisely in Amcron

Insist on buying outmoded 100 watt slaves and you're taking a chance of throwing away at least £200 when the band's success demands more sophisticated amplification.

Invest your money wisely — with an Amcron amp, you won't have to go to the bank when your band takes off.

The M600, While maintaining the exact performance standards of the DC300A produces 750 watts (monaural) into an 8 ohm load, and 1350 watts into a 4 ohm load. Built for durability and trouble-free operation, the M600 includes built-in cooling which permits continuous full power operation. R.M.S. Power Response +1, -0 DC -20 KHz at 600 W into 8 Ω +1, -0dB DC -15KHz at 1 KW into 4 Ω Hum and noise (20Hz to 20 KHz) 120 dB below 600 W into 8 Ω Typ.

The New DC300A will give up to 500 watts from one channel with distortion lower than 0.05%. Hum and noise is below 110dB below 150 watts, and the DC300A is now able to operate into loads as low as 1 ohm. Power Response + - 0db DC - 20 KHz @ 150 watts into 8 Ω

The new D150 offers up to 180 watts from each channel or 330 watts as a mono amplifier. Again very low distortion and rugged construction make the D150 ideal for smaller PAs and fold back systems. The Power Response of the new D150 extends from DC to 20 KHz.

The VFX-2 provides continuously variable filters which can be used to perform either crossover or band pass functions. The dual channel unit employs two filters per channel, each continuously variable from 20 Hz to 20 KHz. Filter rolloff is at a fixed 18 dB/octave.

Setting both low and high pass filters in one channel to a common frequency provides a two-way crossover at that frequency.



For full details contact

AMCRON

Sole Agents:
MACINNES LABORATORIES LTD.
Macinnes House
Carlton Park Industrial Estate,
Saxmundham, Suffolk, IP17 2NL.
Tel. Saxmundham 2262 2615



from page 78

Peavey

Peavey offer a wide choice of P.A. speaker enclosures, the smallest of which is the 210 cabinet, which features two 10" heavy duty drivers in a ported enclosure. The 410 houses four 10" drivers, and the 412 has four 12" speakers, again, in a ported enclosure. Two 12" and two 10" speakers together with three Piezo tweeters make up the 1210T ported enclosure, while the 1210TS houses one 12", one 10" and three Piezo tweeters.

The 115HT incorporates one heavy-duty 15" driver, one hyperbolic horn and two Piezo tweeters, while the larger 215H has two 15" drivers and one hyperbolic horn. Two 15" speakers, two hyperbolic horns and two Piezo tweeters are employed in the 215HT enclosure which is specially tuned and ported. The 1510T cabinet houses two 15", two 10" drivers and three tweeters, and the Festival Projector unit is a 1510T cabinet with the addition of a high-frequency radial horn in a separate enclosure.

There are two Peavey monitor cabinets — the 112T and the 112TS. Both house one heavy-duty 12" speaker and two Piezo tweeters, but whereas the 112T's angle is adjustable, the 112TS is a fixed-angle enclosure.

Peavey do a range of mixer amps, the smallest of which is the PA120. Rated at 100 watts r.m.s., it features four channels, each with individual volume, reverb, bass and treble controls and a master volume and reverb. The standard P.A. mixer amp is rated at 130 watts and has four channels, each with two inputs and individual volume, bass, reverb and treble controls. The master section has volume, bass, reverb and treble controls as well as a reverb and a monitor output.

Peavey's new PA400 is a versatile 200 watt mixer amp with six channels. Each channel has two inputs and separate volume, bass, treble, and an infinitely variable reverb control. A patch panel drives external mixers, slaves, monitor or effects units, and inputs for auxiliary in, power amp in and reverb footswitch in. The master panel features volume, treble, middle, bass, reverb and anti-feedback "scanning".

Miles Platting

Miles Platting P.A. equipment basically consists of two set-ups. The PA 60 amplifier is a six channel valve amp, with separate volume, bass and treble controls and a master fader control. It is designed for use with 50 watt columns, each containing two 12" Celestions. The PA100 amplifier has the same specifications and appearance as the PA50, but with a 100 watts output. The 100 watt columns contain four 12" Celestion speakers in each.

Radiocraft

Radiocraft of Huddersfield offer the Matamp power amplifiers made by Mat Mathias. The MKII is chief among these, a fully transistorised P.A. amp with versatile pre-amp boasting separate volume, treble, bass and echo send on each of four channels, as well as master volume and presence controls. Full output is available into four eight or 16 ohms and 100 volt line speaker systems. A bonus is the echo send and return and slave sockets.

RCF

Among RCF's extensive range of sound equipment are a full range of 12", 15" and 18" speakers. Of particular interest are the L15P100 extended range 15" speaker which is rated at 100 watts, and the L18P100 low frequency sectoral horn. The H4823 19" mid/high frequency sectoral horn is the giant of the family.

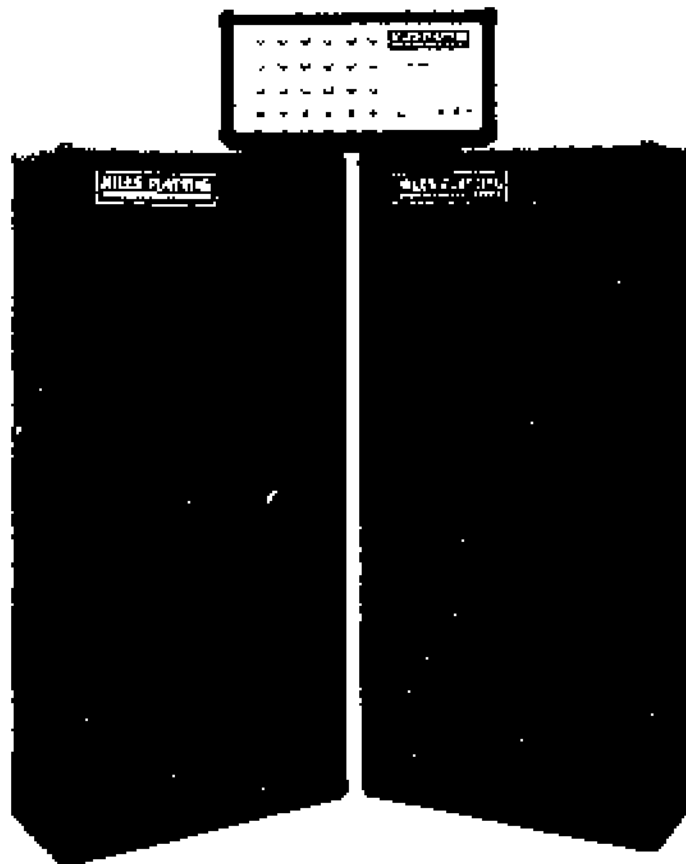
Rose-Morris

The world-renowned Marshall range of amplification includes their Master P.A. mixer amp, which is a six-channel, 100 watt

unit with separate volume, bass and treble controls on each channel, and master volume and presence controls. Echo send and return inputs are also provided. For extra power, the Marshall 250 watt slave amp is available and includes a failsafe switch to prevent overloading. The 2047 columns are front loaded horn units each containing one 10" and one 12" speaker with an output capacity of 50 watts per channel. The larger 2043 columns contain two 10" and two 12" speakers with an output capacity of 100 watts per channel.

For larger applications, the 2056 cabinet is a rear loaded horn enclosure with two 15" Powercel speakers, and is capable of handling 250 watts. Marshall also manufacture a single flare horn unit designed for use with the 2056 cabinet. Recently introduced were the Marshall 2097 cabinets, the fronts of which are angled to disperse the sound around an auditorium, and the pressurised design of the cabinets helps to minimise feedback. Each enclosure has eight Rola Celestion 8" speakers, and a pair will handle 125 watts r.m.s.

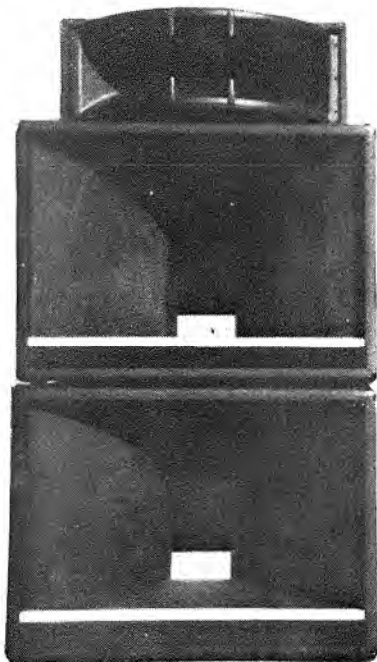
continued on page 83



Miles Platting's P.A. set up

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WING



Wing P.A. Systems

2 Wing bins loaded
with MacLab
£214.00
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Total Price £293.00

2 Wing bins loaded with gauss
£370.00
2 Wing bin Electro Voice
£330.00
4 Wing Twin horn clusters
£158.00
Total Price £1151.00

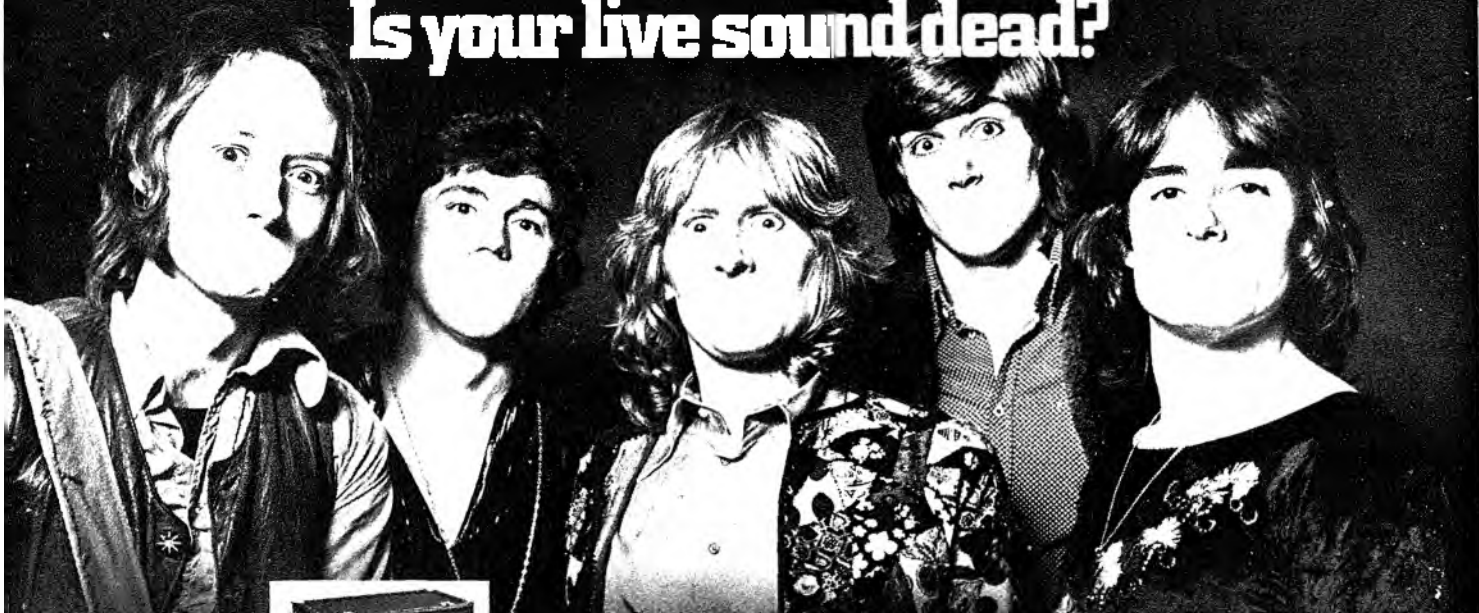
2 Wing Mini Bins loaded with
Maclab £198.00
2 Wing Twin horn clusters
£79.00
Total Price £277.00

All Prices are retail including
V.A.T.

MUSIC

Also 2 x 12 column from £99 per pair

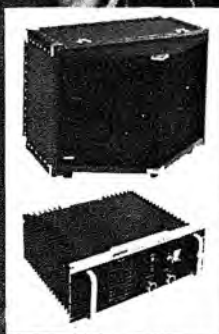
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lay hands on, wind 'em up and
POW.

A sound your mother
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to sound like you really sound
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And whether you're trying
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pushing to sell-out your 20th
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bands are years ahead of
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Because Bose pro
speakers and amps have been
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Honda 250.

Yet the quality and volume
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They cost a few bob more
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But they're well worth the
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ported bass cabinets (which
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And they provide a full
musical frequency range
performance, with excellent
transient response. Small
cones, powered by massive
magnetic structures, provide
rapid response to transient
signals. (Get your drummer to
demonstrate this).

From the point of view of
portability, they're far out: A
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the cover. And they're very
rugged, being built into a case
of 7-ply birch.

When needed, the 800
can, of course, be stacked to
produce a column effect.
For use with the 800 we
recommend the Bose 1600
professional solid state dual
channel power amp.

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the other details you need to
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Twin channel guitar amplifier with tremelo, reverb and sustain. Two complete independent channels. Two inputs per channel – bright and normal. Master volume control. Two controls for controllable sustain effect on channel one. Hammond reverb.

Channel One:— Volume, treble, middle, bass sustain and on/off switch, gain reverb, speed and depth.

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Facility to:—

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One speaker lead two metres long. Mains connecting lead. Operating Instructions. One double footswitch. One single footswitch. Heavy duty cover. Owner's guarantee card.

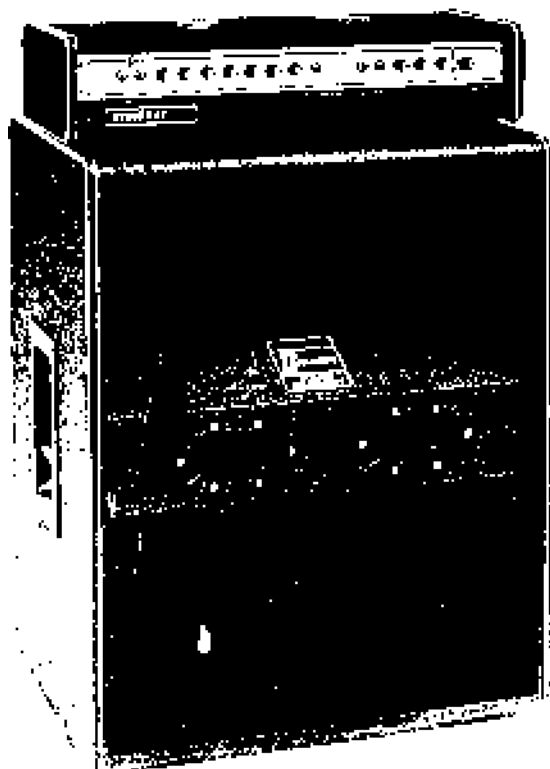
Width 673 mm (26½")

Depth 266 mm (10½")

Height 146 mm (5¾")

Weight 13 kilos (28 lbs.)

(For power amp. specification see back page).



Stingray MK.II

Twin channel guitar amplifier with sustain. Same specification as Stingray Super minus reverb and tremelo.

Supplied complete with:—

One speaker lead two metres long. Mains connecting lead. Operating instructions. One single footswitch. Heavy duty cover. Owner's guarantee card.

Width 673 mm (26½")

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Height 146 mm (5¾")

Weight 12 kilos (27 lbs.)

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Get good penetration with our Bass Bin. Designed for use with our Stingray Amplifier.

The 100 watt Bass Bin will produce the highest quality results from all amplifiers. 2 x 12" Carlsbro Powertone 60 watt speakers and 2 x Horn units ensure a powerful and solid sound.

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CARLSBRO SOUND EQUIPMENT

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S.A.I.

Sound Advice Installations do a very wide range of group, disco and P.A. equipment. Their 15" front loaded horn cabinet features a large bass port on the bottom of the enclosure and is ideal for P.A. application, as is their Eliminator Bin which houses a 15" speaker coupled to a 55Hz folded horn. An Electro-Voice mid-range horn and driver are also provided to give smooth frequency response up to 10,000 cycles with variable attenuator. The S.A.I. Bass Bin features a 15" speaker in a folded exponential horn, together with two mid-range horns. Model MP 1006 is a slope-fronted monitor cabinet housing a single 12" speaker, and is rated at 25-50 watts depending on the speaker specified. Separate horn units include the Vitavox high-frequency horn and driver which is housed in a bow-fronted cabinet and rated at 70 watts.

Selmer

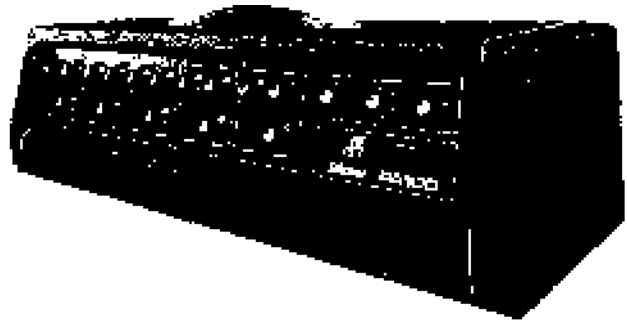
Pride of place in P.A. must go to Selmer's SG P.A. systems model SG 812. Comprised of a 100 watt solid-state amp with 200 watts peak power, and six channels, and four half columns (each with two 12" whizzer cone P.A. speakers), each channel having volume, bass, treble and variable reverb, the system can be pur-

chased at once or built up as finances allow.

Selmer's extensive range of P.A. amps leads off with the Slave 100, a 100 watt slave amp designed for durability. The P.A. 100/6 S.V. boasts six independent high input channels with separate treble, volume and bass controls on each, and an over-riding master gain control. Two of the channels have built-in reverb, and two can be used with external echo. The P.A./4 S.V. has four identical high impedance channels, each with its own volume, treble and bass controls, and a master gain, and is ideal for vocalists.

The P.A. 60H column speaker houses three 12" heavy duty speakers handling a total of 75 watts as well as a special horn. The TV-20 P.A. columns boast four 8" speakers per column, handling 25 watts per column. Newest of the new from Selmer is the P.A. 100. This boasts five channels, each with volume, treble and bass controls, and master controls for power, volume, presence and reverb. The unit also offers a slave output socket on the rear panel, suitable for driving a Selmer slave amp, an echo unit and a footswitch for reverb.

continued on page 85



Selmer's new P.A. 100

BINSON

FOR YEARS THE ULTIMATE IN ECHO MACHINES NOW BRING YOU THE

ALL NEW EC3



BINSON PF100
100 watt slave.



BINSON PM10



"Look at these exciting features"

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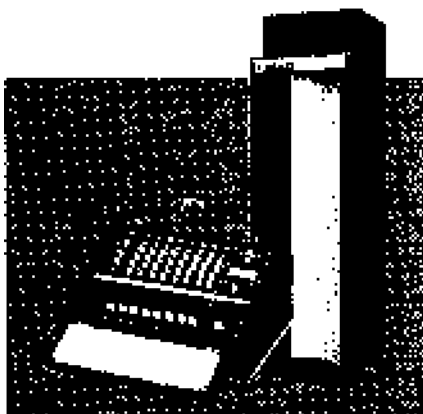
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September Sound Equipment

A relatively new name in sound equipment, September of Bradford manufacture mainly mixers and desks, but they also do two power amplifiers. The SD200 is a 200 watt r.m.s. slave, suitable for high-power studio monitoring or P.A. systems. The SD Twin 100 is a twin-channel 100 watts + 100 watts power amp. They are both available with either jack or cannon sockets.

Dave Simms

Dave Simms market the August range of amplification, including 1 x 12" cabinets with or without horns, 2 x 12" cabinets with or without horns, 1 x 15" folded horn bins and add-on horn units. Their best selling units at the moment are the 2 x 12" cabinets

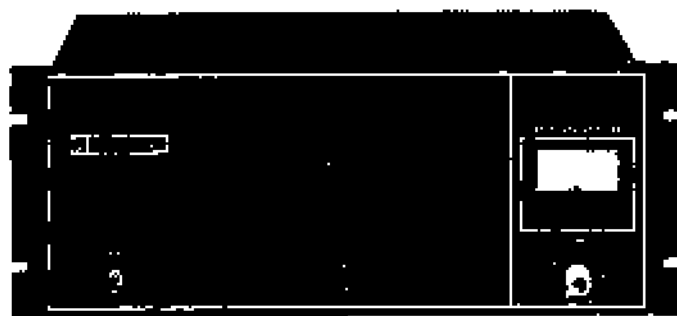
with horns and the folded horn bins. The add-on horn units are also in great demand for use with the bins. P.A. power is based on the August 100 amplifier which is a four-channel P.A. mixer amp with individual volume controls plus master bass, middle and treble controls and an overriding master volume control.

Shure

Shure do a complete range of mixers, stands, accessories, as well as the widely acclaimed Vocal Master Sound System. The Vocal Master system is driven by a 100 watt mixer amp with six channels, each with separate volume, bass, treble and reverb (in-out or auxiliary echo) controls. Master controls can also be used without disturbing the individual settings. There are special anti-feedback switches and built-in protection

circuits. Also available are a 100 watt Booster Amplifier and Monitor Speakers. An H-F speaker is available for use with the Vocal Master columns or monitor speakers. Other speaker columns available from Shure include the SR108, consisting of a horn-loaded low-frequency section and a high-frequency section with four compression drivers and a radial horn. The SR 102 and 103 columns each have two 10's and four 8's along with twin high-frequency speakers.

The newest addition to the Shure stable is the SR 105 power amp. Available in two models, the SR 105A which boasts direct coupled speaker output at 200 watts r.m.s., and the SR 105B, which allows for direct speaker coupling. *continued on page 87*



The new Shure SR 105 Power Amplifier

Cerwin-Vega

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Some of the finest musical instruments ever made are loudspeakers.



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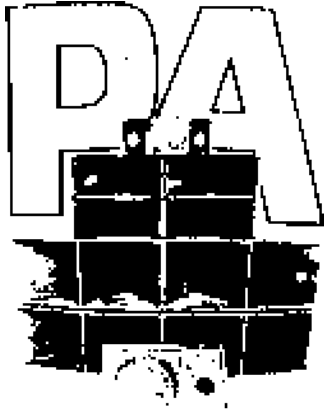
That's right. (Only your lumber yard will know for sure.) Here's how:

See your musical instruments dealer. He has a JBL Loudspeaker Enclosure Construction Kit that covers enclosure theory, materials and assembly techniques. The kit also includes complete blueprints, baffle board layouts and porting information.

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Lamb House, Church Street, Chiswick, London W4 2PB
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from page 85

Simms-Watts

Pride of place among P.A. amplifiers is the Simms-Watts Vocal Blender. A 100-watt mixer amp, it is available with optional Hammond Reverb. It features six channels, each with volume, bass, treble and reverb controls. Each input is switchable to high or low impedance.

The range of P.A. cabinets include the H100 Universal Horn Cabinet. It has four high-frequency horns and a 15" speaker giving a handling power of 100 watts r.m.s. They also do a 50 watt column containing two 12" speakers with two high-frequency horns, and a "half version" with just one 12" speaker and one horn.

They also do two other 100 watt P.A. amps — the PA100 and the PA100R. They are both solid-state four channel amps and a Hammond Reverb unit is featured on the PA100R. Any of these amps can be slaved up with the Simms-Watts TSL 100 power amplifier.

Soundout

Soundout do a range of cabinets suitable for P.A. use, among them the DL3 exponential horn cab, which contains two 12" speakers and can handle 100 watts. The DL6 is a 100 watt ported enclosure rated at 100 watts, while the

HE2C is an infinite baffle cabinet with two 50 watt speakers.

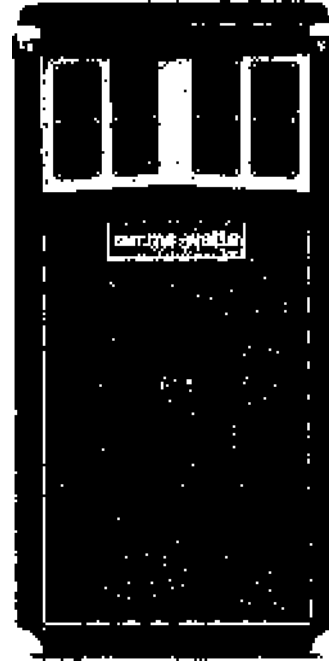
The baby of the range is the HE1C ported cab containing one 50 watt 12" speaker. These can be used with the Soundout M174 four channel mixer amp rated at 170 watts r.m.s., and additional power can be obtained by adding an M170 slave amp, also rated at 170 watts.

Trident

(Livewear Audio & Lighting Hire)

Trident manufacture high quality sound equipment which is often used in applications demanding the highest standard of audio reproduction. Their equipment ranges from multi-track studio consoles which are adapted for live applications, to Parametric Equalisers, providing extensive curve bending facilities covering the audio spectrum and including high and low pass.

A subsidiary of Trident, both hire and lease equipment for any length of time. Their basic equipment is powered by Quad Amps driven by Electro Voice, JBC and Gauss Speakers. The mixers are RSE and they also boast a Triad Deck.



Simms-Watts' H100 Universal Cabinet

continued on page 88

We would have shown
you our gear, but it's
all out on the road

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from page 87

Sunn

Marketed by Ben Page, Sunn amplification includes the studio P.A. amplifier. A portable four channel vocal amp, it offers eight mike inputs, separate tone and volume controls for each channel, separate reverb, off-low-high switches and a master reverb control. The Concert Controller 1, a portable six channel sound reinforcement amplifier, offers 12 mike inputs separate tone, volume and reverb controls and a master level and reverb control. The Concert Controller 2 offers high and low impedance mike inputs, monitor and effects level control. Although normally independent of power, an option of the Concert Controller 2 is available with a 200 watts r.m.s. power amp.

Sunn's columns and enclosures include the 412SR, a 4 x 12 with infinite baffle for high level bass response, and the 410SR, housing two 10" mid-range and two 10" extended range bass speakers, as well as two 4" tweeters. The 212SR houses a single 12" mid-range transducer, a 12" extended range transducer for bass response, and a 4" tweeter cone. In addition, Sunn offer a variety of horn accessories, small radial horns, monitor speakers, concert slaves, large radial horns and graphic equalisers.

Turner

As well as doing a full range of modular and non-modular mixers, Turner market a range of studio quality stereo power amps. There are four models in the range, the A500 being top of the tree with an output power of 250 watts per channel. Their P.A. speaker cabinets all use either Gauss, JBL or ATC speakers and these include 1 x 15 bass horn, 2 x 15, 1 x 12 and 1 x 10 mid-range horn units. High-frequency units includes a Vitavox horn flare with a pair of JBL super-tweeters, and all cabinets are front-loading horn flares. Turner are also specialising in on-stage monitor-mix systems and their range of monitors include 12" and 15" units.

Tyas

Tyas do both custom-built and off-the-shelf P.A. equipment and their range includes 1 x 15 folded horns, 1 x 15 and 1 x 12 wing bins, and horn sections with Vitavox and twin RCF super tweeters. Amplification includes a 70 watt mixer amp with two channels, bass, treble and volume on each channel, overload protection and front-panel fuses. There is also a 70 watt slave amplifier to match. Tyas also manufacture a mixer amplifier with six channels and an output of 125 watts. Again, there is a slave amplifier to match and all these amplifiers are either 19" rack-mounted or boxed.

continued on page 90



A Turner A300 Stereo Power Amp

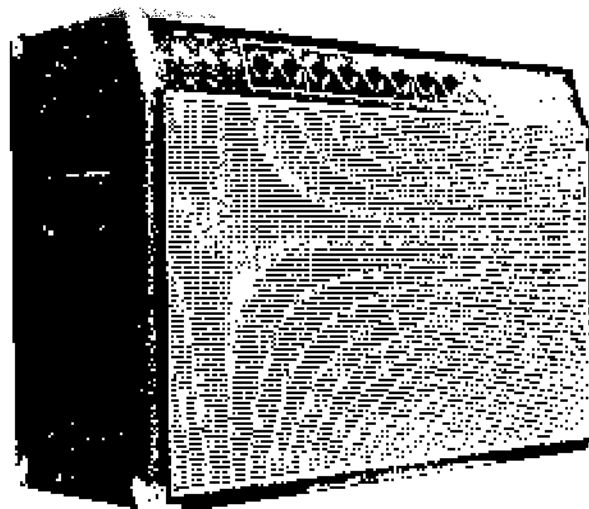
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from page 88

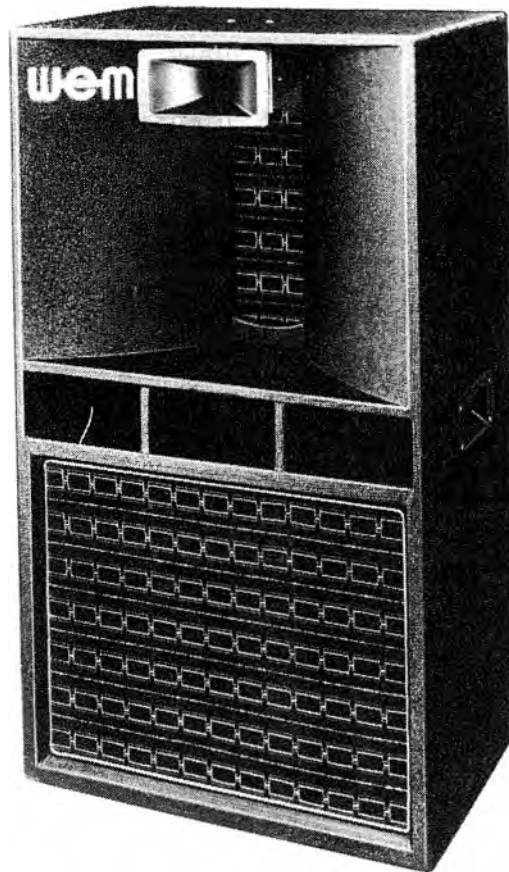
WEM

In the mid 'sixties, WEM were among the first of the sound equipment companies to cater for high-power bands and festivals. They now manufacture a complete range of columns, cabinets, monitors, horns and amps, and recently introduced two reflex bins to their range. The X39 Reflex Bin is a 100 watt handling unit incorporating a 15" woofer in a reflex compartment, two heavy-duty 12" speakers behind middle bin flares and a high-frequency horn. The Intruder Reflex Bin is more or less a half version of the X39. It contains a 15" woofer, one 12" behind bin flares and a high-frequency horn.

Vitavox

Vitavox do an extremely wide range of speakers, pressure units and high-frequency horns as well as their very successful Thunderbolt cabinet, recently road-tested by Blackfoot Sue in conjunction with *International Musician*. The Thunderbolt is a folded low frequency horn enclosure with a 380mm speaker and a cellular horn, and handles 100 watts r.m.s.

continued on page 92



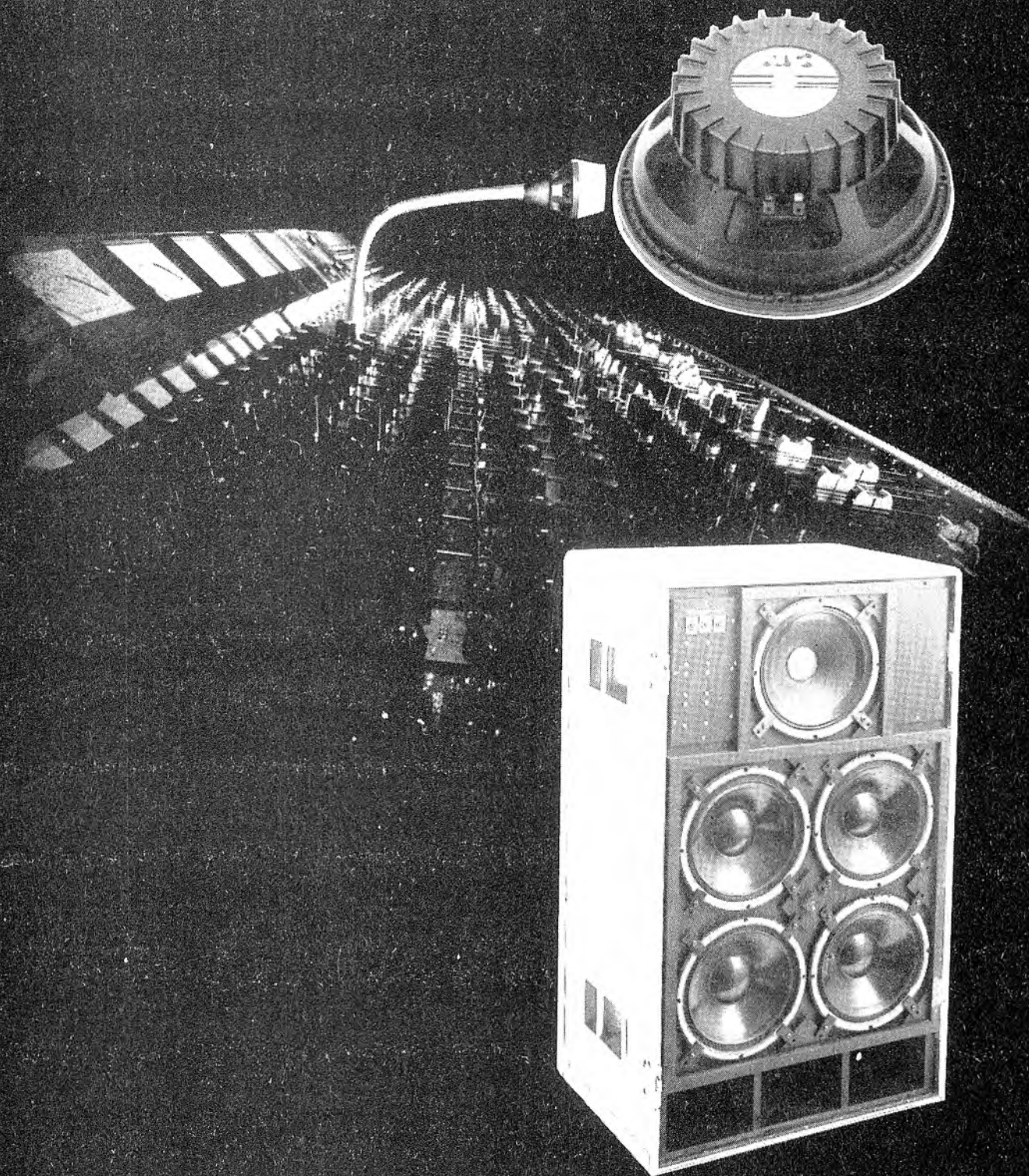
WEM Intruder reflex bin

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from page 90
White

White Amplification of Sunderland provide equipment for applications ranging from cabaret to the largest concerts. The CM 30 can either be injected directly or miked up, and offers two channels with common tremelo, reverb, and phasing, as well as master volume and presence. The P.A. 100 amplifier offers six mike channels with separate input jacks, volume, treble, bass and echo level controls. 100 watts of solid-state power are offered. The P.S. 100 offers input and link jacks, volume control and a power switch.

The S50 P.A. enclosure is geared for the solo performer, and houses the White 412A driver. The S100 P.A. enclosure houses two front loaded heavy duty White 311B drivers, while the S200 houses four of the drivers. The S150 P.A. enclosure houses a 15" driver and a hyperbolic horn. The P.A. 200 amp is a larger version of the P.A. 100.

White also offer the H100 V horn, a bass horn enclosure handling 200 watts, and the B.12 P.A. mid range horn enclosure, also handling 200 watts.

Wing

Wing Music, Bromley, distribute a wide range of P.A. equipment of their own manufacture, ranging from a pair of 2 x 12" P.A. columns to a pair of Gauss flared bins.

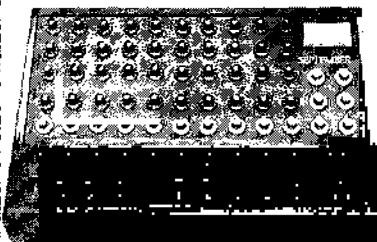
One of the most popular items in their range is a P.A. bin loaded with 100 watt McLab speaker. These are very portable and two can be loaded into a Mini van. These bins are also available with Gauss, JBL, Altec or Electrovoice speakers.

For the smaller P.A. they manufacture a 1 x 15" and two horn cabinet loaded with 100 watt McLab.

One of the most popular lines at present is the twin horn cluster.

continued on page 94

September Sound Equipment



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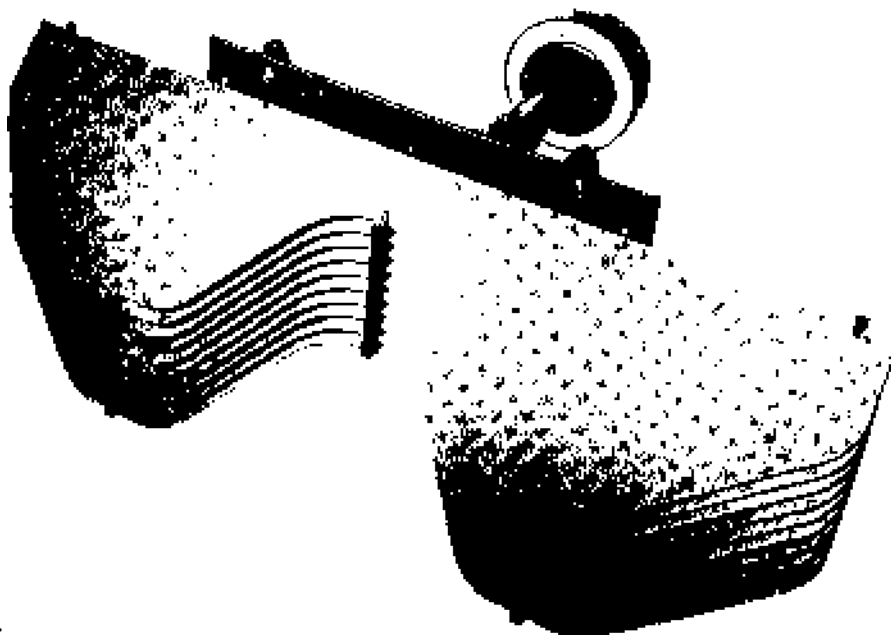
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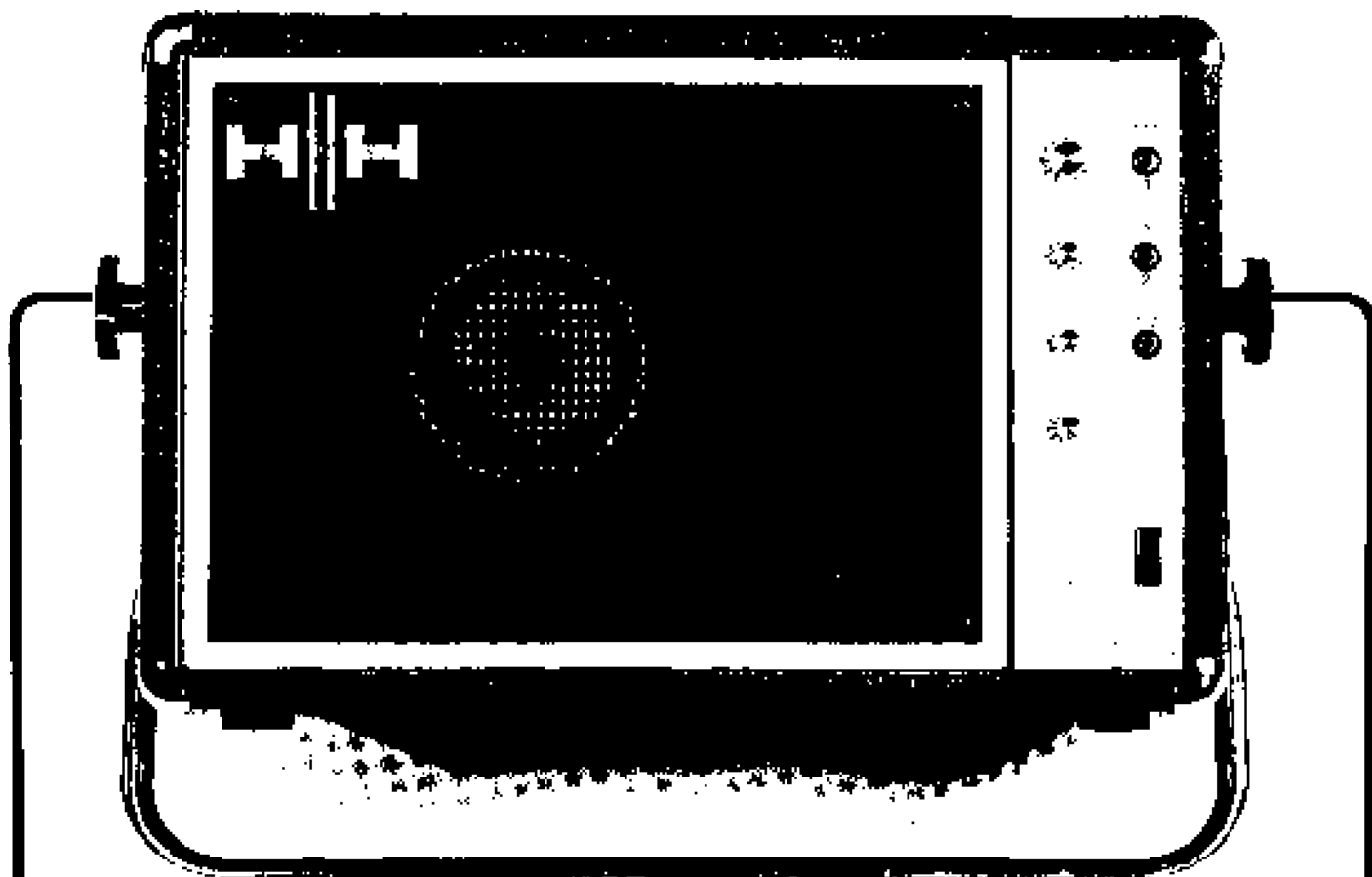
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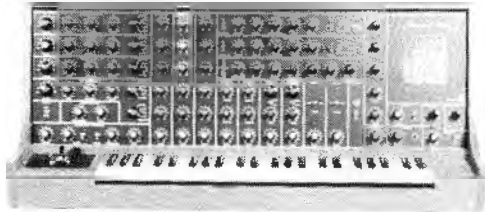
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from page 92

Zoot Horn

Zoot Horn manufacture a number of P.A. systems, which consist of a variety of bins, horns and tweeters. Their 700 watt system employs front-loaded horn bass bins with Gauss drivers, mid-range bins with ATC or Gauss drivers, JBL radial horns and tweeters. Multiples of these can be used for larger systems. Foot monitors are available in 100 watt and 150 watt models, and Zoot Horn also manufacture mixing consoles to order. □

Yamaha

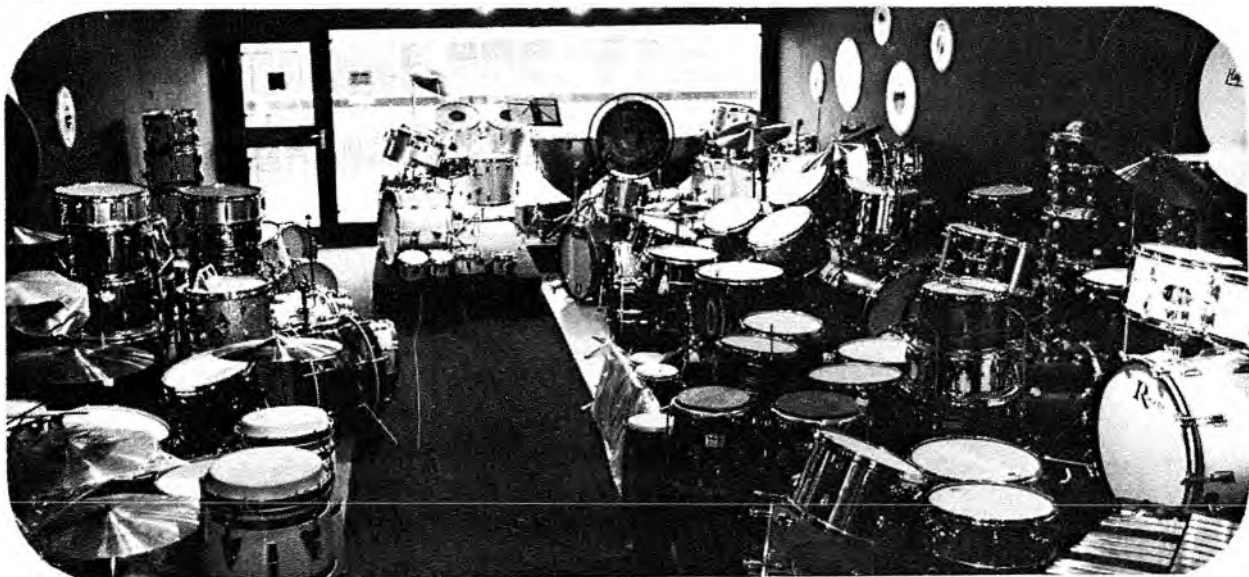
Yamaha P.A. systems cover a lot of territory. From the six-channel 30 watt YES600A with its pair of ES 90 1 x 12" wedges, all the way up to the large high-power rigs. Throughout the range, all Yamaha cabinets are extremely compact and portable and, using their well-established slave-in-cabinet principle, a 200 watt system will fit in the back seat of a mini. Their top-line bin is the PS400, a four-way reflex bin with front loaded short exponential on the lower mids, twin section horns on the upper mids and a pair of high-frequency bullets which extend the top response up to 22kHz.



White's PA 150 with S100 cabs

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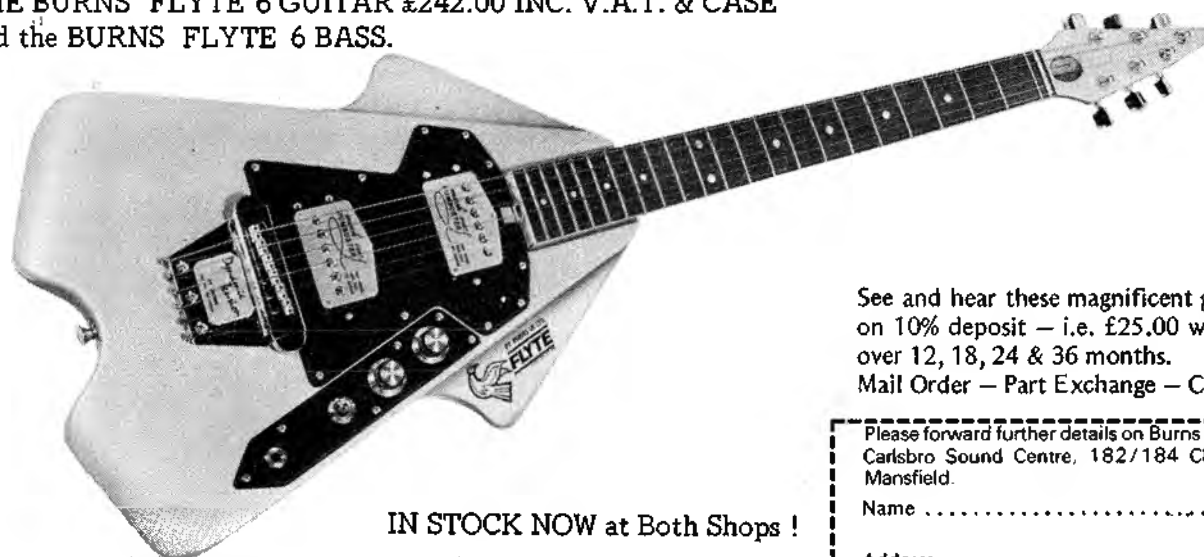
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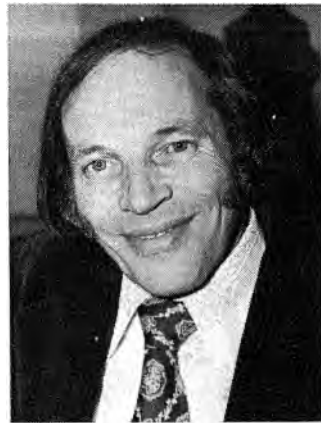
Music Box add Northern Percussion

MUSIC BOX of Bathgate, Midlothian, was opened 20 years ago by Johnny Dankworth. Since then, the owner Colin Meiklem has been able to use Music Box as a launching pad for a hundred ideas he has developed over the years. Colin seems to live for music and his abundant energy and enthusiasm have helped to establish Music Box as a focal point for innovations in the musical industry. Colin is a talented tenor saxophonist with four years at the Royal Academy behind him and although officially retired as a professional musician, he has recently formed a trad jazz band who play two charity gigs a month.

He is perhaps better known to Scottish audiences as The Penny Whistle Player. He appeared in this guise on many radio and television programmes and has had two books published on the art of penny whistle blowing. Of course, it's now impossible to get a penny whistle for less than five shillings but Colin encourages would-be whistlers by offering both his books and a whistle for less than a pound.

With an owner like Colin Meiklem, Music Box can hardly fail to be interesting. It is a large shop split into two levels, one with a floor area of 4,500 square feet and the other 6,000 sq.ft. At this time last year, the five main display windows were stocked with a wide range of guitars and amplifiers. This year, Colin has devoted a lot of space to displaying saxes, clarinets, flutes and oboes. Colin believes that the trad jazz band revival is booming. Interest in Music Box is not confined to those who are part of this revival. Colin is a Gibson Gold Star dealer, and he also has a large stock of Fenders, Gretsch and Rickenbacker guitars, as well as a selection of the cheaper copies, like the EKO range. HJH is the most popular amplifier he sells, but Colin tells me he has every other kind of amplifier and P.A. equipment that a musician could ask for. There is both a full time and a part time engineer in the busy workshop department and there is also a large record and tape department.

Colin has now formed a subsidiary company called Northern Percussion Centre Ltd and his co-directors are two well known jazz musicians, Alex Duthart and Roy Sneddon who both teach percussion classes on Monday and Tuesday evenings.



J. Dankworth 20 years on

Hastings Sound

HASTINGS SOUND is, in fact, in St. Leonards but the towns do merge, so the name is not as misleading as it might at first appear. John Fisher, part owner with Mick Pain, moved to Hastings with Vox some years ago. John stayed on in Hastings to open Hastings Sound in 1974. The shop stands in a new shopping complex with wide modern windows and comfortable carpeting throughout. Hastings Sound is a main dealer for HJH and also stocks a solid amount of group gear, including amplifiers, electric pianos, drum kits and a range of accessories including strings and machine heads.

The emphasis is very much on electronic gear and Hastings Sound does a great deal of electronic servicing in their repair shop. Among recent visitors were local band Stallion, Jinks, Raven and The Rockaires.

Edinburgh Largs

LARGS MUSIC in Greenside Place, Edinburgh, is part of The House Of Clydesdale, and is perched above an electrical fitting company which is part of the same complex. The floor area is some 60ft by 80ft, providing ample room to display their stock. Largs Music has been there for about three and a half years and Colin Mackenzie, the shop manager, has worked there since the beginning. There are a great many keyboards on display: portable, electric, console models

and synthesizers, and there's also a small organ studio at the back.

Among the famous names in stock are Marshall, HJH, Fender, Carlsbro, WEM, Gretsch, Yamaha, the entire CSL range and the new Tamra range, as well as some second-hand equipment.

Under manager Bruce Bedwell commented on increasing sales of the Japanese guitars as the standard of the copies improved and the quality of the American instruments seemed to deteriorate. The shop has a servicing department and Largs Music are willing to organise drum, keyboard and guitar tuition. Recent customers have included Brody, Praying Mantis and The Igmats.

Macaris Hove, too

THE FIRST Macaris Music shop opened in Wembley more than ten years ago. Over the ensuing years, three more Macaris established themselves in the West End of London. Then, only eighteen months ago, a fourth shop was opened in Hove, near Portslade railway station. With the unlimited support of the parent shops and the undoubted talents of Roger Ferris, the shop manager, the newest addition to the Macari chain has flourished.

Roger Ferris is very much a part of today's musical industry. He writes for the band Arrow and initially his plan was to open a small studio for Arrow and other bands to use. The idea was developed and the studio, boasting two four-track tapes, is now part of the new Macaris which is housed in a former flower shop. After considerable work on the structure of the building, the display area is now more than enough to hold the extensive amount of equipment and instruments which Macaris stock. As well as keeping the full range of Colorsound pedals, Roger Ferris is also a main agent for HJH and Roland. The stock is mainly amplifiers and guitars, but there is a selection of keyboards, some second-hand drum kits and a few accordions, as well as various accessories. Customers can also order most other equipment from the main shops in London. Macaris also offer a good discount on cash payments and they participate in the Provident scheme. All good news for the average impoverished musician.

Normans for Burton

NORMANS MUSIC shop has been in Burton-on-Trent for 16 years but has only been in its present premises for three years. The move was made simply because Normans had outgrown their premises and partners Norman Willey and David Haines needed more space to develop their ideas. It's a specialist shop which doesn't actually specialise in any one field, but takes great care to compile as much information as possible about every item in stock. Nick Collins is a full-time engineer. As the saying goes, he knows his onions, (or in this case, his electronics) and he can be relied on to help customers with their equipment problems. Mick Devlin is the woodwind expert and David Haines is full of information about brass instruments.

There are three floors, the first of which is the amp, P.A. and electronic department. The second floor is mostly keyboards but one section of this area is delegated to their hire department. Most of the instruments they hire are for educational purposes and demonstrations are often given in schools to help publicise the hire scheme. The third floor stock is mostly brass and woodwind and a repair shop for those instruments.

There is a studio for brass and drum tuition and a selection of drum kits and guitars. Normans is a main agent for HJH, a Fender Soundhouse and a Gibson Star Dealer. They are also agents for Premier and Rogers equipment and have a range of accessories as well as sheet music and some second-hand gear.

Grimsby Musical

THE GRIMSBY Musical Centre is the ideal shop for anyone interested in the electronics of the music industry. Each member of the staff is a dedicated musician working in local bands and they each have a working knowledge of just how often equipment can fail and, more important, how to get it back on the road again. The Grimsby Musical Centre is on Cleethorpes Road in the heart of Grimsby. The shop is on one floor and although there are guitars on the walls, the overwhelming impression as one enters the shop is of equipment — everywhere. There are skilled technicians in the workshop who are masters of their trade and always eager to tackle any new electronic problem which arises. The reputation of the shop has spread and most of the clubs and pubs in the area look to the staff at Grimsby to install P.A. systems and other equipment on their premises. Of the amplifiers they sell they have found that HJH and Peavey equipment are the most popular. The second-hand stocks fluctuate but the part exchange rates are very favourable. Grimsby Musical Centre closes on Thursdays, but customers on other days include Lincs. Brothers Band, Jody, Good News and Gollum.

A1:11+

A1 MUSIC centre is in a rather unusual building near the centre of Manchester. Although the shop frontage is small, customers have been known to get lost in the labyrinth of cellars which lie beneath the main building! Graham and Anne Mellor opened A1 11 years ago and since then the shop has expanded underground. The main body of the shop is crowded with bits and pieces of everything. Guitars hang from the ceiling, and the shelves and floor area are crammed with instruments and equipment. Downstairs the cellars are lit with fluorescent lights and sound-to-light units. One room is devoted to P.A. and electronic equipment, another to speaker cabinets. There is one area for the more expensive electric guitars and another for acoustic guitars, including the full Martin range. There is a drum cellar where drum tuition is given, a display of keyboards and synthesizers and a competent work shop where repairs and equipment modification are carried out. Graham was playing guitar with a country and western outfit when he was 15 and all of the staff are working musicians. A fairly recent occurrence, and one which has contributed towards an increase in trade is the opening of the main

Northern BBC building some 75 yards from A1.

When Top Of The Pops and the Old Grey Whistle Test are being recorded, visitors to the shop have included Leo Sayer, Sacha Distel and Nils Lofgren, as well as regular customers like Barclay James Harvest.



Nils Lofgren at A1

Fine Sounds Leek

FINE SOUNDS is a very small shop with a large heart in the form of Mrs. Jennings, who runs and part owns it with her husband. It's in the town of Leek in North Staffordshire and Mrs. Jennings has been running it for "two years and a bit".

Fine Sounds is fundamentally a friendly shop. Mrs. Jennings takes a pride in personal service and will go out of her way to accommodate her customers. Musicians often drop in for a chat and as a result the shop is rarely empty. The conversation is something of an incentive to musicians tired of indifferent assistants, but Mrs. Jennings' hospitality is not the only reason customers drop by. Fine Sounds has as comprehensive a range of equipment and instruments as space will allow. There are HH, Carlsbro and other makes of amplification in stock.

Fine Sounds is also interested in those musicians who are just learning. To help them, there are always musical tuition books and a selection of sheet music in stock and Mrs. Jennings will do her best to organise lessons for any of her customers. There's also a list of freelance musicians and phone numbers and that service is free of charge.

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MUSIC NEWS

R~M SHAKE~UP

ROY MORRIS is no longer in charge of the day to day running of Rose-Morris. Peter Clarke has been appointed Executive Chairman and Managing Director and he will assume main administrative responsibility.

Clarke joins Rose-Morris from the Metra Consultancy Group, an organisation brought in some time ago to re-organise the Rose-Morris operation. His marketing background includes work with Staflex, Letraset and Delford Industrial Systems.

Roy Morris becomes President of Rose-Morris and his duties will include "external relations within the company's structure" and the developing of export sales.

Rose-Morris say that "Peter Clarke's appointment points the way to a new phase in the company's history with an emphasis on marketing strength."



Premier Clinic

THE PREMIER Drum Company, in association with Dave Simms Music Products, held a very successful drum clinic on the 24th of November at the Queen Victoria, Ealing. Assorted drummers, roadies and people from the music trade turned out in force to see the Joe Kloess Trio go through their paces, and Premier's Eddie Haynes was there to chair the clinic. On a rare day off from touring with Jack Jones, the trio, consisting of Joe Kloess (electric piano), Billy Torma (bass), and Jimmy Blakemore (drums), performed mostly self-penned material with the accent on Jimmy's excellent technique and ability. After a couple of numbers, Jimmy answered a multitude of questions from the audience, covering everything from tuning drums to miking up a kit.

During a break in the set, some of the audience gathered round his Premier kit as he obligingly demonstrated various rudiments and exercises. Just for the record, Jimmy was playing a Premier Kenny Clare kit consisting of a 22 x 17 bass drum, 12 x 8, 13 x 9, 14 x 10 and 15 x 12 mounted tom-toms, a 16 x 18 floor tom-tom and a 2000 snare drum.

New CMI Guitars

A TOTAL of five new items have been added to the range of products sold by Cleartone. Four new guitars — two with fairly exotic specifications — are announced, and a new phase pedal completes the announcement.

The CMI 1944 Twin neck has 12 and six string necks with rosewood fingerboards. Both guitar sections are fitted with twin humbucking pick-ups. A three-way master switch activates either neck. The guitar is supplied complete with case and sells for £197.71, including V.A.T.

Also slightly unusual is the CMI Stereo Bass, a stereo instru-

ment which is also wired for mono, retailing at £64.67, including V.A.T. The other two CMI guitars announced are the TF266, a six string finished in black with a maple neck and fingerboard (£64.67p including V.A.T.) and the LP200 GMC which is a gold and mahogany finished six string instrument with twin humbucking pick-ups which sells for £87.55, including V.A.T.

The new phase pedal is called the Melos Microphazer, and incorporates an on-off footswitch and speed control. The price, including V.A.T., is £18.35.

Malcolm Hill Moves



REW Enlarges

REW HAVE recently expanded their West End retailing operation to include a new shop at 126 Charing Cross Road. The shop, which is on the corner of Denmark Street, was originally intended to house the professional products REW sell, but it proved more suitable for Hi-Fi display and this department has been moved in to leave the original REW shop at 146 Charing Cross Road clear to deal solely in professional equipment.

The REW shop at 146 stocks an incredible range of semi-pro and professional recording gear offering such items off the shelf as an eight-track recorder for £2,200. A range of microphones which REW claim to be the widest in the West End of London is on show and a large assortment of mixers, for both recording and P.A. use, is displayed.

MALCOLM HILL Associates have moved to a new address in Marden. The full address is now Malcolm Hill Associates, 3 Maidstone Road, Marden, Kent. 062-78-5545.

Feedback Suppressor

F.W.O. BAUCH have announced the availability of a "Feedback Suppressor" and a "De-Esser."

The feedback suppressor is properly called the Universal Audio 560 and it is a unit claimed to be capable of giving up to 12dB gain increase in P.A. systems. It consists of four notch filters, each of which can be tuned to eliminate troublesome frequencies until a final feedback level is found. Even in systems which use sophisticated graphic equalisation, this filter, it is

claimed, can be used to advantage.

The EMT 260 De-Esser is a sibilance eliminator which is entirely passive until a sibilant transient is produced, at which point the unit become a Baxandall type filter with a -3dB point at approximately 3kHz. Attenuation is up to 12dB at 15kHz. This unit does not affect tone, as can happen when treble equalisation is used, but, it is claimed, removes the "S" transients without affecting the rest of the recording.

Ham Expands

JOHN HAM have recently expanded to include the building adjacent to their original premises in Wales. The address of the new musical instrument and equipment shop is 75 and 76 Mansel Street, Swansea, and according to the owner John Ham, the two extra numbers have made a lot of difference.

The new section has two floors of musical instruments including a display of 50 drum kits, while the original shop has been devoted to Hi-fi and sound equipment. The staff has been increased to nine, each member of which is very involved in the local music scene. So far they have done a lot of business with semi-professional recording equipment and mixers.

DJMD

GEORGE SHEPPARD has been appointed Managing Director of D.J. Electronics following the departure of David Woods. Dave is continuing as a consultant to D.J., but George is now in full control of all aspects of the company's operation.

Conn MD

RAY HAMMOND has been appointed the new Managing Director of Conn Organs. He took up his post on December 1.

His appointment follows Jock Robertson's departure from the company in August of last year the accountants operated a caretaking operation until Ray Hammond could take over.

On the first day of his new appointment Ray Hammond stated. "We are not planning any drastic changes in either staff or policy, but we are naturally looking forward to improving our overall representation."

New SAI Slave

SAI HAVE added an important new amplifier to their range. Called the SC150, the amp is a slave model designed for use with their disco equipment but is also completely compatible with most mixers and similar pre-amps.

Power output is 150 watts and controls are an illuminated on/off push button switch, and overall volume. The front panel is finished in anodised aluminium and the wood case covering is available in black or orange. Retail price is £96. excluding V.A.T. A rack mounted version will be available shortly.

Cleveland Opens

SEVERAL MAJOR manufacturing companies turned up to help in the opening of celebrations of Cleveland Music, in Middlesbrough, at the end of last year.

As part of the opening celebrations, Kimball Organs and Rhia organs both staged demonstrations and owner Dennis Harrison claims that the shop is already a "tremendous success." Pictured are, left to right, Peter Taylor, Cleveland's Service manager, John Van Till of Benelux, Jill Richmond of Cleveland Accessories, Dennis Harrison, Alan Marcuson of Sound City Strings, Rita Harrison and Harry Graham Fielding.



Midas For S tramp

MIDAS HAVE recently delivered a brand new sound system to Supertramp. The system is based around a giant 32-channel in and eight channel out Midas desk which has been built to full recording specifications. The cost of the desk was around £12,000.

The system delivers 12Kw, and uses Midas amplifiers which drive Gauss bass drivers, and Vitavox/Gauss mid and top end units. Midas have also built three-way electronic crossovers into the desk. Two other Midas desks have also been supplied to the band, one for echo and one for foldback. EQ facilities on the main desk incorporates bass, mid, treble and presence and cut and boost is available up to 16dB. Shelving is operational on each section. The equipment was supplied with full flight casing by C.P. Cases.

Sun Shines

HIGH WYCOMBE'S Sun Music held its third Birthday party last month and invited more than 400 people!

The party was held in the Town Hall, High Wycombe, and customers, friends and hangers on from all sides of the music business attended.

Dave Roberts, star demonstrator of Gibson products thoroughly enjoyed himself and entertained the audience by zipping through some of the rarer Gibson's he'd brought with him. *International Musician's* Rick Desmond sat in on drums for a number with Dave at the end of his demonstration.

The Sun staff band blew a mean set which was only surpassed by the set from the Director's Band which closed the show. A good time was had by all.

Organ V.A.T.

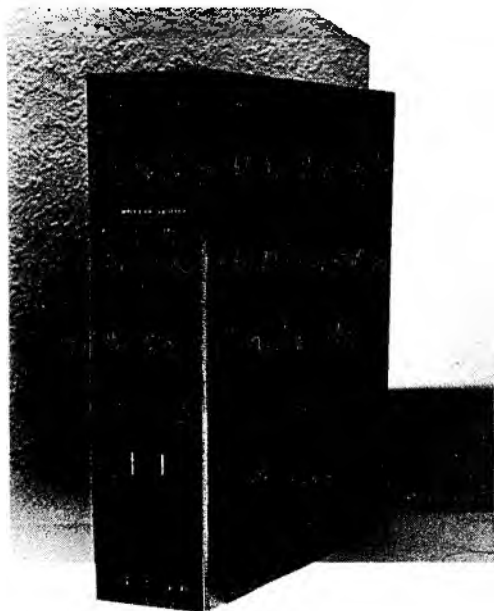
THE ELECTRONIC Organ Distributors Association has been rewarded for its efforts in clarifying the V.A.T. muddle on electronic organs with a clear statement from H.M. Customs and Excise department. From Monday, December 1, only those organs which complied with the following description were regarded as chargeable at 8%.

Electronic organs which 1) have a specification which includes not less than four footages in one voice section, 2) are designed for portability with detachable legs, pedalboard and swell pedal, 3) do not have built-in loud speakers and 4) are advertised and held out solely for professional use.

H.M. Customs and Excise have also confirmed the 8% ruling for electronic accordions and electronic pianos without built-in speakers which are advertised as being for professional use only.

The negotiations over V.A.T. on electronic organs have been conducted by Farfisa's boss Dickie Wren and they mark the need of a long period of uncertainty over V.A.T. on electronic instruments.

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Personalities from the international percussion scene including a party of dealers organised by M. Hohner (U.K.) Ltd., gathered in the Westphalian town of Aue on the 25th and 26th of October to attend the Sonor drum company's centenary.

Johs Link KG, manufacturers of Sonor percussion products, celebrated 100 years of manufacturing with a full weekend programme of events, beginning with a tour of the Sonor works.

The factory at Aue was started in 1950 and was built by Otto Link and his son Horst, the present head of Johs Link K.G. The business was first set up at Weissenfels an der Saale in 1875 by

Johannes Link, who originally started his business career tanning calf skins for drum heads. This progressed to drum manufacturing, and eventually the range of products was extended to cover cymbals and other percussion products.

The Sonor factory at Aue is impressively self-contained and guests were allowed to visit each department in turn and requested to follow a plan of the works given to each visitor by the Sonor staff.

The machine shops make piece parts in wood and metal for all the products and polishing, plating and finishing is completed at the factory. The drum shells are formed on the factory

designed jigs, and machines specially designed by Sonor tool room engineers complete the various drilling functions.

The piece part assembly areas complete their various functions on a batch production basis rather than a moving track mass production line system. This keeps the individual members of the production teams alert and conscious of quality control.

New products were demonstrated including some of the new designs for Frankfurt 1976. Bernard Purdie a well-known American session drummer was among the drum demonstrators and large crowds gathered in the despatch area where the demonstrations took place.

Among many of the overseas visitors at the factory were Bob Zildjian and Tony Wallis from Avedis Zildjian, Giovanni Spadacini from Tosca Percussion, and Mr. Remo Belli of Remo International. After an excellent lunchtime buffet at the works, coach parties left for the country village of Berghausen where the main celebrations were to take place at the village hall. A local band in traditional costume greeted the visitors with a brass and percussion fanfare at the entrance to the hall, and the guests, about nine hundred in number, seated themselves at long rows of tables in the traditional German manner.

continued on page 104

SONOR CENTENARY

by Malcolm Green





Sonny Payne

U.S.A. drum star of Harry James' orchestra and one of America's ranking percussionists, about his Sonor drums. Sonny's remarkable rapport with his instruments is shown in this action picture.



Tommy Aldridge

relies on Sonor drums and accessories for consistent performance in the recording studio and on tour. Listen to Tommy and Black Oak Arkansas, and hear the quality of Sonor drums.



Frank Gant

whose performance with Ahmad Jamal ranks him among outstanding contemporary drummers, insists on Sonor drums and accessories to deliver his unique sounds.



Jack De Johnette

is known to his many fans as "The Wizard" because of the exciting music he creates. His choice of drums is Sonor, an instrument versatile enough to respond perfectly to the vibrant, original sounds. "The Wizard" is famous for.



Bernard "Pretty" Purdie

whose featured performance with Aretha Franklin and other stars in person and on records make him one of the most talked-about percussionists of the day, delivers his message on Sonor drums.



Bobby Gien

Ronnie Scott Band



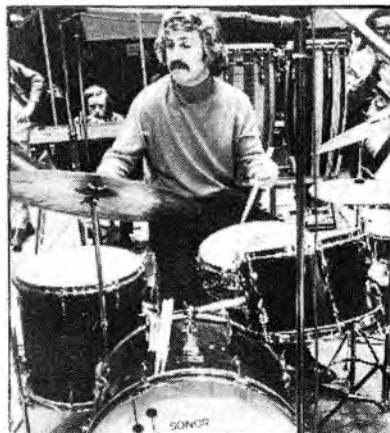
Tony Mann

Humphrey Lytelton Band



Jackie Liebezeit

"The Can"



Ronnie Stephenson

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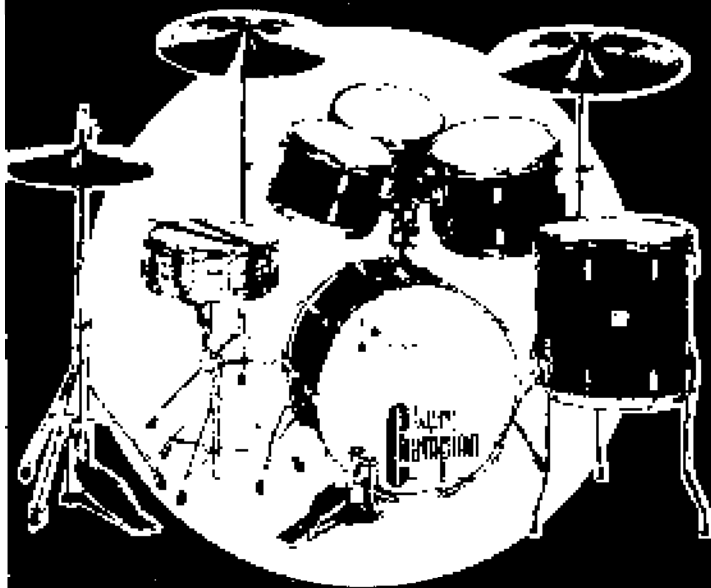
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SONOR from page 100

The ceremony began with traditional folk music, which was then followed by a great number of speeches made by various German dignitaries. After the speeches Horst Link invited everyone to enjoy themselves and gave the word for the festivities to begin.

A whole ox roasting on a spit was the centre-piece of a mammoth buffet. Traditional music played throughout the evening and early into the morning, and the beer, schnapps and wine flowed non-stop to the tables.

The much appreciated cabaret spot of the evening featured ten leading international Sonor drummers including Bernard Purdie; each performed individually and then simultaneously in a grand finale. The solos will be remembered in Berghausen for a long time to come.

The centenary celebrations carried on with a musical matinee on the Sunday morning at the small rural village of Bad Berleburg. In the splendid concert hall, Elizabeth Link introduced Monika Weiss, who demonstrated basic teaching methods using percussion instruments. Monika completed several exercises with children accompanying her on drums and triangles. Gordon Williamson, a consultant for M. Hohner (U.K.) Ltd gave an impressive demonstration on a Sonor kit with accompaniment by the Monika Weiss ensemble.

After the concert, Horst Link invited everyone to a magnificent champagne buffet lunch which had been prepared, a fine conclusion to the weekend of Sonor festivities. □

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PRICE SCANNER

Compiled by
Elaine Cooper

ALL PRICES ARE WITHOUT V.A.T.



I.M.'s Price Scanner aims to be the most comprehensive guide to the retail prices of musical instruments and equipment available.

All our new retail prices are exclusive of V.A.T. and while we have taken exhaustive care to ensure that the prices are correct, we'd be obliged if you could let us know of any alterations, additions or deletions necessary. Unfortunately we have to disclaim responsibility for any problems arising out of any inaccuracy in this price guide.

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12" Crescendo	95.00
12" Gauss	108.00
15" Crescendo	140.00
15" Gauss	170.00

Horn cab 81.57
2x12 col. 100w. Pr. 158.57
6x10 col. 150w Pr. 127.87

SOLID STATE

50w L&B	118.84
100w L&B	127.57
50w PA	118.84
100w Mst. PA	153.50
100w Slv.	111.36
250w Slv.	191.60
8 Ch. Mtr.	257.41
50w Combo Amp	173.05

CELESTION SPEAKER

G12 M25W	15.33
G12 H30W	18.28
G15 M50W	22.98
G18 C100W	41.23
S10 15W	5.49
G15 Twin Cone 50W	25.07

ELKSTONE 810PR

100w R.M.S. / rev	397.42
Elkstone 615PS	
(200w RMS stereo)	497.21
Elkstone 615PSR	
(200w R.M.S. stereo/rev)	528.83

EPICENTRUM

2 x 12 Cols pr.	113.85
1 x 12 Reflex	
ATC pr.	143.75
Reflex + hf hns pr.	197.75
2 x 12 Reflex bin	138.00
1 x 12 Mid hn.	62.10
1 x 12 Mid hn ATC109.25	
2 hf horn unit	27.60
4 hf horn unit	48.30
2 hf horn add-on	39.10

WEDGE MONITOR CABS

1 x 12 ATC pr.	159.85
1 x 12 ATC + hf horns pr.	197.80

MODULE SYSTEM

Small bs. hn. ATC 120.75	
Demountable	
bass horn	149.50
Low rev mid horn ATC	109.25
Upper mid + hf horns	126.50
Complete spkr. system 1000 W	750.00

H.H. ELECTRONICS

1002 N/S	224.75
1005 AP200	167.54
1006 S/L200	157.28
1007 PA200/R	204.50
1010 PA100TC	133.00
1011 PA100S	133.00
1012 PA60TC	83.03
1013 PA60S	83.03
1015 B200	225.00
1018 FH200	225.00
1022 S120	155.00

(BINSON SALES)

30w Col.	97.00
120w Col.	166.00
50w Col.	253.50
60w Col.	126.00
100w Col.	215.00
60w Col.	149.00
100w Col.	162.00

AMPLIFIERS

50w ster.	185.75
100w ster.	299.50
200w	281.50
50w ster. trans.	318.75
5 Ch. Mx.	210.00
8 Ch. Mx.	234.00
4 Ch. Mx.	223.50
4 Ch. Mx.	187.00
4 Ch. PA Mx	231.00
6 Ch. PA Mx.	282.00
8 Ch. PA Mx.	275.50
100w Slv.	161.00
10 Ch. PA Mx.	635.00

COMBINATION AMPS

50w ster.	185.75
100w ster.	299.50
200w	281.50
50w ster. trans.	318.75
5 Ch. Mx.	210.00
8 Ch. Mx.	234.00
4 Ch. Mx.	223.50
4 Ch. Mx.	187.00
4 Ch. PA Mx	231.00
6 Ch. PA Mx.	282.00
8 Ch. PA Mx.	275.50
100w Slv.	161.00
10 Ch. PA Mx.	635.00

COMB AMPS

J6 6W	33.00
Tempest 25T 25W	67.00
Tempest 50 50W	130.00

ELECTRO SOUND

ALL ITEMS CUSTOM BUILT

16/4 B series 940 DU
16/2 C series 110.00
16/4 C series 1380.00
16/8 C series 1940.00
16/4 D series 1540.00
16/8 E series 2020.00
24/16 F series 5100.00

NON-MODULAR DESKS:

M102 10/2	230.00
M102 8/10/2	420.00
M162 16/2	350.00
M16 B 16/2	550.00
M162 FC 16/2	700.00

ROTATING SPK CABS

Elkstone 810PR	
(100w R.M.S. / rev)	397.42
Elkstone 615PS	
(200w RMS stereo)	497.21
Elkstone 615PSR	
(200w R.M.S. stereo/rev)	528.83

POWER AMPS:

IC108 S	70.00
100 W/16 ohms	
IC116 S	70.00
200 W/16 ohms	
IC204 S	110.00
200 W/4 ohms	
IC208 S	110.00
200 W/8 ohms	
IC404 S	110.00
400 W/4 ohms	
IC402 S	180.00
400 W/2 ohms	
IC802 S	180.00
800 W/2 ohms	300.00

WEDGE MONITORS

W12 50 W	65.00
W12 JBL 100 wv	125.00
W15CH 100 W	
JBL	280.00
W15 RH 200 W	375.00

HORNS

JBL2420	190.00
H.F. radial	
JBL2482	280.00
M.F. radial	

BINS

B15 15" 200W	145.00
GAUSS reflex	
MARTIN 15"	199.00
200W GAUSS	

POWER AMPS.

TPA100D	98.00
TPA50D	70.00
AN/8/12	46.00
TPA250	52.00
TPA250 19"	52.00
TPA250-M	50.00

AMPS

1/2 C 100 hd.bs.org.	137.94
hw/rev 100w	
1/2 C 100 S opt.bs.org.	111.60
100w	

P.A. AMPS.

MA100 5 ct./rev.	138.72
MA100-S 5ch.100w	119.34
S130 sl.amp 120w	89.90

P.A. SPKRS.

212DC 2x12"100w	92.54
412DC 4x12"col.	139.50

UNIT P.A. SYSTEMS

50w radial horn	99.20
115bs.compact	100.75
1x15" 100w	

COMBINATION AMPS

1/2 C 100 Twn Rev.	206.15
Tremolo + Sustain	
75/100w	
1/2 C 100 S Sustain	189.10
75/100w	

ROTARY AMPS.

RA.50	280.00
RA.100	434.00
RA.200	666.00

BOSE

Table listing Bose 1800 AMP, A 800 spkr/eq, A 800 spkr/add-on, Bose 800 eq.

BOOSEY & HAWKES

Table listing various audio equipment like VT40 6D w.vl., VT22 120 w.vl., G2 12 120 w. 8s, etc.

BRODR JØRGENSEN

Table listing ROLAND RHYTHM BOXES like TR33, TR30/amp, TR55/portable, etc.

SOUND EQUIP

Table listing Rev030, Rev020, Rev0250, RC1, C2030 12" spk, etc.

CANARY MIXERS

Table listing 'B' SERIES MIXERS like 12/1, 12/2, 15/2, 18/2.

FREIGHT CASES

Table listing 12 ch., 15 ch., 18ch.

'A' SERIES CUSTOM MIXERS

Table listing 20/6/2, 16/8, 24/2.

CROSSOVERS

Table listing 2 way stereo, 3 way stereo.

CERWIN VEGA

Table listing AMPS like A1800 400W + 400W, A1800/1 400W + 400W, etc.

P.A. SYSTEMS

Table listing COMPLETE WITH AMPS like 900W 3 way system, 35-1800 Hz, etc.

VOCAL REINFORCEMENT

Table listing V.30A 150W, V.32B 300W, V.34 300W, etc.

VOCAL REINFORCEMENT

Table listing V.30A 150W, V.32B 300W, V.34 300W, etc.

MUSICAL INST SYS

Table listing G3.22 200W, GB.38 400W, HF.36 300W, etc.

SOUND REINFORCEMENT

Table listing L.48CF 500W, L.48CFD (L.48CF with hrm ext. op.), L.48DD 2000W, etc.

CHINGFORD ORGAN STUDIOS

Table listing Solton Cabinet, StateLine II, StateLine II, etc.

CITRONIC LTD.

Table listing Modules like SMI 500 Ster. Mix, EVM12 L, NMP303 Mono Mix, etc.

CLEAR TONE

Table listing CMI like 2x15 Ld. cab. 120w, 2x15 Bs. cab. 120w, etc.

PA CABINETS

Table listing 2x10 col. 60w. Pr., 4x10 col. 120w. Pr.

Table listing Tempest 50 T50W, Sup. Stud. 500 50W, Sup. Stud. 1000 100W, etc.

MIXERS

Table listing BO92K 50w, Clubman 50w, Mixer 5 100w, etc.

STEREO MIXERS

Table listing Mxr 12 Echo F, Mxr 12 45.

SLAVES

Table listing UP100, UP200, Phase 100-2, etc.

P.A. SPKRS

Table listing VP25 40W, VP40 40W, 35-1800 Hz, etc.

P.A. HORNS

Table listing 10 100W Bxd Hn.

P.A. BINS

Table listing Eponential 100W, Titan 100 100W, Titan 150 150W.

ELECTRO VOICE

Table listing AC100, AR150, AR400, AR500, etc.

ORTOFON

Table listing G0701, DSS661, DSS673, etc.

FM ACOUSTICS

Table listing E2-E4 Network in housing, E2-E4 Network 3-way, etc.

HORNS

Table listing 1212FX100W FM, 1212GX200W Gauss, etc.

MALCOLM HILL ASSOCIATES

Table listing Modular Desks like 16/2 A series, 16/4 A series, etc.

Table listing 16 Cha. PA Mx., 100w Comb., 200w Comb., etc.

F.A.L.

Table listing Minstrel, Maestro, Bass Fiesta, Phase 50, etc.

AMPLIFIERS

Table listing GA2, GA3, G40R, G50R, G8012B, etc.

FARFISA

Table listing RSC 350, RSC 180, OR 200, TR 70.

FELDON AUDIO

Table listing All prices subject to currency adjustment, EVENTIDE CLOCKWORK, DDL 1745A Dgk., etc.

PANDORA

Table listing A.080-1.80 & 9m/sq., d:1 o/p.t., Additional delay modules, etc.

HORNBY-SKEWES

Table listing MILES PLATTING V.50, V.50-S Spkr., V.100, etc.

JASMYN ELECTRONICS

Table listing PROFESSIONAL POWER AMPS like IC840 Series, 900W 4ch. P.A., etc.

IC 820 Series

Table listing 900W 2ch P.A., Standard, IC 820 Series, etc.

IC 320 Series

Table listing 900W 2ch P.A., Standard, IC320 Series, etc.

STAGE MONITOR AMPS

Table listing IC110M spk./amp combo, 150w/12" spk./horn (Goodsman's/celestion drive units), etc.

GUITAR AMPS

Table listing IC210G 200w tone boost + overdrive.

Table listing INSTRUMENT SPKRS. like 412BL, kd.bs.org, 4x12", 200w, etc.

MINI HORN

Table listing Mini Horn, MONITOR SYSTEMS, Combo, Extension, ECHO UNITS, etc.

HOHNER

Table listing AMPLIFIERS like GA2, GA3, G40R, G50R, G8012B, etc.

SPEAKERS

Table listing M8 OB", M10 L10", M10 N10", etc.

HORNBY-SKEWES

Table listing MILES PLATTING V.50, V.50-S Spkr., V.100, etc.

LIVINGSTON

Table listing SPEAKER CABINETS like 2 ch., 3ch., 2ch., etc.

L.S.E.

Table listing 101 pwr. amp, 102-2 ch. mix, & pwr. amp, etc.

MATAPAC (RADIOCRAFT)

Table listing Mark I trans P.A. amp, Mark II trans P.A. amp, etc.

MACINNES

Table listing AMPS like IC53 Console, D50 60w, D150 140w, etc.

STAGE MONITOR AMPS

Table listing IC110M spk./amp combo, 150w/12" spk./horn (Goodsman's/celestion drive units), etc.

GUITAR AMPS

Table listing IC210G 200w tone boost + overdrive.

Table listing LEM Lem Audio road po., 912 amp 4x12 cab., 911 bc amp 2x12 cab., etc.

ORANGE

Table listing SELF-CONT MIXERS like 101 R 15ch.spr., 104 A 15ch.spr., etc.

SLAVE AMPS

Table listing 103 250W, 111 200W, 111/80 80w RMS, etc.

ROSE-MORRIS (MARSHALL)

Table listing 1959 100w Ld., 1982 100w Bs., 2098 Trans 100w Ld., etc.

COMBINATION AMPS

Table listing 115 80w, 115 R 90w/rev., 115/120 120w, etc.

CABINETS

Table listing 114 1x15 60w, 115 1x15 100w, 113 2x15 120w, etc.

P.A. SYSTEMS

Table listing 101 pwr. amp, 102-2 ch. mix, & pwr. amp, etc.

REVERB

Table listing 115, 2096 2x15 Powercel Reflex, etc.

PA: CE

Table listing 6ch. Mix. Amp./Graphic Equal., F.P.R. Slave 200w, etc.

COMBINATION AMPS

Table listing 2200 Trans. 100w, 2x12 Ld./org, 2201 Trans, etc.

B.L. PAGE

Table listing DYNACORD Echochord Spr., Echochord Mini, Magic HS, etc.

Table listing X41, X61, X81, XE2E, X102E, etc.

ORANGE

Table listing SELF-CONT MIXERS like 101 R 15ch.spr., 104 A 15ch.spr., etc.

SLAVE AMPS

Table listing 103 250W, 111 200W, 111/80 80w RMS, etc.

ROSE-MORRIS (MARSHALL)

Table listing 1959 100w Ld., 1982 100w Bs., 2098 Trans 100w Ld., etc.

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REVERB

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PA: CE

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COMBINATION AMPS

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B.L. PAGE

Table listing DYNACORD Echochord Spr., Echochord Mini, Magic HS, etc.

Table listing SM504 50w comb 4x12", SM504R/rev., SM850 50w Bs. Comb., etc.

ORANGE

Table listing SELF-CONT MIXERS like 101 R 15ch.spr., 104 A 15ch.spr., etc.

SLAVE AMPS

Table listing 103 250W, 111 200W, 111/80 80w RMS, etc.

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Table listing 6ch. Mix. Amp./Graphic Equal., F.P.R. Slave 200w, etc.

COMBINATION AMPS

Table listing 2200 Trans. 100w, 2x12 Ld./org, 2201 Trans, etc.

B.L. PAGE

Table listing DYNACORD Echochord Spr., Echochord Mini, Magic HS, etc.

Table listing SELMER SOLID STATE Ld. 100, Bs. 100, Slave 100, etc.

ORANGE

Table listing SELF-CONT MIXERS like 101 R 15ch.spr., 104 A 15ch.spr., etc.

SLAVE AMPS

Table listing 103 250W, 111 200W, 111/80 80w RMS, etc.

ROSE-MORRIS (MARSHALL)

Table listing 1959 100w Ld., 1982 100w Bs., 2098 Trans 100w Ld., etc.

COMBINATION AMPS

Table listing 115 80w, 115 R 90w/rev., 115/120 120w, etc.

CABINETS

Table listing 114 1x15 60w, 115 1x15 100w, 113 2x15 120w, etc.

P.A. SYSTEMS

Table listing 101 pwr. amp, 102-2 ch. mix, & pwr. amp, etc.

REVERB

Table listing 115, 2096 2x15 Powercel Reflex, etc.

PA: CE

Table listing 6ch. Mix. Amp./Graphic Equal., F.P.R. Slave 200w, etc.

COMBINATION AMPS

Table listing 2200 Trans. 100w, 2x12 Ld./org, 2201 Trans, etc.

B.L. PAGE

Table listing DYNACORD Echochord Spr., Echochord Mini, Magic HS, etc.

Table listing SELMER SOLID STATE Ld. 100, Bs. 100, Slave 100, etc.

ORANGE

Table listing SELF-CONT MIXERS like 101 R 15ch.spr., 104 A 15ch.spr., etc.

SLAVE AMPS

Table listing 103 250W, 111 200W, 111/80 80w RMS, etc.

ROSE-MORRIS (MARSHALL)

Table listing 1959 100w Ld., 1982 100w Bs., 2098 Trans 100w Ld., etc.

COMBINATION AMPS

Table listing 115 80w, 115 R 90w/rev., 115/120 120w, etc.

CABINETS

Table listing 114 1x15 60w, 115 1x15 100w, 113 2x15 120w, etc.

P.A. SYSTEMS

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Table listing 6ch. Mix. Amp./Graphic Equal., F.P.R. Slave 200w, etc.

COMBINATION AMPS

Table listing 2200 Trans. 100w, 2x12 Ld./org, 2201 Trans, etc.

B.L. PAGE

Table listing DYNACORD Echochord Spr., Echochord Mini, Magic HS, etc.

SOUND EQUIPMENT

SOUND EQUIPMENT/KEYBOARDS

ALL PRICES ARE WITHOUT V.A.T.

KEYBOARDS/PERCUSSION

PERCUSSION/GUITARS

SIMMS-WATTS

Table listing various audio equipment including vocal blenders, mixers, and amplifiers with prices.

SOLA SOUND

Table listing audio equipment such as Buckaroo 7w, Mighty Atom, and various power packs.

SOUNDCRAFT ELECTRONICS

Table listing mixer consoles and systems with prices.

SOUNDOUT

Table listing audio equipment like HE1C, HE2C, DL3, and DL6.

THEATRE PROJECTS

Table listing theatre equipment including ALTEC speakers and monitors.

W.E.M.

Table listing audio equipment like copical echo, Halle cat echo, and amplifiers.

Table listing PA900 400w 27, PA1000 Rev., and other PA systems.

TYAS

Table listing amplification equipment like L.C. 60 Slave, L.C. 60 Ic, and P.S. 125 Slave.

VITAVOX

Table listing pressure units, loudspeakers, and ARP Synce sounder.

VOX

Table listing VOX amps and speakers.

Table listing horn units, modular mixers, and 3X3 3-way electronic mixers.

KEYBOARDS

Table listing Hammond and Selmer keyboards.

BOOSEY & HAWKES

Table listing various models of Boosey & Hawkes keyboards.

BRODR JORGENSEN

Table listing Brodr Jorgensen keyboards.

CBS/ARBITER

Table listing CBS/Arbiter keyboard instruments.

CRUMAR LTD.

Table listing Crumar Ltd. keyboard instruments.

Table listing professional and studio mixing consoles.

GALANTI

Table listing Galanti keyboards.

HAMMOND

Table listing various models of Hammond keyboards.

HOHNER

Table listing Hohner keyboards.

LIVINGSTON

Table listing Livingston keyboards.

ROSE-MORRIS

Table listing Rose-Morris keyboards.

SELMER

Table listing Selmer keyboards.

KEYBOARDS

Table listing various keyboard models.

HOHNER

Table listing Hohner keyboards.

KEYBOARDS

Table listing various keyboard models.

ZILDJIAN HI-MAT

Table listing Zildjian Hi-Mat cymbals.

CBS/ARBITER

Table listing CBS/Arbiter drum outfits.

ROSE-MORRIS

Table listing Rose-Morris drum outfits.

PAISTE CYMBALS AND CONGS

Table listing Paiste cymbals and congs.

MINI-KORG SYNTH.

Table listing Mini-Korg synths.

LOWREY ORGANS

Table listing Lowrey organs.

SELMER ELECTRONIC PIANOS

Table listing Selmer electronic pianos.

SELMER ORGAN

Table listing Selmer organs.

KENTUCKY ORGAN

Table listing Kentucky organs.

SELMER PORTABLE COMBO ORGANS

Table listing Selmer portable combo organs.

TOM-TOMS

Table listing Tom-Toms.

RED SOUND

Table listing Red Sound equipment.

HEAVY BAND

Table listing Heavy Band equipment.

FLETCHER COPPOCK & NEWMAN

Table listing Fletcher Copcock & Newman equipment.

HOHNER

Table listing Hohner equipment.

CONGAS

Table listing Congas.

BONGOS

Table listing Bongos.

OUTFITS

Table listing Outfits.

TOM-TOMS

Table listing Tom-Toms.

SNARES

Table listing Snare drums.

FORMULA 602

Table listing Formula 602 equipment.

B62 22"

Table listing B62 22" cymbals.

HEAVY BAND

Table listing Heavy Band equipment.

DRUM OUTFITS/CYMBALS

Table listing Drum Outfits/Cymbals.

SHURE

Table listing Shure equipment.

SIMMS-WATTS

Table listing Simms-Watts equipment.

ASBA METAL

Table listing Asba Metal equipment.

WOOD

Table listing Wood equipment.

CONGA/BONGO

Table listing Conga/Bongo equipment.

ROSE-MORRIS

Table listing Rose-Morris equipment.

Powermate 22" N.P.

Table listing Powermate 22" N.P. equipment.

Image creator 22"

Table listing Image creator 22" equipment.

Image creator 22" Wdshls

Table listing Image creator 22" Wdshls equipment.

Image creator 22" Fgls

Table listing Image creator 22" Fgls equipment.

Image creator 22" Edshls

Table listing Image creator 22" Edshls equipment.

Image creator 22" T-T

Table listing Image creator 22" T-T equipment.

Image creator 22" amp

Table listing Image creator 22" amp equipment.

Image creator 22" Bass

Table listing Image creator 22" Bass equipment.

Image creator 22" Bass

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Table listing Image creator 22" Bass equipment.

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Table listing Image creator 22" Bass equipment.

Image creator 22" Bass

Table listing Image creator 22" Bass equipment.

TOP GEAR

Starfinder twin 15	106.48	CRUMAR	
Super starfinder 200	149.15	KEYBOARD	
Starfinder super80	115.74	Multiman	462.00
Aggressor	120.37	Multiman	
1x12"	40.40	P/board	
1x12"/vol. con.	49.80	Stringman	369.00
2x10"/horn	49.60	Jazzman	399.00
4x10" 100	59.19	Jazzman	305.56
6x10" diffuser	92.59	Jazzman	320.00
Club 2x12"	60.19	Compastring	230.00
Band 2x12"	75.93	Compacbrass	212.00
Club system	74.07		
Band system	87.96		
Four monitor	97.22		
Intruder reflex bin	134.26		
Vendetta sys.MKII	143.52		
2 x 12" Cab	90.74		
X39 reflex bin	263.89		
SE 4121 Ld. 75w.	144.00		
SE 4123 Ld. 100w./Bs.	123.00		
75w4x12" Cab.	136.50		
SE 4122 Ld. 150w./Bs.			
100w 4 x 12" Cab.	153.00		
SE 260 AP 2 x 15"			
Hn. Bn 100w	190.50		
SE 320 AP 4 x 12"			
Hn. Bn 150w	190.50		
SE 2150 150w 2x15"	154.50		
Bs Refl. Cab.			
4 x 12" PA col. 75w	117.00		
4 x 12" PA col. 100w	141.00		
4 x 12" PA col. 150w	157.50		
2 x 12" PA / Mon.			
cab 30w	72.00		
2 x 12" PA/Mon.			
Cab. 75w	88.50		
SA 212 50w 2 x 12"			
Ld. combo	168.00		
100w 2x12" combold.			
Revb/vib	216.00		
SA 412 50w 4 x 12"			
Bs. combo	211.50		
SA 4120 100w 4 x 12"			
All purp. combo	235.50		
PEAVY COMB. AMPS			
Pacer 45w/rev. 1x12"	142.50		
TNT 45w 1 x 15" bs.	157.50		
Classic 50w rev. 4x12"	187.50		
Classic 50w rev. 2x10"	217.50		
Vintage 120w rev.			
2 x 12"	307.50		
Vintage 120w rev.			
4 p 10"	337.50		
Vintage 120w rev.			
6 x 10"	367.50		
Druce 11 120w rev.			
2 x 12"	277.50		
Session 200w rev			
1 x 15"	412.50		
Session 200w rev.			
2 x 12"	427.50		
Session 200w rev.			
2 x 12"	337.50		
Mace 160w rev.			
2 x 12"	367.50		
Mace 160w rev.			
4 x 12"	412.50		
AMP HEADS			
Century 80w all/p.	135.00		
Century 100w all/p.	142.50		
Standard 130w/rev			
all/p	172.50		
Musician rev/eq 200w	247.50		
Bass 200w autormix	232.50		
Festival 110w/rev	232.50		
Foot Master 200w			
rev/autormix	307.50		
F-800B 400w/rev grt.	427.50		
F-800B 400w/bs eq.	367.50		
SPEAKER CABS			
All-p 80w 1 x 15"	97.50		
G/k-brd. 100w 2x12"	120.00		
All-o 150w 2x15"	165.00		
G/k-brd. 200w lge			
4 x 12"	180.00		
G/k-brd. 200w stackable			
4 x 12"	180.00		
G/k-brd. 150w 2x15"			
+ horn	210.00		
Bs/org. 100w stackable			
1 x 18"	210.00		
PA SLAVE MIXERS.			
PA120 80w 4ch/rev	150.00		
PA120 100w 4ch/rev	172.50		
Standard 130w rev mix	187.50		
PA400 200w rev	247.50		
12 input			
PA600 200w 18	450.00		
input mix			

Starfinder twin 15	106.48	CRUMAR	
Super starfinder 200	149.15	KEYBOARD	
Starfinder super80	115.74	Multiman	462.00
Aggressor	120.37	Multiman	
1x12"	40.40	P/board	
1x12"/vol. con.	49.80	Stringman	369.00
2x10"/horn	49.60	Jazzman	399.00
4x10" 100	59.19	Jazzman	305.56
6x10" diffuser	92.59	Jazzman	320.00
Club 2x12"	60.19	Compastring	230.00
Band 2x12"	75.93	Compacbrass	212.00
Club system	74.07		
Band system	87.96		
Four monitor	97.22		
Intruder reflex bin	134.26		
Vendetta sys.MKII	143.52		
2 x 12" Cab	90.74		
X39 reflex bin	263.89		
SE 4121 Ld. 75w.	144.00		
SE 4123 Ld. 100w./Bs.	123.00		
75w4x12" Cab.	136.50		
SE 4122 Ld. 150w./Bs.			
100w 4 x 12" Cab.	153.00		
SE 260 AP 2 x 15"			
Hn. Bn 100w	190.50		
SE 320 AP 4 x 12"			
Hn. Bn 150w	190.50		
SE 2150 150w 2x15"	154.50		
Bs Refl. Cab.			
4 x 12" PA col. 75w	117.00		
4 x 12" PA col. 100w	141.00		
4 x 12" PA col. 150w	157.50		
2 x 12" PA / Mon.			
cab 30w	72.00		
2 x 12" PA/Mon.			
Cab. 75w	88.50		
SA 212 50w 2 x 12"			
Ld. combo	168.00		
100w 2x12" combold.			
Revb/vib	216.00		
SA 412 50w 4 x 12"			
Bs. combo	211.50		
SA 4120 100w 4 x 12"			
All purp. combo	235.50		
PEAVY COMB. AMPS			
Pacer 45w/rev. 1x12"	142.50		
TNT 45w 1 x 15" bs.	157.50		
Classic 50w rev. 4x12"	187.50		
Classic 50w rev. 2x10"	217.50		
Vintage 120w rev.			
2 x 12"	307.50		
Vintage 120w rev.			
4 p 10"	337.50		
Vintage 120w rev.			
6 x 10"	367.50		
Druce 11 120w rev.			
2 x 12"	277.50		
Session 200w rev			
1 x 15"	412.50		
Session 200w rev.			
2 x 12"	427.50		
Session 200w rev.			
2 x 12"	337.50		
Mace 160w rev.			
2 x 12"	367.50		
Mace 160w rev.			
4 x 12"	412.50		
AMP HEADS			
Century 80w all/p.	135.00		
Century 100w all/p.	142.50		
Standard 130w/rev			
all/p	172.50		
Musician rev/eq 200w	247.50		
Bass 200w autormix	232.50		
Festival 110w/rev	232.50		
Foot Master 200w			
rev/autormix	307.50		
F-800B 400w/rev grt.	427.50		
F-800B 400w/bs eq.	367.50		
SPEAKER CABS			
All-p 80w 1 x 15"	97.50		
G/k-brd. 100w 2x12"	120.00		
All-o 150w 2x15"	165.00		
G/k-brd. 200w lge			
4 x 12"	180.00		
G/k-brd. 200w stackable			
4 x 12"	180.00		
G/k-brd. 150w 2x15"			
+ horn	210.00		
Bs/org. 100w stackable			
1 x 18"	210.00		
PA SLAVE MIXERS.			
PA120 80w 4ch/rev	150.00		
PA120 100w 4ch/rev	172.50		
Standard 130w rev mix	187.50		
PA400 200w rev	247.50		
12 input			
PA600 200w 18	450.00		
input mix			

Starfinder twin 15	106.48	CRUMAR	
Super starfinder 200	149.15	KEYBOARD	
Starfinder super80	115.74	Multiman	462.00
Aggressor	120.37	Multiman	
1x12"	40.40	P/board	
1x12"/vol. con.	49.80	Stringman	369.00
2x10"/horn	49.60	Jazzman	399.00
4x10" 100	59.19	Jazzman	305.56
6x10" diffuser	92.59	Jazzman	320.00
Club 2x12"	60.19	Compastring	230.00
Band 2x12"	75.93	Compacbrass	212.00
Club system	74.07		
Band system	87.96		
Four monitor	97.22		
Intruder reflex bin	134.26		
Vendetta sys.MKII	143.52		
2 x 12" Cab	90.74		
X39 reflex bin	263.89		
SE 4121 Ld. 75w.	144.00		
SE 4123 Ld. 100w./Bs.	123.00		
75w4x12" Cab.	136.50		
SE 4122 Ld. 150w./Bs.			
100w 4 x 12" Cab.	153.00		
SE 260 AP 2 x 15"			
Hn. Bn 100w	190.50		
SE 320 AP 4 x 12"			
Hn. Bn 150w	190.50		
SE 2150 150w 2x15"	154.50		
Bs Refl. Cab.			
4 x 12" PA col. 75w	117.00		
4 x 12" PA col. 100w	141.00		
4 x 12" PA col. 150w	157.50		
2 x 12" PA / Mon.			
cab 30w	72.00		
2 x 12" PA/Mon.			
Cab. 75w	88.50		
SA 212 50w 2 x 12"			
Ld. combo	168.00		
100w 2x12" combold.			
Revb/vib	216.00		
SA 412 50w 4 x 12"			
Bs. combo	211.50		
SA 4120 100w 4 x 12"			
All purp. combo	235.50		
PEAVY COMB. AMPS			
Pacer 45w/rev. 1x12"	142.50		
TNT 45w 1 x 15" bs.	157.50		
Classic 50w rev. 4x12"	187.50		
Classic 50w rev. 2x10"	217.50		
Vintage 120w rev.			
2 x 12"	307.50		
Vintage 120w rev.			
4 p 10"	337.50		
Vintage 120w rev.			
6 x 10"	367.50		
Druce 11 120w rev.			
2 x 12"	277.50		
Session 200w rev			
1 x 15"	412.50		
Session 200w rev.			
2 x 12"	427.50		
Session 200w rev.			
2 x 12"	337.50		
Mace 160w rev.			
2 x 12"	367.50		
Mace 160w rev.			
4 x 12"	412.50		
AMP HEADS			
Century 80w all/p.	135.00		
Century 100w all/p.	142.50		
Standard 130w/rev			
all/p	172.50		
Musician rev/eq 200w	247.50		
Bass 200w autormix	232.50		
Festival 110w/rev	232.50		
Foot Master 200w			
rev/autormix	307.50		
F-800B 400w/rev grt.	427.50		
F-800B 400w/bs eq.	367.50		
SPEAKER CABS			
All-p 80w 1 x 15"	97.50		
G/k-brd. 100w 2x12"	120.00		
All-o 150w 2x15"	165.00		
G/k-brd. 200w lge			
4 x 12"	180.00		
G/k-brd. 200w stackable			
4 x 12"	180.00		
G/k-brd. 150w 2x15"			
+ horn	210.00		
Bs/org. 100w stackable			
1 x 18"	210.00		
PA SLAVE MIXERS.			
PA120 80w 4ch/rev	150.00		
PA120 100w 4ch/rev	172.50		
Standard 130w rev mix	187.50		
PA400 200w rev	247.5		

GUITARS

PEARL	
PF 200 Iik.	41.31
PF 250/5 jbo	49.20
PF 250/12 jbo	51.96
PF 155 jbo.	54.13

DANA	
R.30 T/pc.	8.23
R.105	10.67
F.33 Iik.	19.56

SCDB	
SCDBR	200.05
L/scl.bs.	250.00
S/scl.bs.	225.00

JOHN BIRCH

ALL STANDARD/ SINGLE NECK/SIX STRING FROM 260.00	
--	--

ALL TWIN NECKS FROM 450.00	
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BOOSEY & HAWKES

DI GIORGIO	
No 16 Signorina Classic	36.25
No 28 Classico Classic	43.52
No 36 Balsom Classic	85.22
No 30 Amazon Classic	50.92

TAKEHARU	
GT230A small	49.00
GT 308 small	49.00
GT 86	32.30
GT 120	49.00
GT 120	37.00
WT 100 jumbo	36.35
WT 200 jumbo	50.90

VITTORO	
570 small	11.80
575 Full size	18.45
2851 Full size	14.60

CBS/ARBITER

FENDER SOLID BODY	
Jizmstr (500)	263.00
Jaguar (500)	280.00
Strat./Trem.	232.00
Strat.	200.00
T/cstr./d./[522]	251.00
T/cstr./Trem.	271.00
T/cstr. Cust.	196.00
T/cstr./Trem.	
Cust.	234.00
Starcaster	375.00
T/cstr.	180.00
T/cstr./Trem.	225.00
Bronco	112.00
M/mstr.	103.00
Mustang	182.00

FENDER SEMI-SOLIDS	
T/cstr.	234.00
T/cstr./Bigby Trem	258.00

FENDER CLASSICS	
FC10k	30.00
FC10	33.20
FC20	40.60
FC30	52.50
FC40	59.30

STEEL STRING	
F-15	38.95
F-25	45.25
F-35	49.80
F-45	50.85
F-55-12	61.90
F-65-	62.00
F-75	72.90
F-85	105.05
F-95	134.65

BASS	
Precision	185.00
Precision n/nk.	198.00
Precision f/a	185.00
Jazz bs.	223.00
T/cstr. bs.	189.00
Mustang	152.00
M/mstr.	92.00

ANTORIA CLASSICAL	
2839	39.35
2840	45.37
2841	47.22
2850	39.81
2858	53.70
2858 sld.grd.	54.44
F2871 Flmco.	94.44

TAMA	
3561 S	120.83
3569 S	133.33
3568 S Jbo.	119.91
3550 P Grd.	
concert	86.11
3550 S Grd.	
concert	88.89

YAMAKI	
225 12 str.jbo.	93.51
220 12 str.jbo.	83.80
215 12 str.jbo.	75.45
120 5 str. jbo.	81.02
115 5 str. jbo.	62.96
112 6 str. ik.	43.51

ANTORIA	
756 Herald	74.54
757 Gt.Wstrn.Stnd.	58.33
758 Gt.Wstrn.	
Ant. jbo.	103.70
695 N shvlf. 6	40.28
697 D'ngt	69.44
357 Fk	37.96
62 B co Fk.	32.87
627 L/h	47.22
627 B co jbo.	40.74
627/12 B cojbo.	48.15
79 Calif. ik.	34.72
628 Calif. jbo.	47.22
628/12 Calif. jbo.	53.70
684/6 L/h	53.70
685/8 Sld. jbo.	65.00
648/12 Sld. jbo.	56.94
693 Gnt.Jm.d/l	52.78
696 Gnt.Jm	50.00
658 MGI.Wst.bs	71.76
658 Gt.Wstr.jbo	61.57
654 E Sup.Elec.	56.48
698 E Gt.Wst.Elec.	72.68
2374 sem-Ac.id	87.04
2371 sem-Ac.bs	75.46
2370 sem-Ac.id	79.17
1752/AS/mstr.bs.	39.35
1755 S/mstr.ik	48.15
1917 Twncst.bs	47.22
1912 Twncstr.	45.37
2385 Clpr T/boy bs.	107.41
2384 Clpr d/lll	109.25
2386 L/h	127.31
2386 Memphis dtm d/l	
2376 Dixie f/bs.bs.	98.15
2375 Ash	118.98
2375 N Rock'mn	
Natural	97.22
2378 Lc/bst l/h	89.81
2378 W Rock'mn	
White	90.74
2375 Rock'mn	
Maple lb	86.57
2375 Rock'mn	
R/wd lb.	81.02
2386 FLB. F/les	
Bass	75.45
2386 BMksmn.	75.45
2365 B Dixie bs	76.85
2365 Dxmstr.	58.33
2368 Cpr. F/bl.	64.81
2353 LDX. Cpr.	
L/bs.blk.	65.91
2353 Clpr./bs.	58.33
2352 C'iom.	71.86
2352 d/ik.	83.33
2352 MCpr.d/l	56.45
2352 Clpser.	50.00
2354 W/stk.l/bs	80.09
2354 BW/stk.bs	70.83
2394 W/stk.net	77.31
2347 W/stk.jn.	96.30
2338 W/stk.sld.	84.00
2383 W/stk.csm	110.19
2382 W/stk.d/l	86.11
2377 W/stk.pro.	81.94
2354 SL/h	74.54
2354 SW/stk.std.	85.28
2354 W/stk.	67.78
2350 B Mem.bs.	72.69
2405 Mem.orig.d/l	123.61
2391 N Mem.Nat.	77.31
2351 MMem.orig.	85.11
2351 DX Mem.d/l	91.67
2351 Mem.d/l	80.09
2350 L.Mem.sld l/h	77.31

FRAMUS

CLASSIC	
01010	50.92
01210	69.44
01510	137.96

WESTERN 6 STRING	
05011 Dix 6	66.66
05810 Falcon	118.51
D/night	
05550 Falcon	147.22
Jumbo	
05710 Nashv.	180.55
D/night	
05910 Nashv	205.00
Jumbo	

WESTERN 12 STRING	
06011 Dix 12	76.38
06810 Falcon	128.70
D/night	

SOLID BODY	
1010 DS/74	78.70
10200 5/156	127.77
11010 Nashv.	165.74
Sian.	
11110 Nashv	230.55
Stan.D/ik	
11210 Nashv	99.07
Super D/ik	368.51
10980 Jan Akkerman	508.33

SOLID BODY BASSES	
12002 J/156 2	85.18
12510 Nashv.	51.16
627/12 B cojbo.	165.74
12610 Nashv.	
Stan D/ik	368.51
12980 Triumph Bass	239.81

SEMI-ACOUSTIC	
07301 5/120	200.92

JAZZ	
03302 5/60	137.03
13503 AZ/10	382.96

STEELS	
14470 D/4	69.44
14670 FS/1000	
Simple	703.70
14570 FS/2000	924.07
Double	

G.M.S. PICATO

ELECTRIC	
ES77 Rnd gau.	2.32
UL77 R.N.R.G.	2.47
77 L.G.	2.47
P750 Med G.	2.78

ELECT.BASS.	
735 Rnd Long	6.97
735 M Rnd.Med.	6.97
738 L Ny.Long	6.97
738 M Ny. Med.	6.97
738 L Flt. Long	6.97
738 M Flt. Med.	6.97

ACOUSTIC	
727 fik.	2.37
P727 C & W	2.37
P12 12 str	3.89

CLASSIC	
76 Grnd. Nyl.	1.86

HOHNER

ECONOMY	
500	8.89

MUSIMA	
1612 N	13.56
1612 S	13.24

RESONATA	
730 class	16.43
731 class.	18.15
732 class	22.73

MORIDAIRA	
841 class	20.83
842 class	24.86
843 class	27.22
845 class	30.25
846 class	50.46
847 Jbo	41.87
848 Jbo.d/l	54.30

ZENTA ELECTRICS (NEW MODELS)

EG501	21.60
EG502	23.92
EG51	25.20
heg5006	30.40
HEG5004	38.40
HET5001	32.80
HES5000	34.00
HEP5002	42.40

KEMBLE

CLASSICS	
G 56	33.33
G 65	37.03
G 90	40.09
G 120	45.61
G 150	50.92
G 180	61.44
G 220	72.52
G 280	89.81
GC 3 H/made	111.11
GC 6 H/made	157.40
GC 10 H/made	212.96

FOLK	
FG 75	39.30
FG 11 ON	43.57
FG 160 Jumbo	53.95
FG 170	55.12
FG 200 N Jumbo	67.22
FG 260 Jumbo, 12 st.	76.57
FG 280 Jumbo	76.98
FG 300 N Jumbo	99.07
FG 360 Jumbo	101.65
FG 580 Jumbo	123.79
FG 1500 H/made	336.11
FG 2000 H/made	379.62
FG295	80.00
FG70GS With Handmade	
Case	179.00
FG1000 With Handmade	
Case	259.00
FG1200 With Handmade	
Case	289.00

FOLK & PICK UP	
FG 110 E	53.05
FG. 160 E	64.53

SEMI-ACOUSTIC	
SA. 60	78.18
SA. 60	175.60
SA. 90	221.21
SA. 75 Bass	183.84

SOLIDS	
SG 30	77.26
SG 35	83.64
SG. 40	104.52
SG. 45	109.10
SG. 86	160.89
SB. 35 Bass	93.64
SBL 55	138.02
SBL 75	189.09

ACOUSTIC ELEC.	
AE 12	200.33
AE 18	263.01

IVOR MAIRANTS

MARTIN	
D 18	231.50
O 28	305.68
D 35	319.47
D 12-28	314.84
D16NY/case	231.48
D 41/case	509.30
D021/case	324.10

ARDSTEGUI	
No.2	18.52
No.4	20.37
No.6	22.22

OSCAR TELLER	
748	69.45
77/case	97.23
8P/case	166.68

CALABERT	
OS	18.52
A	20.84
B	24.08
C	30.56
E	69.45
Falobanto/case	92.60

Class. Balladeer Nly.st.	241.65
Folklore Steel st.	272.06
Cust. Balladeer 6st.	256.82
Class. Nylon string	325.30
Core. cl. nyl. string	256.82
Legend 6st. steel	313.15
Artist 6st. steel	258.35
Country Art. Nyl	268.35
Electric Art. steel	348.15
Electric country art	348.15
Nyl	348.15
Electric Clas. Nyl.	409.01
Electric Folklore	
Steel	365.76
Electric Pacemaker	
12 st.	416.55

SAXON CLASSIC RANGE

810	18.51
813	29.16
814	31.25
815	39.58
816	46.06

FOLK RANGE

812	26.62
817	33.33
818	37.50

JUMBO FLATTOP

819	36.11
820	40.27
821	40.74
822 12 str.	41.20
823	40.74
824	53.70
825	57.40

SOLID RANGE

830	55.20
831	52.99

SELMER GUITARS

Rancher 6 st.	25.69
C = W	31.48
Rancher 12 str.	80.00
C = W	

JUMBO ELECTRIC FLATTOP

J-160E	280.00
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GIBSON 12str FLATTOP

8-45-12N Deluxe	284.25
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GIBSON LTD ED.

cataton outfit	2320.00
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MSA PEDAL STEEL

CS-10	780.00
Side Kick	386.40
Red Baron	300.0

ARBITER GUITARS	
Cls. C10	23 10
Cls. C15	36 20
Cls. C20	49 75
Jbo. J110	31 90
Jbo. J115	40 15
Jbo. J120	43 45
Jbo. J125	45 00
Jbo. J130	80 30
Elec. E250	1 p/u sid
Elec. E255	24 75
Elec. E260	2 p/u sid
Elec. E265	37 95

GRECO GUITARS	
Elec. E210 LP	82 50
Mod. S/B	82 50
Elec. E215 LP Mod.	85 00
S/B Split p/u	92 40
Elec. E220	114 40
FSG Mod.	114 40
Elec. E225	106 70
FLV Mod.	106 70
Elec. E230 SG 3 Gld.	95 70
p/u w/ trem.	99 00
Elec. E245	99 00
Elec. E265 Ster	135 00
bs	170 00
Elec. E215/E270D/Lx	170 00
Elec. E275 dble nk.	165 00
6 str. x Bs	

MELODY	
1200	34 65
1500	43 71
2500	30 81
525	38 09
325	13 00
450	21 81
480	29 94
350	15 33
600	34 47
1300	39 38

MIAMI	
FT1	25 35
FT2	29 83
FT1 Bs.	32 69
KLIRA	
Westbury	54 79
310 Elec.	59 93
360 Bs.	58 75
Blue Hill 6	62 17
Blue Hill 12	80 13
SM8 Solid	90 57
SM9 Solid	75 86
355 Bs.	75 86
149 Classic	27 61

GUYATONE STEEL	
HG91	20 65
HG306	55 52
HG188 C	85 71

CAMI	
Custom 6	109 95
Custom 4	122 76
Salisbury	109 95
SG2 S	42 05
SG10 B	41 06
ST300	64 42

HASHIMOTO CLASSIC	
G100	38 72
G130	44 18
G160	51 41
G200	57 79
G250	59 68

J.T. COPPOCK	
DOBRO	163 89
Hnd. Dg sq nk.	163 89
B/grsd nk.	163 89

NATIONAL DOBRO	
33 D Dia. ench.	253 88
30 Gd. enam.	175 00

HAWAIIAN	
2390 Gir.	21 75
2391 D/Hit	42 61

ANTHONY CLASSICAL	
361	30 09
RA2	31 02

2350 Ctm. Cust.	
Snd. Bst.	76 85
2350 Mem. sid.	71 76
2350 G Mem. Custom	77 31
2357 Mr. Strad.	47 22
10p. bs	47 22
2355 Bg. Jhn.	112 96
S. Ac. Mpl	112 96
2355 Bg. Jhn.	112 96
Sac S'bst	101 85

DAVOLI	
Les Paul 6 str.	90 00
mahog gld	90 00
Sup. Les Paul	101 50
mahog gld	101 50
S.G. Type 6 str.	85 00
Walnut gld	85 00
Les Paul Bs.	90 00
mahog gld	90 00
G.2.Bs. Wal. gld.	90 00
Jazz bs. Nat. Chr.	95 00

FLETCHER, COPPOCK & NEWMAN	
KIMBARA ACOUSTICS	
N105 Cls.	26 39
N106 Cls.	27 73
N169 Cls.	28 06
N175 Cls.	35 09
N29 Cls.	43 06
N108 Cls.	55 51
N75 Cls. w/cs	76 20
N76 Cls. w/cs	96 30
N30 Flk.	30 70
N71 Jmb.	35 86
SG 12 str	40 69
N73 Jmb.	49 96
N107 12 str	52 31
N95 Cust. c/w	92 55
blend w/c/s	92 55
N95 Cust. c/w	92 55
sws. w/c/s	92 55

ELECTRICS	
N114 Solid Bk	90 80
w/cs	90 80
N115 w/c	90 80
N116 sun	90 80
N117 nat.	90 80
N118 mahog.	76 40
N120 white	105 60
N121 nat.	114 40
N122 Bass sun	105 60
N124 Nat.	114 80
N125 stereo Bass	171 20
nat w/cs	171 20
N126 Bass nat.	111 20
w/cs	107 20
N128 Solid nat.	107 20
w/cs	107 20

RESONATA	
N87 classic	17 58
N89 Classic	23 15

VICTOR GARCIA	
Custom 4	22 92
N188 Spanish	23 04
N189	26 76
N127	26 76

LORENZO	
N98 Student	12 92
N111 Cls.	14 12
N99 Cls	17 55
N110 Flk.	13 84
N102 Flk.	22 64
N103 Jmb.	27 41
N104 12 str.	28 06

COLUMBUS	
N197 Jumbo sun	31 96
N122 12 str	34 36
N36 S'ac. 6 str	45 20
N83 solid	32 76
N84 Bass	38 04
N113	39 68
N85 Bk.	50 35
N82 S' sun	50 35
N82 S' p/u	45 20
N54 mahog	43 80
N65 Bass	46 04
N77 sun	51 15

849 12 str. jbo.	
850	53 61
855/F301 Fk.	35 42
855/F303 Fk.	46 57
851/W613	86 81
852/W61030 Jbo.	46 34

HONDA	
H130	24 95
H150	24 95
H155	27 13
H160 12 str. jbo.	31 94
H175 Jbo	27 41
H180 Jbo. D/L	29 35
H200 Folk	31 53
H210 Jbo	35 74
H220 12 str. jbo	14 12
H305 Class.	21 39
H310 Class.	27 92
H320 Class.	27 92

ELECTRIC	
AT2T	27 92
FB 1W Bass	60 74
FT 2T	30 05
JB 2 Bass	54 63
JB 200 Bass	48 38
HB 200 Bass	74 49
LE 200	79 77
l-bG 23R	72 36
LP 200 G	54 77
LS 200 C	33 61
NBHD 200 Bass	39 58
ME 20 TS	41 25
PM 302	42 69
PM 302 Bass	40 37
SA 200	36 81
SE 2 B Bass	28 61
SE 2	37 36
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d-t	Disc to tape	
Q	Quad	
OTC	Over/Time charge	
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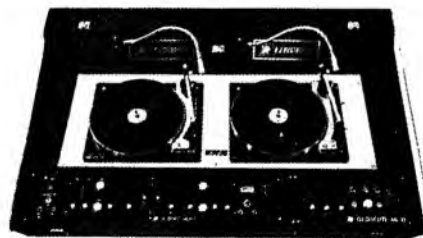
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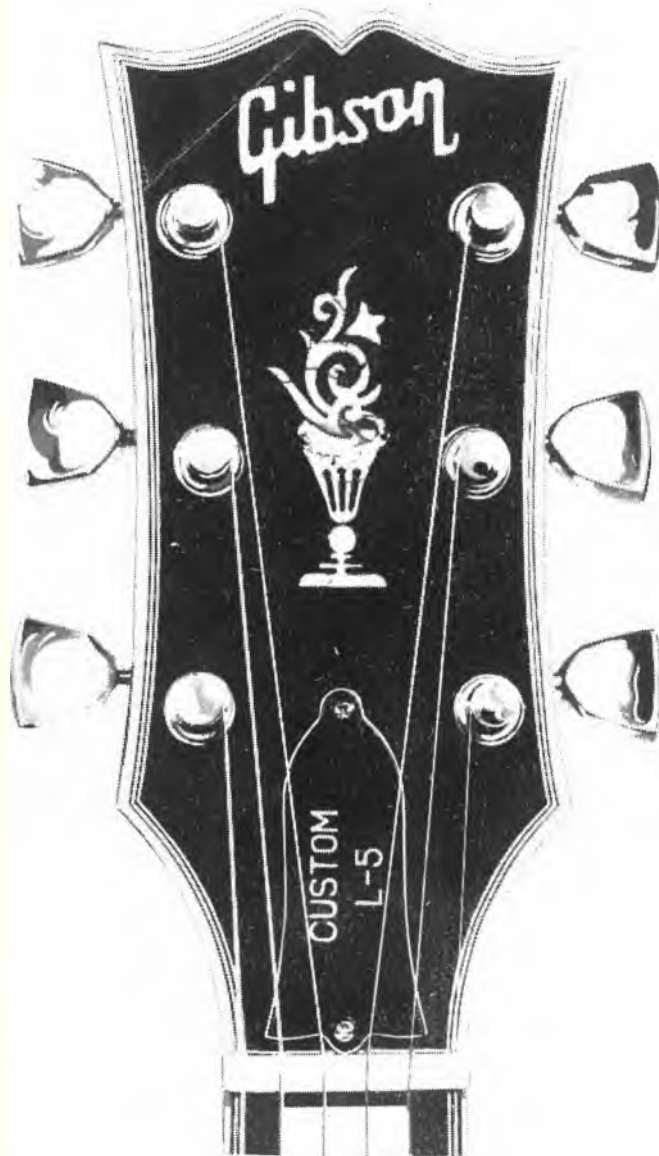
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