

INTERNATIONAL Musician

AND RECORDING WORLD

November 1977 40p

B-J NEWS



OLD GREY
WHISTLE TEST

HOW TO GET ON TV

Ian Anderson

TESTS

Hagstrom Semi-Acoustic

Beverley Drums

PA:CE Intermusic Combo

Build a Mixer · Renovate a Revox

Playing · Carlsbro Market Report



MICROPHONES
MATTER
MOST

SHURE

SEE PAGE 51

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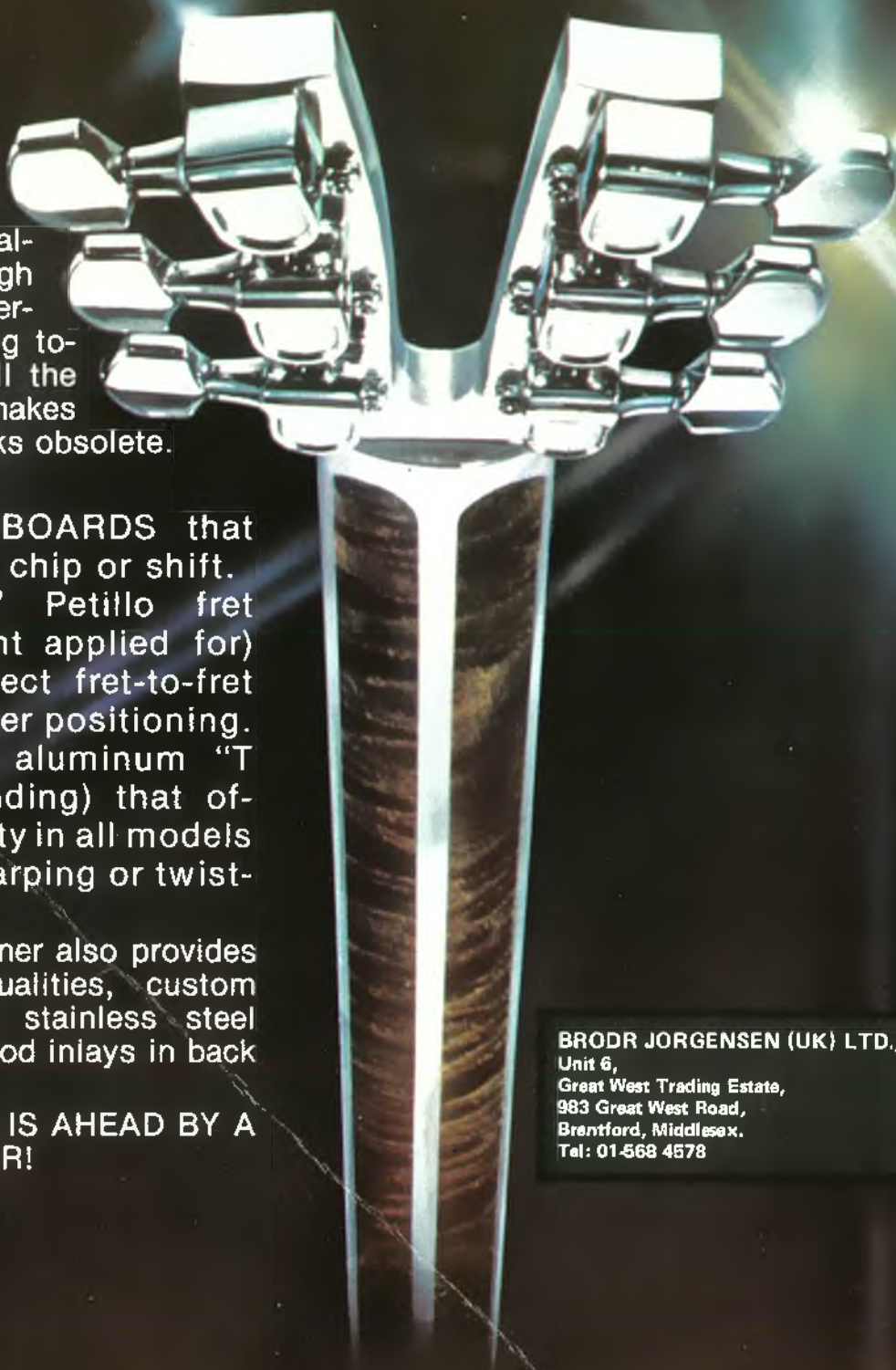
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Regular Features

12	Letters
	More from you on strings and things.
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55	I.M.'s Guide To Recording
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85	Playing — Keyboards
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87	Playing — Drums
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79	Drum Repairs
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60	ALBUMS
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81	News Extra
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201	Ad Index

A thousand thanks to Sad Cafe and Mike Appleton and his team at the BBC for their help in our cover shoot.

Test Section

SOUNDCHECK

36

What has two 12" speakers, built-in flight case and phaser, two channels, and sells for about £200. Page 36 will reveal all with the expert guidance of Blake and Sawicki to unravel the mysteries of the PA:CE Intermusic combo (oops).

delft's GUITARCHECK

38

Stephen was suitably impressed by the Hagstrom Viking semi-acoustic guitar. As they say on Broadway "this one will run and run". What with Abba and guitars of this quality, is Sweden the Future of Rock and Roll?

41

It's Delft's Golden Oldies time again as Guild M.20 acoustics get an appraising eye. If you own one of these instruments this is your lucky day. Even now, buyers will be beating a path to M.20 owners' doors.

henrit's DRUMCHECK

44

As well as being a famous team of singing sisters, the name Beverley also stands for a fine kit of drums. Belting Bob Henrit takes his sticks to a top kit of Beverley drums and finds they withstand his onslaught very well indeed.

IN BRIEF

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A double helping of In Brief this month (the second dollop starts on page 46) and it's pedals, pedals all the way from the new Ibanez range to amazing marvels from Bell Electrolabs and Mighty Mouse.

Special Features

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Television

No we don't mean the band, rather IM's recipe on how you too can wallow in clouds of dry ice in a TV studio. It's not all Top of the Pops and Whistle Tests as contributor Beverley Legge discovers in his magnum opus "So you wanna be a (television) star?". Just don't blame us if the makeup makes your skin break out.



52

The Naked Revox

Alan Holmes unique guide to updating and refitting a Revox. Or how to keep these legendary machines running endlessly. Who said a perpetual motion machine was an impossibility?

136

Build A Mixer

Sorry to disappoint all you chefs who thought this series would help you make cakes. We're now into the second part of Mark Sawicki's do-it-yourself. Next year "How to Build A Time Machine"

56

Ticket To Ride

Ian White chances his arm and picks Meal Ticket as a major band for '78. When you've got a bunch of musos as good as the "Tickets" something has got to give. Roll over Beethoven.

140

Switching on the Brass and Ironing out the Bugs

The second part of Alan Holmes amplification guide for brass players in which he unravels the secrets of the King Octi-voice and delves deeper into the Tootalbug.

64

Gordon Giltrap

Since going to press, Gordon has released his latest album "Perilous Journey" and a fine album it is. We talk to the man about his influences and the story behind his last impressive record "Visionary".

144

Premier Tri-lok stands

Premier's new stands have created no end of interest amongst drummers and who better than Bob Henrit to lead you through the ins and outs of Premier's new babies? Answers on a postcard.



150

Effects Flanging

Flanging is definitely this season's thing and Stan Wilson gives a boffins-eye-view of how your guitar is turned into an inter-galactic space craft when you plug into a flanger. And if you thought the "Bucket brigade" was a firm of office cleaners, read on.

68

Ian Anderson

Eamonn Percival finally tracked Jethro Tull's main man down at his Buckinghamshire estate where the most incredible collection of Martins was laid bare to our intrepid reporter. Ian has guitars so old they were probably antiques before your grandfather was born.

188

Foldback

Ken Dibble at last reaches a climax and by now dear reader you should have the key to the clearest fold-back methods this side of Abbey Road. Next month Ken starts an exciting new series on speakers. And we're not talking about Hyde Park either.

Editorial

A musician in Fife has raised issues which are bound to prove controversial amongst our readers. You can read John McFadyen's letter on page 73 of this issue.

But we would like to comment on the assertions he makes that bands who play cabaret material from quicksteps to rock are looked upon with scorn by the majority of contemporary bands.

To some extent this may be true. But musicians in any field will always appreciate genuine talent in another player whatever is being played.

It takes a certain amount of artistic courage for a band to play music it believes in rather than tailoring its repertoire to a specific audience demand. Cabaret musicians who, in Mr. McFadyen's words, involved in "dreadfully square activities then go and play their music in the weekend" must be aware that they are re-creating the work of musicians who have recorded and created the work before them.

While this is not a bad thing, such musicians must realise the debt they owe to Rock music generally for supplying them with the inspiration and material to play in the first place. Mr. McFadyen, with his talk of short hours and perks, seems to see music as a means to an end. While doubtless he is playing competently to audiences who appreciate his repertoire, International Musician feels that music is there to be enjoyed for its own sake. You do not need glittering new gear to make good music.

On the other hand, it is wrong for bona fide Rock artists to "Sneer at bands who comb their hair, and dress up in matching suits". But, at the same time, a neat appearance is useless if the music is not competent in the first place.

Mr. McFadyen and his colleagues can make their honest buck by entertaining the wider public. But any musician worthy of the title should always be looking to other players for self-improvement in playing and techniques. There is prejudice on both sides of the fence. We hope Mr. McFadyen's arguments will encourage all readers to think about this important debate.



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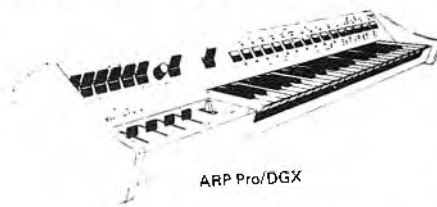
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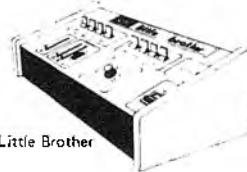
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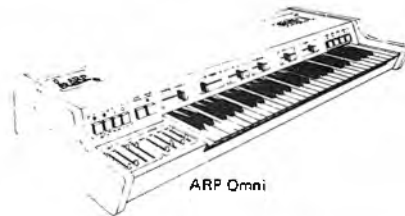
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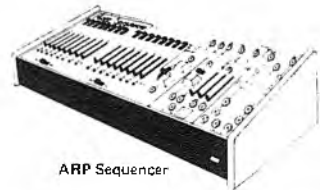
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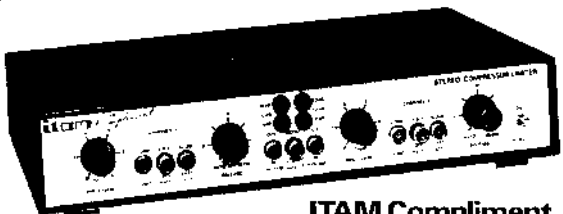
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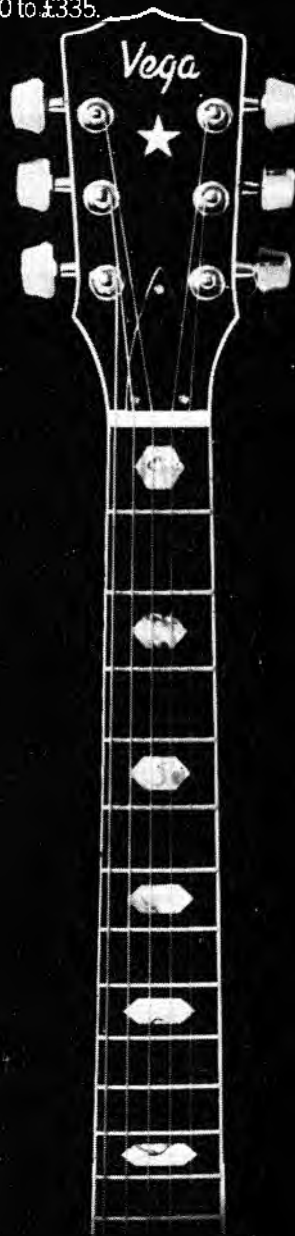
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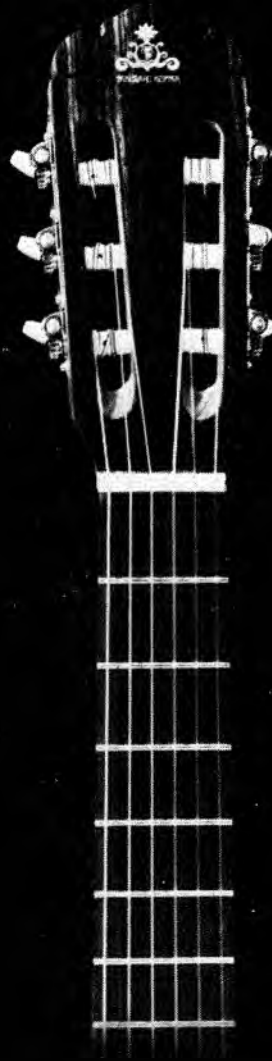
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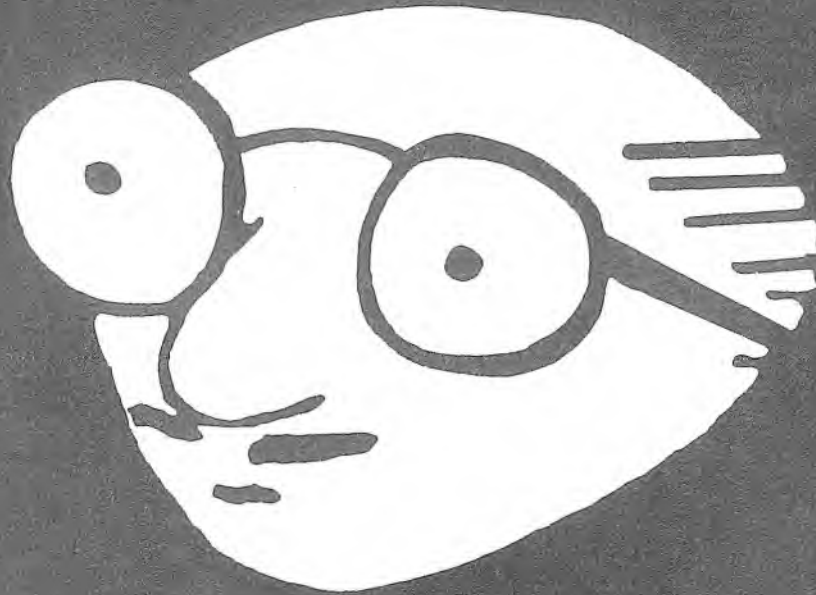


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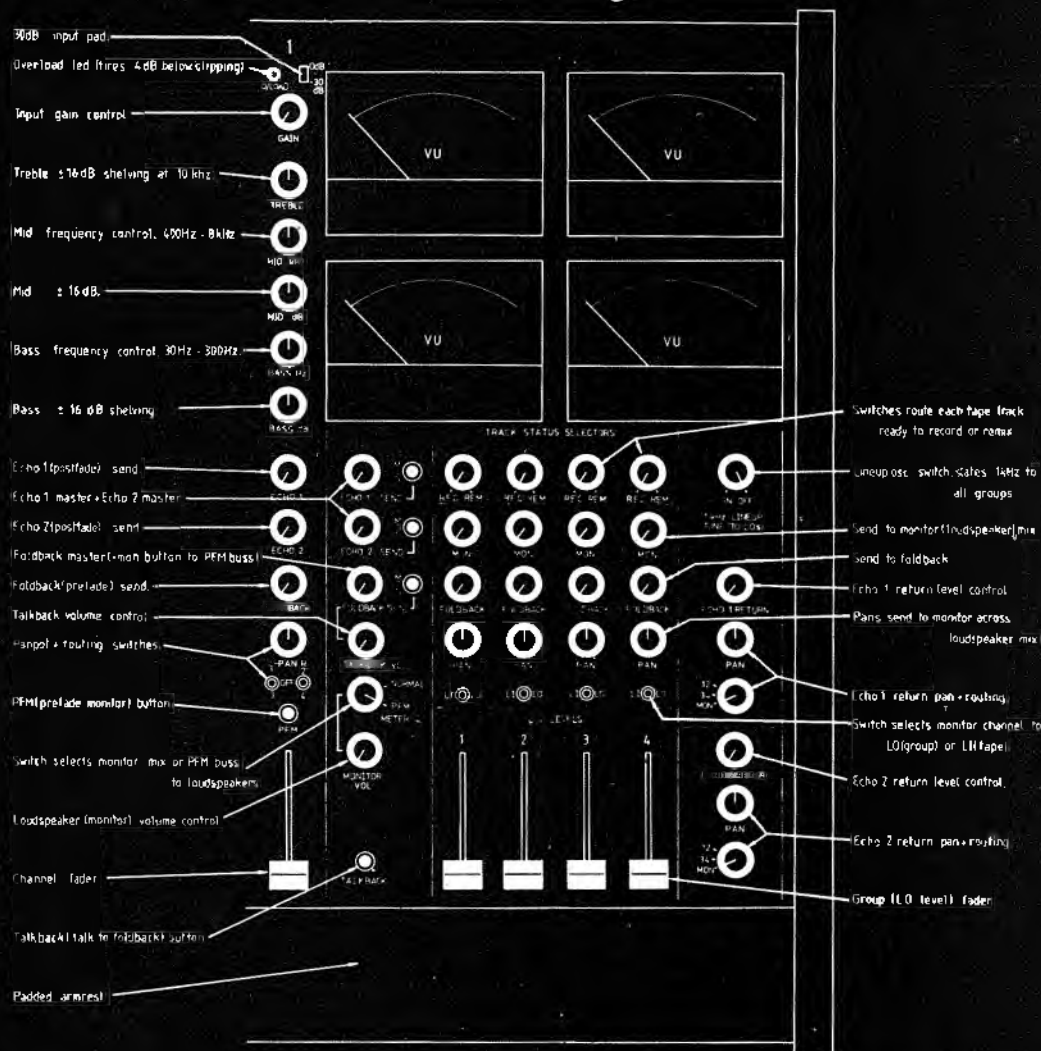
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String Bag

Dear Sir: I have read with interest the letters in recent editions of I.M. concerning strings as I am at present in the process of systematically trying out various makes. As I can only afford to change my strings every three to six months it is likely to take me a few years to try even the most popular brands. In the October edition of I.M. you state in reply to a readers letter that you cannot carry out tests on strings because there are so many variables involved. I would like to offer the following comments on this.

1. Whether or not one likes the sound of a string is obviously going to be a subjective matter to a degree; however surely this is equally true of the guitars, amps etc. which you review. At the very least you could help guitarists trying out different strings to eliminate the very worst ones from their lists.

2. You state that you don't carry out such tests because there are so many variables involved beyond the actual string. This again is no doubt true; the obvious variables being the type of guitar, how it is set up and so on. However again is this any less true for the guitars that you review: the resultant sound again depending on the type of strings, the way it is set up, amps used etc. I would in fact expect that the quality of strings will vary less than the quality of guitars.

3. Finally at the very least would it not be possible to compile a chart composing the prices, gauges and materials used of at least the major makes of strings?

Presumably, all guitarists are concerned to get the best out of their instruments especially those of us who can only afford modestly priced ones and finding a suitable set of strings seems to be one (relatively) inexpensive way of achieving this.

If you are unable to implement my suggestions it would be a help if other guitarists could write to you with their comments on types of strings etc. For a start here is a short account of my experiences in trying to find the ideal set of strings for my Epiphone FG140. The strings supplied with the guitar (new) sounded good but I have no idea what make they were. The first set I tried was the Gibson GB400 (medium) one as these were the makers recommended replacements but was disappointed, even when new they didn't sound good and they quickly deteriorated from even that low standard. Then I tried Martins (M140 light), twice the price but soundwise certainly worth it. However the second string on each of the two sets I have tried broke as I was attaching it. On the advice of my dealer I wrote to Boosey & Hawkes (the distributors) who replaced the string free of charge by return post. I haven't used these strings since. Next came a D'Addario medium set which has been the best so far sounding as good as the Martins but about 40p cheaper and no breakages. Although I was satisfied I decided to carry on trying others and bought a set of Earthwood light gauge. Again no breakages and the sound is comparable to the D'Addarios and the Martins but the price is similar to the latter.

The Earthwood light gauges are lighter than the Martin light gauges however and I think too light for my kind of playing. Now I think I'll try a set of Guilds.

If you publish this letter I hope my experiences are of some use to other guitarists with a similar instrument.

One final remark. I enjoy Stephen Delft's reviews but what about looking in detail at some of the cheaper guitars in the £50-150 bracket. Also what about an

article (or articles) on setting up a guitar. Best wishes and thanks for a good magazine.

Dave King,
Oxton,
Birkenhead.

We hope you've finally found the string of your dreams. It really is difficult to review strings in the conventional sense. One guitarist might go through one set in two nights while another musician will be happy with his strings for weeks. We hear Ry Cooder changes his strings annually! Nevertheless your suggestion for a chart comparing prices and materials used is a good one and will probably materialise as a feature in IM over the next few months.

The reason Stephen Delft doesn't review "Cheap" guitars is that we just haven't the space to carry more reviews than we do. Obviously with such a limitation on space we try to feature guitars that would serve working musicians the best and this counts out most of the sub-£150 guitars.

Dear Sir: Having followed with interest the correspondence, inspired by Kimberley Rew (I.M. July and October issues) and his strings problem, I think that I may be able to offer some solution to the problem.

I am a Folk musician and I play eight different stringed instruments, but I rarely seem to break a string. The strings on my Yamaha FG260 12-string for example are even higher than those used by Mr. Rew, the top E being a mere .009 in. I use Earthwood Light Gauge Strings on my guitars, and Black Diamond or Rotosound on my assorted Banjos and Mandolines. I have used most makes of string at some stage, but I cannot recall any particular make being more prone to breakages. I change my strings at infrequent intervals, and have been known to keep a set fully intact for months, even with regular playing. On that record, I don't think the string manufacturers are necessarily to blame. All of my instruments are acoustic, so they are generally played with a fair degree of enthusiastic plectrum work, particularly at Medieval Banquets where there is a high degree of noise and no amplification at all.

My solution is therefore based on a more scientific basis, and since Mr. Rew's guitar is of a quality which should exempt it from any proportion of the blame, might I suggest that the fault lies in the fitting of the strings. A recent article in I.M. by Stephen Delft dealt with the tying-on of strings at the machine heads and since my strings have always been tied on in a similar fashion, perhaps this is why I have a reasonable record of success with my strings. If a string is not secured properly to the machine head, it will slip when being tightened for the first time and will continue to slip during the first part of its life. When a string is under such tension and still slips, it is certain to be weakened, particularly at the points of contact (the nut and the bridge), and this is where a string is likely to break. Under such conditions a string may last 5 minutes or 5 days depending on how much slipping took place when the string was tightened.

I should be interested to hear Mr. Rew's comments on my suggestions, and particularly interested to hear whether anyone else agrees with my comments. If anything the quality of strings has improved tremendously in recent years from a durability point of view and all I can add is that I hope that the string manufacturers maintain their excellent standards. Ian Hartland,
Birmingham.

Licensed to thrill?

Dear Sir: I would like to make a humble contribution to the "musician versus DJ" saga. I am a sound engineer, a composer, DJ, and have played in bands. I am actively involved in promoting live music. This does not prevent me believing that there is a place for the discotheque, providing the discotheque is correctly licensed.

Every discotheque should hold two licences: the Phonographic Performance Ltd. Licence and the Performing Rights Society Licence. The PPL licence allows the DJ to use records for public performance providing that live music is also performed at the same venue. The PRS Licence protects the interests of composers. Most disco's too are breaking the law. If these licences are held, musicians and DJ's both work. But discotheques are not sticking to the rules - and thus bands are losing work. More control over the licensing at discotheques would ease a great many problems.

Dick Childs,
Woodburg,

Nr. Exeter, Devon.

Voice box query

Dear Sir: Many thanks for a wonderful magazine.

What I would like to know is, how does a "Voice-Box" work, how is it used, and if it's possible for you to print a photo of it.

Thank you,
Ioni Louisides (Miss)
Limassol, Cyprus.

The principles of a voice-box are a lot simpler than most people think. The signal from a guitar (or other instrument) to an amplifier is intercepted when the box is activated. The signal is then diverted to a horn driver in the voice box (various ratings from 15 watts to 100 watts). The sound then travels up the plastic tube (which is attached to the driver) and into the player's mouth. By changing the shape of your mouth, you "shape" the sound produced from the instrument. The idea is to hold the tube in your mouth about two or three inches away from the microphone. The signal then goes into the mike, to the PA amp and then through the PA speakers. Various effects can be obtained such as simulated phasing, wah-wah and "talking instruments".



Joe Walsh and Voice Box

Essex rocks

Dear Sir: I am sorry to see Colin Rowe of Strahl (Letters, September issue) thinks that Essex is dead, he is grossly mistaken.

Mr. Rowe (I always like to be polite) has contacted Southend Action Group for the Arts (SAGA) on several occasions, and his communications are with me. In one of these letters he states, and I quote, "We have plans for promoting our own concerts in the area and we seem to be getting quite a following of people at our rehearsals on Sundays. We are also planning on going up north on a couple of dates, also the Roxy Club, Chancellors Hall Chelmsford, and the City Tavern Chelmsford." With all this information in mind it seemed that Mr. Rowe and Strahl's manager, David Hall, were gaining quite a lot more experience than most of the lesser known local bands. They did not sound like a band who are desperate for work.

To answer the Editorial footnote to Mr. Rowe's letter, the Ballroom Blitz mentioned, was a two-part concert, part one on Sunday 28th November 1976 and part two on Sunday 5th December 1976, which were part of an Open Door Arts Festival held in Southend in October, November and December of 1976. Each Sunday of the 'Blitz' ran from 12 noon to 12 midnight, involving 13 groups in each session, a tall organisational order, if ever there was one. All groups appearing were asked if they would be willing to appear for free, and all those that did, including Strahl, agreed to this. As a form of 'thank you' to the bands for doing this, it was decided to inform recording companies, and agents, of the event, to see if they wished to send a representative along to sample the local talent, and a fair number were present at one time or another during the two twelve-hour sessions.

Just to finish answering Mr. Rowe's letter, how the hell do you hold a Ballroom Blitz in the Open Air? To bring things more up to date I would like to inform you of subsequent events since the Ballroom Blitz.

I personally wanted to make work for bands in the area, and I presented this idea to the SAGA Committee of that time, who, after agreeing that the Ballroom Blitz was a great success, considered it a good idea. I was introduced to Jon Paul, a well known promoter in Southend, and a partnership was cemented soon after this, and on Sunday 10th April 1977 the Queens Club, Queens Hotel, Westcliff, was re-opened, featuring the Lew Lewis Band.

In Southend we are blessed with a few good local bands who have a good following, so that we could use them as the headliners and leave us the chance of using many of the small unknown bands as support.

The club was formed with one thing in mind — to help local bands, not only by giving them the gigs, but the chance to gain confidence, which is the thing that all bands need right at the beginning. Only once have we strayed from this policy and that was when the Damned and the Adverts were banned from playing the Kursaal, Southend on a Saturday and we obliged them by allowing the gig to take place on the Sunday.

In the last few weeks we, the Queens Club, organised a Rock Competition for the bands in the area. Full details were published in the local press, and quite a few bands applied. Our main concern was whether we could entice the established local bands to 'chance their arm' against the lesser known bands. The only way we could do this was to try and make the prizes as attractive as possible.

We were fortunate enough to gain first prize of a recording audition with Phonogram Records, plus a £50 voucher towards equipment, plus a small amount of cash, and second and third prizes of record tokens plus cash. Judges for the contest, which included John Staines of Phonogram, and Jonathan Cooke of Tramp Promotions were also on hand if any of the bands wished to seek advice on their performance.

As I have said before, all this is being done to help local bands through the first tentative steps to possible stardom.

I am sorry if I have gone on a bit, but you can put it down to Mr. Rowe and his desperate and out of work group.

"Big" Denis Fewtrell
Essex.

"Orange" squash

Dear Sir: Further to your article concerning the "Electronic Orange" sound level switch manufactured by Castle Associates, you may be interested in bringing the following comment to the attention of that company.

I am an English guitarist currently living and working in Sweden, where a great many of these units are in use in live music venues due to a Swedish law limiting the sound pressure level in any person's place of work to 96 dB. While I have no objections to the imposition of reasonable sound level limitations, I do object most strongly to the use of this device, as my considerable experience of it in the course of my work has shown it to be hopelessly inefficient and inaccurate.

The system has a number of serious drawbacks — first and foremost, of course, the risk of damage to electronic equipment connected to it. I have bitter and expensive personal experience of this with both guitar amps and PA slaves. Secondly, these units (or perhaps the cheap microphones used with

them) have a wickedly poor frequency response, and are much more sensitive to high frequencies than to low. I have found that certain high notes on guitar at very low levels will activate the system almost immediately, while bass guitar at almost any level has practically no effect. Thirdly, these units are almost never installed correctly — according to the notice which Castle Associates provide to be displayed to inform musicians of the use and effects of the system, it "measures 96 dBA on the dance floor" — if someone can explain to me how it can do this with the microphone installation on stage, I will be most grateful. If these units are to be used at all, then installation must be carried out by a trained sound engineer, and should be calibrated using a reference meter, account also being taken of room acoustics and size. Installation is no job for an ordinary electrician. Fourthly, and please correct me if I am wrong, it seems to me that a system calibrated in dBA is eminently unsuitable for measuring music levels.

The system can of course be defeated in several extremely simple ways — simply disconnecting the microphone, however, is of no use at all, as pins 3 and 4 in the microphone connector (a standard 4-pin DIN plug) are shorted together to form a simple switch when plugged into the active unit, so that the unit passes no current to amps and instruments if the plug is removed.

I have come across several other sound level limiting devices which are generally available, and all of them seem more accurate.

Paul Guy,
Stockholm.

What Bass?

Dear Sir: I have been a subscriber of your magazine since it started and I am writing for the first time to seek help from you. I would like you to recommend to me an average bass guitar costing around the region of £100-125 which is suitable to play Funk, Soul and Blues numbers. Please tell me what type of strings are best for this type of music. Do you recommend any effects for the bass guitar? How about the Doctor Q or the Mole and Hog's Foot Bass Boosters from Electro Harmonix. Your expert help will be greatly appreciated.

Oomar Khatib
Woodford Green, Essex.

Your wish is our command. Turn to Jim Radford's Playing piece in this issue where our favourite Bass player gives a guide to the whys and wherefores of buying a bass.

Gibson "seconds"

Dear Sir: With regard to the correspondence on the subject of Gibson quality control I feel I should clarify the position. It was the policy of Henri Selmer and Company Ltd., in years gone by to offer a limited quantity of second quality instruments to the trade. At such times no effort was made to conceal the fact that these instruments were second quality, hence your letter from Mr. Cannon.

However, in reply to Mr. Cannon I certainly do not want to hide this fact. Henri Selmer and Company Ltd., was taken over by Norlin Music (U.K.) Ltd. Much as I am delighted to hear that Mr. Cannon is pleased with his instrument I must repeat the statement made in my first letter.

Norlin Music (U.K.) Ltd. do not supply second quality Gibson guitars.

D. Ellis (Sales Manager)
Norlin, Braintree.



The Damned: banned at the Kursaal

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If you want aggro go somewhere else. If you want service and low prices come to Andertons.

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A is for ANDERTONS

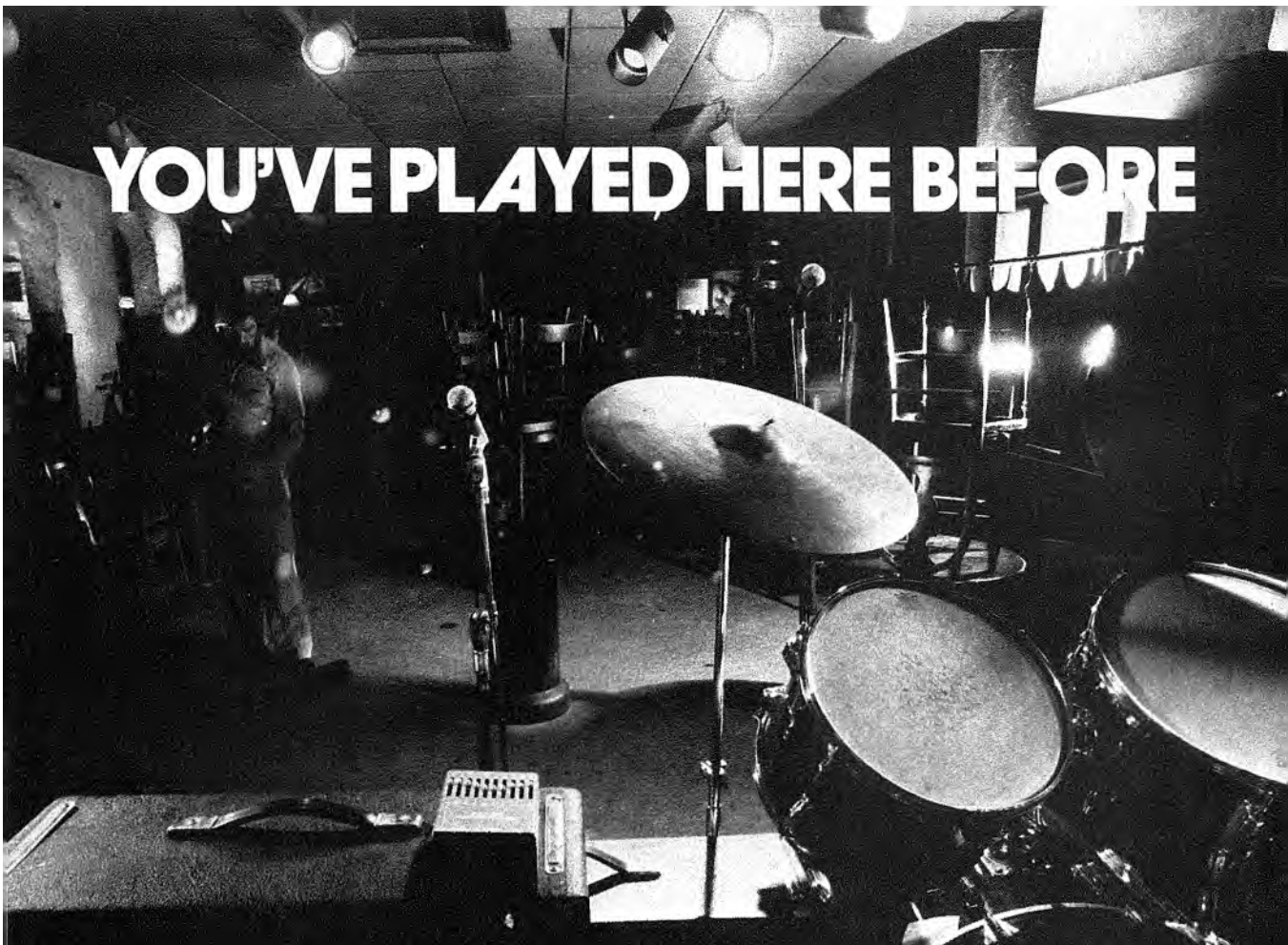
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bility enables the Six-band Graphic Equalizer to selectively distort at any given frequency. The MXR Six-band Graphic Equalizer is battery powered with battery life of up to one year in normal use.



The Ten-band Graphic Equalizer expands the capability of sound control even farther. Ten bands cover the entire frequency spectrum in octave incre-

ments that allow you to specifically boost or diminish the tonality of any part of your performance. Its frequency range (31.2 Hz-16KHz) is sufficient to allow the widest range of application, including; musical instruments such as keyboard and drums as well as PA mains and/or monitor equalization. The MXR Ten-band Graphic Equalizer is AC powered, can handle both low and high impedance signals and is extremely quiet.

Both the Six and Ten-band Equalizers are ruggedly constructed for long-term reliability. So, now you can make any environment a controlled environment with an MXR Graphic Equalizer. To hear the difference for yourself, see your MXR dealer. MXR Innovations, Inc., 277 N. Goodman St., Rochester, N.Y. 14607.

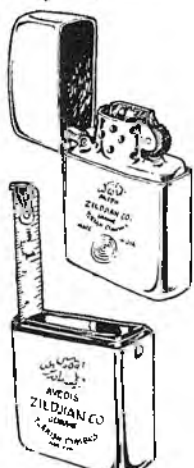
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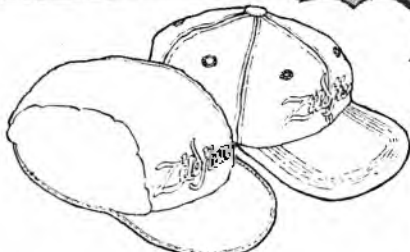


5. 'Ritepoint' retractable black felt marker. Red casing with black writing 'Avedis Zildjian Co.' **£1.00**



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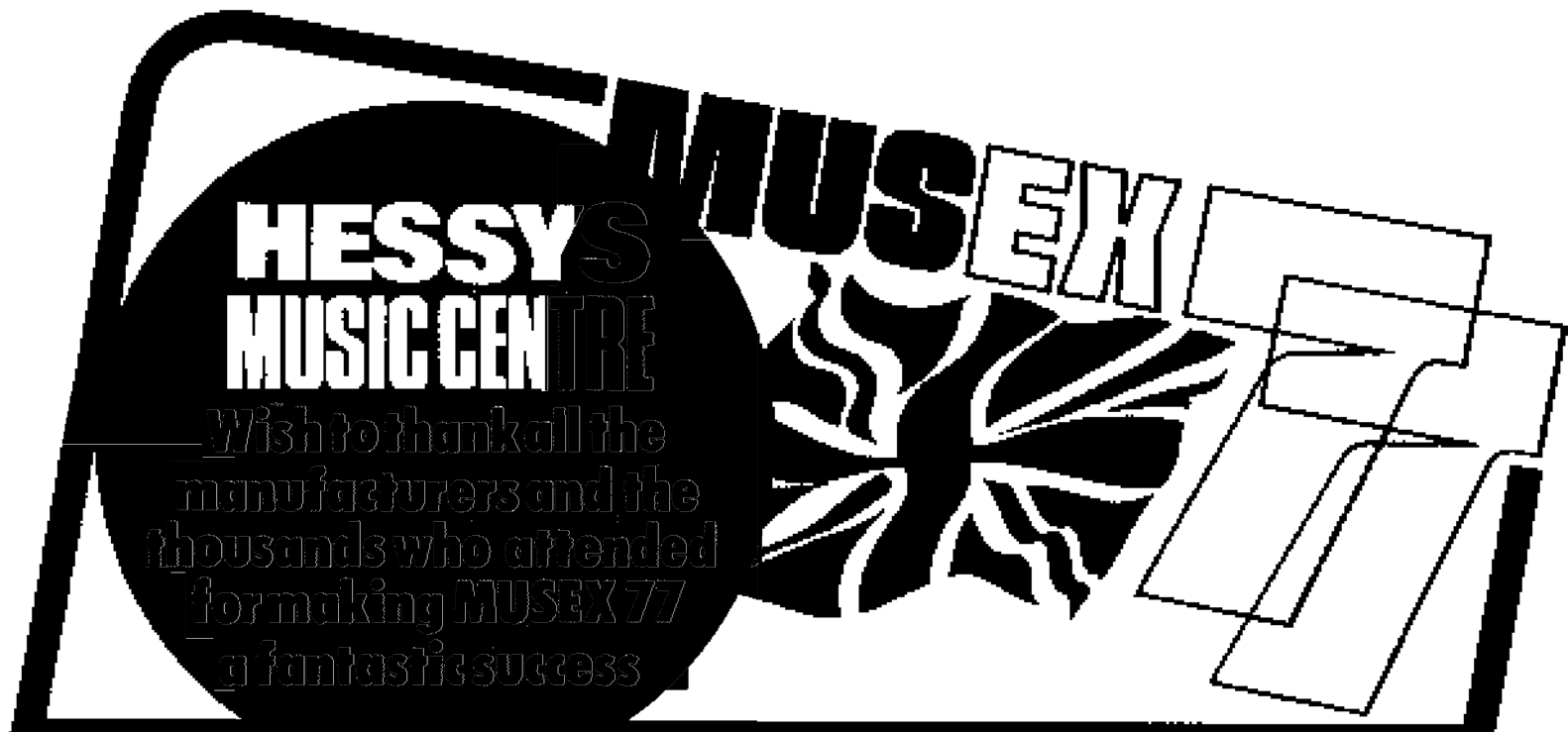
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The interestingly-named **Gygafo** from Leeds have recently obtained London management and are now under the wing of Duncan Ferguson, landlord of the Fulham Greyhound. Duncan can be contacted on 01-385 0526 ... Still in the Northern England area, **Rubi-Lazer** are a five-piece from Preston who play their own material written by the singer, guitarist and keyboardist. Their lineup is: Reg (lead vocals/12 string); Dave (keyboards/vocals); Pete (percussion); Norman (bass guitar) and Greg (lead guitar). They are willing to accept gigs anywhere in England and can be contacted through Mike Mather, 433 Garstang Road, Broughton, Preston ... **Stage Fright** are a pro band based in Birmingham and have been together for 2½ years playing colleges, universities, pubs and clubs all over England. They are currently working on demo tapes to take to London and wish to forewarn A&R men ... **Hippo Band** hail from the Hastings area and play all kinds of material from early skiffle to heavy rock, depending on who they are playing to. Last year they supported the Glitter Band and Mungo Jerry at two concerts on Hastings pier and, although they played for peanuts, felt it was worth it for the experience of playing to over two thousand people. They tell us that, while being in the Big League may be OK, being happy in what you're doing must count for a lot - a worthy sentiment ... Currently gigging around the Oxford area are a five-piece band called **Memphis**. Although still a fairly new band (they formed four months ago), they already have most of 1978 booked up. Their gigs are mostly in local clubs and their repertoire includes late Fifties rock 'n' roll and recent chart numbers. Their lineup is: Dave Ellesmore (lead guitar); Dave Surman (rhythm guitar); Ray Langford (bass guitar); Ron Savory (drums) and Phill Slade (vocals) ... Down to Wales for news of a band by the name of **Rhode Island Red**. Their lineup is; two guitarists, guitar/pianist, bass and drums and they pride themselves on vocal harmonies. A semi-pro outfit, they are having a hard time finding suitable gigs although they cite The Palace, Mountain Ash, as a "nice gig". If any local promoter or club manager is interested, contact Ian Davies at 28, Gospel Hall Terrace, Gadlys, Aberdare, Mid-Glamorgan ... A rather interesting music contest is being set



Stage Fright

up by Hamiltons of Teeside during October and November. There are prizes worth more than £4,000 including; Epiphone guitars, Peavey 130 monitor amps and cabs, an HH mixer, a Yamaha combo and lots more. The contest is divided into three sections: Groups (New Wave, Progressive, Soul, Pop etc.); Solo (vocal and/or instrumental) and Country and Western (contemporary trios duos etc.). An interesting point is that singers or musicians can enter all three categories if they wish e.g. a singer from the Group section could also enter the Solo section. A first, second and third prize will be awarded in each section and a representative from a leading record company will be there on the lookout for talent (he might also be listening to a few groups). Details from Hamiltons (Tel: 0642 247314) or see their ad on page 121 ... **The John Doe Band** from Staffordshire (see last month's Buzz) are now a four-piece due to one of their guitarists "disappearing." The band would welcome a chance to audition a good keyboard player and to hear from the roadie they

are looking for. Call John Watkins on 078-53 5768 ...

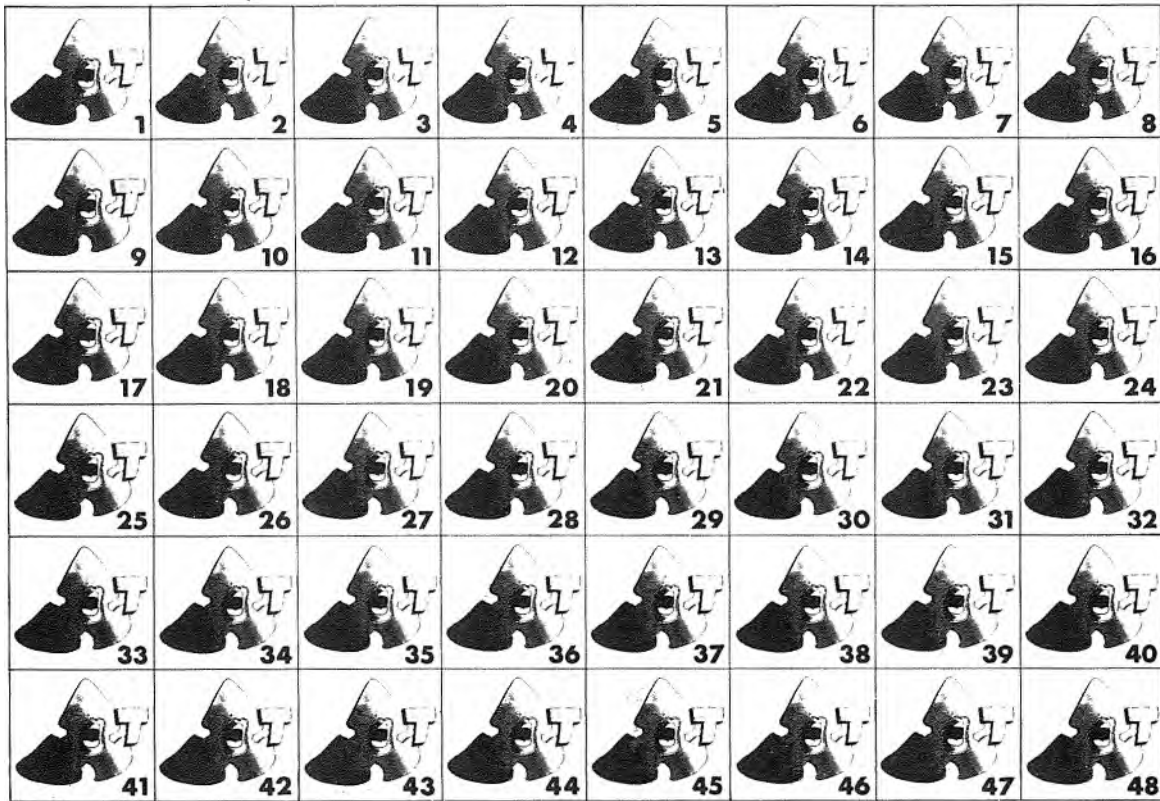
Nice to hear that the Horn of Plenty in St. Albans is still thriving. They have bands on every night except Wednesdays and the bands are of exceptionally high standards. Name "guest artists" are not uncommon at the Horn - in the past, musicians like **Rod Argent, Gary Boyle, Jim Rodford, John Grimaldi, John Marshall, Michael Garrick, Steve Cook** and **Mick Abrahams** have guested there. Lots of good local bands regularly appear at the Horn including **Panama Scandal, Street Band, Eve and Max Speed and The Dials**. It's a popular venue with a great atmosphere and a young, friendly landlord. Bob Andrews. There is a decent size stage and HH/Wem PA available. Contact Bob on St. Albans 53143...

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

Stephen Delft in concert

You've marvelled at Stephen Delft's guitar reviews and do-it-yourself article. Now is your chance to see Our Resident Guitar Critic In Concert actually playing the instrument. As well as being a top guitar maker, Stephen also writes and performs his own songs. Seeing is believing on Sunday November 6 at The Half Moon Theatre, 27 Alie Street, London E1. Nearest tube: Aldgate East, Telephone: 01-480 6465 for further info. A splendid time is guaranteed for all.



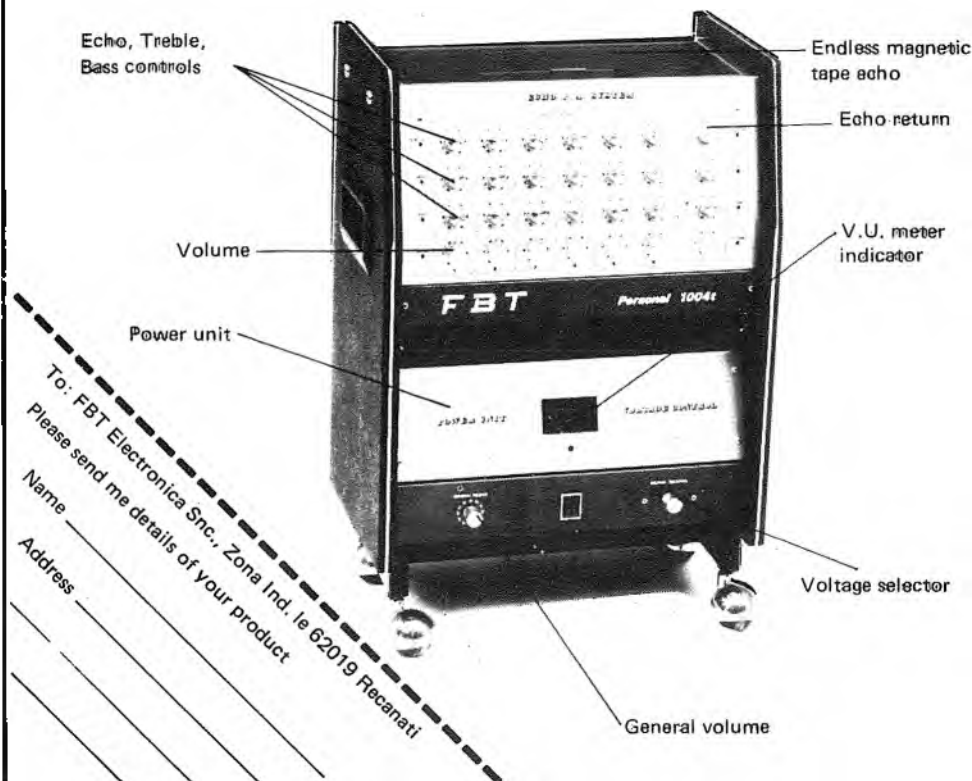


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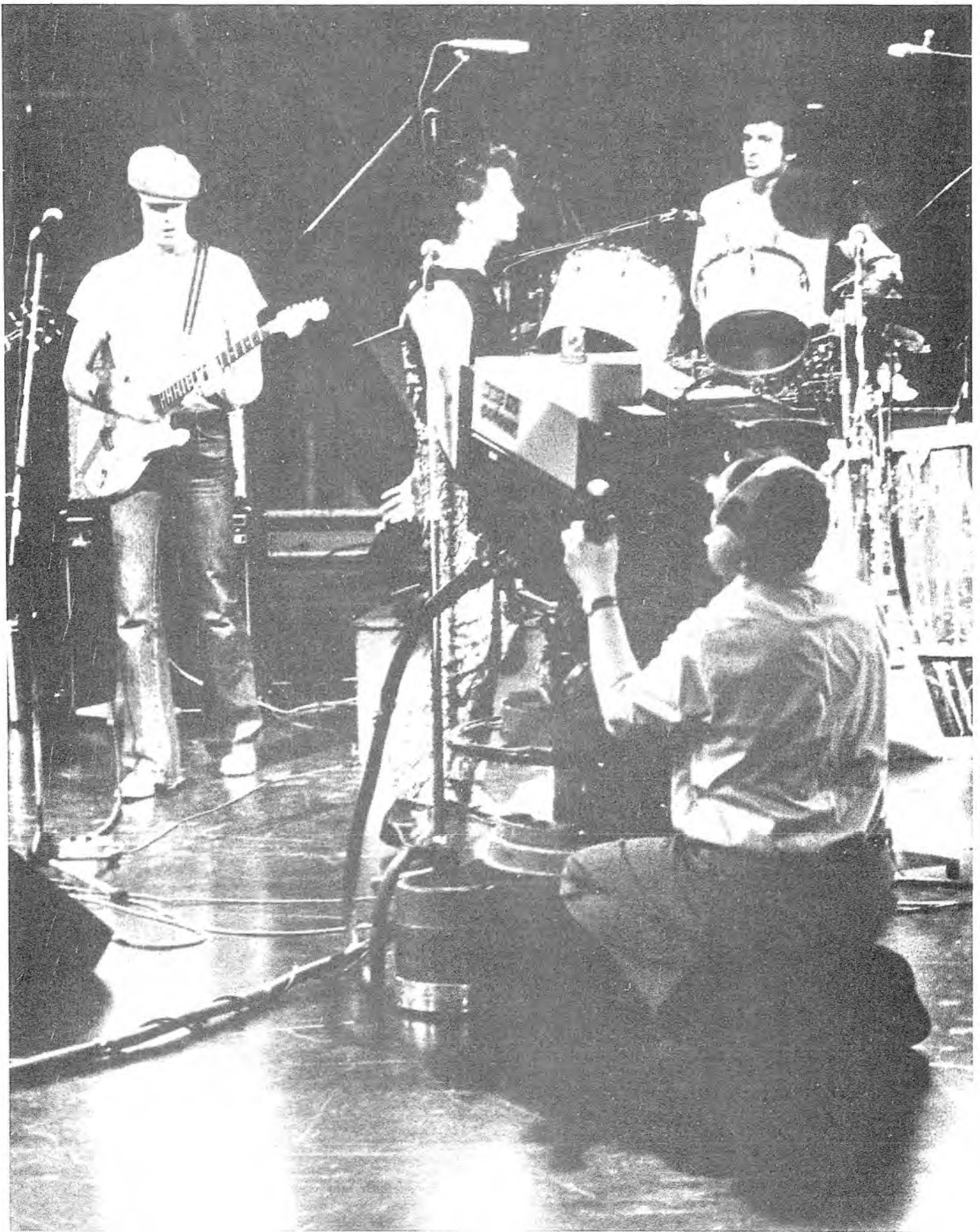
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SO YOU WANNA BE A (TELEVISION) STAR?

Produced and directed by
Beverley Legge

Most bands are so busy trying to arrange gigs and recording deals, that they seldom stop to think about the other opportunities for exposure that are open to them.

One opportunity that is regularly overlooked by unknown bands is television. Years of watching programmes like "Top Of The Pops" and "Whistle Test" have doubtless convinced them that television is solely for the bands with recording contracts and chart success. Without these two things, they assume they stand no chance of getting on the box.

Well, if that's your opinion on the subject, then perhaps it's time you had a rethink, because the prospects for unknown bands on TV are not nearly as bleak as all that.

To begin with we'll assume that your band is worth putting on TV, that the music you play has sufficient quality and originality for you to merit a slot on the box. If you honestly think that you pass that test, then you'd be well advised to start making overtures to TV producers as soon as possible.

The best way to do this is simply to write or telephone the producer in question and let him know clearly and concisely what type of act you have to offer. When you write to him you should include a cassette or tape (containing no more than two normal length songs), some decent photographs of the band and perhaps a brief, typewritten biography, emphasising any unusual or remarkable aspects of the band. It's also wise to

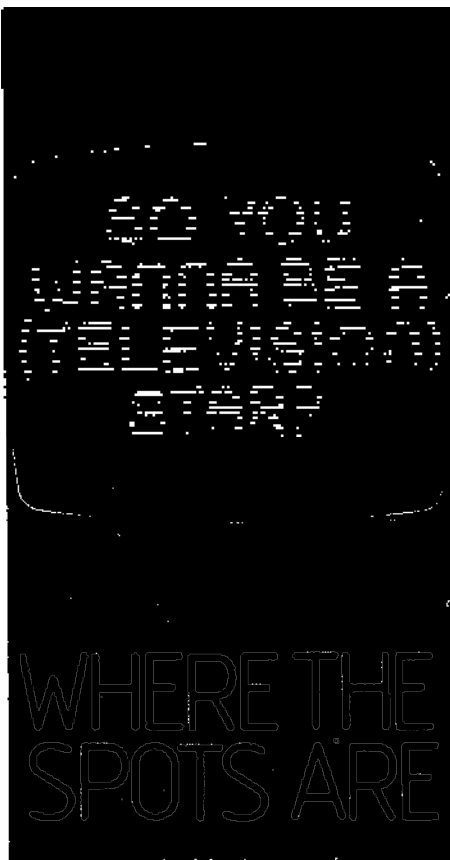
include a stamped, addressed envelope so he has no excuse for not returning the material.

A large number of opportunities for unknown bands are to be found on regional magazine programmes produced by the ITV companies. The emphasis in these programmes is not so much on music as on news, so a band that can supply the producer with a good news item relating to themselves has a far greater chance of getting on the show. Publicity stunts involving fund-raising activities for charity can often work wonders.

In addition to these programmes there are also a few locally-produced pop and rock shows, that can always find space for a good, but unknown, local band. Some of these shows will only be screened to a regional audience but, very occasionally, they will find their way on to the national network. The most notable example of this is HTV's "Jam", which was broadcast nationally back in the summer. It need hardly be said that exposure like that can be very useful for an up-and-coming band with no recording contract as yet.

We estimate that, in any one year, as many as 100 such bands find their way on to television. If you have the talent and the ambition there's no reason in the world why you shouldn't be one of them.

So let's take a look at the TV companies network by network and see what they have to offer.



Westward (south-west England)

There are just a few opportunities for unknown bands on Westward Television. These are to be found on two programmes, "Stargazey Pie" and "Westward Diary".

"Stargazey Pie" is a series that features music by a wide range of artists. Each show is devoted to one particular branch of music and, since rock music has not yet been covered, it's not too late for you to get on the show.

"Westward Diary" is a regional magazine programme that, very occasionally, features local artists. If you can provide the producer with an interesting news item about yourself, you stand a far greater chance of getting a gig. Tight budgeting on the show means that solo artists are preferred to groups.

If you're interested in either of these programmes get in touch with Paul Bernard ("Stargazey Pie") or Dick Charlesworth ("Westward Diary") at Westward Television Ltd., Derry's Cross, Plymouth, Devon (Tel: 0752 69311).

ATV (Midlands)

It's probably fair to say that no British TV company gives greater opportunity to unknown bands than ATV. Through its controversial talent show, "New Faces", the company manages to find TV spots for as many as 60 new bands a year.

The show is fully networked and regularly attracts large audiences, so an appearance on it can be looked upon as a useful piece of publicity.

As a rule, two bands are featured on each show; one at the start, one at the end. Many of the bands end up getting recording contracts and at least two (Sweet Sensation and Showaddywaddy) have had number one hits. Even if you don't make the charts as a result of appearing on the show, at the very least you will be able to raise your concert fees.

If you think your band can give a good account of itself in the three-minute time limit and you are prepared to face the risk of being hacked to pieces by the panel of judges, then why not give it a try?

Producer Albert Stevenson, who has the final word in choosing acts for the show, says he likes to see bands that have fresh ideas and imaginative line-ups. The conventional three-guitars-and-drums format, once so popular in the 'sixties, gets a very low rating from him. Though he didn't say it in so many words, one gets the impression that a pop or middle-of-the-road band would be more welcome on the show than a new wave or hard rock outfit.

To apply for an audition write to Albert Stevenson, ATV Network Ltd., ATV Centre, Bridge Street, Birmingham B1 2JP. Tel: (021) 643 9898.

Anglia (east of England)

Of all the companies that we approached, Anglia were without doubt the least helpful. Our polite request for information about the company's policy on using rock bands was treated somewhat curtly by a lady public relations officer.

Anglia, it seems, have no time for rock music. You'd be well advised to steer clear of them.

Border (the borders and Isle of Man)

Opportunities for appearances by unknown local bands on Border TV are few and far between, but they do exist. What opportunities there are occur mainly on "Border News And Lookaround", a magazine programme that goes out each weekday between 6 and 6.30 p.m.

There is, however, one small snag. The programme is very much geared to what's in the news, so unless you can supply the producer with an interesting news item concerning your group, you won't even be considered.

An imaginative publicity stunt might possibly do the trick. If you do decide to try this, it would be wise to watch the programme first so you have an idea of the kind of news items they are interested in.

When you feel you're ready to take the plunge get in touch with Bill Campbell, Border News And Lookaround, Border Television Ltd., Carlisle, Cumberland. (Tel: Carlisle 25101).

Grampian (north-east Scotland)

This company is certainly more polite than Anglia, but its policy on using rock bands is much the same. Not much chance of you making your television debut on Grampian.

Granada (Lancashire)

As far as its policy on pop and rock music is concerned, Granada is one of the more enlightened ITV companies. Besides turning out programmes aimed at the younger end of the market such as "45", "Marc" and "Get It Together", the company has also ventured into the hazardous worlds of punk and hard rock with "So It Goes", a weekly show presented by Tony Wilson.

The programme is unusual in that it makes heavy use of bands that don't have recording contracts. Tony and his producer, Geoff Moore, are always willing to consider unknown bands for the show provided they have some sort of reputation as a performing outfit.

In addition to presenting "So It Goes", Tony Wilson also acts as host for "What's On", a 15-minute round-up of local happenings that goes out every Monday evening. The show features a rock band on average once a fortnight. Only bands with gigs in the Granada TV area will be considered.

If you feel your band is suitable for one of these shows get in touch with either Tony Wilson or Geoff Moore at Granada Television Ltd., Quay Street, Manchester M60 9EA (Tel: 061-832 7221).

HTV (Wales)

HTV is one of that dwindling number of TV companies that actually produces its own rock show. The show, which is called "Jam", was launched back in October 1976 and has proved to be quite successful. So far, two six-part series have already been screened and a third series seems likely for next year.

"Jam" is presented both in Welsh and English, and features music by Welsh bands, most of whom are quite unknown. Producers Iwan Davis and Owen Griffiths are prepared to listen to cassettes from bands that think they might be suitable for the show. The only stipulation they make is that the band must have some connection with Wales.

Write to them at HTV Ltd., Television Centre, Cathedral Road, Cardiff CF1 9XL (Tel: 0222 21021).

London Weekend Television

The only programme on LWT that might feature music by an unknown act is "Our Show," a Saturday morning magazine programme for young people. A member of the production team told us that they were always willing to listen to tapes sent in by bands without contracts, but up to now they had never featured such a band.

If you're interested, send your tapes etc. to Alan Wallace, "Our Show", London Weekend Television Ltd., South Bank Television Centre, Kent House, Upper Ground, London SE1 9LT. (Tel: 01-902 0102).

Scottish (Central Scotland)

Like most of the other ITV companies, Scottish Television has an early evening weekday magazine programme that occasionally features items by rock artists. Unfortunately, the producer's policy is to use famous personalities in the music scene rather than up-and-coming artists. If, however, an unknown group were able to provide him with a good news story concerning themselves, he would be willing to consider them.

If you think your band can meet his requirements, write to Ken Blackie,



Scotland Today, Scottish Television Ltd., Cowcaddens, Glasgow G2 3PR. (Tel: 041-332 9999).

Southern (south of England)

Southern Television also has an evening weekday magazine programme called "Day By Day" that, from time to time, features items about rock artists. Tight budgeting means that the programme can rarely afford the luxury of a performance from a band, but has to make do with a studio interview.

More often than not, the artists concerned are established names on the music scene, so the chances of an unknown band getting to play on the show are pretty slim. An unknown solo artist with a good news story relating to himself might stand a chance.

Send tapes etc. to The Producer, Day By Day, Southern Television Ltd., Television Centre, Northam, Southampton SO9 4YQ (Tel: 0703 28582).

Thames (London weekdays)

With the demise of the "Today" programme and "Opportunity Knocks" there are now no opportunities for unknown bands on Thames.

Tyne Tees (north east England)

If you live in the area and your band is reasonably talented, you stand a fair chance of getting on "Northern Life", the weekday magazine programme for the Newcastle area.

On average, the show features one act a week and very often its an unknown local act. Groups are preferred to soloists and the fee for one appearance is around £70.

Send cassettes and photographs to Peter Moth, Northern Life, Tyne Tees Television Ltd., City Road, Newcastle upon Tyne (Tel: 0632 610181).

Ulster (Northern Ireland)

Ulster Television hopes to launch a new 13-part pop series in the next few months. The show, which will be fortnightly, will be geared to a local audience and will certainly feature unknown local bands.

If you live in the province and you think your band is up to a TV performance, get in touch with Bob Brien, Ulster Television Ltd., Havelock House, Ormeau Road, Belfast BT7 1EB (Tel: 0232 28122).

BBC

These days the opportunities for unknown groups to appear on BBC TV are somewhat limited. What rock music programmes there are on the Beeb tend to feature only established bands with recording contracts.

If your band stands any chance of becoming the exception to this rule, it's probably through Colin Farnell, a BBC producer who also acts as a kind of talent scout. Send your Tapes, photographs, etc. To Colin Farnell, BBC Television Centre, London.



SO YOU
WANNA BE A
(TELEVISION)
STAR?

AT THE END
OF THE CUE

If you are lucky enough to get a spot on television, there is one thing your band has got to have plenty of (besides talent) and that is - patience.

When an act appears on TV it looks so straightforward. The band start the number and finish it - simple - yes? Actually it's not all that easy. All those shots and zooms you see, from a close-up of the lead guitarist's hands to the dissolve into the lead singer's face, have all had to be planned, logged, and rehearsed. And that takes time, lots of it.

To perform two three-minute songs on a programme like the "Old Grey Whistle Test" on BBC2 can take a band all day. For much of that time they will be doing nothing while the producer, director, and floor manager confer to work out the best way to plan their shots.

The band will start with a first run through. This gives the director the lengths of the song and tells him what features to bring out in the band i.e. close-up shots of a drum solo, pull-back to take in the rest of the band etc.

On the first run-throughs, sound levels have to be set and lighting planned. Meanwhile the cameramen are being told by the director in the control room what shots they are to look for and when.

A clip-board on one of the TV cameras might read something like; "guitarist in shot for first solo - second singer for first harmony line". Up in the control room, the producer and director can see each of the shots from every camera simultaneously on a range of monitors before them.

During the run-throughs, these images are all being mixed and times of shots being logged with a stopwatch. Even after a band has gone through their act several times and the director is happy with his shots, the producer may offer alternative ways of shooting the number. This means another run-through so these other shots can be tried out.

The pressure is at its greatest for a band when they are expected to do a number live. After hours have been spent setting up camera angles and timing has been logged to the split-second, there is simply no room for mistakes. You HAVE to get it right. This means there is no second chance if the band fluffs its intro and ending. You may be able to cover up for each other during the number, but if you're not all in on time you'll have egg all over (and it won't be from the BBC canteen either).

It may sound easy: perform a number you have done live dozens of times. But remember, you are not playing to an audience in the conventional sense. The people out in front (unless it is an invited outside audience) are all professionals who are concentrating on their specific jobs. They are also very jaded and you'll have to pull off something very spectacular if you expect any appreciative reaction from them.

You may think the band is performing admirably. Yet out in front there is absolutely no reaction from anybody. They just carry on working as if you aren't there. **DON'T WORRY** You don't have to earn an encore from cameramen and directors who have seen a million and one acts before. Indeed the feeling can be very odd indeed, playing your heart out in a huge spotlight barn where a cold silence greets the end of your song instead of familiar applause.

Generally, though, there is no unfriendliness to a band unless it invites this by any big-headed fooling about or doing anything which interferes with the director's plans and schedule.

Do anything you are told to do. Don't touch cameras, cables and other technical paraphernalia and do whatever the floor manager or director asks. This is not to say you should be inhibited in any way when it comes to performing your song. By all means throw the mike around if that is your thing... just make sure everyone knows so they can mark the spot where it will land... and duck.

Albert Stevenson ("New Faces", ATV):

"I don't like to see guitarists looking down to see what chords they're playing. To me that's the sign of a bad group."

Muriel Young ("Getting It Together", Granada):

"My advice to a band appearing on television for the first time is don't try to be phoney. Be as natural as possible. And from a technical point of view never wear all white or all black. It doesn't come across well on TV."

Tony Wilson ("So It Goes", Granada):

"One of the hardest things about television is knowing how to react to the camera. If you can treat it like a person, you'll get the best results."

Iewan Davis ("Jam", HTV):

"Make sure you have the right equipment before you get on TV. There's nothing more annoying for a producer than to have a group fiddling around with faulty equipment."

Paul Bernard ("Stargazey Pie", Westward):

"When I listen to a new group I want to hear something fresh and original. Looks are also very important. If a group is reasonably good looking or there's a pretty girl singer in the line-up, then that's a plus."

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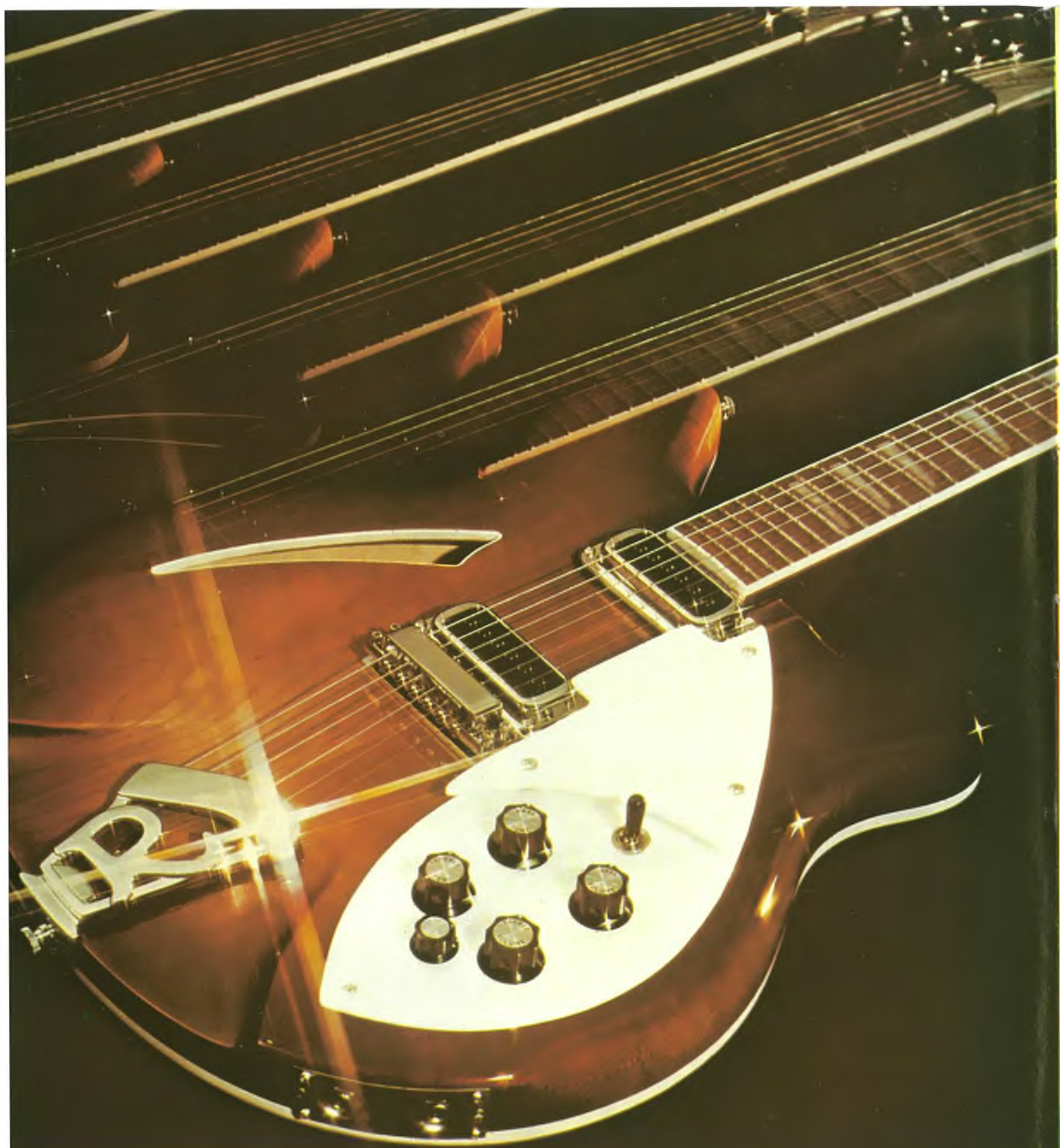
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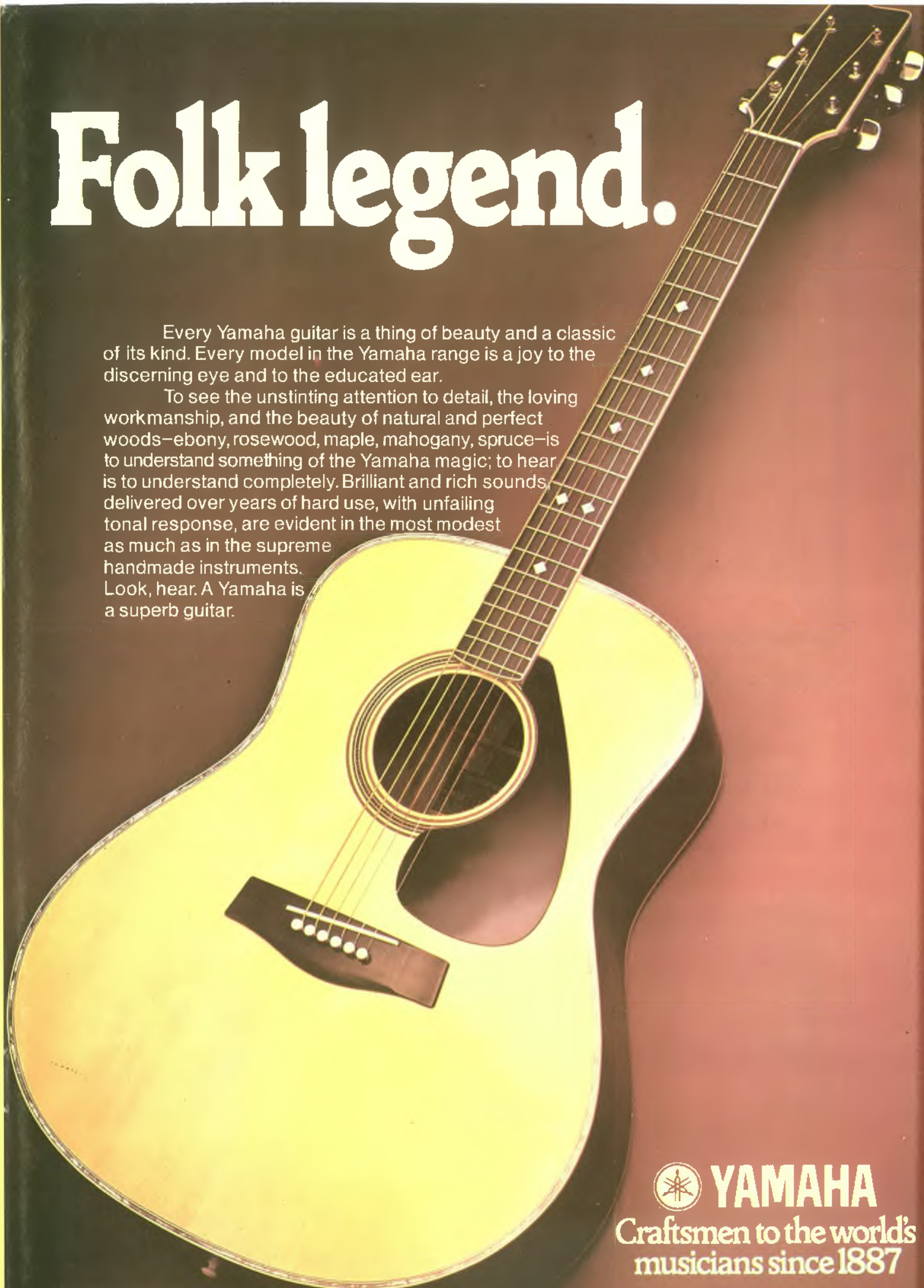
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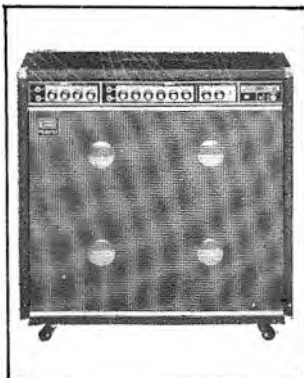
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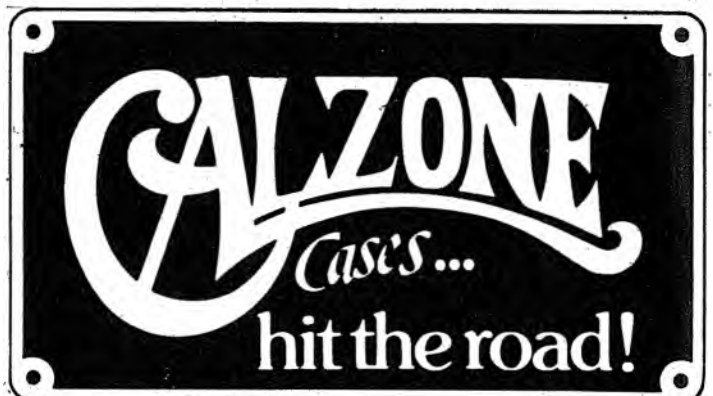


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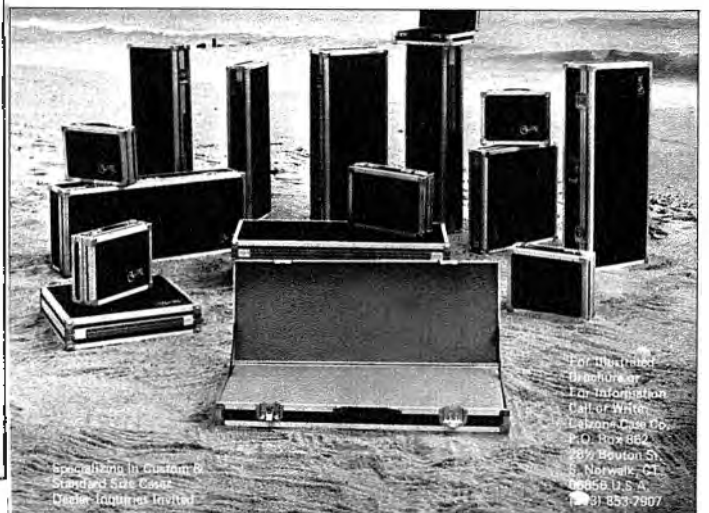


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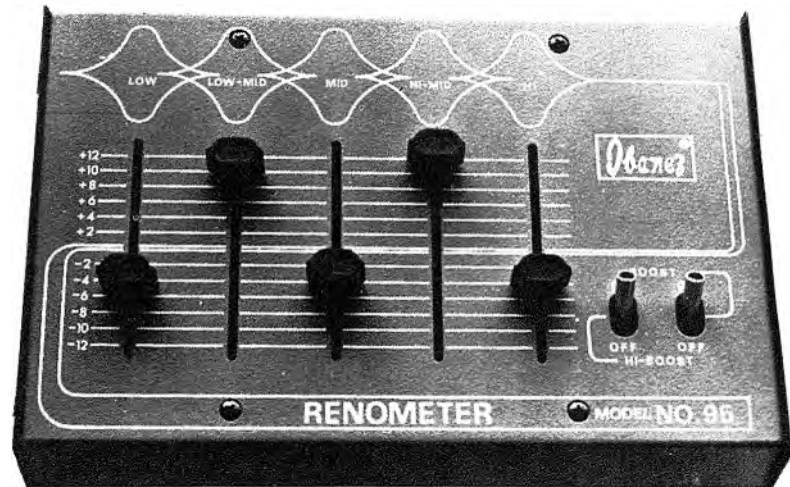
Bell Electrolabs have lowered the price of their Flanger (reviewed on page 47). The new price is a direct result of a design innovation which utilises a brand new integrated circuit. This feature means that the noise figure is considerably reduced. The Flanger will now retail for approximately £47 plus VAT.

On Test: The Ibanez Range of Effects Units

Despite being one of the most famous guitar names in the world, Ibanez's effects units have not been available to British musicians until now. Perhaps their entry to the UK market is a little late – there's a considerable number of effects units competing for a limited market – but the units are of sufficient quality to cut themselves a share.

In this brief review we have looked at the most important pedals and effects available although the range is so vast that combination units bringing some of the units discussed below together are available as are some more straightforward devices like pan pedals and stereo boxes that offer little material for review.

UK distributions of Ibanez effects units is by one of Britain's best wholesalers – J. T. Coppock of Leeds – and we will be finding these units generally available in the British Isles.



Renometer No. 95. Retail Price £42.50

This sound modifier is a graphic equaliser designed especially for use with guitars. The unit looks like a simplified graphic with five sliders offering boost and cut in five frequency bands. In

addition two boost switches are fitted. This unit represents a very economical way for a guitarist to achieve equalisation of compensation of sound and the units work very well. All the faders have a "click stop" in the centre position and the unit is battery powered.

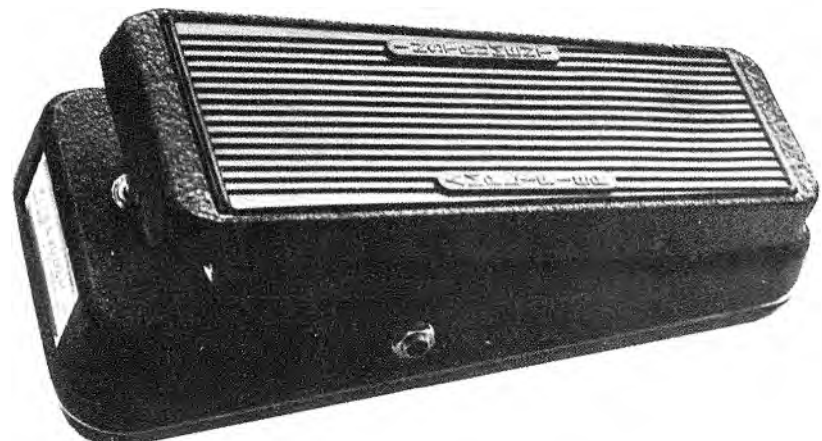


Flanger FL-303. Retail Price £78.00

The flanger is the pedal to own at the moment and this unit from Ibanez is particularly attractive and works very well.

It's bright yellow and the player is offered three controls – speed, width and regeneration – and the usual foot operated on, off switch. There's no variation in output volume from the pedal with the effect either in or out and the width and depth of the flanging sweep will please any lover of the effect.

I noticed that at extreme settings the unit itself started to "speak" and added its own contribution to the guitar sound. I liked the way it worked and I heartily approve of the very robust metal knobs and casing. Ever thoughtful in commercial things the Japanese have provided a stick-on rubber mat for the bottom of the unit just in case you find any slippery stages.



Blubber Wah-Wah Pedal. Retail Price £35.00

Two wah-wah pedals are available in this range and the only significant difference seems to be in styling. At £35 this model is £12 more expensive than the standard Wah-Wah (or Wau-Wau) as the Japs write it.

The cheaper model appears to deliver the same sound variation and I preferred it because it wasn't so easy to switch the

effect on or off by accident. The Blubber machine looked tasty in its matt-black "De Armond" type casing. But I would recommend players to go for the standard model if they can stand the noticeably oriental styling. Like many players I tend to use the wah-wah pedal for a foot tone control and both are excellent for this purpose with actions stiff enough to hold a setting.



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Doublesound. Retail Price £47.00

This peculiar unit is both a wah-wah pedal and a fuzz unit and it's highly unconventional in design. Two slide controls either side of the shoe platform control volume (although its called balance) and depth of fuzz. Either side of the pedal are on/off switches for the fuzz sound (which will work with the wah-wah) and tone, a switch which alters the fuzz type of sound. Additionally there is a third on/off switch located under the shoe platform for switch the wah-wah in and out. On our sample it was quite difficult to get this switch to activate.

The pedal is exceptionally well made and the sound modifiers are very powerful. It's possible that the plastic knobs on the slide pots could get damaged under road conditions.

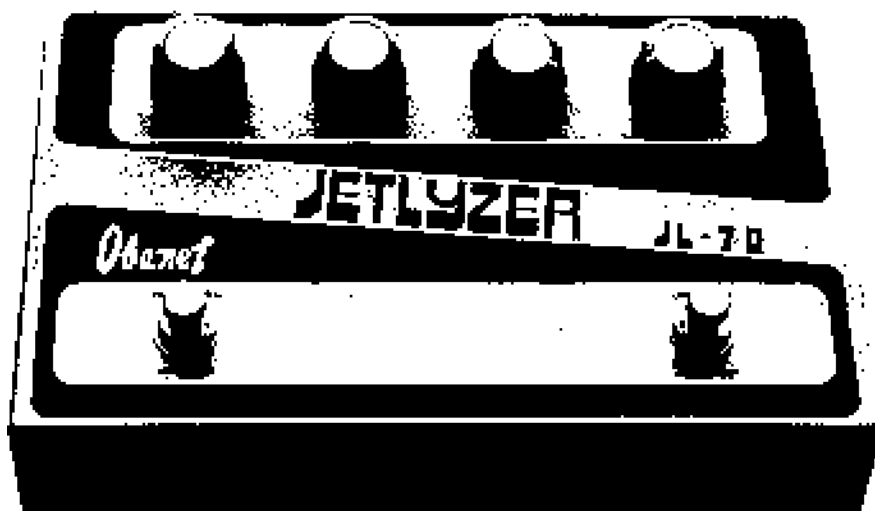
Ray Hammond

On Test: Giant Mouse effects units. Overdriver £33.33; Mini-Moaner £42.00; Phaser £38.19; Sustainer £44.25; Noise Gate £44.95 (ex VAT)

Recently introduced to the ever-increasing effects market, Giant Mouse units include the Phaser Mach One, which is a straightforward phase unit with Speed control and on/off foot-switch.

It produces a nice clean phased signal with a long sweep on its slowest setting. The Giant Mouse Overdriver is exactly that – an overdriver with controls for volume and threshold. While an overdriver's function is to give that popular overloaded valve amp sound, the distortion is fairly clean distortion. With chords, you can hear each note individually and lead lines are particularly impressive.

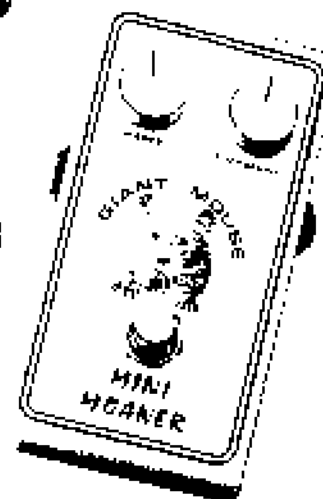
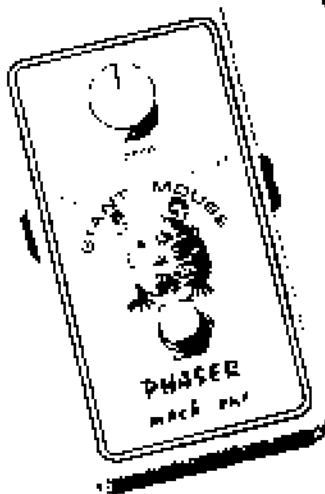
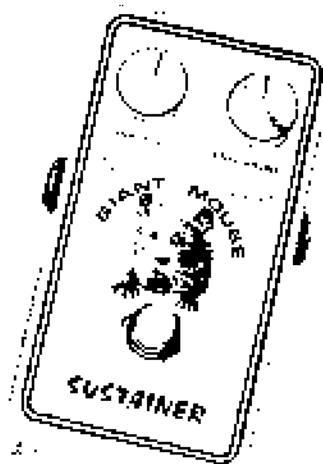
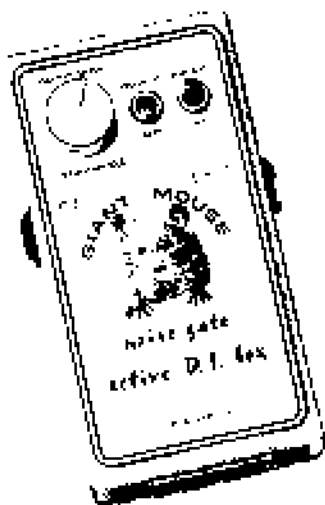
The Sustainer also has volume and threshold controls and produces sustain without distortion – very handy if you play a guitar with single pole pickups but want a Les Paul tone for solos. The Mini-Moaner is an interesting effect. It's basically an automatic wah-wah unit but with attack and threshold controls. By pre-setting these, you can produce a "wah" at strategic points according to how hard you hit the string. Perhaps the most interesting device in the range is their Noise Gate/Active DI box. Like the rest of the units, it has In and Out jack sockets plus a female cannon socket for mic line. The idea of the noise gate is to eliminate residual noise which is usually generated when using effects units on stage at high power levels. The DI section can, for instance, send a signal to the PA and to a mixing console. The noise gate has a threshold control and power on and earth switches are also provided.



Jetlyzer. Retail Price £82.00

This is a unit unique to Ibanez. It's a combination phase unit and "jet sound" unit and, as might be guessed, this evil thing will turn your guitar into a jet plane at the flick of a switch. The jet effect is actually quite good and with a stereo box you can pan the jet across

stage! I thought the jet sound ran out of steam a bit quickly although it did depend on the depth of phase setting. I think I'd have to be pretty keen on special effects to spend this much for just the jet sound, but the phaser is as good as many that sell at this price on their own.



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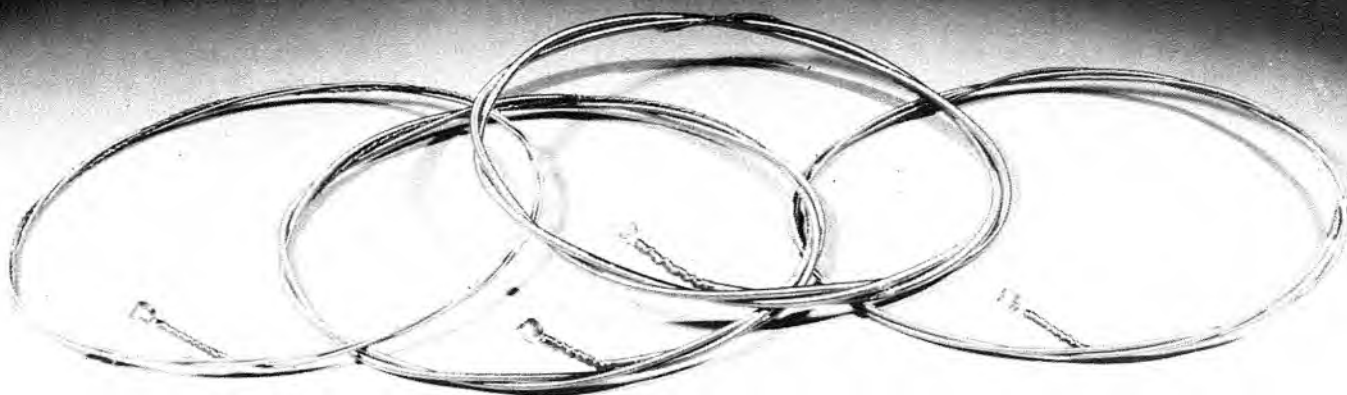
His summary? 'Hamma . . . sensibly supply only four different colours . . . they all look really professional.'

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For further information please write to Hamma Adept,
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John Entwistle's "Swing Bass" Guitar Strings



Once Used, Never Forgotten



TEST SOUNDCHECK

TEST ON: INTERMUSIC 2 x 12 COMBO (PA:CE - ROYSTON)

DATE: OCTOBER, 1977

TEST BY: DAVID BLAKE and MARK A. SAWICKI, M.Sc. (Eng.), ASSOC. M.I.E.E., M.A.E.S.

PRICE: £197.00 & VAT

Introduction

It just goes to show that inflation hasn't completely blown out the idea of value for money. Although you can be hard put nowadays to find a car or refrigerator that doesn't seem a touch overpriced, it has to be said that the musical instrument and equipment manufacturers are still capable of pulling the proverbial rabbit out of the chapeau. In this case the worthwhile rabbit in question is the Intermusic 2 x 12 Combo, made by PA:CE of Royston, Herts.

The Intermusic beast is a four-input two-channel mono combination amplifier/speaker cabinet with a specified output of 120w rms into 4 ohms. The amplifier itself is, of course, solid-state, and puts out into a pair of twelve-inch loudspeakers mounted from the front beneath the amp. Extra facilities include individual channel gain and a master volume, master presence, brilliant switches on each channel, capability for auxiliary input and slave output, and – wait for it – a phaser operative on both channels. The whole unit is built into a flight case with lid. What makes this combo particularly interesting is the price: retail £197.00 plus VAT.

The Intermusic is a sample of the newfangled "muscle" units in that everything is built with toughness in mind and the speakers are exposed and held by big metal screwdown clamps for all to see – very butch. The design is very much a mixture of Acoustic black-with-turquoise-trim and Redmere (made, oddly enough, by PA:CE). In fact, the model we tested is not the absolutely final production spec. In its marketed version, the speakers will be protected by individual plastic grills.

Construction

So let's take a long hard look at the beast. First impressions are of tough competence. All battened down for a quick Sky-train flight, the combo measures 27½" wide by 16½" deep (including 3" of lid) by 25" (including 3" of non-detachable heavy gauge rubber wheels – the two rear wheels have brakes).

The overall weight is about 110 lbs. No lightweight, this. The cabinet is covered in the usual black vinyl with rivetted black plastic corner edging and heavy bulbous metal corners. The lid detaches via four large clamp-clips

with provisions for padlocking – but again, in the final version, the clamps on one side will be replaced by lift-off hinges for easier closing up – a good idea because the lid is heavy and needs careful balancing on your toe while you fumble with clamps. On each side of the cabinet is a recessed plastic handle of the Rean type. On the back is a kind of trapdoor which swings out on a heavy piano hinge to give access to the amp's back panel. A minor complaint here: the lock on this trapdoor is operated by a T-bar key which could get lost – it might be worth PA:CE coming up with an alternative opening method.

Front panel

Once the lid is off, we see the glories within: the front panel of the amp over the pair of speakers. The control on the front panel are: Normal channel Volume, Treble, Middle, Bass, standard ¼" jack inputs 1 and 2, Brilliant switch; then Lead channel Volume, Treble, and so on as normal channel; then Phase Speed (which, strangely, is fastest on zero and slowest on ten) and Depth and on/off switch; finally the Presence, Master Volume, and red-light mains rocker switch. All the switches are the small, black (rather stiff) slider type which might be difficult to see under stage-lit conditions. All other controls are rotary knobs marked zero to ten, and again, the single marking spot might be hard to see in low light. Still, all things considered, the layout is intelligent, ergonomic, and pleasant without being too fussy. For once, all controls are legibly labelled. Applause.

Back panel

The back panel is simplicity itself: beneath the trapdoor are the pair of RCA power trannies on their heat sinks, mains input of the encapsulated three-flat-pin type (there are those who don't like these, saying they pull out too easily, but logically it must be better to pull a plug out than tear the whole lead out from the back of the amp or rip the lead loose from – say – a Bulgin plug, or even topple the whole thing over), 3A mains fuseholder, and internal voltage selector preset for 240V; then come the pair of 4 ohm standard jack speaker outputs, one of which takes the jack lead from the speakers, phaser footswitch jack socket and finally jack sockets for

auxiliary input and slave output. On the sample we have, the speaker jack prevents the trapdoor from closing fully, but this should be rectified on production versions. One presumes from the grommet-blocked socket labelled reverb footswitch that there is or will be a version with reverb, which would certainly be welcome.

Performance

In use the Intermusic is very commendable; it suffers from the almost universal problem that you can't force it into gritty overdrive with a Strat, but the Lessy has no problem. The sound is a bit characterless at low volume but it warms up nicely as you turn the wick up. The Lead channel adds both treble boost and considerable gain over the Normal channel, but that is fair enough. The phaser adds considerably to the noise but also to the charm of the beast – it's a good phaser with plenty of flexibility (but many musicians might prefer reverb instead, which is a more usable effect in the workaday sense). It could be said the sound through the Lead channel with Brilliant switch in adding 10dB boost at 3KHz and the Presence control full up adding another 12dB at 10KHz might be a mite overwhelming, but the New Wave will love it.

There is one quibble: this amp did very well on output, coming out significantly above manufacturer's spec every time, and was producing 68w rms into 16 ohms – the pair of 8 ohm speakers are wired series. Now, on the back of those speakers are the usual Celestion G12M specs, namely 25w each. Intermusic tell us they are in fact specially up-rated units. Just as well. But for the sake of prospective purchasers' peace of mind, could they please label them so? The speakers seemed to suffer not at all after a pretty ferocious bash, but if they are up-rated, in the interests of the Trades Descriptions Act, let's change the labels.

Conclusion

That quibble aside, it is now time to heap praises on PA:CE and their Intermusic beastie. Sensibly laid out, superbly constructed, conservatively specified, and evidently tough as old boots – you name it, it's good at it. At the price, most certainly a winner.



PARAMETER	RESULT	TEST CONDITION	COMMENTS
Specific power Output (Watts RMS) Ref. 1.0 KHz	156.25 W r.m.s. 89.78 W r.m.s. 68.06 W r.m.s.	Onset of clipping into: 4.0 ohms Onset of clipping into: 8.0 ohms Onset of clipping into: 16.0 ohms	Plenty of power!! Higher than specified 120 W r.m.s. into 4.0 ohms load.
Total Harmonic Distortion T.H.D. (%) Ref. 1.0 KHz	0.200% 0.130% 0.05% 0.04% 0.03% 0.06% 0.08%	@ 140.0 W r.m.s. @ 120.0 W r.m.s. @ 100.0 W r.m.s. @ 70.0 W r.m.s. @ 40.0 W r.m.s. @ 20.0 W r.m.s. @ 10.0 W r.m.s.	Total Harmonic Distortion level depends traditionally on Volume/Master setting. Mainly 2nd harmonic distortions. Very clean sound when using with electric guitar.
Input Sensitivity for 120.0 W r.m.s. = 21.90 V r.m.s./Output Signal - mV r.m.s. Ref. 1.0 KHz	22.08 mV - "NORMAL" 9.50 mV - "LEAD"	Middle/Bass - fully up Presence at 5) All rotary Master at 8) controls cali- Treble at 7) brated (0-10)	Manufacturers claims: "NORMAL" - 100 mV r.m.s. - Tone controls - Flat; Bright - off 6 mV r.m.s. - Tone controls - Max; Bright - on "LEAD" - 15 mV r.m.s. - Tone controls flat; Bright - off 0.6 mV r.m.s. - Tone controls - Max; Bright - on
Tone Controls range Swing in dB	26.58 dB - Swing 23.25 dB - Swing 25.20 dB - Swing 25.85 dB - Swing	Bass @ 120.0 Hz Middle @ 750.0 Hz Treble @ 6.0 KHz - "LEAD" Treble @ 4.0 KHz - "NORMAL"	Nice and Symmetrical. Personally I feel that Bass centre frequency at 120 Hz is a bit too high, bearing in mind resonant speakers frequency at 75 Hz
Presence Control	+12 dB - boost approx.	@ 10.0 KHz	Valuable for guitarist
Signal/Noise Ratio in dB	Better than 80 dB		Manufacturer claims Noise ret. Input -95 dB ("Normal") and -99 dB ("Lead")
Brilliant Switch	+10 dB - boost approx.	@ 3.0 KHz	Quite unusual from design point of view but works OK
Phaser Speed	(0.4-5.0) Hz	Ref. Rejection of 300 dB	Very good.
Capacitive Load Test		2 uf @ 4.0 ohms dummy load	Small overshoot - stability poor when all controls - max and player should avoid this situation.
Open Circuit Stability Test		Dummy load - removed volume/presence/Master - Max. Tone Controls - Flat	
Short Circuit Test	0.5 min		No ill effects, Worked when short was removed.



delft's GUITARCHECK

TEST ON: Hagstrom 'Viking' semi-acoustic guitar. Sunburst finish

DATE: October 1977 PRICE: £250 ex. VAT (UK)

This is a nice instrument. It is also the sort of guitar which sounds significantly better with other guitars than it does on its own. If you are interested in trying one, it may be worthwhile to locate a sympathetic music shop, choose a quiet time of the week (Tuesday afternoon is usually a good one), and take one or two other guitar players with you.

Even without use of the tone controls, this guitar has nine switched tone settings, of which about five or six are markedly different from each other. You will probably find it much easier to assess this range of tones when the guitar is played with other instruments. Please bear in mind that even the most helpful music shop may not be happy about a showroom full of jamming guitarists on a Saturday afternoon without advance warning.

I suggest that you listen to this guitar along with other instruments, because my own opinion of it changed substantially after just such a test.

Tone Switches

My first reactions on taking it out of its box were: that I didn't particularly like its shape, that for a sunburst it looked a bit anaemic, and that the maker had inadvertently fitted two pickup selector switches. Further examination showed that this was not a universal left/right-handed model! One of the switches operates a tone-modifying circuit, which affects the output of whichever pickup or pickups are selected by the other switch. I had some initial difficulty understanding this system, until I realised that the selector switch was on the lower, treble-side cutaway, and the switch on the upper cutaway was the tone modifier. I am sure there are differing opinions about this, but I would prefer the selector switch at the top, possibly identified with the usual plastic ring marked "Rhythm/Treble". If symmetry requires that the other switch has similar bezel, it could be marked "Bright/Mellow", which is a fair description of what the switch does.

It has incidentally, a middle position, in which the tone circuit seems to be inoperative. This position, as one would expect, gives a sound somewhere between the Bright and Mellow settings, and this is probably the basic sound produced by the pickups.

There are now several guitars available with many switched tone settings in addition to the normal tone and volume controls. I have played five examples from four different makers so far and I find the Viking easiest to get on with. In fact, I found it easiest to ignore the normal tone controls and just use the



switched settings.

Two switches, each with three positions, are not too difficult to comprehend, as long as they are clearly visible from a playing position and not too close together. As a guitarist who often plays with fingernails (and prefers them undamaged), I should like to express the entirely personal point of view that I loathe selector switches with rough, knurled knobs. They break the edge of the nail exactly where it needs to be smooth and polished to withstand wear and tear from playing steel strings. If you do not use fingernails for playing, this point is of no significance and metal knobs are less likely to crack and fall off than the usual plastic ones.

My feelings about the colour of this sample are probably because I like to see a hint of red in a sunburst finish, or a base colour which has a little more golden yellow in it. In either case it is usually necessary to apply the two colours separately. This sample of the Viking seems to have a single-colour sunburst done with a rather cool brown.

The whole idea of sunbursting guitars is only a convention anyway, and there are no arbitrary rules about "correct" colour schemes, but I do prefer the colours of the sunburst Viking illustration in some of the Hagstrom advertisements. It is a small point, but my experience in running a repair shop suggests that some guitarists are strongly influenced by the colour of an instrument. (Whether their prejudices agree with mine is another matter!) As to the shape of the Viking, what I don't like is the shape of the body around the cutaways. There is nothing mechanically wrong with it, and there is a reasonable amount of clearance for the back of your hand, I just don't like the look of it. You may think this is a very unimportant detail and not worth bothering about. You may also disagree with me and think that the shape of the Viking is just perfect. Either way the question has little bearing on the value of the Viking as a musical instrument, although it may affect, for better or worse, its ability to compete for attention amongst other similar guitars from America and Japan.

Laminated Birch

The body and, I think, the neck of this sample are made from birch, a useful and subtle-looking wood which is often overlooked by guitar companies. If your experience of birch wood is limited to third grade plywood, think again. There is some excellent birch plywood about, and solid birch is traditionally used in some places for the handles of woodcarving tools. We get only third grade birch in England, because most of the demand is for cheap ply to be covered up with paint. (The only board of solid birch I ever saw on sale disappeared before I could collect it — I never did find out what happened to it.)

The quality of semi-acoustic guitar bodies made from laminated birch veneers depends on the skill employed in selecting suitable veneers and in gluing them securely together, and Hagstrom seem to know what they are doing. Unfortunately, the end result may have the same colour



as very cheap guitars also made from birch but with less care and skill. One might as well claim that all black berries are poisonous because Deadly Nightshade has black berries!

Tone

This is definitely a *semi-acoustic* guitar. Without amplification, it produces a fair volume of sound, although I don't think it quite reaches the standard of the "superb tone" referred to in the advertisement in front of me at the moment. Neither does it produce a "true acoustic tone" when amplified. I have not yet played any guitar which does produce a "true acoustic tone" via a magnetic pickup and an amplifier. However, it does produce a very nice tone of the sort which one expects from a thin-bodied semi-acoustic. There are several sorts of semi-acoustic guitars available with slightly different properties, and it may be to the point if I try to explain the basic difference between them. The only manufacturer to my knowledge who has models of both common types is Gibson and, as their guitars are generally well-known, I shall use their model numbers for identification.

A semi-acoustic guitar is not just a thin, hollow-bodied guitar with pickups. Some semi's are virtually standard plectrum guitars (frequently known as Gibson Jazz guitars) with added pickups, but I am only concerned here with thin-bodied semi's made from laminated wood and intended primarily for electric use. Even within these limits, there are important variations in internal construction.

This is not just a technicality it affects the sort of tone produced and the probability of unwanted feedback at high sound levels. Probably the two best known Gibson semi's are the 330 and the 335. There are exceptions to this rule (as I am sure readers of I.M. will rush to tell me) but, generally speaking, the 330 models were more or less hollow, except for a block of wood between back and front under the bridge, and the 335's had a solid lump of glued-together pieces of wood running from neck to end block.

This block not only stiffened the bridge, but rigidly connected the front and back of the body for most of its length. The effect is much more like that of a narrow rectangular solid guitar, concealed in an outer hollow shell. The same construction is used in the 345 and 355. I have noticed some slight variations in wood and assembly methods but I have not been able to relate this conclusively to variations of performance between different samples.

However, there is a considerable difference between hollow semi's and blocked-in semi's. The 330 type usually has a larger sound output without amplification and a greater tendency to unwanted feedback if played at high levels. Some owners of 330's have covered the F-holes with tape or filled the body with cotton wool in a (fairly) successful attempt to stop the feedback. The 330 style of semi is usually rather sensitive to anything which vibrates the body, and may reproduce handling noises through the amplifier, in addition to the intended

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It wasn't impossible, it just took a little longer.

THE BOTTOM LINE.

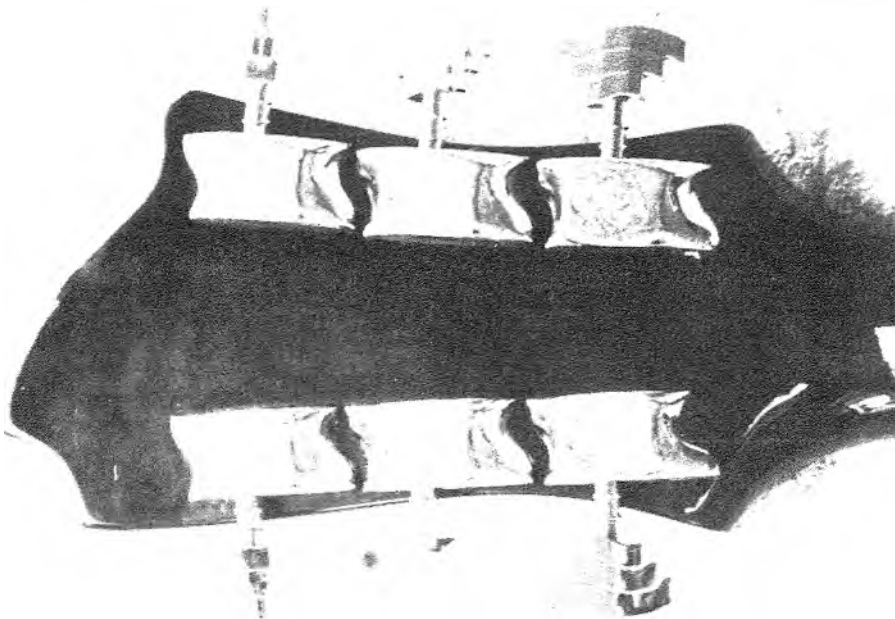
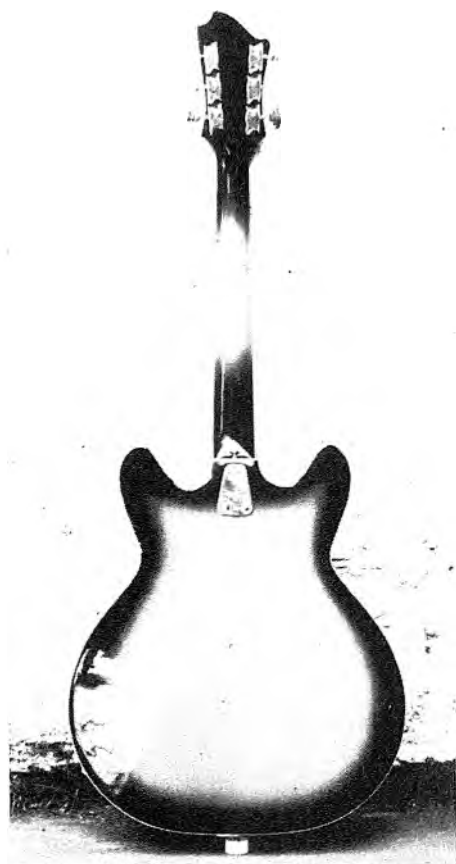
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On the positive side, the tone of this type of "nearly-hollow" semi is closest to that of a full-bodied plectrum guitar with a good added pickup. The "blocked-in", 335-type semi's sound much closer to solid electric instruments -- which may, or may not be, what you want. The 335 type is less sensitive to handling noises, and less likely to give unwanted feedback, but it is heavier, and its tone is one step further removed from that of a good acoustic with pickups. You pay your money and you take your choice.

The Viking appears to fall somewhere between these categories. It has a fairly narrow block from the neck joint to the bridge, fitted to the back only, and a block under the bridge from front to back. The front of the guitar is braced only around the bridge, and the back is braced only from bridge to neck joint. This sample does have a tendency to howl if held too near the amp, but only at high gain settings. Just how much of a problem this would be for you will depend on what you want to use the guitar for.

As a rhythm instrument in pubs, middle-sized clubs, and studios, there should be no problem with feedback. However, if you intend to turn up everything is sight and play searing (and deafening) single string solos, this is probably not the instrument for you. Do not be seduced by the excellent neck on this guitar: I doubt that it was ever meant to replace a Strat or a Les Paul as a lead instrument in a loud Rock band. There are *other* Hagstrom guitars whose appearance suggests that they *are* intended for this purpose.

The Bridge on this guitar is unusual in at least two respects. Firstly, it does not slip out of place if you remove all the strings. The top half will come off, but

the base is held in place by the height adjustment mechanism at each end. The bushes for these adjustments pass right through the bridge-base, through the guitar front, and into the block underneath. The top half of the bridge is a curved brass extrusion, with a projecting spine along its top surface. Six small brass saddles fit across this 'spine' and each is clamped in place by two screws, pressing on each side of the spine.

The basic range of adjustment is fairly small and is extended by the string bearing-point being placed off-centre on the top of each saddle, which can be reversed if necessary. Fine adjustments require first loosening one screw and then tightening the other one. This is not the simplest of bridges to adjust, but it has one very desirable feature: if correctly adjusted, the saddles are held rigidly onto the bridge frame, which is firmly attached to the body.

The chances of rattling bridge parts is fairly small, and the only parts which could work loose (the saddles) are easily tightened without disturbing the rest of the bridge. It is not a perfect bridge, but what bridge is perfect? This one needs a bit of concentration to adjust it, but once set, it works properly. There are others which are easy to adjust, and rattle whatever you do with them.

Pickups

The pickups are, as claimed, of twin-coil, humbucking construction. Instead of one magnet below the coils and iron poles in the secondary coil, this design uses individual magnets as the poles for the secondary coil, and an Iron base plate (in the position usually occupied by the magnet) to link the bottom end of the six magnets to the bottom end of the six adjusting screws in the primary coil.

Amateur pickup-makers please take note. The moral of the story is that six

long thin Alnico magnets are easier to obtain than one short wide one. It is possible that they are also more consistent. The pickup chassis and covers are made from Stainless Steel, which solves the problem of peeling plating. It *may* be possible to remove the pickup covers, but you are likely to destroy the pickups in the process. Leave the lids on!

Volume and tone controls work very well, with the exception of volume pot which is noisy when turned quickly.

Conclusion

Having said that there are in my opinion, some limitations to the applications of this guitar I must also say that it is a delight to play, and particularly good in combination with really good acoustic guitars, and a female voice. It is difficult to fault the neck and fingerboard in any way, except for the fingerboard binding and the guitar was supplied for review with good strings, a very low action and no buzzes. What more can one ask? I suppose one could ask that it is immune to feedback, has everlasting strings and tunes itself . . . and pigs should fly!

On a more realistic level, it is a good rhythm or accompaniment guitar and has a wide range of tone variations, approximately covering most of the established and familiar guitar 'sounds' in one instrument. It also has a little bit of something in its tone which you won't find in a solid guitar.

Measurements on Hagstrom Viking
 Serial No. 53 935096

Scale Length	628 mm
String spacing at bridge	52 mm
	(adjustable)
String spacing at nut	36 mm
Fingerboard width at nut	42 mm
Action as supplied	1.1 mm treble / 1.9 mm Bass.

This is about as low as possible on this sample.



delft's GUITARCHECK

TEST ON: Guild M.20 acoustic guitar

DATE: October 1977 PRICE: £203 ex VAT (UK)

Introduction

Scattered around England are a few dozen smug guitarists who have been fortunate enough to find secondhand Guild F20's with the body made entirely from Mahogany. I think they were originally called F20 M models. Like the little old 'brown' Martins, with Mahogany fronts, they have a sweet tone and record beautifully. Unlike little old brown Martins, they have sometimes been offered for sale in music shops at absurdly low prices, because no one quite knew what they were.

I doubt that there are more than 10 or 20 examples of this guitar in good condition in the country, and any that are for sale are likely to go up in price overnight as soon as the present owners read the above paragraph. I am not sure whether Guild discontinued this model or whether it was no longer imported into England, but I have not seen a new one for a very long time, and I did not expect to see any in the future.

For reasons of their own, Guild have once again made the M20 model available in England, and if the one I have is representative, they should be very popular. I hope they will be sufficiently popular this time round to ensure their continued availability. I do not mean in any way to be disparaging, but large pieces of wood are hard to find. If a company can use some of the smaller pieces, and produce from them a nice responsive instrument, that surely is a worthwhile thing to do.

It seems to be a tradition that little brown guitars are satin finished, not glossy, and I would not wish to change this tradition. However, I would like to do something about the lacquer on this review sample. It is carefully applied and well finished off, and I have no quarrel with the workmanship, but the lacquer itself appears to be the sort which contains wax or silica and gives a satin finish straight from the spray-gun.

This particular batch of lacquer is just *too* matt. As delivered for review, there was a sort of grey bloom on the surface which killed the colour of the instrument, and the guitar needed a light wax polishing to restore the full colour. The same lacquer, with rather less matting agent, is more likely to produce a finish resembling old mahogany guitars. I know that this 'bloom' wears off, but it does so unevenly and without a bit of wax polish, a new guitar finished like this looks rather strange. If the finish is intended to resemble the dirty state

some of my customers let their guitars get into, I can only say that I don't think good guitars should be left in that state, even if it does have a tenuous association with the image of 'real' musicians.

Construction

I could, if I wanted to niggle, say that one of the machine-head bushes is not pushed fully into its hole and that the glue joint between bridge and soundboard might be suspect, but it doesn't look suspect enough to worry me, and I would be happy to buy this sample. I think the action is higher than necessary. There is enough height in the bridge and saddle to make a lower action possible, but only just: I would like to see a larger possibility for adjustment.

I think the reason for the fairly high action is a marginal problem with the setting of the neck on the body. This sample is adjustable to a good standard of performance, but a neck setting further out from optimum alignment could produce an instrument with poor playability, outside the range of normal 'over the counter' adjustments.

It is also possible that I have a sample which only just passed Quality Control, and most other examples would be better in this respect. Even on this sample, the action and neck alignment fall within the range of normal adjustments unless you happen to be a low action fanatic.

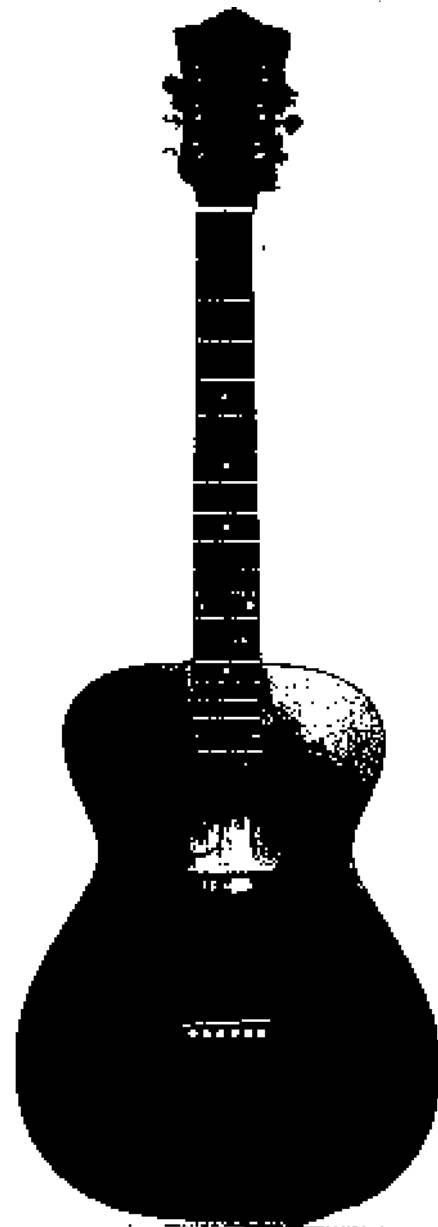
I have no other significant criticisms of this guitar. It is, I believe, the lowest-priced Guild acoustic available. It has an absolute minimum of decoration — there is not even any binding on the edges of the body. This ought to make it more susceptible to damage, but small-bodied guitars seem to suffer fewer small accidents of the sort which cause chipped edges.

Conclusion

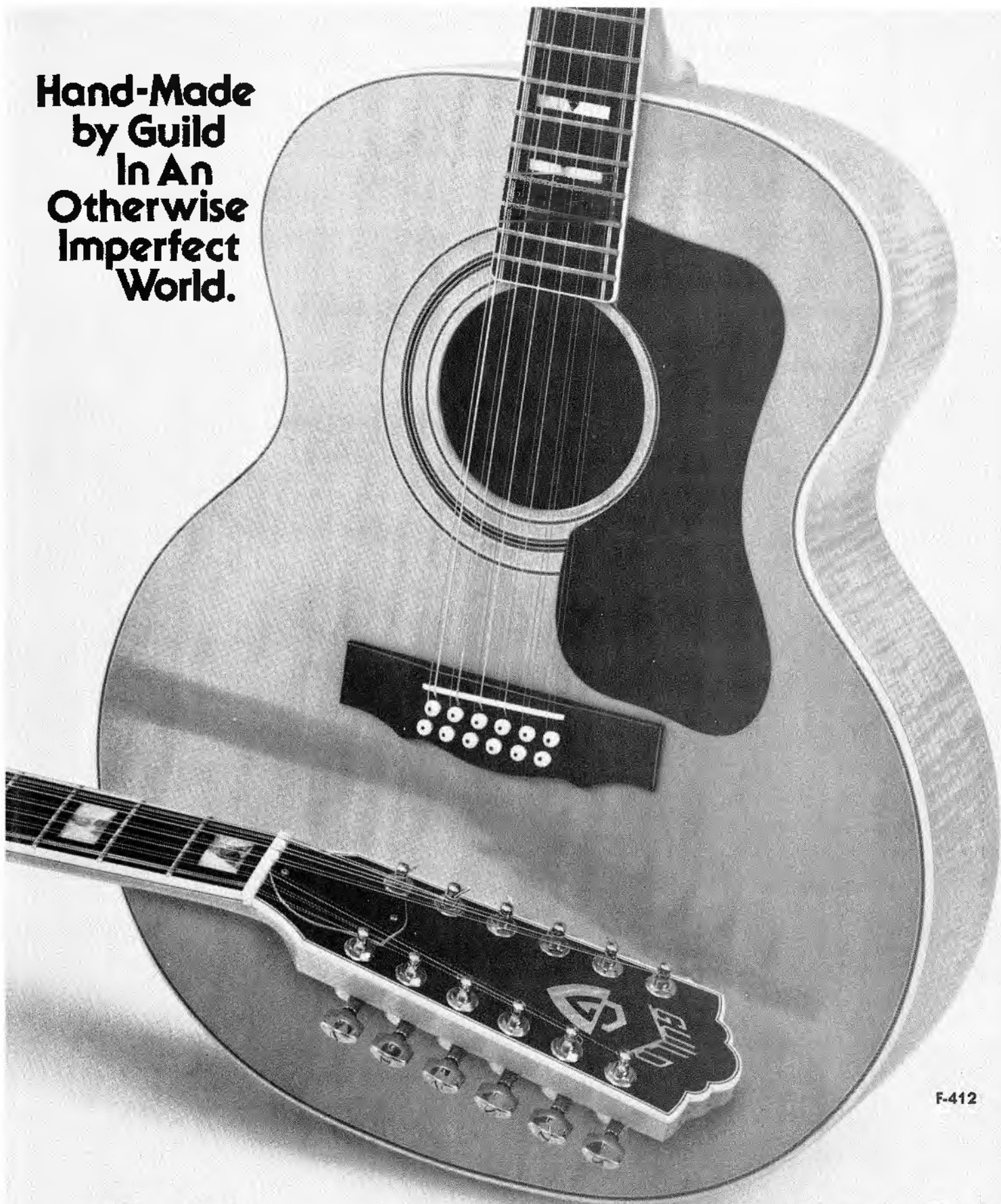
This is a good guitar to write songs on, loud enough for small folk clubs and it also records well. It is also probably the lowest-priced non-laminated guitar (i.e. entirely made from solid wood) available. Even with its action as supplied, it is pleasing to play, and this could be improved significantly with about an hour's work And I always did have a weakness for small brown guitars.

Measurements on Guild M20 Ser. 158085

Scale length	652mm
String spacing at bridge	54mm
String spacing at nut	36mm
Fingerboard width at nut	43mm
Action as supplied	2.3mm treble/ 3.2mm bass



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henrit's DRUMCHECK

TEST ON: Beverley 8003 kit. DATE: September 1977

PRICE: £362.38 plus £200 for concert toms ex. VAT (UK)

Some time ago I did a Drumcheck on Beverley but, since then, they have brought out a completely new range of drums and fittings. For those of you unfortunate enough to have missed my original article I'll reiterate the facts about them.

These drums have been built in England since 1904 when the marque originated in Beverley, Yorkshire. Subsequently, they moved to Leicester where they are still built in Wigston. The original factory founded by a C.S. Deans had been famous for making and bending metal tubes for all sorts of general applications. No one seems to know why they got into the business of making complete drum outfits but one could hazard a guess that they graduated to it logically, or illogically via making drum stands and fittings.

They have, until recently, been considered a somewhat second-rate or economy set but within the past year or so their old image has been updated and streamlined (just a look at the photograph will confirm this), and Beverley are nowadays definitely a division one set.

This month's set does not have an actual name or number but is made up from a whole octave of single-headed concert toms (available singly by the

way if you fancy adding to your present set) - 8,10,12,13,14,15,16 and 18 inch diameters and outfit 8003 with a 24 inch bass drum, 13x9, 14x10, 16x16 and 18x16 double-headed tom toms and a 14x6½ metal shell snare drum. The set price includes spurs, legs, one bass drum, mounted double tom tom holder, a pair of sticks, a pair of brushes but no other stands or pedals. While I'm on the subject, there are two completely different types of stands and pedals available. One sort are called "Executive" with solid flat metal tripod bases, the others called "Professional" are tripod-type too but much more substantially built from 'U' section extruded (or is it pressed) steel with larger diameter centre tubes - sounds familiar doesn't it?

Bass Drum

The 24" x 17" bass drum is slightly deeper than normal made from five ply Birch with solid glue rings possibly mahogany. Like all the drums it is neatly finished inside with a light coat or varnish and metal plates behind all the nut-boxes and fittings. The drum had twenty cast nut-boxes and 'T' handled 7/32" threaded tensioners with pressed steel claws. These nut boxes I wasn't knocked out with before but seeing them now against Beverley's new solid plastic finishes they don't look too bad at all -

perhaps just a little fussy. The timpani-type tuners are the ones I saw before with cast handles which still don't look too strong. However I've never heard any complaints about them breaking.

The drum itself had a big loud sound which I feel could be warmed and improved with a better quality head - it had an Everplay Extra whereas the others had the better Everplay Extra Plus. It's supplied with two felt strip dampers and solid wooden, plastic inlaid hoops. Beverley fit non-disappearing, bent out rigger type spurs made from more-substantial-than-usual mild-steel rod with optional spike or rubber foot ends. These spurs fit neatly into large cast blocks (which also double for tom tom leg holders) which have large wing tensioners to hold the rods securely.

Tom Toms

8003 has 13,14,16 and 18 inch diameter tom toms. These of course are the sizes which have become standard for modern music which demands big-sounding sets. These are of course double-headed but, as I said, the set I saw had the concert tom toms too.

Beverley have been rather shrewd I feel in not making a 6" single-headed drum, (I have never heard a 6" drum which sounded anything other than a glorified bongo - furthermore the smallest drum is often difficult to hit clearly in a hurry). So, they forget about the six, start at eight and substitute an 18 at the bottom end. If I owned this large set I think, for ease of playing and sound I wouldn't set them up as in the picture but instead try to put the eight melodic toms in front of the normal double-headed, bass drum mounted ones. From a sound timbre point of view single and double heads don't mix in a run. Incidentally, Beverley's single headed drums have spring steel, internal, under batter head operating dampers on them too which is unusual and could be useful. All tom toms have triple flange hoops, the 12" drum has six tensioners per head as had the thirteen. The fourteen, fifteen, sixteen and eighteen all had eight. Tension screws are standard British pattern with screw driver slot to take the drum key. These mounted drums including the single headers have a spur/leg block doubling as a tom tom holder attachment fixed to their shells.

The sounds from all the drums were deep and clean although for some reason I found the smallest one a little bit "clangy" - mind you I started tuning them up from the bass tom end first and might have made the small one too highly



pitched. I think the tom tom's sound could have been improved by fitting C.S. heads which would thicken it up a little and also brighten it overall.

Snare Drum

The Beverley snare drum seems to be the one I saw before but now available with a 6½" metal shell. Then it was called the '21' but I would surmise it's now called something different. Anyway, I was impressed last time with this drum and am still impressed. It's sound is "brittle" yet with depth mostly due to its 16 gauge mild steel shell construction and its triple flange hoops. This one was fitted with Everplays Plus 75 head which helped to thicken the sound a little. The drum has a 45 degree inverse flange with a snare bed, a single head for strength and ten double-ended nut boxes. (I was surprised to find these fixed to the shell with just a single screw. Since the nut box has a semi circle cut out of it where it fits over the convex bend I shouldn't think it would twist). There's an unfussy adjustable cam action snare strainer string-attached to a twenty-strand snare (the buttend being non-adjustable) and an extremely small sound hole. It's roughly ¼" in diameter as on all the drums. (I'm in several minds about these holes - I used to have a Trixon set without any at all and the result was a very compressed sound. Slingerland's Buddy Rich snare drum has three holes which give an open sound, there's also an American snare drum with ten air holes but so far I don't know how it sounds).

Last time I reviewed the Beverley snare drum I said: "It's a very nice drum which, if fitted with American heads, would be difficult to distinguish from its more expensive Chicago built competitor." I still stand by that statement. It is now possible to buy a wood-shell Beverley snare drum with a 5" or 6½" deep shell, but to order.

Accessories

The "Executive" snare drum stand has wide spreading tripod legs and a slightly updated, cradle-style holding system. Instead of one moveable and two fixed arms to clamp the drum, this one has an arm hinged to the centre which can be moved in a vertical arc on to the drum with a wing bolt. It's ingenious but I don't think it would take anything other than a 14" drum so you couldn't mount a small tom tom on it. The aforementioned arms are bent at their ends into a radius and sheathed in rubber to better grip the rims of the drum. It has a unique playing angle adjustment which works on a friction clutch with two rubber washers inside which mesh when the new style wing bolt is adjusted. There are three reasonably large wing bolts to adjust the height of the stand and one can tailor the spread of the tripod legs to any playing requirements. The stand works well and looks like it would last for years.

The alternative "Professional" snare stand has the same sort of non-basket type drum clamping system but has a much wider based tripod bottom made from the 'U' section extruded steel with self levelling floor glides which is much

more sturdy and has more substantial centre tubes and larger wing bolts.

Their "Executive" hi-hat has a side-pull nylon sheathed action with a non-adjustable spring. It has a strengthened two piece cast foot plate with rubber non-slip inserts at heel and sole contact points and a sharp spur, drum key adjustable on a screw thread. Like all the other stands it has rubber-tipped tripod legs which ought to keep it on an even keel. It has a jubilee clip fitted above its height adjustment screw which helps make sure the unit sets up at the same playing height every time.

The bottom cymbal sits on a plastic cup which would benefit from being a little larger as would the top cymbal's clutch which is a little fiddly. The whole unit was high enough and felt quite smooth in operation, although a side pull could never be as good as a centre pull.

The alternative Beverley "Professional" hi-hat actually is a centre-pull job with two adjustable expansion springs, large bore tubes and the same extruded 'U' section tripod legs with floor glides and a plastic strap for its pedal linkage. It sports the same cast foot plate as the "Executive" and is needless to say a much better job and more realistic for up-to-date playing.

The tripod base on the "Executive" cymbal stand is slightly shallower than on other stands and is thus not quite so substantial. I admit it goes quite high but the higher it goes the less trustworthy it seems - especially if you are trusting a hundred pounds worth or so of Zildjian or Paiste to its tender care. It has a cast spring loaded ratchet tilter which can be adjusted with a screwdriver type key. As you'd suspect there's a "Pro" cymbal stand which is much heavier duty with very wide tripod base and the 'U' section steel legs with self levelling pads. Whilst the tubes have larger bores than on the original stand the cast tilter is exactly the same.

The "Executive" foot pedal for the bass drum is something like the "Fleet-foot" pedal which was revolutionary over 20 years ago. This in no way makes it obsolete (Ludwig's "Speed King" has been around for much longer) and it works well within limitations. The unique pivot frame of the pedal is made from solid substantial rod bent into a 'U' shape with its bottom clamped to the bass drum hoop. It has a single adjustable cam and expansion spring. The two piece cast footplate is strengthened with ribs underneath (so is the hi-hats) and has three positions relative to the head-dead centre, slightly left and slightly right (for left footers and double bass drum players). The strap is made from plasticised industrial fibre and doesn't look particularly sturdy although of course this may be deliberate to make sure the easily replaceable strap is the weakest link. The models I have seen have all been fitted with wooden beaters which I dislike since they wear the head away eventually. The catalogue shows a lambswool one so here is a slight alternative. A pair of key operated spurs are built in to stop the pedal from creeping. I don't think the manufacturers have

seriously aimed this pedal at the professional as I found it a wee bit unresponsive, but at the price it competes well with standard no-nonsense pedals.

So far I haven't heard of any plans for a new Beverley pedal but I wouldn't be surprised to see one appear soon modelled along the same lines as the 252. By the way all the "Professional" stands and holders come in a nickel-plated finish - it's like brushed aluminium (some American stands were available in it in the early sixties).

Beverley's double tom tom stand is used not only mounted on the bass drum for their double headed drums but also on a large flush based stand with thick flat discs thoughtfully provided with a drum key adjustable spur on each tubular leg for all of the concert toms. It's a sort of hybrid which works well and allows close tom tom placement. (I feel its receiver plate could be fitted nearer to the front of the bass drum though). The stem of the holder is oval shaped and locates into a pressed steel block bolted to the bass drum (or in the concert toms case, onto the top tube of its cymbal type stand). Two large wing bolts hold the height adjustment securely by pressing on each side of the oval section tube which by its shape effectively stops the tom toms from circling about it. At the top of this tube is a 'T' shaped casting with a pair of substantial screw locked ratchet tilters which hold and contain two knurled 'L' rods. These thicker-than-usual rods locate into spur-type blocks bolted to the tom tom shells which are then secured with the usual 'T' shaped large wing bolts. These blocks are also used for the bent-bottomed, wide spreading tom tom legs which are slightly thicker than usual which can't be a bad thing. This tom tom holder when fitted on a stand is the only one I have ever seen which can easily take and stabilise together a 16 and 18 concert tom.

Appearance and Conclusion

These new Beverley drums look good, clean and unfussy and with their updated badges are a great improvement. The colours supplied (with the exception of the burnished pewter) are all very serviceable and professional-looking, black, white, red, blue or yellow solid plastics now being available also. I liked very much the nickel-plated stands which gave a no-nonsense image to the set yet still looked attractive. Here's a drum kit which has always sold steadily in an "unsung hero" sort of way. Its image has now been updated and given the present vogue for single-headed drums, could at the right price and with the proper endorsements and exposure make mince meat of some of its overseas and even home-based competition.

P.S. When I wrote my last report on Beverley I felt there were no problems at all with their sound but some of their fittings although perfectly adequate at one time had been superceded by some of the Behemoths built by their competitors of late - anyway now, there are better and heavier duty stands available. I'm sure this will help their selling power no end.

IN BRIEF IN BRIEF

On Test: Ibanez analog delay/flanging units. Price: AD-220 £414/AD-230 £532 (ex VAT)

It was only a matter of time before there was a Japanese version of studio effects units and Ibanez are there first with two new analog delay/flange units.

The two units, AD-230 and AD-220 are still to be introduced into the shops and the only ones in Europe at the moment are in Chappells London studio.

Both the AD-220 and AD-230 appear to be aimed at the small studio owners: bands who perhaps are into their own recording and have their own studios but are nevertheless on a restricted budget. For this segment of the market, costly units like Eventide are out of the question and the Ibanez units would seem to fill this need adequately.

It should be remembered that the units are primarily analog delay machines which have the facility of flanging as a built-in effect much in the same way as many amps have reverbs built in to fulfill a secondary function. Flanging is flanging and the sounds obtained from the two units were nothing more, or less, spectacular than you would expect to find on a quality foot-operated unit.

The delay function is particularly effective on these units and any amount of echo can be obtained from a slight reverb to a full repeat of the original signal.

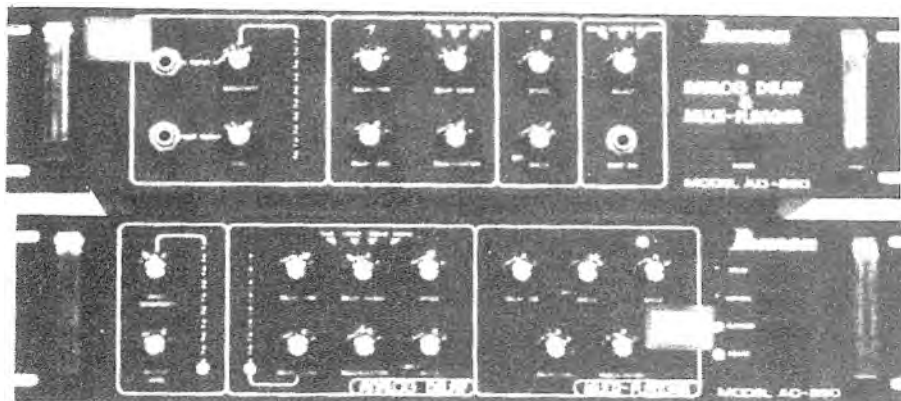
Both units come with a full complement of controls. On the AD-220 these are: Input sensitivity, output level, delay time, delay range, regeneration, LFO speed, LFO width, delay/normal/flanger mode selector switch, power switch, and normal/effects foot switch. The AD-230 has more controls associated with the flanging function such as: flanger delay time, delay level, and separate regeneration control.

The machines can be used easily on stage as well as being rack mounted in the studio, making a double economy for a band which needs to use the effects both for live and studio use.

Monitoring of the analog function is simplicity itself thanks to a clever LED display which indicates at a glance the amount of delay being switched in and the speed of the effect.

The bulk and weight of both the machines (just over 8 kg) makes them highly portable and compact and their construction seems durable enough to withstand normal rigors of the road and studio. At their current price these Ibanez machines are bound to create a great deal of interest as well as enabling many musicians to obtain quality effects units that were previously denied to them through prohibitive prices.

Ian White



On Test: The Satalite flanger/phaser (available only through Free 'n' Easy shops. Price: £80 (inc. VAT)

This pedal sounds like something out of "Star Wars". I'm still not quite sure if it's a straightforward flanger/phaser as the printed legend on the box states, or something out of the BBC "Dr. Who" sound effects department.

The device is aptly named "Satalite" and though flanging is in itself a pretty spacey sound, the noises you can get from this box of tricks make other flangers sound subterranean. I don't know if what the Satalite offers is good or bad. It seems sometimes to totally ignore the guitar and go off and make its own indescribable swoops and wows as if it was working without any reference to the instrument plugged into it.

The Satalite takes a great deal of juggling with the "rate", "depth" "range" and "colour" controls to get a proper guitar-related sound. Once you've achieved this, the box does emit a fairly pleasant double-tracked or chords effect with a tinge of echo. But the slightest adjustment of the colour control transforms the jingle-jangle guitar sound into something more like a UFO taking off.

I'm not sure I like the printing quality of the Satalite. It is tacky and makes the unit look far cheaper than it is. The slider controls are a good idea but they don't look as if they would stand much heavy footwork from an enthusiastic player who wanted to change the sound with his feet.

The unit is mains operated which has the advantage of eliminating the prospects of flat batteries and the disadvantage in that you have to work closer to a plugboard than may be desirable.

At a suggested price of £80, the Satalite is, in my opinion, overpriced. But this is offset by the fact that I've never heard any other flanger quite duplicate the sounds made by this unit.

Whether or not you can make use of this sound in a practical application is

another matter. But if you want to add a touch of the Inter-Galactics to your 12-bars, the Satalite seems worthwhile investigating. Hopefully the makers will improve on the presentation of the Satalite before too long and change the ugly paintwork lettering that was on the model we had for review.

Ian White

On Test: De Armond Thunder Bolt 5-Octave Wah Pedal B and M Champion Wah Pedal

It is interesting to compare these two pedals, because of the considerable price difference between them. The B and M Champion costs £18 and a few pence and the De Armond costs about £60. Each has some points in its favour.

The Thunderbolt is made by the American Rowe-De Armond company, (is there any guitarist who has *not* used a De Armond pickup?), it has a cast aluminium base, and gives the appearance of being very solidly constructed. I am not so happy about the pedal part, which is folded from sheet steel.

The corners are neither welded, nor overlapped, and all four have sharp projections. It is not very likely, but if you picked up this pedal carelessly, or fell on it while loading the back of a van, you could do yourself some damage.

I am surprised that De Armond have not used seamless pressing for this component. In other mechanical and electrical respects the Thunder Bolt uses high quality components throughout. It is less likely than most, to suffer from crackles after some use, partly because it employs a high-quality moulded-track potentiometer, and partly because this potentiometer appears only to carry a variable bias to the voltage controlled filter.

This is the same principle found in V.C.F's in most synthesizers. The theory is that, as no part of the signal passes through the pot, there is less chance of the odd crackle and squawk finding its way into the output. The electronics

under the lid are quite extensive and complex (and expensive), and I must admit that the Thunder Bolt is certainly one of the quieter pedals available. It also, as its '5-octave' name suggests, has a wider frequency range than many pedals, and can be used with a Bass guitar, to produce some surprising effects.

The B and M Champion is in rather a different category. I am sure its designer rightly considers it is a bit above the average, but basically, it is the standard recipe for a conventional wah pedal, done very well indeed, at a low price.

I suppose it is possible that I have got a better than average sample, but I chose it myself unheard, from a pile of about 20. That's a fair approach to random selection. It really is remarkable what can be produced to sell for £20. This Champion has no sharp corners, survived a 2-Meter drop test unmarked and unchanged, and if my sample is typical, seems to be one of the very best examples of lower-priced effects pedals.

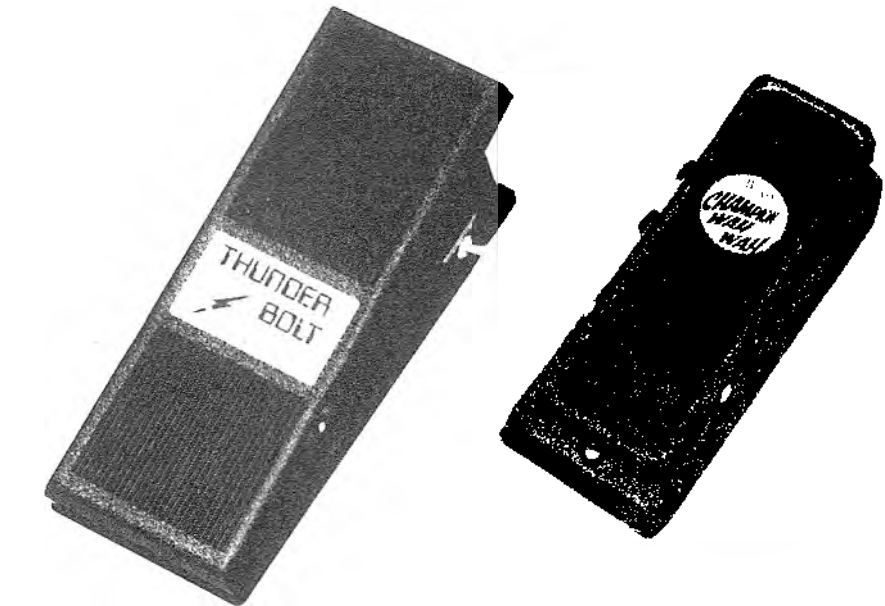
American companies understand very well how to make an item *look* robust, but the cases of these two pedals seem equally robust for normal usage. The Potentiometer on the De Armond and its drive mechanism are likely to last longer without giving trouble, but the mechanism in the B and M unit has been around a long time, and if you leave it alone it should last several years before needing replacement. If the makers would enlarge the pot; mounting bracket, the owner would at least have the *option* of fitting a (larger) moulded-track pot.

The noise level of the B and M Champion is a little higher than that of the Thunder Bolt and if you use it frequently you may need a new pot now and again, but personally I prefer its sound to that of the more expensive American unit. It is also very much cheaper. I award the contest, on points (and sound) to the B and M Champion. **Stephen Delft**

On Test: Bell effects pedals. Prices in text.

There are already a few modular effects systems on the market but there is still room for more and this new range by Bell Electrolabs is a welcome addition. At the moment, their range of effects include: Flanger, Phaser, Vibrato, Fuzz and Sustain, although a new ADT unit should be on the market soon.

As in any modular system, the effects units link up side by side via two nylon plugs (on the right hand side of the units) and corresponding sprung steel and nylon sockets (on the left). All electrical connections are simultaneously



made through 5 pin DIN connectors. Standard PP3 batteries power each effect and a master mains box, called The Mother, is available for mains supply. One Mother can supply up to ten effects simultaneously and, by using an optional Electrolabs power lead, can power two banks of modules so two musicians can share the same Mother on stage.

The system is simple and uncomplicated borne out by the fact that only two jack leads are needed for any number of effects – the instrument plugs into the first effect while the last effect in the line is connected to the amplifier. An LED indicator displays on/off modes.

The effects units, individually or collectively, are outstanding. The Flanger (£59.68) is particularly versatile. Without going into technical terms like Clock Pulse Generator and Analogue Shift Register, suffice to say that an enormous range of effects can be obtained from this unit. By varying the controls (Speed, Filter and Mix), you can get the traditional "skying" flange, a "chorus" effect, a 12-string sound and a simulated ADT effects among others. Another "first" is the optional stereo output facility which splits the original signal and the delay signal between two amplifiers.

Their Fuzz effect (26.20) has controls for Volume, Sustain and Tone and can produce a bassy, smooth, Clapton-like "woman-tone" at one end and a raw, biting treble distortion at the top end. At mid-setting, the tone response is flat and gives an almost "equalised" fuzz. When used with the Flanger, this unit goes a long way to providing the Isley Brothers guitar sound.

If you're in a band doing gigs that don't allow you to turn your amp "flat out", the Sustain unit (£33.70) may well

be what you're looking for to help you get the overloaded valve sound at low volume. Controls are provided for Volume and Sustain so the sound can be pre-set and a Stage/Studio switch which allows you to change from heavy power chords to sustained 2nd harmonic lead lines.

The Vibrato unit (£24.21) is an often overlooked effect. Yes, it's the same type of effect that was built into many 30-watt combos years ago but hasn't enjoyed the same amount of popularity that Fuzz, Flange, Phase and all the rest have recently. Vibrato can be used tastefully in many ways. Arpeggiated chordwork can be enhanced by the use of a Vibrato unit, bass guitar also sounds richer in some applications (Chris Squire of Yes has used Vibrato in the past) but, when linked up to the Phaser or Flanger, the Vibrato unit really comes into its own. By careful setting of the Speed control and with the Depth about two-thirds on, it's possible to get a simulated synthesizer-type pre-set pattern. I tried linking the Flanger with the Vibrato in just such a way and played the Arpeggio from the synth intro to The Who's "Baba O'Reilly" – and was surprised at how realistic it sounded.

The Bell Phaser is, without doubt, one of the best I have come across. It has a 30-odd second sweep and produces a rich, deep and full phased signal. The speed control can be set at its slowest to produce a dramatic and subtle slow rolling phase while switching the speed control to the right produces a chorus tremelo type of oscillation.

The Mother costs £27.80 and all prices exclude VAT.

Eamonn Percival

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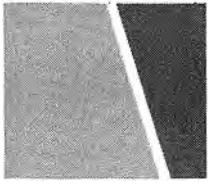
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THE NAKED REVOX PART I

Sooner or later, if music is an important part of your life, you will consider buying a Revox, simply because it is the Rolls Royce of semi-professional recorders. Manufactured by Willie Studer, famous for Studer master recorders, to the same high standards. Its capstan motor, for example, is made on the same 8 ton press and is nearly identical to that of the £24,400 Studer A80 24-track machine, to be found in most of the world's top studios. It also has the same adjustments for bias and equalisation as a professional machine which means that it can be serviced every year and recalibrated like new, regardless of age. A ten-year-old Mk 2 can be adjusted to give the same performance as a new Mk 4 providing the heads are not too worn and, for less than £30, have the knobs and front covers updated so it looks brand new too. Very interesting if you would like a Revox but find the current new prices of around £550 for standard and £650 for a high speed beyond your means.

Renowned for its long life under punishing conditions, it is nearly impossible to wear out the main bearings. A machine was recently returned to the main agents for service after six years of almost continuous day and night use in industry, without breakdown. On examination, the heads were very worn indeed but the bearings were perfect. It was returned, ready for another six years, for under £100.

The wear on the heads is caused by the abrasive effect of the iron oxide particles which coat the recording tape, which is only rust in a sophisticated form. The wear pattern takes the form of a flat across the width of the curved head surface and, by measuring this, it is possible to tell if the heads need replacing, normally 4mm maximum but sometimes 5mm before the performance is affected. The rate of wear can be reduced by the choice of recording tape, as some brands are more abrasive than others, Maxell and TDK being very smooth closely followed by Scotch 207 recommended by the factory, (their own "Revox" brand is selected 207) and Agfa PEM.

The life of the heads on pre-Mk 4 machines was a conservative 900 hours but the new permalloy Mk 4 heads, which can be fitted to any model for around £50, are rated at 5,000 hours.

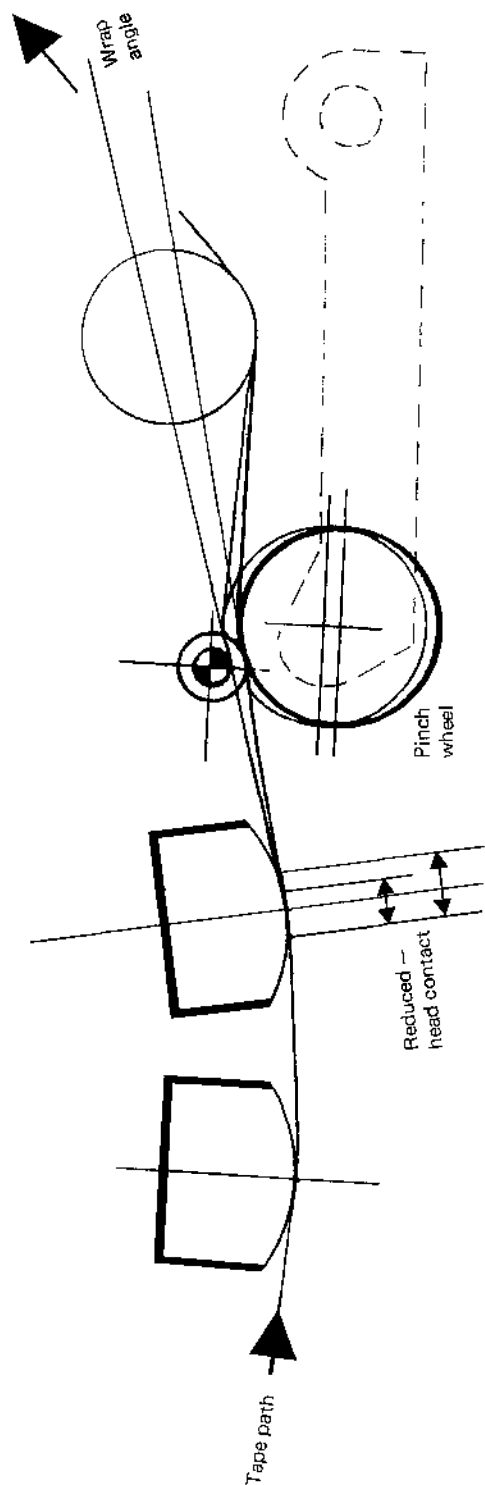
You might consider buying (or already own) a four-track Revox with worn heads, in which case, for around £75; which includes three new heads and an oscillator coil, it can be converted to the more useful two-track which has a

better signal-to-noise ratio for multi-tracking and is essential for tape edits.

The conversion of a standard model to high speed costs about £110 and includes a new motor at £75. All factory-built high-speed models have the 7½-15 speeds silk-screened on the shell with the rest of the functions and the monitor select skirt has only "tape" and "input" markings, equalisation is IEC as standard, NAB to order. Beware of the machine with a sticker over the speed markings which says "British high speed professional" or similar, sometimes in German. These are cheap conversions, costing around £40, in which only the capstan shaft is changed, or a sleeve fitted over the existing one. Doubling the diameter of the shaft is the correct way to double the tape speed but if the motor is not offset 2.25mm in its mounting as the factory conversions are, the path of the tape and the wrap angle is wrong. If you increase the diameter of the shaft, this moves the tape away from the head, altering the angle at which the tape passes the minute gap at the centre line of the head. It is important that the tape contact or "wrap" against the head is equal on each side of the gap, a total of around 5mm. If the angle is decreased the tape will touch more on the left hand side of the head altering the frequency response to the extent of an 8000 cycle drop at the top end from the 20,000 peak to around 12,000, which is serious for this class of equipment. The tape will also not stay in the tape guide which keeps it tracking straight over the head resulting in "drop out" or sudden loss of signal when the tape veers off course.

The firms who do these cheap conversions try to compensate for the loss of correct angle by bodging the mounting plate by filing the holes to push the head down and sideways. The tape guide has to be flattened out and bent to an entirely different shape. Having lost the correct tape path, it is almost impossible to regain and many of the firms do not have the correct equipment to check the performance to begin with. To tell the correct conversion, look at the end of the capstan shaft and the mounting, these should not be concentric but have 2.25mm or nearly 3/32" offset in the direction of the digital counter.

The vari speed conversion is mainly for the Revox to be found in most professional studios being used as an echo. The motor speed is controlled by a "servo motor circuit board" which governs very accurately by reading the speed and compensating the current to the motor by tiny amounts to keep it



REVOX A77 tape path diagram. Full size. Showing how head contact is reduced when capstan is doubled to convert to high speed without offset to motor.

constant. By modifying this circuit so that the current can be altered manually, a wide range of speeds can be obtained, from around 30 inches per second to nearly zero, and thus a wide range of echo delay times. Because of the demand by studios for this type of conversion, the later Mk 4 boards were modified with integrated circuits to make this simpler.

This delay, caused by the time it takes the tape to travel from the record head to the replay head can be eliminated by the "synch" conversion which modifies the internal wiring to enable the head to playback on one track whilst recording on the other and is how master recorders operate.

It is possible, when multi-tracking, to just switch the output wires so that you hear the existing track in "synch" with the fresh overdub. It rather depends on if you have the patience to change the wire for every new track. If you don't mind the fiddling about then don't bother, but if you're impatient, then go for a "synch" conversion.

The Dolby-equipped machines are only supplied new and cannot be done by a conversion. They are externally distinguished by a small sliding switch between, and just below, each pair of knobs. Beneath the flip-down lid there are two calibration knobs for setting the Dolby to the tape's sensitivity.

A cosmetic update to the appearance of a Mk 4 can be done on any previous Mk of Revox by changing the various parts visible from the front. The drive cover was changed to the later type of dark grey plastic at Mk 3 so is only necessary for Mk 1 and 2 and can be fitted by taking out the two screws at the lower corners and gently pulling so that the clip fasteners at the top come free without snapping the cover in half, the replacement gently pushed on to the three sockets and the screws replaced. The lower front panel is removed in much the same way and, in the case of Mk 1s, will need replacing but Mk 2s can get by except if the new-type meters are to be fitted, in which case they will need to be filed slightly larger and the rib inside cut away by the technician fitting them. The old shell is removed by carefully peeling it from the cover starting from the back where the knob holes allow access to push the shell up with a screwdriver. The new shell is fitted by gluing it to the front, making sure that the clear Bostic or similar does not squeeze out round the edges, so little is needed.

Fitting the new lid, the long flip-down cover, is done while the front is off by loosening the screws of the mounting

pivots and un-hooking the springs. To remove the push buttons from the perspex arms on which they are a snap fit, lever a 10p coin between the shoulder on the arm and the button and simply press the new ones in place, making sure that the lip is at the bottom. Very carefully rock the record buttons next to the meters backwards and forwards and they will pull off. All the knobs will pull off too and the skirts should be rocked to avoid pulling the entire tube out. It is not really necessary to change the black VU meters of the Mk 1 and 2 as they are mechanically the same as the later type and some people prefer them in appearance anyway. So, for around £29, you can make your shabby "old faithful" sparkle like new with the list of parts shown.

To keep the performance like new the heads need demagnetising every month or more frequently in heavy use. A demagnetiser would cost around £15, and any oxide removed before every day's recording. Every year, the machine should go for a service and readjustment, or two years if it only gets occasional use, to keep it performing up to specification. There would appear to be very little that is likely to go wrong so there is no such thing as a clapped-out machine, as it is

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VU Meters	2x1077470-04	£11.32
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Feeler Conversion Kit	1077199-99	£11.89
Push Buttons	4x1077490-07	£ 2.28
"	1x1077490-08	£ 0.57
"	2x1077475-03	£ 1.14
Head Cover	1x1077665	£ 0.85
	Plus VAT at 12½%	

always going to be cheaper to have it brought up to scratch than to buy a new one, even more so with inflation.

Thanks to the service dept. of F.W.O. Bauch Ltd. for their help in compiling the information. Any queries should be addressed to them at: 49 Theobald Street, Borehamwood, Herts, WD6 4RZ (Tel: 953 0091), along with any conversion and repair work.



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The Producer

Previously, in this series, we discussed certain specifics concerning the recording of instruments. This month, we'll be looking at a studio job that doesn't actually involve playing or (necessarily) engineering: that of the producer. Most people who buy records must have noticed "Produced by Myron Newt" or some other name on the sleeve credits and centre label of the record, but few outside of the studio world are actually aware of what a producer *does*. (And with a few producers, some of us inside the studio world sometimes wonder, too!) It's difficult to define in one sentence the role filled by the producer but, basically, his task is to translate onto vinyl disc, through many and various processes, the music and character of the artist he is producing, and to do this within the confines of the budget laid down by the record company concerned. Also, he has to act as a catalyst in the studio between electronic equipment and its operators, and the music and the artist, drawing the full potential of that artist out of himself to maximum performance. All of which is a little verbose and long-winded, so lets take it stage by stage and see what a producer gets up to from the beginning.

And the beginning is really when the record company, artist (or artists, if they're a group) and the artist's manager get together before recording starts, and decide whom they wish to be the producer for the project. Their decision will rest on several criteria, such as whether they need a particular sound overall on the recording, or whether they need a disciplinarian to force the pace of the sessions, or perhaps they feel someone who is experienced in drawing performances out of artists in a subtle way is needed. Lets imagine that they've chosen YOU. Well, providing you accept the commission to produce an album for Khant Singh and the Fakirs, you then arrange the paperwork concerning your fee and royalties with the parties concerned, and then go off and meet the artists. This pre-recording stage is vitally important, when the producer and the band sit down together on almost a social level, and discuss all aspects of the music and recording to be done; how many songs, how the backing tracks will be recorded, ideas for sounds and special effects, the personalities involved between the band themselves and the producer, and how the whole team of band and producer gel together in a "chemical" sense.

The next thing is to go along to the rehearsals for the group, and sit in to get a feel of the music and the musicians themselves, perhaps making musical suggestions and recommending changes to songs if you feel, in the light of your experience that for a recording, they should be altered. Then you would book time at a recording studio, probably one at which you had worked previously, and were totally familiar with its sound and technical layout. At this time, you would also pick the engineer with whom you would like to work, and begin discussions with him concerning the project.

During the actual recording process of the record, the producer's main responsibility is to his artists; to commit their best performance

to tape by any means feasible or possible. This often involves a great deal of subtle psychology and understanding of people, especially when musicians start to throw "moodies" when they can't get something right. The sessions have to be stage-managed very carefully as regards their pacing and length. A law of diminishing returns seems to set in after about 2 a.m. in the studio, but it often needs a very firm hand to persuade musicians to pack up and go home to rest. In the end, of course, the artists save money by having someone around who is aware of record company budgeting, but one is seldom thanked at the time by the musicians concerned. Also, the producer must get to know when to deliberately waste time and joke around — often a ten minute dithering session of laughter can liven everyone up and save an hour in the long run. So as you can see, production is not just getting good sounds and right musical notes; it's handling people, and highly-strung, imaginative people at that. This requires something else from the producer and that is a certain type of character strength in order to have discipline during the sessions. The producer is always the boss, but the trick is not to force that down everyone's throats.

The focal point of the studio control room is the mixing desk, at which sit, for the most part of sessions, the producer and his engineer. Sitting at the desk, you are not expected necessarily to operate it, but most producers have a thorough knowledge of what every knob and button does and indeed can engineer for themselves. Many producers around today, especially in the fields of music which require particularly careful and sophisticated imaginative sound techniques such as the jazzy-rock end of things were, in fact, engineers before becoming producers, and form the "Engineer/Producer" type. Others have come into production from being musicians, and have learnt about studio techniques from long hours in studios as session players. But I think that, whichever school you are from, musician or engineer, you have to be into tape as a medium; regarding magnetic recording tape and all the ways in which you can encode sound upon it as an art form in itself. Admittedly, the form is necessarily complex in a technical sense, but there's great satisfaction working in a field where technology is merely the slave and tool of an art form, instead of being mindlessly worshipped for itself.

Sitting and working together, producer and engineer ideally have a mutual respect, forming a team and discussing and co-operating everything from "which kind of mike shall we put on the bass drum?" through to "let's double track that guitar line in varispeed". And when the band have recorded every overdub they require (and usually many that they don't require), it's up to the producer and engineer to mix the 2-inch master tape down to quarter-inch stereo tape from which a master lacquer can be cut. The mixing process is even more complicated technically than the recording process, but is very enjoyable — it's as if the musicians have provided you with a kit of parts on tape to make their album with, and it's up to you to enhance and expand their musical performance through the use of echoes and special effects and, above all, the perfect balance of levels between instruments.

It's also very easy to completely wreck and destroy the work done by bad, insensitive,

hurried mixing, so you take your time and work long, painstaking hours, listening over and over to tiny fragments of a piece of music until you have extracted everything possible from the multi-track tape.

It is as well not to have the band present the whole time you are mixing, as the process is prone to failure when there are too many cooks, as it were. Besides, musicians in recording studios tend only to hear what they personally played, and not be able to be objective about the balance of a track as a whole. So get them to pop in every hour or so for quick discussions, then send them away. (Sometimes hard to do!).

Eventually, when the mixing is complete, the running order of the album has to be decided upon; a process which strangely enough, requires some technical consideration from the point of view of cutting to disc later (things like groove velocities and dynamic ranges and other boffinry). So, to the cutting room, and the very last stage of the producer's responsibility, which is to ensure that a master lacquer is cut from the tape to enable the record to be pressed into disc form. This process is very highly specialised, even down to the point of having an engineer who does nothing else but cut discs.

So, to summarise, what the producer has done from the beginning to the end of the recording project is to mastermind and control the whole thing in an unobtrusive way, pleasing the record company from a financial viewpoint, and the artist from a musical and sounds angle.

Perhaps a few of you who read this column are prospective recording musicians; maybe after reading this very brief, and necessarily precised essay, you may feel that this kind of activity (production) is for you. If you want to know some more specifics, feel free to write in and I'll happily answer queries. One has to say, however, that the field is highly competitive, and brooks no mistakes. The life also demands so much of your time that social relationships can often suffer. But, in return, the rewards are so great that it really is worthwhile, and I'm not talking merely of the money to be earned. The musical industry today needs more producers who have imagination and sensitivity to interpret the musical horizons of the present time, and these horizons are expanding daily.



Robin Lumley is a record producer and keyboard player working mainly in London. His first major venture in the business was as keyboard man in Bowie's *Spiders* and he later formed a writing partnership with Jack Lancaster. He recorded the "Peter and the Wolf" album which sold over 250,000 and then met and joined Brand X. Currently producing Rod Argent, Bill Bruford, and others, as well as recording with Brand X.

TICKET TO RIDE

by Ian White



Once in a while a band comes along which is special, either because of its material or because of the spontaneous way the musicians may spark off some sort of chemistry which brings out the best in each of them. Meal Ticket is such a band and is making its reputation on the strength of its music rather than any hype or gimmicks.

The band also has a unique recording deal to maintain complete independence and control.

Ray Flacke remembers the feeling: "It was frustrating not being able to play what I wanted to play and not even hearing it in this country. When Chris and I heard the band for the first time when it was just a four-piece I thought "Jesus Christ", I was knocked out, it was such a good feeling - rhythm and melody."

The band evolved early in 1976, a time just before Johnny Rotten had proved you didn't actually have to play good to get on a stage.

What happened was that a bunch of seasoned and highly-proficient musicians stumbled upon each other in a pub in Brentford and found that, together, they could play the most dazzling rock, country, and blues that any of them had been involved in with previous bands.

They called themselves "Meal Ticket" and slowly, but surely, went about blitzing audiences wherever they played with a style of country rock that was probably better than a lot of what was happening in America and certainly streets ahead of anything that was going down in Britain.

Meal Ticket is unique on two fronts. One factor is that the band has three lead vocalists and three lead guitarists of the highest order. The other is the way the band has gone about organising its recording deal. But more of that later.

Meal Ticket is: Steve Simpson (lead guitar, mandolin, violin, and lead vocals), Rick Jones (piano and lead vocals), Willy Finlayson (lead guitar and lead vocals), Jack Brand (bass and vocals), Ray Flacke (lead guitar and vocals), and Chris Hunt (drums and vocals).

Now you'll notice in that above list the word "lead" appears a great deal. Meal Ticket is several bands in one. It can change from dazzling electric bluegrass, to blues, to country, to rock, to rambling songs that are like novels in their content.

The band came together out of a frustration by its members of playing in bands where none of them had been really getting off on what they were doing. Steve Simpson had been involved in Ronnie Lane's Slim Chance, Ray Flacke had been honing his incredible picking technique in obscure country bands for years, Willy Finlayson had been burning his larynx in bands like Bees Make Honey. Rick Jones had been working on children's television programmes, and Chris and Jack were consolidating their reputations as solid rhythm men in other bands.

Steve Simpson got together with Willy, Jack and Rick and they scored a few gigs at the Red Lion pub in Brentford churning out country music and Band songs like "The Weight" without a drummer. Flacke heard that Simpson was performing and picked up Chris Hunt. and they went to the Red Lion.

Chris Hunt also remembers seeing the embryo Meal Ticket for the first time in the Red Lion: Chris had been doing sessions for people like Cat Stevens, Thunderclap Newman and Leo Sayer. "I knew Ray 15 years ago. We kept in touch every couple of years and two years ago we got together again. I knew Steve from when I'd auditioned with Ronnie Lane and he told me he had a band together but no drummer.

"They were doing songs that I really love and it was an amazing gig. I don't think anyone had really blown together that well for a while. As far as getting off on the music was concerned, that was it."

Watching Meal Ticket in action is to see six musicians in total empathy with what the others are doing. Solos are bounced around with telepathic precision, and three distinct vocalists take care of any genre the band is playing in.

Most of Meal Ticket's songs come from two Canadians Rick Jones and his partner Dave Pierce. Pierce writes the kind of evocative lyrics in the American country syndrome which an Englishman could never hope to achieve.

By the time the present Meal Ticket line up had worked itself in, the word got out and gigs became packed. Jaded London audiences at venues like Dingwalls and the Nashville had their well-cultivated cool shattered by the driving virtuosity on the stage before them. Audiences who had had their skulls battered by the sledge-hammer tactics of lesser rock bands drank in the sublime musicianship they had previously seen only in the big concert halls when American acts had come to town.



Top (L-R) Ray Flacke, Jack Brand, Rick Jones
Bottom (L-R) Chris Hunt, Steve Simpson, Willy Finlayson.

It was only a matter of time before the record people thronged to Meal Ticket gigs and there are stories that the band turned down some very heavy offers.

What Meal Ticket, and manager Mike Ross, wanted was for the band to be in control of its own destiny and product. The personnel in the band were all aware of the dangers of losing control with a big record company and were determined to set their own pace.

"The idea was to look for a deal which flattered the potential of the band. We're looking at the band as an entity in itself with a certain degree of talent and experience and the deal we were looking for was one which would reflect that independence," said manager Mike Ross.

"There is a fear in the back of your mind that you're going to get involved with a record company that is going to market and promote you in a way which doesn't do that. The track record of a lot of bands has proven that there is plenty of room for a band like Meal Ticket."

Meal Ticket found the deal it was looking for by going through an independent production company and having a major record company, EMI, process the product.

They signed to a production company called Logo, which is obligated to get the band's albums distributed. In that respect it was the first deal of its kind for EMI's licensed label division.

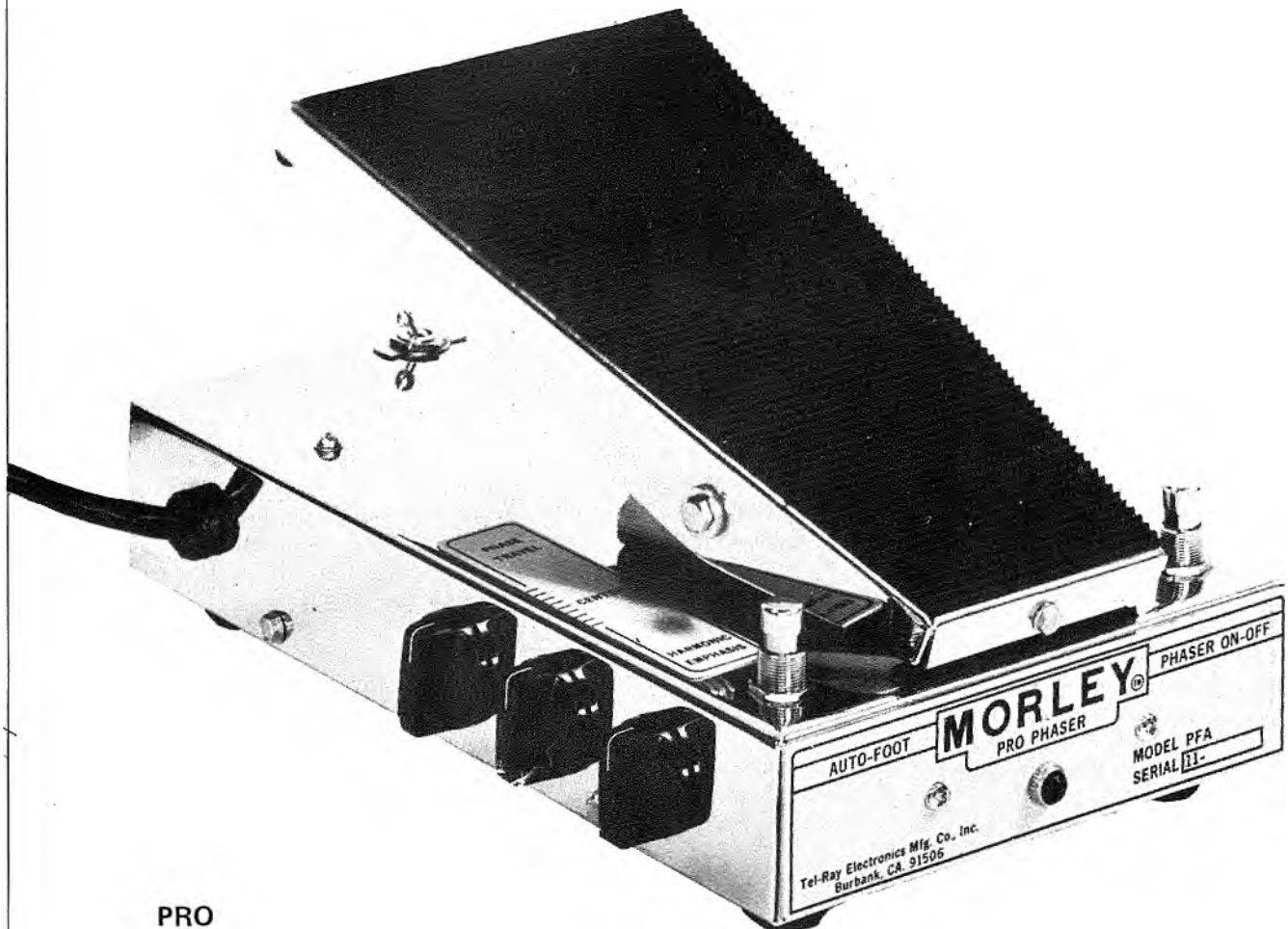
Mike Ross reckons this arrangement makes no difference to the band as musicians. "The deal was structured all along the way so that there was no situation where the band would be slung into a corner. We have a great deal of control."

"When I had six musicians who had been around for about fifteen years, I wasn't going to put them with a record company which was going to start marketing them in an area they weren't comfortable in.

"I think a lot of bands sign with production companies, but where our deal is perhaps unique is that we've gone with a licensed label adjunct of a major company. The benefit of that is that the division is totally committed to making us "happen". There seems a genuine love of the product. We feel it's sort of a family situation in a way."

Nevertheless, Meal Ticket is at a difficult stage in its evolution. It is essentially a working band that is at its

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about how bands should progress."

The evolution of Meal Ticket also shows how having a superb live act can have an adverse effect when it comes to recording. The band's first album "Code of the Road" was a splendid debut album. But it was knocked for not retaining the live excitement of a Meal Ticket gig.

"That comparison is always going to exist. You're constantly going to find that line between the live gig and the recorded gig. And with every band there is that problem, how do you project yourself on record to the mass audience?" says Mike Ross.

"It's fairly simple," says Willy Finlayson who produced the band's first album "Code of the Road": "they are two different gigs. There's a live gig and a studio gig. You don't just plonk a mike in the middle of the studio. You try and bring whatever ability anybody has got to the fore."

Chris Hunt adds: "A lot of it had to do with what people were expecting from us. They were expecting us to rock out and we chose to do it a different way." We're still learning how to make records. The second time we learned a bit more.

"We're going to be successful and sell a lot of records".

"We could have just as easily gone into the studio and done our first album with perhaps a cajoled situation where the producer was laid on. I don't know if the band would have been happy with that. We're going to be successful and sell a lot of records — but very much on our own. I've heard people in the business say 'it doesn't matter a damn what the band thinks — it's what sells'. I agree the marketing and sales thing is

best in the smaller venue where the musicians can be in touch with their audience. The band played its first successful major gig at London's New Victoria Theatre but there does seem a time when it will have to cross to the concert hall circuit and become more remote from its fans.

"I don't feel there is any one direction the band has to travel in," says Mike Ross. "I think that, because of the class of the musicians I don't think we'll suffer. What obviously has to tie in with the band's venues is that we have to reach as large an audience as possible."

Willy Finlayson is not so sure that sticking to smaller venues would be such a good idea for the band.

"The only danger of playing small venues is that you're playing to the same people and you know there isn't any challenge."

Ross disagrees: "I don't think there is any danger at all in doing small venues. In fact I have a belief that to be able to go back and play for a similar audience is good. The band gets a chance to play rather than just get stuck waiting for the right venue. I think a lot of musicians are afraid that, because they are doing small venues, they could feel it's a sign of failure because they see themselves going back over the same ground. The fact is that I don't think you can categorise Meal Ticket in general terms. The business has created a great deal of dogma

very important. But there has to be a synthesis between what the band wants to hear and what the record company has to sell," Mike Ross says.

Meanwhile, Meal Ticket's second album "Three Times A Day" is due out about now. It is a good case of a record which does retain the mark of the band. The guitar playing especially is reminiscent of some of the best Meal Ticket gigs.

How does it work having three lead guitarists in one band? Chris Hunt reckons it is because Steve, Ray, and Willy will always listen to what the other player wants to do.

"It works through experience and luck. You could have three "Blackmores" or something and they are all amazing but they might not play in and out of each other. With us you just hear when to stop and really that's all its down to. It just happened like that there's no rehearsal about it. It was just a chemistry thing that happened," says Flacke.

"It's respect for each others playing but there is no conscious effort not to play, it does that on its own which is like the band, it was an accident thing, it was chemistry, and it works," Ray said.

"Willy's the raucous player, Steve is the country blues player and I'm country and it seems to work very well." It works very well. Catch Meal Ticket soon.



The Carpenters: "Passage" (A&M AMLK 64703)

An album just this side of amazing from The Carpenters, "Passage" showcases the now mature talents of Richard and Karen Carpenter. Perhaps the best track to demonstrate this is the stunning "Calling Occupants of Interplanetary Craft", an edited version of which is also available as a single. Written by Klaatu, (the is-it-The-Beatles group). It's an excellent song, the Carpenters' cut being the superlative version. Richard Carpenter's arrangement, orchestrated by Peter Knight, is full, clean, and not the slightest bit pretentious — an easy trap to fall into with a song like this. With a full orchestra and choir augmenting the regular Carpenters' backing musicians, the whole thing builds to a spine-tingling climax reminiscent of the second half of "All You Need Is Love" — it's worth buying the album for this track alone.

The traditional Carpenters style is also in evidence on this album — "All You Get From Love Is A Love Song", "Two Sides" and "I Just Fall In Love Again" all feature good melodies, rich harmonies and Karen Carpenter's flawless vocals. The musicianship, too, is excellent. Tom Scott guests on "Love Song", Leon Russell on "Man Smart, Woman Smarter" while regular Carpenter's guitarist Tony Peluso plays brilliantly throughout but shines on the countryish "Sweet, Sweet Smile". Like on the early Carpenters' version of "Jambalaya", his six-string sounds uncannily like a pedal steel. Mr. Peluso must be one of the finest guitarists around.

My copy of "Passage" is almost worn out already with the exception of one track — "On The Balcony Of Casa Rosada/Don't Cry For Me Argentina" from Webber and Rice's "Evita". I've never been a fan of this duo and their

"operas", so this is one track I tend to skip. To the Carpenters' credit, however, it is probably the best version I have heard, and this is the best Carpenters album I have heard.

Eamonn Percival

Produced by Richard Carpenter, Engineered by Ray Gerhardt, Roger Young and Dave Iveland.

Joe Ely: "Joe Ely" (MCA2808)

Joe Ely is another artist in the Willie/Waylon Outlaw mode. All the familiar musical hallmarks of this style are on the album, honky-tonk piano, hard time songs about bad women, booze and lonely-days-on-the-road.

However, Ely makes it on the strength of his strong voice which stays melodic without losing the whiskey and sandpaper vocal touches a la Jerry Jeff Walker and Kristofferson.

Ely writes most of his own songs and pretty good numbers they are too. He at least moves into some sort of variety like rock/waltz time on "Mardi Gras Waltz" as well as rocking out with songs like "I had my hopes up high".

With a lot of these types of albums, the pace never seems to vary much. Ely has come up with an album full of very good songs with some fine guitar playing throughout especially on the last cut "Johnny Blues" which may or may not be a paon to Johnny Winter.

The last Texas singer/songwriter to make a big impression was Guy Clarke. Joe Ely, on the strength of this debut album, may well be the next big Texan artist. He's got the voice and the songs, and on this album he's got a fine band with some brilliant steel guitar on a number called "Gambler's Bride." I hope the follow-up album is as good as this one.

Ian White

Produced by Chip Young. No other recording details.

Caldera: "Sky Islands" (Capitol E-ST 11658)

This is an amazing album. Caldera are a superb group of musicians who I would guess are South American. They produce a mix of Rock/Samba/Jazz/Blues which is really exhilarating to listen to though hard to describe.

There are so many elements in their music that it is a wonder how it succeeds at all; but succeed it does. One song can move inexorably from a slow Charlie Byrd-type of thing into a Return To Forever movement. Yet the music remains very accessible and immediate.

The main man behind Caldera seems to be Eduardo del Barrio who writes the bulk of material and plays all synthesizers and pianos. He is backed by a bass player of the highest order Dean Cortz and a brilliant guitarist Jorge Strunz. Steve Tavaglione plays flutes and saxophones with a feel I've only heard from people like Stan Getz and Herbie Mann.

There are a host a guest musicians on the album who contribute to the wealth of sounds on "Sky Islands". There's not much more I can say about "Sky Islands" except if you appreciate fine musicianship go and buy it. Caldera make a refreshing change from mainstream Rock and have produced an album that can be taken out and savoured now and again like an expensive brandy.

Ian White

Produced by Eduardo del Barrio, Larry Dunn and Jorge Strunz. Recorded at Indigo Ranch Recording Studio, Village Recorders, Capitol Records. Engineer: Chris Brunt, Mastered by Ken Perry.

Waylon Jennings: "Ol' Waylon" (RCA PL 12317)

It takes a sparkling album like "Joe Ely" to show that old indefatigables like Ol' Waylon had better do some heavy thinking unless they want to keep producing unimaginative "product" like this album.

There's no doubting that Waylon Jennings is a fine artist. His "Rambling Man" and "Dreaming my Dreams" albums were strong works which started the whole Outlaw country movement and showed that country music could take the best that Rock had to offer and produce an exciting new Country sound.

It seems that Waylon Jennings is falling into the rut he accused the rest of the Nashville heavies of doing. "Ol' Waylon" isn't a bad album. The songs are good and so is the musicianship. But Jennings himself sounds tired and bland without any of the feeling that he is capable of. This is nowhere clearer than on the Presley medley "That's All Right/My Baby Left Me" The King would turn in his grave; say no more. What comes over on this album is a Waylon Jennings who sounds only a shadow of what he once was. Now and then there are flashes of the real



Carpenters "performance"



Joe Ely

Ol' Waylon like on the chorus of "If you see me getting smaller". But it's really sad to hear him taking stock A and R songs like "Lucille" and "Sweet Caroline" and doing nothing at all with them. The album was recorded in Nashville, so maybe it's not Waylon's fault after all. Maybe he was victim of the Nashville conveyor-belt production scene which was seeking its revenge. Get Waylon Jennings into a bar full of Texas "Outlaw" musicians, turn on the tape-recorder, and then we'll have a decent Waylon Jennings album. "Ol' Waylon" isn't the one.

Ian White

Recorded and mixed at American Studio, Nashville; Produced by Chips Moman, Engineered by Neil Willburn and Don Cobb.

Sutherland Brothers & Quiver: "Down To Earth" (CBS 82255)

It's a pity that the Suths have never quite achieved the recognition their music deserves. Both Gavin and Iain Sutherland are writers and musicians of top calibre but I suspect it is because their material lacks the traditional raunch of good rock that they have never really fired the music public's imagination as a whole but instead earned the devotion of a hard-core of fans.

This album is their first outing without Tim Renwick being an official part of the line-up although Renwick must have been in on the sessions because he is credited with lead guitar along with Mick Grabham and Meal Ticket's Ray Flacke.

"Down To Earth" is a fine Sutherlands album which will not hold any surprises but is still quality listening with accessible songs and a top rate production by Bruce Welch with other top session men like John Bundrick and Brian Bennett adding their talents.

The Sutherlands seem to have a pre-occupation with sailing images (apart from the Rod Stewart hit) and throughout the album are lines like "we're riding on a dark ship heading out across the bay", "harbour light I will see you there tonight" and "and we sailed and we sailed". I don't know what it all means, and I do like it. But it would be nice to hear the Suths rock out on some of their album tracks. Nevertheless, "Down To Earth" is a quality album from a band who never fail to keep their standards high.

Ian White

Produced by Bruce Welch, Recorded at EMI Studios Abbey Road June/July 1977, Engineered by Peter Vincent assisted by Pete James.

The Pirates: "Out Of Their Skulls" (Warner Bros. K56411)

Not the original, original Pirates, but certainly the line-up featured on classics like "Hungry For Love" and "I'll Never Get Over You" and, to my mind, the best Pirates line-up. Mick Green (guitar), Johnny Spence (bass) and Frank Farley (drums) decided to reform earlier this year after a gap of over ten years and, rather than come back in a blaze of hype and glory, opted for the smaller pub and club circuit.

This back-to-the-roots refresher course has certainly paid off and is borne out on this album, half of which is live (recorded at the Nashville Rooms in April), the other half recorded at Rockfield in March.

The live side features re-workings of old favourites like "Please Don't Touch", "I Can Tell", "Shakin' All Over" and the like. When a vocal mike fails after "I Can Tell", the trio go into an impromptu version of "Peter Gunn" and prove that you don't need countless kilowatts to sound powerful. A lot has been said

about Mick Green in the past - suffice to say he is one of the most exciting guitarists to listen to. His playing is full, combining rhythm and lead parts simultaneously, and he's probably got the cleanest sound this side of the Atlantic.

Side Two, although the "studio side", still has a lot of a "live" feel to it, probably because there are very few overdubs. The Pirates, in any situation, still have that raw, natural power and energy that many of today's bands should aim for.

Eamonn Percival

Produced by Vic Maile, records at Rockfield and Maison Rouge mobile, mixed at Jackson Studios.



Joanna Carlin: "Fancy That" (DJM 20508)

It's criminal how some albums never see the light of day. But DJM should be "shot" for neglecting to let the public know about Joanna Carlin. This album is a gem. It is so good, we felt it should warrant some attention. Joanna Carlin began her career in the folk clubs in England and this is her first album. The choice of material here is excellent as is the choice of musicians. Andy Fairweather Low's "Dancing In The Dark" opens the album and features some stunning guitarwork a la Amos Garrett from Jerry Donahue. Jerry also shines on the jazzy "Laziest Gal In Town", with spine-tingling blues playing.

Other session men appearing include Dave Mattacks (drums), Gary Taylor (bass), Pat Donaldson (bass), Mick Moody (guitars) and Pete Solly (keyboards). With a wealth of class players such as these, it's to her credit that Joanna doesn't get "lost". Indeed she performs well throughout, her voice being so flexible she can get the raw edge for the blusier tracks and immediately turn on the sweetness to suit tracks like her own song "Honesty" and James Taylor's "Something In The Way He Moves".

An absolutely standout track, if there can be one on an album like this, is "Sugar In My Bowl" featuring an astonishing Donahue solo on a par with the famous Garrett workout on "Midnight At The Oasis". A knockout album, buy it! DJM where are you?

Eamonn Percival

Produced by Hugh Murphy, Engineered by Vic Gamm, Recorded at Olympic and Sound Techniques.



Sutherlands: Quality album



Mick Green



We have

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OFF!**



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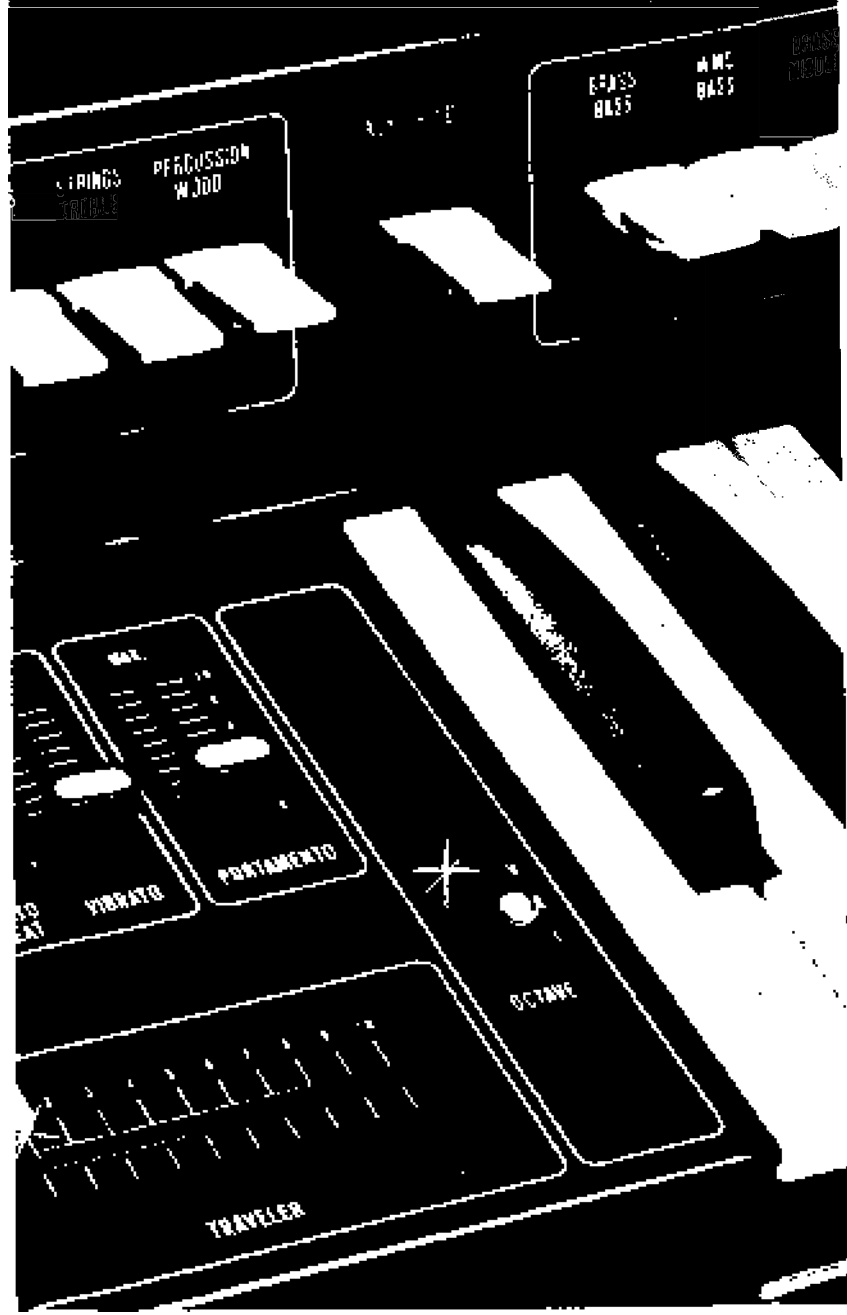


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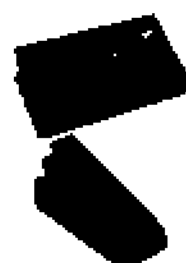
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GORDON GILTRAP

The 'Visionary' Speaks

It came as a surprise to learn that Pete Townshend is one of Gordon Giltrap's biggest influences. If you've heard Giltrap's masterful playing of the acoustic guitar you can appreciate the Bert Jansch influence. But it is still Townshend who commands a deep respect from Gordon.

Gordon Giltrap was one of the first guitarists signed to Transatlantic back in the early days when John Renbourne and Jansch were carving out reputations as Britain's foremost acoustic players.

But Gordon's recent work "Visionary" takes him to a new level of guitar playing. The album is a neo-classical epic based on the poems of William Blake and Giltrap's playing weaves in and out of the orchestral bulk of the album.

One criticism that has been levelled at the record is that it doesn't feature enough of Giltrap's lightning fast multi-fingered picking. Here, he answers that criticism.

Fortunately, or unfortunately, I've been tagged as a guitar player. If my very first album had been like this people

wouldn't expect so much guitar. Mike Oldfield is a guitar player. But you listen to Tubular Bells and there's not that much guitar on there. He's a composer for other instruments. And that's the way I've developed and want to be accepted, along with the guitar thing.

"But what I want to do, to please myself and a lot of people is to do a pure guitar album. I've got to do that even if it doesn't sell a lot of copies. I've got to do that".

"With 'Visionary' and the new stuff I'm doing now, it's very much Rock music. The stuff I was doing prior to that was more folk and medieval classical things.

'Visionary', explained Gordon, came about because of a concerto he wanted to write. It was originally intended for one side of the album and he later hit on the idea of using Blake's poems as the basis for the entire record.

If you listen to 'Visionary' you'll hear some brilliant recording of acoustic guitar. On a good stereo system the brightness and clarity of Gordon's play-

(L-R) John Bailey twin neck (Baldwin pickups, spruce front stained mahogany back and sides) John Bailey 6-string (spruce top, rosewood back and sides, ebony fingerboard and bridge, Schaller machines), Fylde Custom 6 (rosewood back and sides, cedar top, ebony fingerboard and bridge), Fylde Custom (inlaid with silver wire, ebony fingerboard and bridge), Fylde 12-string (rosewood back and sides, spruce top, built-in Barcus-Berry, birdseye maple inlaid head, Schaller classical machines).



ing just bounces out of the speakers. What super-human engineering and recording techniques, we wondered, could give such a clear sound?

"Well, I was chatting to my engineer the other day and he said it helps having a really good guitar. If you've got a guitar that's full-bodied and projects well, it doesn't matter what microphone you use. There's no fantastic technique. I've heard about guys having ambience mikes placed 12-feet away from the soundhole. All we do is stick a microphone in front of the guitar and what comes out of it is the way it does."

Another surprise was that Gordon does not use his electric-acoustic Ovation in the studio unlike many guitarists who swear by these instruments for direct-injection and acoustic studio work in general. Apart from his favorite John Bailey guitars, Gordon uses Fylde for all recording and only reluctantly takes out his Ovation for live work.

"The guy who makes Fylde is Roger Bucknall and I met him at a folk club five years ago and he'd just made two guitars then. I played his guitar and it was amazing, it was the nearest thing I'd ever played to my Bailey. He said he had made it and he agreed to make me one. I think he realised he could make a very good living out of it.

"The Fylde he made me gave me a tremendous amount of volume and a crispness of tone from the treble strings to the bass strings all the way up the neck. The neck itself was amazing and I think he's the best guitar maker in the country. This guy is really taking the place of Martin and, I think, given a few years, he will be as big as Martin over here.

"When you're buying a handmade instrument you're buying something that is completely hand made and you have to trust to luck how it's going to go. It's so difficult to get wood. Martin are very fortunate because they can stockpile the wood for years and I think Roger is slowly getting that together.

"I've got three Fyldes. I have a custom-built (J200 Shape), which is like the big Gibson; one he gave me is like a Dreadnought shape with a cutaway, and I have a 12-string which needs some refretting. He made the 12-string in his garage. I think you'd get a good guitar from him for about £200. The Fyldes I've got are the best guitars I own apart from the Baileys.

Gordon is still trying to work out a way to use his Fyldes on stage. He has had to change to Ovation so when

playing acoustic guitar live with his band.

"It's been a big problem and it's very sad for me and very sad for Roger that I can't use them in a live situation. But, unless you're going to use thousands of watts of PA you just can't get that volume to cut across bass and keyboards. I've tried pickups but I can't do it. So, for convenience sake, the Ovation is amazing, they liberate someone like me. You've got that volume and clarity and you can move around.

"I'm a rock musician at heart so I like the volume. I know the audience can hear every note at the back of the hall. I know that for a fact. There's nothing worse than playing something and wondering if people can hear it. So the Ovation is great for that. You can get as much volume out of an Ovation as you can, say a Strat. I just hope Roger can come up with something to give that kind of volume. Maybe he can invent a pickup that can do what the Ovation does. On the last tour I did, I used a Fylde with a Barcus Berry built in and it sounded loud but it just didn't have the attack that an Ovation has through a PA. But Ovation, acoustically for me, forget it."

Gordon is equally as fond of his John Bailey guitars as he is of his Fyldes. He bought his first John Bailey guitar in 1968. This was a six-string he bought for £70 and he has used it on practically all his albums, including 'Visionary'. He also has a twin-neck John Bailey that was made in 1969, which he regards as a work of art. The table of the guitar is carved out of one piece of spruce and the pickups are embedded into the wood of the top.

"Electrically it's not that amazing. I'm using old Baldwin pickups that you can't get any more. It's got more of a clean acoustic sound rather than an electric sound. I've got an Ovation Deacon for use mainly on electric things. I still haven't got the electric thing together, the sustain and the amp etc.

"I've also tried some of the Ibanez guitars and I think they are incredible and I think I may be getting one of those. But I'm still exploring that side and, as I say, I still haven't got that side of it together. You don't find many accomplished acoustic players who can really get it together on electric. It's funny that, I think it's really horses for courses. I believe you've got to specialise to accomplish something and I don't think you can pick it up in two minutes going from acoustic to electric."

As basically an acoustic player,

Gordon shies away from using effects but is excited about the advent of the guitar synthesizer which he sees as an instrument which will extend the limits for creative players.

"If I wanted to really get into electric guitar, I'd probably go for a Blues style like Peter Green had. I used to be amazed at the emotion he could get out of his electric guitar. But I think I'll always be basically an acoustic player.

"If I had the time I'd really like to get down to learning theory. I think it's important to be around good players to inspire you. I've always felt, with me, it's been the other way around. I've always helped other players because I used to teach guitar at one stage a few years back. Guys were coming to me who had got in a rut and it was nice that I helped them get out of that rut. Quite a few electric players came to me as well. So I really need to be around other players.

"But I think it's really classical music and classical guitar players who really do things for me. I don't listen to many guitar players these days which is a thing I think people find strange. If I do it's people like Julian Bream and John Williams. I like lute music very much, I used to play the lute but I sold the one I had because I felt to master the lute you've got to devote your whole time to it. It's a whole new ball game and I felt I didn't have the time.

"Now, when I get down to practising guitar it varies from about six hours a day. I usually work out my own things; trying to do long stretches down the fingerboard. If you concentrate too much on technique you can get into a rut. But if you are a creative person and you're writing a piece, you forget about what your fingers are doing and, at the end of the day, you realise you've been playing for eight hours and you end up mastering something that is quite difficult."

"I'm also aiming for getting a good tone out of the instrument and melody. That's why I was a bit saddened when Bert said (*in an International Musician interview*) that I was just a fast guitar player because I'm not.

"Some of the stuff on 'Visionary' is very melodic and very slow. There is some fast material and again that is the Pete Townshend thing. All credit to Pete Townshend really. I count my influences on one hand. Hank Marvin, Bert Jansch, Pete Townshend, Django Rheinhardt, and Julian Bream and Peter Green recently for the blues.

Ian White



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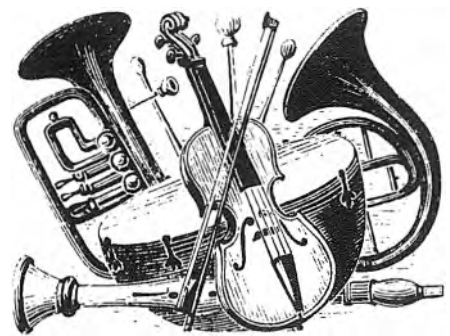
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GUITARS FROM THE WOOD

by Eamonn Percival

Better known as flautist and vocalist with Jethro Tull, Ian Anderson has a large collection of guitars, most of them Martins. He states he is "not really a guitarist" but nonetheless owns some beautiful vintage instruments and seems to know Martin guitars and their history inside out. We spoke about thirteen of the more interesting instruments in his collection and he explained his love for vintage guitars.

"It gives me immense pleasure to play a guitar that was made a hundred years ago and has actually played a hundred years worth of music, even if it was only dragged out of an attic once in a blue moon. It's played so many different kinds of music and I'm using it today in writing new music and using that guitar to play on a record that a million people might sit and listen to. That, to me is the greatest justice I could possibly do the maker of that guitar."



Apart from the guitars here, what others have you in your collection?

Well, there are a few other oldish Martins. Most of them are classical guitars rather than steel-strung ones. Like the early 1900's — there are two or three more of those. I also have four or five new Martins which I play on stage. I have a Dick Knight guitar which I have, regrettably, never played. I've got a couple of mandolins — a Martin one and a Japanese copy.

I've also got some electric guitars — a Hamer, which looks like an Explorer, and it's rather good. Then there's a Stratocaster, Telecaster and a Gibson SG. I don't use them very much, I just occasionally have a blast. I've got a Firebird bass which I sometimes use. I have a lot of old Martins, because I really like the early ones.

They were sufficiently robust to take silk and steel strings without much modification. Obviously there must be some modification done to the bridge and top nut. But the fingerboards don't need work done to them. I suppose there must be about half a dozen of the pre-serial number, the pre-1898 Martins which I have silk and steel strings on and I like them the best. In 1929, they started bracing their guitars for steel strings.

It's usually those ones you find fall apart. But I always use silk and steel strings now. I no longer use steel strings on my guitars, even the newer Martins. The only drawback is you have to change strings before every concert. I usually play guitar with the capo on the second or third fret. Regular chord inversions, at the bottom of the fingerboard, I feel, don't sound that good. I like the parlour guitars, the small-bodied ones. I find they record much better. That's really all I play now. I have never owned or played what has become the traditional acoustic guitar; the jumbo, truck-driver's guitar. I find them totally lacking in any aesthetic quality and they have an ugly shape. They're not particularly loud guitars either. All they do is make a big round sound. They sound very grand, bassy, and boomy but on the smaller guitars, when you play a chord, you can really hear all the strings as separate notes producing a chord rather than just being an overall effect. Not really being a guitarist as such, I tend to look more closely at the sound produced from an acoustic guitar.

A lot of players go more for technique and they just accept that it's an acoustic guitar and therefore it sounds like this when of course it doesn't. They all have totally different sounds. Even today, you can go into Rose-Morris or somewhere and buy a couple of Martin guitars and the chances are ten to one that you'll have to take them into Stephen Delft or somebody to get them fixed up because they won't be in tune and two identical models with consecutive serial numbers will sound totally different, which is a bit rotten.

If you're going to accept that guitars do sound so different, you may as well delve back and find the old ones. I do believe in the maturing of a guitar. If you find a guitar that's still in one piece and still plays after a hundred years, the chances are that it sounds pretty good. Whereas, with new guitars, you're taking pot luck. I don't know what the Japanese guitars are like now but I certainly wouldn't advise anyone to buy a new Martin without comparing it to at least ten others because nine out of ten, in my experience, are duff. And I've bought about ten new Martins in the eight years that I've been playing guitar on stage and out of them all, the three I use now have been all worked over several times to get the best out of them.

Why, and when, did you get interested enough in guitars to amass such a collection?

Just by trying to find guitars that I liked. When I first got paid some record royalties and had enough money in my hand to actually go out and buy a guitar, (it was in about 1971) and I bought a new Martin in Boston because I had been playing a Yamaha on stage for a while.

I got it back to the hotel and I was really proud of it. I never thought for a minute there would be anything wrong with it and that damn thing was nowhere near tunable. I mean it was all over the show. I later discovered the bridge to be 3/16" away from where it should have been which is absolutely inexcusable.

I was really disappointed with that. So I didn't have anything to do with Martins for a while after that, I went back to using a Yamaha. Funnily enough, in 1973 I was in Tokyo and went to a music store to buy some guitar strings and, lo and behold, there was a plain, dusty old guitar at the back of the shop and it cost thousands of yen but looked



(L-R) Martin 0-45 (1929) and Martin (1834), Ian Anderson's favourite guitars.

GUITARS FROM THE WOOD

as if it couldn't possibly cost more than about £10. I thought "God, what on earth could that be?" So I dusted it off and it was a 016 Martin New Yorker. It had been lying in the shop for five years and it was far too expensive for anyone out there to buy so I haggled over the price and eventually paid roughly about what they cost anyway. I used that guitar for a while and it wasn't too bad. I've had a bit of work done on it over the years but I still have it. So that was the one I was using around 1973 and I carried on using that until '76.

Going back to the thing about Martin, I've been back to the Martin factory to complain about their workmanship and, while they're concerned that anyone should criticise their product, they don't take seriously the fact that young musicians today actually tune their guitars up and that they're in possession of sophisticated instruments like stroboscopes to make sure that their guitars are in tune.

If you bung a cross section of guitars through a strobe, you'll find that a lot just aren't up to standard. It's a very simple matter. I mean, fretting is all done on a machine. If you have a factory producing six different models of a guitar and they're different scales, they re-tool and re-adjust and it's just not done accurately enough.

As far as putting on bridges goes, they have this knack of getting it just that little bit out, which is ludicrous! Then of course you have different strings and the makers don't tell you anything about choosing different strings and the effect they have on the guitar. Silk and steel, gut strings, solid steel strings — you can't just swap them around. With capos, you'll often find the guitar is in tune with the capo on but in the open position, it's way out — and vice versa. The fretting on most guitars isn't that accurate. I tend to use a capo a lot of the time and it can be quite horrendous.

Martin 042 (1929)

That's Martin's second top-of-the-line model. It has the mother-of-pearl round the soundhole and edges but it doesn't have the flowerpot motif on the head. Nor does it have the mother-of-pearl continuing around the side edges which the 45 does. They're interesting guitars and there aren't very many around. I stopped buying them because they're really too expensive now.

Martin (1834)

This was made in about 1834 and is a very good example of the narrow

waisted, small bodied style of guitar which originated in Europe. It's interesting that they have that head on it which Fender brought out over a hundred years later with all the machine heads on one side.

The machine heads are very flimsy but they work OK. I've only tuned it up a couple of times because I don't play in a classical style so it's very much a collector's piece. Even if I did play classical I don't think I'd take that one up because it's probably too rare to risk anything happening to it. I know of only one other of that period. Martin have an 1833 model in their own museum, but I know of no other.

Martin 2—30

These are my favourite guitars. I have three of those and I play them a lot. They're super little guitars because they're quite bright and loud. They're very nice if you want to do two or three overdubs because you really do hear the separate notes. To use on stage, it isn't really big enough. It doesn't produce quite enough sound in the bass register. If there is anything such as a "lead" acoustic guitar for playing separate lines on, this is it. Very bright and very clear.

Washburn

It's not a great guitar. Compared with Martins, they're very crude. It's very much a lump of wood. The V-cross section of the neck is very deep and very pronounced and can be quite (un)comfortable in your hand. When they would come into their own is for bottleneck because they have a very brash sound. What attracted me to it was simply that it was a reasonable example of one, when I bought it, it was in pieces and I had work done on it. It's an interesting guitar but I don't really rate it as a "playing" guitar. It's great as a funky, raucous blues guitar. But it's not a very mellow instrument.

Martin 028

The same thing applies. They're a very brash sound. I've used it for various solo lines on a couple of albums. But it just doesn't have that warmth. It's a very brittle sound. It has its uses and I would fetch it out again, were I doing a certain song where I wanted that brittle sound. It's one of their cheaper guitars. It's an interesting collector piece

Darsche

I bought that from Tony Bingham in Poland Street. It actually has a very nice sound and I bought it because it was very much the style of guitar that Martin modelled their early styles on. It's the European parlour style of guitar that

Martin took over to America with him.

Martin 2—30

This one is a newer 2—30 from about 1880 when they started making them a bit more decorative. They had additional mother-of-pearl around the edge and inlays on the fingerboard. They are potentially very good, playable guitars.

Martin 45

That's the top of the line. They still make them. But today's models have got great ugly inlays on the neck. Up to, and including, the 1930's they were tastefully done. The great offenders in decorative guitars were the 19th Century European guitars which got so ridiculous with ivory and abalone and things. They weren't really made to function. They were the sort of thing one would buy one's girlfriend. If she happened to be a countess!

Martin 42

This is from about the same period and it's the sister model of the other one. I was actually using the 42 a lot and I bought a second one as a safeguard in case anything happened to the first one. I then got the 45 which turned out to be a very good guitar and is the one I use mostly.

Martin 28

I've got a few of these. In fact, the 28 is a nice instrument and I've sent one of mine up to Fylde guitars near Blackpool and they're going to make me one styled after the 28, of those dimensions, neck and bodywise. The machine heads on the 28 for instance need to be improved. That's another sad thing. If you go and buy a Martin guitar, (the slotted head ones like I use), the machine heads are really dreadful. I don't know how on earth they can make such bad ones. I'm always having to send away for new machine heads. You can't go and stick Grovers or Schallers on these small bodies because of the weight problem. Good machine heads tend to equate with weight because of the machinery inside. Even if you put Grovers on a Les Paul Junior, for instance, the weight goes straight to the head.

Martin 2—17

That was one of their cheapo guitars, one of their twenty buck models. I think it's a 2—17 although it's a little vague. It's a 1930 or 1931 guitar with a very small body and that particular one I've actually used on stage. It's very responsive because the wood is paper-thin but it wouldn't really stand up to being on the road a lot with temperature changes and things. It's already been back to Martin's once. I've only seen one other



because they don't survive. As I said, if you find one in one piece, it'll be a good one.

Martin 0-28

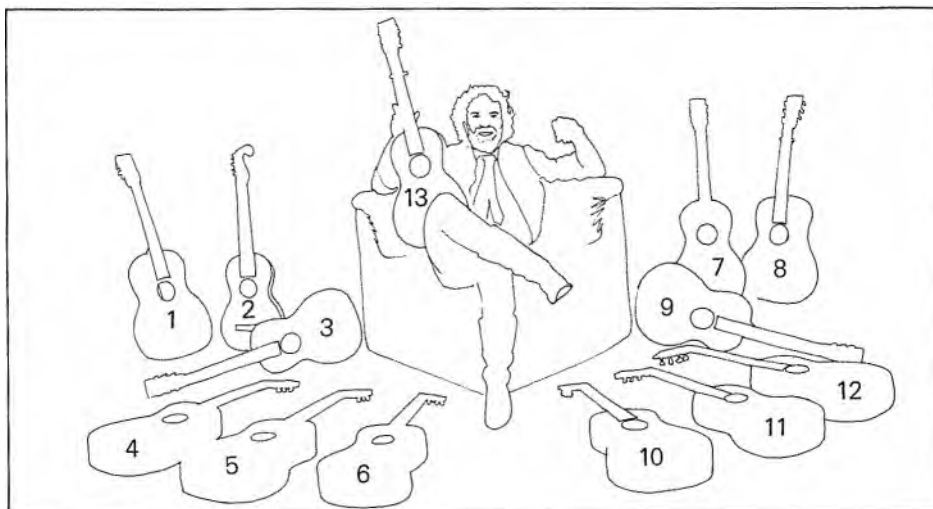
This is similar to the 20's. It's about an 1890 guitar, just before they started the serial numbers. It's got ivory pegs as opposed to the tuning gear machines. Again, I've a couple of these but, not being a classical guitarist, I can't tell you much about them apart from the fact that they sound very nice. An 0-28 is a lovely size for a classical guitar and it's a lovely neck dimension for somebody who finds a regular classic just that bit too wide and deep. It's a super size. It has quite a rich sound but you have to play in that style to get the most out of it.

Martin 2-30

Well, it's another 2-30. But, although I say 2-30, you'll find that Martin's guitar book is very vague and there are a lot of styles from around the same period and, while they know how many were made of a certain style, they can't actually describe them to you. The reason for this is that, month to month they would introduce a new styling. Given certain dimensions, it's obviously a size

2 or size 2½ or whatever, but beyond that you're only guessing that it's a style 30. Given that loose terminology of 30, we know that they had some which were virtually just herringbone trim and nothing else, and yet they extended to

quite lavish mother-of-pearl around it and inlays on the fingerboard. They would just introduce a new little change, you know? So you'd find a lot of very different styles lumped together under the name 30 or whatever.



- (1) 0-42 (1929 Martin)
- (2) Martin (1834)
- (3) 2-30 Martin (1880)
- (4) Washburn (1880)
- (5) Martin 0-28 (1928)
- (6) Darsche (1820)
- (7) Martin 2-30 (1880)

- (8) 0-45 (1929)
- (9) 0-42 (1928)
- (10) 0-28 Martin
- (11) 2-17 Martin (1931)
- (12) 0-28 (Classical Ivory Pegs)
- (13) 2-30 (1860)



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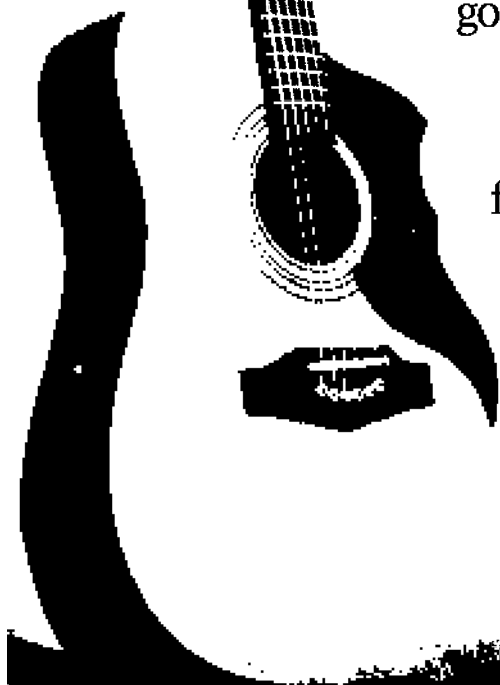
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★ LETTERS ★

SPECIAL

The other side of the fence...

It is not often that we get a letter that is as controversial and as intelligent as the missive International Musician received from John McFadyen, of Glenrothes, Fife. We feel the points and philosophies he has raised in his paper are so important that we have reprinted the letter in almost its entirety. We expect many readers will disagree violently with John McFadyen's letter but it is so important to musicians everywhere that we have devoted a page to his discussion. We welcome your response.

Dear Sir:

What I'm after is a wee bit of respect for the thousands of players like me and my band-mates in their early thirties with wives, kids, 9-5 full time jobs, mortgages etc. We spend most of the week involved in dreadfully "square" activities like gardening, D.I.Y., watching telly etc. then, come the weekend, we go out and play our music. We invariably go for residencies in local clubs or hotels which means we hardly ever need to lug equipment about and we enjoy facilities (stage-lighting, dressing rooms, etc.) which your average pub-rocker can only dream about. On top of this we have short hours and good pay not to mention various perks (e.g. The hotel my band is in at present gives us a free dinner during our break).

Unlike the typical rock band whose mountain of equipment is likely to be on tick and, in a lot of cases, unlikely to get fully paid up (the bands seem to fold or change personnel so often) we pay cash for our gear and it is not rubbish we buy.

This brings me to my next point:- some of these kids seem to make a religion out of their equipment and the jargon relating to it. They talk of nothing else but "fold-back", "feed-back", "laif-back" and suchlike yet still, in too many cases, end up producing a sound crappy enough to make you wonder if every speaker on the rig is blown. We, on the other hand, find time for other interests, yet have enough knowledge (a lot of it learned from your pages I may say) to create and run a fairly sophisticated set-up which sounds just as good played quietly as it does at full blast. For instance my band's line up is:- guitar (Fender Tele), Keyboards (Farfisa and Crumar), bass (Hayman), drums (Ludwig). The back-line amps (Marshall and HH) plus four vocals are all miked (AKG and Beyer) through an MM 12-channel mixer with Carlsbro slaves into custom-built PA bins and home-made monitor cabinets.

"What?" you may ask sneeringly "All that

gear just to play "I Left my Heart in San Francisco" and "Viva Espana" to audiences who aren't listening?" Well, No! not quite, and this is my last, and hopefully, most telling point in this lengthy diatribe:

We do play music for dinner-dances which can hardly be described as New Wave viz Quick-steps, Tangos, Waltzes which does require numbers of the type you so clearly despise. We also back to-name artistes on the C.I.U. cabaret circuits which can mean having to hastily learn and sometimes re-write, complicated arrangements of all types of music from Jimmy Webb to Jimmy Shand.

We play at club carnivals and works-dances which can mean requests for anything from a "Gay Gordons" to "Rock Around the Clock". But also, and here's the point, we take the odd booking to do a Disco or Pub gig just to keep "our hands in", as it were.

This means that we have to be able to hammer-out the usual mixture of ear-shattering rock numbers and slow (albeit, still deafening) bird-pulling stuff. For this we draw on a huge stock of material from LP tracks by The Doobies, Eagles, SAHB, Stretch, Beatles, Wishbone Ash, Stylistics and many others.

In other words we can, and do, successfully invade the Rock Groups' domain whenever we choose. How long would a Rock Group last in our regular environment before having to own up? About 5 minutes I should imagine, the reasons being:- a) Their music, however well played it is and even when the volume level is acceptable, just hasn't the variety to gain universal acceptance. b) The vast majority of Rock players, and fans, hold our scene in such open contempt that a permanent rift between the two sides is inevitable (your magazine's attitude isn't exactly conciliatory in his respect, is it?).

I find it very sad that anyone finds it necessary to sneer at bands who comb their hair, dress-up in matching suits and actually pay some attention to their audience instead of coming on late looking like a bunch of refugees then playing three deafening numbers each lasting twenty minutes with mumbled announcements and ten-minute tuning-up sessions between. I put it down to the fact that most of them are envious of the money we pick up and some of them also resent the fact that most of my colleagues can play the arse off the typical eighteen year old rock "star" who slavishly learns how to make lots of fashionable noises on his instrument but can't be bothered learning chords.

I know the last remark is perhaps an unfair generalisation as there are, several really exciting young (and not so young) bands even in this provincial neck of the woods. There are also a great many very talented young players around who could play me off any stage. But I do feel that I speak for countless other individuals playing the same kind of music as me that we have a perfectly valid place in the music business and deserve just as much recognition in your magazine as you afford to the other lot.

I would also like to think that I may have helped to explode the myth that only Rock Bands are capable of creating any meaningful innovation on the music front whilst the rest of us charlatans shamefully churn out stale "musak". I admit our scene does have its share of "robots" whose music never generates anything approaching interest never mind excitement but I would also humbly submit that there is every inch as much creativity in any one of my band's head arrangements or speciality numbers (we do a ten minute version of Jesus Christ Superstar which comes out different each time we play it) as there is in most Rock Bands' meticulously rehearsed programmes.

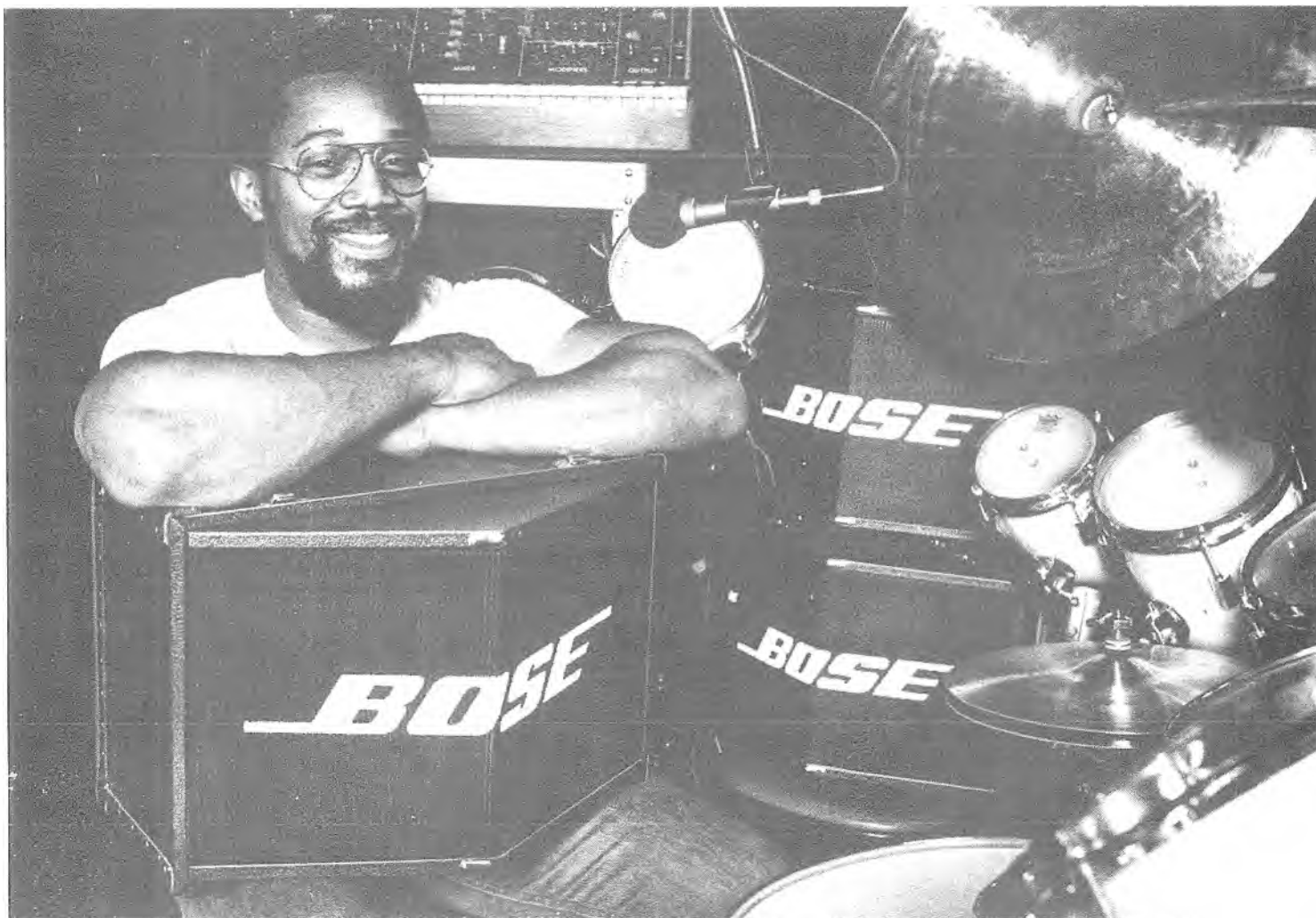
Incidentally, why do they take three weeks of rehearsal to prepare each new number before doing it in public? It seems such a waste of time (even though they normally have plenty of time to spare) when you consider that the majority of their audiences are young girls whose musical appreciation is nil and who don't seem to have one iota of rhythmical sense in their whole bodies - try watching Top of the Pops with the sound turned off - you'd never be able to guess by watching the "dancers" what beat the band was laying down (or, should I say, miming to).

I can only imagine that all these meticulously prepared "spontaneous" solos are produced to impress any members of the audience who might happen to play in other groups - and who might therefore be able to appreciate the skill and effort - Maybe I'm wrong of course and haven't appreciated that all this perfection is to satisfy some deep personal musical "thing" which is beyond the grasp of my cash-besotted soul.

I realise you couldn't possibly cater for every branch of the musical scene today. But I really do think you ought to spare a thought, and perhaps a line or two of print from time to time for the legions of excellent "time-served tradesmen" who make an honest buck by entertaining the wider public, and kindly lay off this corny line about dedication and creativity as if it were solely the province of precocious youth. Music is an art-form and does need constant injections of genius and vision, it is also a business and as such requires a steady established workforce to maintain the whole infrastructure.

One more small grouse - Why do you give any space whatsoever to promoting the interests of these damned Discos? Surely people in your position should try to make life as difficult as possible for these talentless bastards with their "souped-up gramophones" rather than giving tacit encouragement by advertising Disco equipment. Thankfully they don't threaten me too much but I would have thought Rock players had enough problems without losing work to these parasites.

Yours sincerely,
John McFadyen,
Glenrothes, Fife.



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We didn't get the opinions of the rest of the band. But we're sure they're as happy about Bose as Mr. Cobham.

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A general overhaul of the Premier 250-S pedal:6

by Mike Lewis

I am sure that most drummers have, at some time, come into contact with the 250S pedal. Its reliability and easy, uncomplicated action have given this pedal world-wide acclaim for many years and, no doubt, many years to come.

One of the prime advantages of this particular pedal is that it very rarely lets you down in the middle of a gig. You usually have a feeling that something is amiss and somehow it struggles on until the end. Obviously it is better not to allow the pedal to reach this state by giving periodical checks to the various linkages etc. as the following instructions should explain.

The part most likely to cause trouble is the rocker unit (Fig. 1A) there are two problems which can occur. Firstly, the thread can become stripped where the thumb screw holds the beater in position (Fig. 1B) and, secondly, the pulley (Fig. 2A) can become worn.

Let me add at this point that the need to replace these parts usually comes due to lack of maintenance on behalf of the user and in no way reflects upon the quality of the product.

The first operation in removing the rocker unit is to unscrew the two bearings (Fig. 1C) with a large Phillips screw driver. These screws are usually very tight so make sure that the screwdriver you use is the correct one for the job. The crankloop (Fig. 1D) and spring (Fig. 1E) will detach themselves from the pulley enabling you to examine the crankloop and pulley for wear.

If the pulley needs replacing proceed as follows. File off the riveted end of the pulley and, very gently, tap the pulley out. I must emphasise that this has to be carried out very carefully with plenty of support on the arm to which the pulley is attached (Fig. 2B). With

the old pulley out of the way replace with a new one and again, when riveting the end over take the same precautions as when removing.

The part number for the pulley is 250-10. If the complete unit has to be replaced remove the rivet (Fig. 2C). At this point it is as well to check the over-riding unit (Fig. 2D) and the crank link (Fig. 2E). If wear is apparent it is as well to change them. Part numbers are 250-47 for part D and 250-71CA for part E.

The three rivets shown in Fig. 2 are identical. It will also be necessary to replace the felt pressure pad (Fig. 2F) part no. 250-3. A small point to mention at this stage; when fitting new rivets use a reasonably light hammer and do not over-rivet as this will cause binding through the linkage.

There are two more rivets remaining on the pedal. One is below the footplate (Fig. 3A) and the other acts as a hinge at the heel part of the footplate (Fig. 3B). These may be found to be sloppy and need to be replaced.

Both rivets are the same diameter, one being 7/8" long the other 2 1/8" long. The diameter of these rivets is slightly greater than the three previously mentioned. Now we come to the replacing of the new rocker unit part no. 250-41 C.A. Fit new rivet (Fig. 2C). The new unit should now be positioned between the arms of the upright assembly (Fig. 3C) and the bearings screwed home.

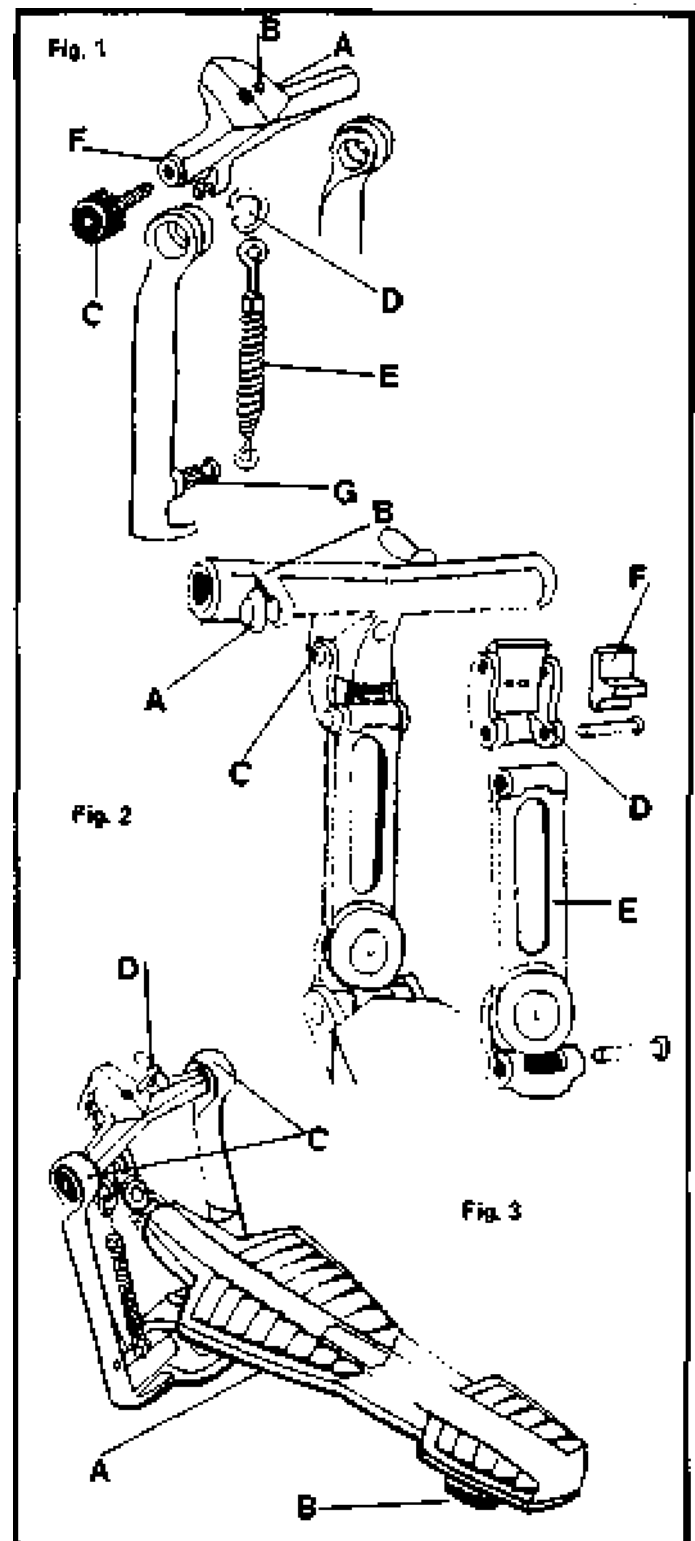
You will notice the new unit is not threaded at the bearing location points (Fig. 1F) the reason being that the bearing screws are self-threading. A certain amount of pressure is needed therefore, and I find that a small amount of grease applied to the tip of the screw will make the job that little bit easier.

With the rocker fitted in position refit the spring and

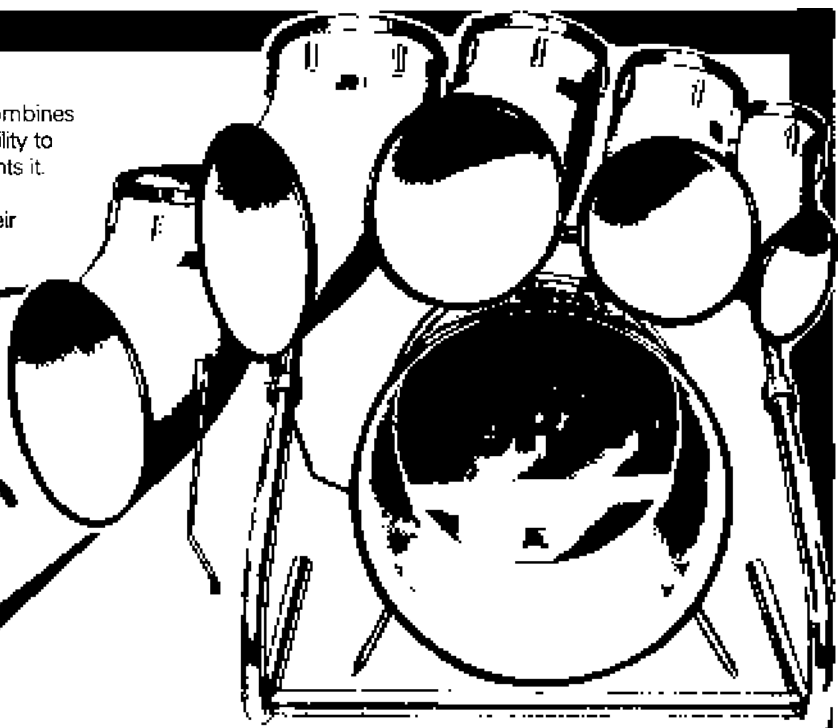
crankloop. If the spring needs to be replaced unscrew spring stud (Fig. 1G) and refit new spring part no. 250-12CA.

The part no. for the crankloop is 250-11A, all that remains now is to fit the thumbscrew (Fig. 3D) part no. 5007 and the job is complete. Regarding the availability of spare parts the

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CREME/GODLEY GIZMO COMES TO TOWN

The Gizmo is nearly ready for production. The long-awaited device which is expected to add to new dimension to guitar playing, will be available to guitarists early next year at an anticipated retail price of £75.

The Gizmo is the brainchild of Lol Creme and Kevin Godley who split from 10cc early last year to devote their energies entirely to developing and recording the machine.

At a press conference in London's Savoy Hotel this month, the two musicians unveiled the prototype Gizmo which was attached to a Fender Stratocaster. The principal of the Gizmo is simplicity itself; an electric motor powers six tiny saw-toothed nylon wheels which rotate thousands of times per minute against each string. This bows the string as long as a key, which holds the spinning wheel against the string, is depressed.

Where the Gizmo differs radically from other bowing devices (such as the E-Bow) is that the former is completely mechanical and a guitarist can bow more than

one string at once. Godley and Creme expect that the unit will become an integral part of the guitarist's technique in much the same way as a tremelo arm is used.

To launch the Gizmo, Godley and Creme have completed a mammoth three-album work called "Consequences" which is staggering in its content. "Consequences" is the ultimate "demo" record having originally been conceived as a single. However when Godley and Creme began using the Gizmo in the studio they found the device was capable of almost limitless effects.

In the hands of Lol Creme at Strawberry Studios, the Gizmo was capable of duplicating practically every orchestral sound except that of a grand piano.

The Gizmo concept was thought of by Godley and Creme six years ago and it has taken that amount of time working together with the Physics Department of the University of Manchester for the device to reach a stage where it can be made available to musicians at large.

The Gizmo will be able to be detached and fastened to a guitar bridge in a matter of seconds. At present the mounting device is tailored for Fender but it is possible Gibson owners will be able to purchase a universal mounting unit.

With a Gizmo attached, the guitarist will still be able to pluck, bend, and add vibrato. The only function that cannot be achieved is string damping as the Gizmo is located on the bridge where damping is most effective.

With what International Musician has seen and heard of the Gizmo, and from talking with both Lol and Kevin, we are convinced that the Gizmo will be of enormous benefit to guitarists everywhere and that the invention is one of the biggest advances in guitar technology in years. It must be stressed that the Gizmo is not an effect and that the guitarist retains total control over the sound his instrument is producing. International Musician will carry an in-depth investigation on the Gizmo, (similar to last month's guitar synthesizer probe), when it becomes available to the musician. IAN WHITE



(L-R) Peter Cook, Lol Creme, Kevin Godley, (note the Gizmo wheels on Strat bridge).



The prototype Gizmo: the commercial product will be smaller and more compact.

The original soundtrack

Lol Creme/Kevin Godley: "Consequences" (Mercury CONS 017/6641 658).

The triple-album epic from Kevin Godley and Lol Creme "Consequences" is a work that is astonishing to listen to. In these days of New Wave rawness, many people are bound to shy away from a three-record concept work. But "Consequences" must be appraised as something separate from mainstream rock 'n roll. You cannot dance to it and you cannot, ideally, listen to isolated tracks. "Consequences" is so staggering in the breadth of sounds that is contained in the album that it is both exhilarating and exhausting to listen to in one sitting.

"Consequences" takes on the scope of an "ear movie". Ideally you should devote an entire evening to it. It is impossible to come to any snap decision about whether or not one "likes" the project in the conventional sense of appraising an album. After two hearings, I can say it is an album which, in time will take on the status of Sergeant Pepper; because it is the first to do what it does and because no similar work of music exists.

Primarily, "Consequences" is a demonstration record of what the Gizmo is capable of. It does not show what the Gizmo will do in the hands of every guitarist but shows off what scope of sounds can be achieved in the right hands and with the right recording conditions.

The story to "Consequences", very briefly is this; the elements have turned on Mankind, natural disasters are sweeping the earth, and the world "as we know it" is ending. One man has anticipated

this disaster and has calculated a piano concerto will counteract Nature's anger.

The recording statistics attached to the £200,000 "Consequences" makes interesting reading. 17 hours a day, seven days a week; one minute completed each day, 200 buckets of water thrown against a wall to simulate a tidal wave sound, a fireworks display especially arranged to capture the sound of a fireworks segment



"Consequences": £200,000 demo?

of the album, six months to record side 1, four months to record side 2, and three months of dialogue recording.

There are some standout conventional musical highlights on the album especially when Sarah Vaughan guests on one of the numbers: and there are one or two potential singles on the album. One criticism I do have is of the amount of dialogue on

the album by Peter Cook, who does an expert job simulating four characters at once. But the album is, in my opinion, too heavy on dialogue which could have been edited down to make "Consequences" a two-album set.

"Consequences" contains some spine-chilling effects: the wind, the flood, the burial sequence. Godley and Creme are in fine voice for the vocals they do and the compositions are worthy of anything the duo did in 10cc.

At £11 for the full boxed set, "Consequences" is going to have a limited audience. But Phonogram and both Godley and Creme, at least deserve their project to be listened to with an open mind. The record company has invested £100,000 in "Consequences" and Kevin and Lol together put in approximately an equal amount of bread. So that form of commitment at least obligates the listener to step outside the usual criteria when appraising their efforts.

Melvyn Abrahams, who mastered all 10cc albums, has done a fine job on "Consequences" and the efforts of Martin Lawrence in engineering and mixing the project have paid off to one of the best production jobs ever. Love "Consequences" or hate it. Just don't ignore it. **Ian White**

Written, arranged and performed by Lol Creme and Kevin Godley (guitars, percussion, Gizmo, vocals), with dialogue written and performed by Peter Cook. Guest appearances by Sarah Vaughan, Judy Huxtable, Peter Wheeler and Andy Peebles. Produced by Godley and Creme and engineered and mixed by Martin Lawrence at Strawberry Studios, Cheshire, and the Manor Studios, Oxon.

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★ PLAYING ★

ROD ARGENT: Keyboards

In the last couple of articles we've touched very briefly on the ornamental tones that can be added to the major, minor and dominant seventh chords. We've found that the ornamental intervals are basically those of ninth, eleventh and thirteenth. However, the ornamental tones themselves may, in many cases, be altered a semitone either way to provide extra colour without changing the function of the chord. For example here is a V - I progression utilizing chords harmonically coloured with 9th, 11th and 13th intervals:



C13th (V) Fmaj 9th (I)

The right hand voicing for the C13th chord is made up of 7th, 9th, major 3rd and 13th intervals. Consider now the effect of chromatically lowering the 9th in the C13th chord from D to D flat. This would be the result;



The function of the C chord is unchanged; as basically a dominant seventh it resolves to its tonic, F. It does, however, provide another and even more highly coloured alternative. Of the three sorts of chord under consideration, major, minor and dominant 7th, the dominant 7th shows the most flexibility and offers the greatest number of possibilities for chromatic alteration. The basic alterations (shown in the key of C) are as follows;

1 Flattened 9th



or for instance



2 flattened 9th, flattened 13th



or for instance



3 sharpened 9th



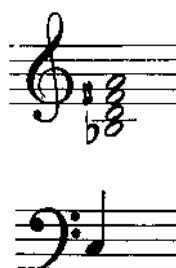
or for instance



4 sharpened 11th, or as its more commonly known, flattened 5th



or for instance



Of these chromatic alterations, only the sharpened 11th, or flattened 5th, is usually added to a major ninth (as opposed to dominant 9th) chord.

Chords such as these must, of course, be used in context. Going from a C7th flattened 9th, flattened 13th to a bare F major triad would sound incongruous to say the least! The usefulness in practice, of a chord progression utilising a lot of ornamental and altered tones, is that the player is offered a far greater scope for

- producing dissonance and tension,
- and
- producing interesting and satisfying melodic movement between chords for the individual voices.

I think we've now reached a point which is just about as far as we can go in these pages as far as chords are concerned. We have of course only been considering chords built on thirds! There are in fact many other methods of construction; one which is becoming more and more common uses the interval of the 4th as its basic unit. It's my opinion, however, that if you become really conversant with the possibilities inherent in the system using the 3rd as its basic interval you'll be able to explore the possibilities of chords built on fourths and other intervals for yourself. Suffice to say that, should you reach that point, the fun and games really start!

Before we finally leave this subject I'd like to remind you once more that there are no rigid harmonic rules; there is no one "right way" to approach chords and chord progression. What's "right" is what sounds good. The meaning of the word "chord", after all, is simply the sounding together of two or more musical tones. What I have tried to show over the last few articles is that there are more ways to approach even a simple chord sequence than the usual one of mechanically taking the root note of each chord and automatically building a triad with perhaps an added seventh as colouration. And if you want evidence of what magic can be worked on basically simple progressions, get hold of a sheet music album containing piano transcriptions of Duke Ellington orchestral arrangements of "Caravan", "Solitude", "Moonglow" and "In a Sentimental Mood". It's called "Rhythm Classics" and it's published by J. R. Lafleur & Sons Ltd.

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★ PLAYING ★

ANDREW McCULLOCH: Drums

Drums are basically broken down into four parts — the shells, the skins, the hardware (pedals and stands etc.) and the covering. The two most important elements are the shells and the skins. These two fundamentals give the drums their sound and character and no amount of flash covering, chromework and polish is going to improve them. You've got to approach the kit you're looking for with your ears, not your eyes. It sounds easy enough but it's very difficult to do. When a young lad goes into a shop looking for his first kit he'll encounter several obstacles. The first may be the dealer who, by and large, is out to sell the latest monster from America or Japan — getting you to part with a couple of grand with the least amount of noise from your part. Secondly, the lad is presented with a mass of literature and glossy brochures with all his favourite idols sitting behind their new range of drums looking suitably pleased (they probably got them a lot cheaper than you will — if not free). Thirdly, the young lad is brainwashed with all the legendary rumours about this make and that, how this kit has survived being dropped from an aeroplane and this make has had Keith Moon jumping all over it. So it becomes increasingly difficult to look at the beaten-up old kit at the back of the shop with any enthusiasm.

When you're setting out to buy a second-hand kit, try first of all to find someone to go with you whose knowledge you trust and who understands what you're looking for and what you can afford. Secondly, don't go in with your hands in your pockets and stand quietly in the corner while the dealer

walks all over you. Take your sticks along with you and try to arrange a small corner where you can try a kit out. It can be a bit embarrassing but it's your money you are spending and you want to hear what you're spending it on. Ideally, if you can, leave a deposit and take the drums away to try.

Second-hand drums invariably come into the shop with their skins suitably embossed with pitt marks, fag burns and telephone numbers of local girl friends of the last owner. This lends a certain charm, I must admit, but doesn't help you discover the true potential of the shell and, even if the skins are replaced, they are usually inferior ones, which is also understandable. I've always felt that drummer and dealer constantly underestimate the contribution the skin makes towards the tone of a drum — they'll spend a fortune on the drums and slap any old skin on almost as an afterthought, in which case it is advisable to take along a few of your own skins, say a 12", 14", 16" and 22". When you've found a likely prospect, persuade the dealer to let you try them out. You might also remove the bottom skins on the tom toms if that's the sound you're after and, as long as you promise

to leave the drums as you found them, I can't see the dealer objecting.

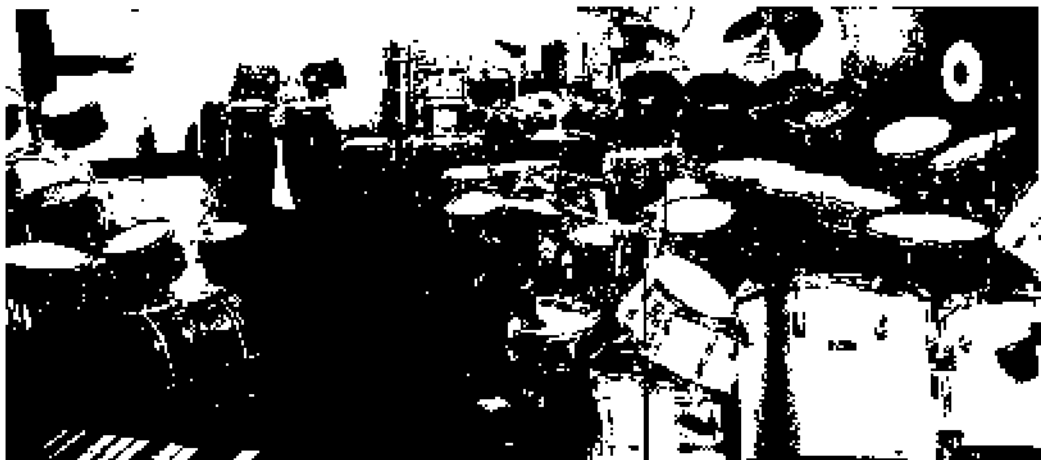
Don't reject a drum because you don't like the fittings or the covering — they can always be changed at a later date. It doesn't matter if every single item comes from a different drum manufacturer — by changing a few fittings and having the shells stripped and re-covered (which doesn't cost as much as you think if you shop around) you can put together, in my opinion, what is a much more interesting kit than anything you can pull out of a catalogue, and at half the cost. A friend of mine who couldn't afford to purchase the Gretsch kit he'd always wanted for studio work, settled for a very inexpensive second-hand Olympic kit which he totally stripped down to the wood. Then he varnished both the inner and outer shells. He then replaced all the nut boxes, fittings and snare drum, and changed for the best skins he could afford. To this day he's got one of the best studio kits I've ever heard.

Buying second-hand cymbals is another matter — apart from cleaning them there is not much you can do to improve them. Decide firstly

on what set-up you want, starting with the basics of high-hat, ride and crash — everything after that is a luxury. Good cymbals aren't cheap and the gap in quality between a cheap and expensive type make good cymbals almost a must (which usually comes down to the two main makes). Get your friend to play the cymbals while you walk about the room hearing them from different distances, you'll find you can judge them more objectively.

If you are prepared to spend a little time stripping and servicing your kit, or find someone who'll help you with the parts you can't manage, you should be able to end up with a first-class kit that will probably fetch twice what you paid for when you finally want to move on to something better.

Lastly, I'd like to suggest that you invest a few quid in one of the new teaching systems that are coming on to the market soon — these usually consist of a tutor book and a cassette which plays all the exercises first at a slow tempo, and then at a faster speed. They are usually concerned with bass drum and snare co-ordination and teach you to read at the same time.



★ PLAYING ★

Jim Rodford: Bass

The most common question put to me by relative beginners are (1) about my advice on the choice of a first instrument and (2) my thoughts on the comparative strengths and weaknesses of top range basses, more especially Fender, Rickenbacker and Gibson.

This month, I would like to deal with question (1) and start with a broad statement. Always go for the very best you can possibly afford, and that means reputable distinctive makes as opposed to a copy because, even if you change your mind and decide to give up the instrument, its resale value will remain higher. If you stick with it, and progress and save until you can afford your ultimate choice, then try to avoid part-exchanging it, and keep it at home, or as a spare, because it will eventually gain in financial and sentimental value to you personally. A Hofner was my first choice, which was fantastic value at the time for around £35 (remember McCartney's Violin bass) and I believe they've just re-introduced the range, although I'm not sure of prices at this time. If you can't afford an American product, try Hayman or Shergold. I own two Haymans — a long scale, and a little gem of a short scale of which I believe only about 30 were made. If you see one, snap it up quickly. I'm sure they'll be worth something in the future. Whilst touring the U.S.A. with Argent last year, I used it most of the time, and every other bass player we worked with was knocked out with its appearance, sound and feel. As you probably know, Hayman, as a trading name, no longer exists, but the guy who designed and built them, Bob Pearson (who also, incidentally, designed the Burns-Marvin range a few years back), now designs and builds

Shergold. The necks and most other fittings are identical to the Hayman range, although I believe the pickups are improved, and the bodies considerably lighter in weight. My opinion and recommendation of them is backed up by Mike Rutherford who uses one. You may have noticed that Bob has built a detachable twelve string and bass double neck for Mike, based on my method and concept carried out on my Precision and Stratocaster in 1969, which I showed Bob when he was at Hayman. For the money, Hayman or Shergold are excellent value, especially a good second-hand one. The pickups are really punchy with plenty of high top and bags of poke at the bottom end, and the necks have a lovely fast feel.

Another interesting model to look out for is the original Dan Armstrong DANELECTRO LONG HORN bass, not to be confused with the Italian copy DYNELECTRON. They are fast becoming collectors items now even though they were extremely cheap, around £60, when they first appeared. They have a medium to short, double octave scale, and very distinctive "ringy" sounding pick-ups. This feature made them unusual and popular before the Rickenbacker was heard in that deep, clangy guitar fashion.

Of the copies, I must admit to a scant knowledge, as there seem to be so many different brands marketing almost identical product in finish and basic quality. New makers names seem to come and go so rapidly, that I suspect the majority of the cheaper copies are the same components offered under different names and, more important, different prices.

In the light of the above speculative statement, my

advice would be to try as many as you can until you find a good one. Quality control is bad enough these days with the top makes so persevere and, if it feels and sounds good to you, that's the only yardstick that counts. I feel it's not worth spending much more than £100 on a copy, as there are some excellent value for money examples about at around that price, which look amazingly convincing. The finish, sound and feel of the Maya Jazz bass impressed me, as did the Gherson Jazz. The Melody Grabber, also seemed good value, all around the £100 mark. At that price you can't lose much on resale or part exchange, but I don't see the point of shelling out around £200 for a top range copy, when you consider the prices of good second-hand Fenders for instance, you lose £70 to £80 straight away.

A lot depends on the advice given by a good retailer, and whether he's "set the guitars up" properly before putting them on show. Check for all the obvious faults like warped or twisted neck, bridge adjustment for correct string heights and alignments, correct nut to bridge string length adjustment to obtain perfect relative intonation between the octave note and the Harmonic at the twelfth fret.

All these things make a big difference to your first impression and can put you off a basically good one sometimes. If you can't get to a big City shop, it's worth seeking out one of the smaller off shoot shops that seem to be spring up around the country. Places like The Valtz in the basement of Hammonds of Watford for instance run by enthusiastic young musos and stocking mainly good quality, cheaper

lines, and second-hand gear. Economy forces them to stock only a few makes, and these have to be of good quality and be well "set up" to avoid comeback. So copy brands here are carefully chosen for value and efficiency.

To be safe, I would always choose medium to long scale in the cheaper ranges, as short scales can be a bit flappy on the bottom E string when playing aggressively, and they don't sound as deep and percussive as long scale axes, especially within a Heavy Rock framework. As always, there are exceptions. Alan Lancaster of Status Quo and Glenn Hughes, late of Purple, both use short scale Fender Mustangs, as did Bill Wyman for a while, all within extreme heavy rock sound spectrums. But they have the advantage of large, sophisticated bass rigs to compensate. In a later issue, I'll discuss amplification and effects in detail.

Last month, I discussed at some length, the importance of chord arpeggio knowledge, and the relative merits of "rooting" a sequence or the taste and musical vision involved in the use of intervals further from the tonic note. Here are some illustrations of instances where following the root notes of a chord sequence is not necessarily the most complimentary and attractive sounding pattern to adopt. Some sequences, as in example (1), lend themselves to a descending bass line which deviates from the roots of the chords, but at the same time, ties them together in a pleasing and satisfying way.

The pattern starts by using the root note of C in the first bar, but doesn't employ any other tonic until the second half of the last bar. Underneath each chord symbol, in each bar, I've

shown a simple arpeggio, illustrated diagrammatically underneath in my usual way which I hope you find helpful.

Underneath that is the chosen bass note and phrase against the above chord and I hope it all helps to illustrate the interval relation of the note, to the chord. [Bar I: C is the root of C] [Bar II: B is the major 7th interval of C maj 7] [Bar III: B is the dominant 7th interval of C7] [Bar IV: A is the major 3rd interval of F] etc. etc. You won't obviously appreciate the effect of it until you are able to hear the

bass line played against the chords, and most of you will recognise the sequence/pattern relationship straight away as it's used frequently in many songs, but I feel it's important to understand how and why.

The thinking behind the bass note concept of example (2) is equally well used and just as effective. You'll notice that the same note is employed throughout the sequence, and is therefore defined as a pedal note. It forms a different harmonic interval within each chord, and ties them together in a different way to example

(1) but in its own way, just as attractively. With either sequence, you could use a more rooted pattern, or any harmony you wish, depending upon the context of this whole piece. Experience and "ear" have a lot to do with the ultimate choice, but it's nice to have the alternatives.

The competition bass riff this month, is again taken from an "all time Rock classic", and although perhaps a little more difficult for non-readers to fathom than last month's lick, I'm sure that most of you will twig it after you've worked out the first

four notes. It was recently revived and became a hit for a new band, which should help you. Again, I'm offering a new set of "Rotosound" strings, to the first six correct entries picked out of a hat, to the following questions,

- 1) Name the song
- 2) The original group to record it
- 3) Name the three members of the original group.

Don't forget to stipulate your choice of strings i.e. Long, medium, or short scale, - Flat, Tape, or Roundwound.

CHORD SYMBOLS C Cmaj7 C7 F

ARPEGGIO'S

FRET Nos → IV III II I NUT IV III II I OPEN IV III II I OPEN IV III II I

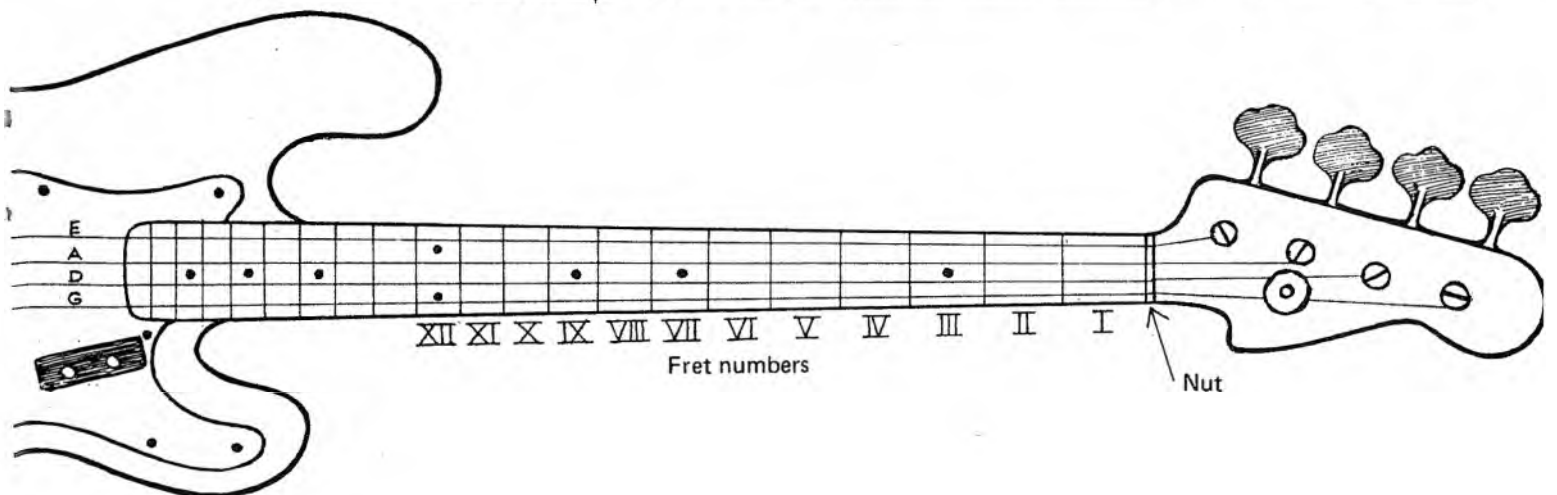
C D Dmin Gsus4/G

IV III II I OPEN V IV III II I V IV III II I V IV III II I

D E7 Gmin6 Dmaj7

IV III II I NUT IV IV III II I IV IV III II I IV

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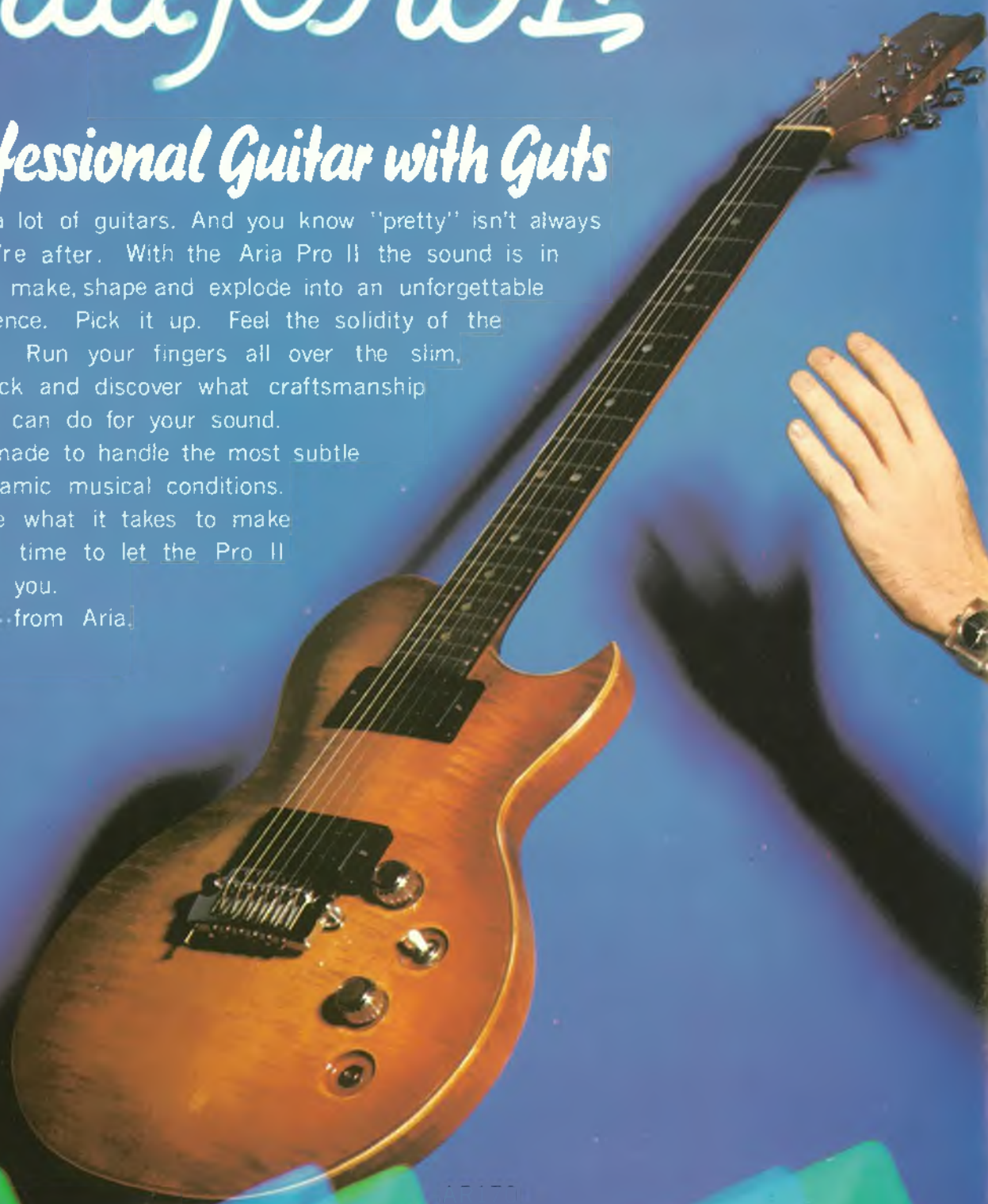
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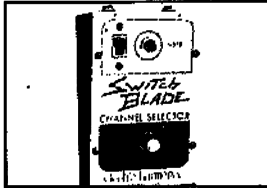
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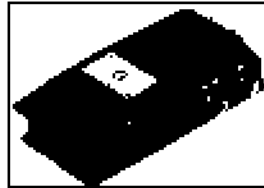


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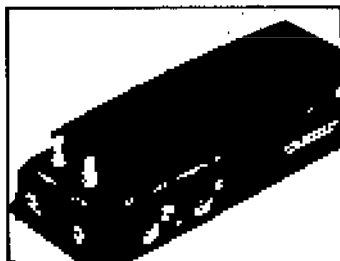
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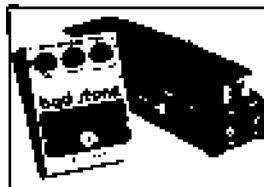


THE QUEEN TRIGGERED WAH IS THE SUPREME ALL-FUNCTION WAH

Resonance control adjusts the wah from razor sharp to ultra-mellow. Low Pass or Band Pass outputs give a choice of the standard wah or a fuller tone sweep with trailing low frequency responses. Built-in Envelope Follower triggers automatic filter sweeps for today's popular synthesizer effects, which can be overlaid at the same time on a range of wah effects with complete versatility. Bass and Treble Boost controls provide for pumping lows

and/or fine-pointed highs. Adjustable Q Range, and Filters, as well as Trigger, give sounds from Tape Reverse Simulation to Hendrix to Shal and beyond. Because of its unconventional voltage controlled filter design, the QUEEN has the low noise and smoothness of a light-operated pedal without its fragility or heavy power consumption. The QUEEN TRIGGERED WAH is fantastic with bass and keyboard as well as guitar.

13" x 6" x 3 3/4"



FOR UNEQUALLED PHASER VERSATILITY

The BAD STONE Phase Shifter provides the professional musician with unequalled phaser versatility. Extra stages of phase shift plus a continuously variable Feedback control give your axe or voice a light touch of color, a pounding swoosh, or any sound in between. The Rate control will take you all the way from slow chorus rotation through vibrato into spacey ring modulation. The BAD STONE's

exclusive Manual Shift allows you to stop the sweep at any point for a whole range of new tone colors. You can sweep the phase shift in rhythm with your playing or for special accents or by foot with the HOT FOOT Universal Pedal. OR, Get the BAD STONE Phase Shifter Pedal model — all the features of the BAD STONE floor unit plus built-in foot-controlled phasing. Our heavy-duty pedal design places the Bypass and Auto-Manual footswitches forward of the pedal so as to avoid accidental switching during a hot solo. As an extra feature, the BAD STONE Pedal incorporates a Color switch for a choice of standard phasing or pitch-modulated vibrato. BAD STONE Box and Pedal both AC/DC.

BAD STONE Box 6 3/4" x 5 1/2" x 2 1/2" x 1 5/8"
BAD STONE Pedal 13" x 6" x 3 3/4"



A FUZZ WAH VOLUME PEDAL

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

13" x 6" x 3 3/4"



ZIPPER: THE ULTIMATE ENVELOPE FOLLOWER

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

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

6 3/4" x 5 1/2" x 2 1/4" x 1 5/8"

electro-harmonix

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

Wholesale Prices



PUT ANY KNOB UNDER FOOT CONTROL

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

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



STRETCH YOUR GUITAR NECK UP TO 19 FEET!

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

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



GOLDEN THROAT WILL LET YOU SING YOUR AXE OFF

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

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



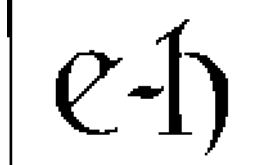
MOUTH TUBE FLEXIBILITY WITH BUILT-IN MONITOR AMP

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

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

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

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



E-H DEMO RECORD GETS DOWN TO IT

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

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



OUR GREAT NEW ECHO/ANALOG DELAY LINE

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

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

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

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

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

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

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



DELUXE OCTAVE MULTIPLEXER WITH ERROR-FREE TRACKING

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

mit the bass and baritone range. Makes any singer sound like Ike Turner. The popular standard OCTAVE MULTIPLEXER has the same fine features and timoraly bass with slightly relaxed tracking accuracy. The pedal version of the standard unit gives the musician continuous foot-controlled bending of high and low notes for the ultimate flexibility of

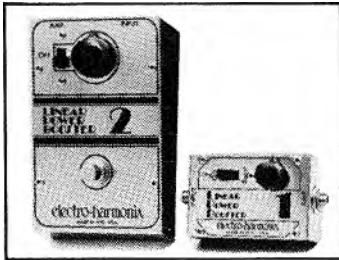
AC only DELUXE 8" x 6 1/2" x 6" x 1 1/2"
AC-DC STANDARD 6 1/2" x 5 1/2" x 2 1/2" x 1 1/2"
AC-DC PEDAL 13" x 6" x 3 3/4"

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

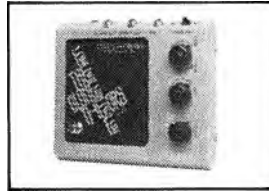
Wholesale Prices



CONVERT YOUR AMP INTO A STACK OF AMPS

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

instrument output to pre-set boosted output. Increases guitar sustain. Vastly increases the performance of all distortion devices, wah wah pedals, and other accessories. Using two LINEAR POWER BOOSTERS will give you even more sustain. Turning up the volume level of the first one past the halfway point will shift the second one into overdrive. Using the first LINEAR POWER BOOSTER's control you can now develop the initial bare hint of harmonic distortion to any desired degree. The second LINEAR POWER BOOSTER can control the volume of the combination. Two models: LINEAR POWER BOOSTER-1 with a double male plug will fit into amp or instrument; LINEAR POWER BOOSTER-2 does the same dynamic job down on the floor.
LINEAR POWER BOOSTER-1—3" x 2" x 1 1/2"
LINEAR POWER BOOSTER-2—5 1/4" x 3 3/8" x 2 1/4" x 1 1/2"



NEW ELECTRONIC DEVICE FOR SELF-MULTIPLICATION

Let THE CLONE THEORY Chorus Effect double your live vocals or instruments, with the fullness of studio overdubbing and the natural intermodulation of large orchestral groups. Makes voice, guitar and horn sections—in fact any instrument—sound bigger and richer. This new device utilizes a highly sophisticated voltage-controlled analog delay line, which generates both echo and flanging at the same time. The result is a moving chorus otherwise obtainable only with an expensive combination of delay and flanging equipment. Multiple controls can produce a delightful true vibrato and other variations. AC.
8" x 6 3/4" x 6" x 1 1/2"



TRY HENDRIX' SWEET SUSTAIN

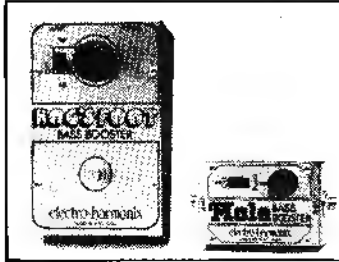
Jimi Hendrix relied on the BIG MUFF PI for his smooth, mellow, supple electric-lady sound. Now Santana uses this finest distortion device, high on sustain and low on distortion. Whole chords can be played with minimum distortion. It is designed for the guitarist who wants his axe to sing like a hummingbird with a sweet violin-like sustaining sound. The sustain control allows the player to optimize long sustain with a hint of harmonic distortion. The tone control allows you to control the harmonic content, from a sweet silvery liquid to razor sharp. AC/DC. 6 3/4" x 5 1/2" x 2 1/4" x 1 1/2"

THE LITTLE BIG MUFF PI is a compact version of the famous Big Muff PI favored by Jimi Hendrix and Carlos Santana. Preset maximum sustain. AC/DC. 5 1/2" x 3 3/8" x 2 1/4" x 1 1/2"
MUFF FUZZ—This funkier distortion device will give the player that dirty sound which cannot be gotten from today's popular solid state amps. It gives the player that natural distortion of tube-amos used by the Rhythm'n Blues bands of yesteryear. And now it comes with a double male plug that lets you plug into amp or instrument. 3" x 2" x 1 1/2"



TASTE AND FEEL EACH NOTE

The SCREAMING BIRD and SCREAMING TREE are treble boosters that will give your instrument that razor sharp edge that can cut through when you're playing live. The high end of your sound spectrum will sparkle, as you can taste and feel each note.
BIRD—3" x 2" x 1 1/2"
TREE—5 1/4" x 3 3/8" x 2 1/4" x 1 1/2"



PUT SWAMP IN YOUR BASS

The MOLE and HOG'S FOOT Bass Boosters cut the highs and amplify the subharmonics, giving your instrument the depth, authority and heavy penetration of the foot pedals of a church pipe organ. The MOLE or HOG'S FOOT will give your axe or amplifier that thick, swamp-bottom blues sound of the Fender jazz bass used in conjunction with the old Ampex B-15.
MOLE—3" x 2" x 1 1/2"
HOG'S FOOT—5 1/4" x 3 3/8" x 2 1/4" x 1 1/2"



ELECTRO-HARMONIX PRESIDENT KEEPS TWO MISTRESSES!

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

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



WELL DONE, DOCTOR Q

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

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



MIXXXXX

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

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ALL NEW STATE-OF-THE-ART PRODUCTS AT Wholesale Prices

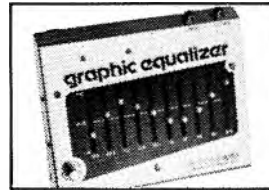


THE NOISE-FREE MULTI-PURPOSE ECHOFLANGER

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

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

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



THE 1ST GRAPHIC EQUALIZER FOR MUSICIANS WITH FEET

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



SOUL PREACHER SAVES YOUR NOTE

Hallelujah! The SOUL PREACHER Compressor-Sustainer sings out with angelically sweet, enduring sustain. It's a heavenly clean, musician-designed dynamic-level processor featuring a full 40 db compression range. (That's right!) The PREACHER's output, sensitivity, and hi-boost controls give the musician a variety of playing options, including organ-like swells and the sharpest possible staccato attack. Cathedral-quality sound at a store-front price. (Yeah, Brother!) 9 volt battery or AC-adaptor powered. 5 1/2" x 3 1/8" x 2 1/4" x 1 1/2"

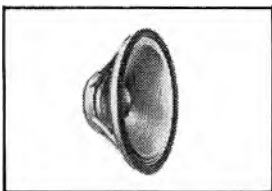
sible staccato attack. Cathedral-quality sound at a store-front price. (Yeah, Brother!) 9 volt battery or AC-adaptor powered. 5 1/2" x 3 1/8" x 2 1/4" x 1 1/2"



THE DIRT ROAD SPECIAL

Now the pathfinders in powerful small amps are hitting the trail again with the AC-powered MIKE MATTHEWS' DIRT ROAD SPECIAL, named for its gritty funkiness, great power efficiency, and extreme durability. A built-in SMALL STONE (the world's most popular phase shifter) and CELESTION 12" speaker (the same one used in the famed Marshall 100-watt stack) in a sealed, infinite baffle cabinet make the DIRT ROAD SPECIAL truly unique. This amp belts out up to 25 Watts RMS and has as much as 60 Watts available for the peak transients essential to a really striking attack. Included are Volume and full-range active Tone controls, LED power indicator, and an exclusive Bite control to contour your sound to a fine, incisive presence. Built to take the bumps, it features materials carefully selected for their acoustic and structural properties, tough, textured vinyl covering, chrome corner hardware, and shock-mounted PC boards and control panel. Ideal for studio and club use.

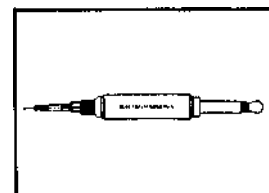
24 1/2 lbs. 17 1/4" x 14 1/4" x 9 1/4"



GUITAR SPEAKERS WITH FEELING

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

Available in 12" and 15" models for guitar, bass and P. A.



MILITARY/COMPUTER CABLE: THE BEST IN THE WORLD

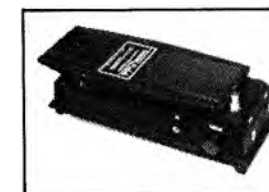
Our famous MILITARY/COMPUTER Cables are the finest available anywhere. They have become the standard for discriminating musicians because they are specifically designed for demanding professional use and incorporate premium materials and precision construction. All lengths from 3'4" to 100' are available; especially recommended is our SUPER HEAVY DUTY 25' Coiled Cable.



A SINGLE SHORT DELAY

The compact SLAPBACK ECHO and STEREO SLAPBACK ECHO offer the musician one of the most useful features of our famous DELUXE MEMORY MAN at a fraction of the price. Featuring the latest in analog delay circuitry, they produce a single 80-millisecond delay for the spacious sound heard on guitar and vocal tracks by Creedence Clearwater. A Blend control allows mixing of the delay signal with the straight signal in any proportions desired. And both units have switchable noise filters. Direct and echo outputs are included on the STEREO SLAPBACK to allow external echo placement and blended STEREO also includes LED power indicator. AC-DC. 5 3/4" x 3 3/8" x 2 1/4" x 1 1/2"

itions desired. And both units have switchable noise filters. Direct and echo outputs are included on the STEREO SLAPBACK to allow external echo placement and blended STEREO also includes LED power indicator. AC-DC. 5 3/4" x 3 3/8" x 2 1/4" x 1 1/2"



AND NOW, FOOT JIVE: THE TALKING PEDAL

From advanced research in speech synthesis, Electro-Harmonix has developed the TALKING PEDAL, a unique tool for the innovative musician. Its critically-tuned resonant filtering of instrument input creates the continuous vowel series "A-E-I-O-U" at given positions on the pedal sweep. Consonants can be created by the way you strike your guitar or other instrument. Besides foot-

speech, superior wah and mouth-tube timbres are obtainable through variations in your playing techniques. The Sustain adjustment controls the degree of effect and also introduces a BIG MUFF-like sustain. AC or DC. 13" x 6" x 3 1/2"

hill

Hollingbourne House, Hollingbourne,
Kent. Tel: 062780 555/6/7.

30 into 8 into 2 "D" Series
Custom built for Rig Hire, London





Marcuson trip

Alan Marcuson, the globe-trotting marketing and export director of British Music Strings Ltd., has just returned from another business trip that took him half-way around the world.

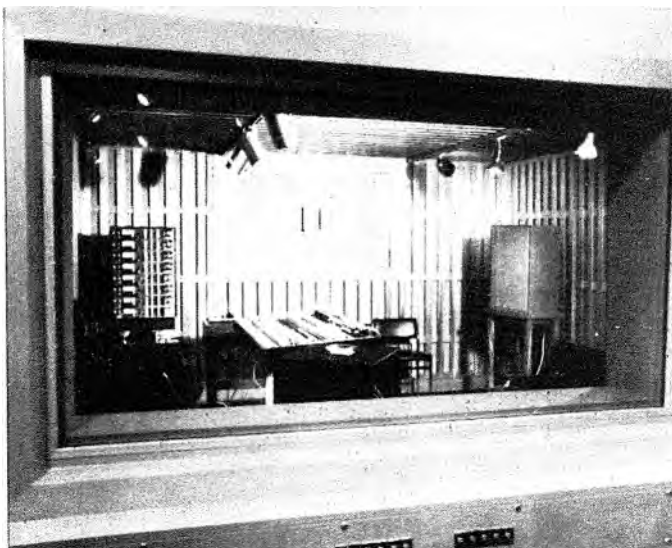
Marcuson, who these days seems to spend more of his time abroad than in Britain, visited the Australian Trade Fair in Melbourne where BMI had a stand. He also managed to find time to stop off in Mauritius, South Africa, Kenya and Nigeria to promote the company's products.

Meanwhile the company's managing director, George Osztreicher, continues his export drive in the Far East. So far he has visited Thailand, Malaysia, Singapore, Indonesia, Hong Kong, Japan, Taiwan and Korea. British Music Strings, which began life in 1967 as Cardiff Music Strings, is responsible for marketing Sound City, Cathedral, Summit, St. David and Londoner music strings.

Chase hold more demos

Chase Musicians held two synthesizer demonstration evenings in October. The first was at the Horseshoe Hotel in London's Tottenham Court Road where the Roland synthesizer range was demonstrated by Adrian Lee. A similar evening was held at the same venue, this time to show off Yamaha's polyphonic synthesizer which was played by Yamaha's top demonstrator Pat Archer. This can play four-note chords while the CS60 and CS80 instruments can play up to eight notes at once.

Chase Musicians has been steadily involved with organising demonstrations of keyboard synthesizers. The shop was recently established and now boasts one of the most comprehensive range of synthesizers in London.



View into Jigsaw Studio's control room

Back to eight track?

When Phil Spector started the "Back To Mono" movement a few years ago he was really pleading for music to be considered in front of technical achievement. Continuing his philosophy well-known producer and engineer Dave Williams has opened a purpose built 8-track Recording Studio in Surrey. The studio is specifically designed to be eight track and no consideration is given to the possibilities of an enlarged track format. The studio is called Jigsaw Studios and it's situated at 115, Old Lodge Lane, Purley.

"We felt that many small studios sacrificed everything to go 16 or 24 track," Dave told I.M. "We decided to get the very best equipment possible on an eight track

format and then worry about the music before worrying about cramming in as many tracks as possible."

Julians takes off

Julians Studio Rentals opened its new Willesden base with a reception attended by such luminaries as Chris Rainbow, Steve Hackett, and members of Pilot, Sad Cafe and the Ian Gillan Band.

Julians offers a complete range of keyboards, guitars, and effects and has a demonstration room to enable clients to try out equipment before hiring it.

At the reception on October 6, Brodr Jorgensen had most of the Roland and Kramer guitar range on show. Adrian Lee demonstrated the new Roland guitar synth-

esizer and musicians had a chance to get to grips with the Roland Micro-Composer.

New wave band get recording chance

The finals of a rock talent contest sponsored by Chris Stevens Music Centre of Southend were held last month in the Queen's Hotel, Westcliff. The winners were Diamond Jack a new wave band from Essex. Besides receiving £100-worth of prizes in gift vouchers and cash, the band also won a recording test with Phonogram.

Last month the Music Centre staged an evening clinic for Yamaha guitars. Guest artist was Mick Abrahams who demonstrated the full SG range of guitars.

New Andertons store

Andertons is opening a new store at 73b North Street, Guildford, Surrey which will cater mainly for classically orientated trade with stock to include: pianos, organs, brass, woodwind, strings, sheet music, and educational goods.

Both Andertons stores will be directed by Peter Anderton with the Stoke Fields shop to concentrate on electronic equipment and percussion. This shop will be managed by John Hulke.

Whooping it up at Julians are (L. R) IM's delectable Kathryn de Luca, Brodr Jorgensen assistant manager and general manager Fred Mead and Brian Nunnery, Shirley Lee of Julians and debonair IM ad executives Rick Desmond and Giles Neville.



MOVE UP TO OTARI

-the best in mobile professional recorders

Just over two years ago, Otari introduced a unique new product – the first truly professional recorder in a compact package – the MX-5050. Since then, the performance and reliability of this innovative new machine have been tested and proven in over a thousand critical professional applications – by broadcasters, recording studios, A/V departments, musicians, and semipro recordists worldwide. Universal acceptance and repeat orders by these satisfied customers tell this remarkable recorder's success story better than we can.



Bias can be re-optimized in seconds.

As you compare the MX-5050 with other recorders, keep this in mind. The MX-5050 is not a hi-fi machine with a few professional features added later as an afterthought. It was designed from the ground up based on Otari's 10 year experience as Japan's leading manufacturer of professional recorders and high speed duplicators. It is a full professional machine with the performance, features, and field proven reliability that you expect to find only in the larger professional recorders.

Here are some of the key reasons why the MX-5050 is the best compact recorder available today.

Production Features: Creative production is simplified with: Front panel edit to spill tape.

Lift-up head cover to mark splices and clean heads. Built-in splicing block on head cover. Adjustable cue to defeat head lifters. Selective reproduce to add new tracks in perfect time synchronization.

Two speed operation, 15 and 7½ or 7½ and 3¾ ips (field changeable in dc servo versions).

Performance Features: Headroom is 19 dBm, a full 15 dBm over the switch selectable fixed output of +4 dBm. This standard reference level output can be rear panel switched to -10 dBm to drive a PA system or power amplifier.

S/N ratio is NAB weighted better than 65 dB half track, ref 520 nWb/m at 15 ips. Crosstalk is greater than 60 dB half track.

Outputs are 600 ohm balanced or unbalanced as required. Line input and output connectors are XLR.

Operating Features: Bias is front-panel continuously adjustable (not limited to fixed positions). With built-in test oscillator (not available on other compact professional recorders) bias can be optimized in seconds when changing tape.

Record EQ and standard reference level are also front adjustable.

Straight-line tape path simplifies threading. Capstan is located on back side of tape for improved tape life. An extra reproduce head is standard on all versions to allow playback of tapes in different formats. For pitch control and freedom from power line variations, an optional dc capstan servo is available with ±10% correction range.



Easy threading: capstan on back side.

Versatility: Available in full-track (with half-track reproduce capability standard), two-track, and quarter-track versions. Walnut case is standard and a rack mounting adaptor is available. Universal power supply standard. Low impedance input and output transformers and remote control also optional accessories.

See your nearest Otari dealer for the full story or contact Otari. And, if it's multichannel you need, ask about the standard-setting four and eight channel versions of the MX-5050.



OTARI

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BJ NEWS

ESSEX BAND ROCKS ON ROLAND

Paul Bliss is keyboards player with the David Essex band which is rapidly earning a reputation for consistent quality backing work for Essex himself.

The band and their singer have worked hard these past few months. There has been the new Essex album, the regular BBC television series and a tour which tests both musicians and equipment alike.

Like so many other keyboard players who want only the best, Paul Bliss plays Roland: an SH5 synthesizer and an RS202 and is more than happy with their performance.

The SH5 is the synthesizer about which Rod Argent proclaimed: "The Roland SH5 is a compact, effective synthesizer, with most of the usual effects and a few more besides. The layout of the instrument has been intelligently planned, always, it seems with the musician in mind."

Bliss himself is a muso who will not settle for second best and has the ability to put all his gear through the strongest tests. He played and wrote with Keef Hartley; was Bobby Vee's bassman for a time, and has done countless sessions on bass and keyboards.

Paul Bliss is in good company with his RS202; Robin Lumley (Brand X), Genesis's Tony Banks, and Dave Courtney all have one. The actual layouts of the RS202 and SH5 are convenient and easy to follow and the synthesizer has two VCO's.

The Roland sound of the David Essex band also comes from a Chorus pedal used by bass player Mark Griffiths. Mark has played with Southern Comfort and has backed Dobie Grey as well as Rab Noakes and Johnathan Kelly. He spent six months on the road in America playing for Al Stewart and was one of David Essex's musician's for the singer's 1975 and 1976 British tour.

Mark uses the Roland Chorus pedal to give him a unique "double-tracked" effect that only a Roland "Chorus effect" can give. The Chorus is already familiar to musicians who know about the Roland range of combos. But now guitarists everywhere can get that famous "Chorus" effect with whatever equipment they are using simply by plugging in to a Roland "Chorus" pedal.

If you've never heard the Roland "Chorus" at work you don't know what you are missing. Imagine turning a six string guitar into a 12-string at the touch of a button. Suddenly dull and lifeless solo lines and chords take on a new dim-



ension and fill out into a chime-like sound that still retains the nature of the guitar's original signal.

The "Chorus" can also be described by imagining the sound you would get if two six string guitars played together with one of them slightly out of pitch

with the other. If the two guitars were perfectly in tune, you would hear only one dimension of sound. The Roland "Chorus", by brilliant electronic techniques, manages to split one signal into two and introduce a different pitch to one note and achieve a chorus effect. 99

STANLEY CLARKE THE WORLD'S PLAYS THE WORLD'S



It wasn't so long ago that the role of the bass player was a simple one. He was the anchorman of the band. A player who had to work within strict confines to lay down the basic backbones of a band's sounds to enable the other players to work around the bassist's nucleus.

It was unheard of for the bass player to actually be a "frontline" musician who would receive the same recognition as the lead guitar player. Slowly a few pioneering bass players changed all that, John Entwistle of The Who was one. Stanley Clarke is another. It was Clarke who first crossed the bridge between the free-form upright bass jazz player and the role of the rock musician.

Clarke was an innovator and wielded his instrument like a lead guitar. Stanley Clarke has had an intense education as a musician playing with such luminaries as Chick Corea and John McLaughlin.

Slowly he learned to step outside the 12-bar pattern of music that had confined him and other

bassists and ventured into the unknown world of "free form" and jazz.

To break out of the confines of four-to-the-bar playing, Clarke needs the best guitar on the market. You can't be hindered by an instrument which will not behave exactly as you want it to when you reach the degree of expertise of a Stanley Clarke.

That is why Stanley Clarke now uses Kramer guitars. This new generation of players who are demanding more from their guitars than previous models have been able to give.

Of course the other bass guitars that can be bought may be perfectly satisfactory as guitars. But they have been built to the sounds that have already been around for years. Kramer, on the other hand, recognises the new sounds and music that is being rated and has designed its guitars to give these innovative players the best guitar their money can buy.

So what does Stanley Clarke get from his Kramer that other guitars

can't give him? Perfect intonation is one feature. Kramers will play perfectly in tune from the day you buy one. All Kramer frets, by Petillo, are positioned so precisely that you'll never have to worry about intonation.

As every player knows, a satisfactory neck is one of the key requirements of a guitar. Now, while some guitar makers are producing axes with aluminium necks, they have forgotten that musicians like to feel the traditional "wooden" feel that conventional necks give.

Kramer uses select woods in the aluminium "T" neck to combine the warmth of a traditional neck with the strength and reliability of forged aluminium. The Kramer neck will never bend or warp thanks to the exclusive "T" neck feature that makes such movement impossible.

Knowing that a professional instrument has to stand up to the rigours of touring and road use, Kramer has treated its guitars with a protective coating that won't wear, chip, discolour, or fade even after years of use. You already

BEST BASS PLAYER

BEST BASS - KRAMER

know the havoc that perspiration can wreak on guitar finishes and fretboards. Well this defacing may add to the "character" of your instrument but it sure won't improve its playability or sound. So with a Kramer you know that that sweet, pure tone you get from your new instrument will be with you always.

What Kramer has done is simple, in principal. Kramer has combined the solid American tradition of fine guitar making with today's state of the art materials and design concepts, but most important of all, to today's music. You know if a Kramer is good enough for people like Stanley Clarke, there is no danger that you will be able to outplay the instrument.

Kramer has one goal, and that is to offer serious musicians a quality instrument which is noticeably better than other ones on the market but still retaining a price within a player's reach.

Pick up a Kramer and the sustain when you play it will astound you. This is due to the

pickups, and the wood used in Kramer guitars. Kramer pickups have strong magnetic fields to give improved response and low noise and distortion. Unlike most other pickup covers, Kramer pick-up covers allow for 100 per cent of the signal to pass through.

With Kramer pick-ups and controls you can get the sound of just about any other guitar or use Kramer's own inherent sound. Sustain is also improved by the use of a zero fret which leaves the nut free as just a string guide and an enhancement for sustain.

When Stanley Clarke plays his Kramer, he is assured of a session when his guitar will not go out of tune because of any weakness in the instrument itself. A Kramer is engineered to solve the majority of the causes for guitars going out of tune.

Of course Kramer can't do anything about natural string "creep" or stretching. But the usual weak link in the tuning of the guitar is the machine heads themselves. Bad machines result in inprecise tuning.

But the Schaller machines used on Kramers are machined to such close tolerances that string slippage from them is negligible.

A good tip when tuning is to tune up, never down. If it is necessary to lower a note, tune below and come up to proper pitch. This brings the tuning gears into tight mesh and eliminates the loosening of strings due to backlash.

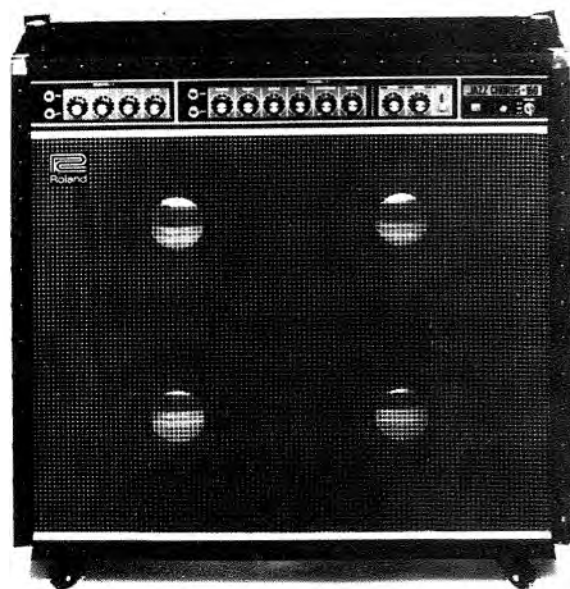
Even the way Kramer bolts its necks on to the body lessens the risk of tuning fluctuations. Kramer puts bolts through big washers secured in the body. These are then screwed into the aluminium part of the neck. This method of fastening the neck, along with the "T neck" design means that humidity and temperature changes do not affect the playability of a Kramer guitar.

All these features, and more, mean that Kramer is the one guitar that you can take and play anywhere and be assured of the same sound wherever you are. And if that's good enough for Stanley Clarke it will probably suffice for anyone into guitar playing, whether bass or six-string.



GENESIS

BEGINNING WITH ROLAND



Genesis' Mike Rutherford gets to grips with his Roland guitar synthesizer

Genesis has always been a band that has been in the forefront of pioneering new directions in Rock music. The band performs an intelligent form of music that cannot easily be fitted into any one category.

To reach their current heights of popularity, Genesis has had to keep up with all the new instrumentation that manufacturers have had to offer. When the Roland polyphonic guitar synthesizer was launched, Genesis guitarist Mike Rutherford acted quicker than ever before.

Rutherford immediately grasped the amazing potential of the Roland G-500

In the hands of a fluent guitarist like Mike Rutherford, the G-500 is capable of the most unbelievable sounds.

No sooner had Mike Rutherford taken delivery of his G-500 than he

shut himself away in Pete Townshend's Shepperton studio and began practising in earnest on the synthesizer.

The Roland G-500 is being featured on the new Genesis album and Mike Rutherford needed time to get to know his way around the equipment in much the same way as a Grand Prix driver will slowly familiarise himself with a characteristic of a new Formula One car.

The G-500 represents probably the ultimate "effect" for a band like Genesis. Use of the synthesizer is bound to have a profound effect on the band's music and especially its live act. Even though, Steve Hackett (another Roland user) has left the band, it should still be possible for Mike and the G-500 to expand the spectrum of Genesis' sound beyond anything they have done before.

With five different amplifiers at his disposal, Mike Rutherford will be able

to link up each of the different sound producing sections of the synthesizer to a different amp. This will give him five different synthesized sounds coming from as many different sources.

A bass section will mean the addition of another "bass player" in the band because the G-500 is capable of producing a bass sound from any string (or strings) that Mike picks.

Thanks to a complete on-board control panel, Mike will not have to keep moving to the synthesizer itself to obtain different sounds. If he is playing on stage he can operate any one of the synthesizer-presets from the guitar itself. If he just wants to play conventional guitar, all Mike has to do is flip a small switch on



the custom guitar and the synthesizer will immediately cut out and bring in the excellent natural guitar sound inherent in the special guitar that is part of the Roland G-500.

If you read International Musician's investigation into guitar synthesizers last month, you'll know that the guitar is attached to the synthesizer control panel by a 24-core lead. Each one of the string outputs on the guitar pickup go through to the synthesizer control board where the conventional string sound is changed into one of the countless tones that can be obtained from the G-500.

When you pick up the guitar that is part of the equipment, you will immediately know that you are holding a quality instrument that utilises all the best features of guitars that have been classics for many years. When switched to just a guitar sound, the instrument

sounds like other top quality electric guitars fitted with good humbuckers.

With the Roland G-500 you get the best of both worlds: synthesizers and guitars. If it's good enough for a class player like Mike Rutherford you can bet the Roland G-500 is a match for all other guitar players who want to explore limitless boundaries in their music.

Both Mike Rutherford and ex-Genesis member Steve Hackett are also both ardent admirers of the Roland Jazz Chorus amps. Both guitarists use the JC160's on stage and in the studio. These musicians know that there is no sense sticking to traditional equipment just for tradition's sake.

They know that, if they want to progress as fast as they need to, they require a manufacturer whose thinking is as advanced as their own. That is why

Genesis have looked to Roland to provide them with the amps they need to get the best sound possible.

With the Jazz Chorus combos, Genesis now have the most modern technology combined with the warm sound that is a favourite among guitarists. Then there is also the fantastic Chorus feature itself which fills out any guitar sound by a clever means of splitting a signal and putting it slightly out of pitch with the original.

If you hear two singers singing the identical note you will probably be aware of one single note. But if one of the singers adjusts his voice so that it is slightly out of tune with the first singer, their voices will fill out and the audience will hear two distinct singers or a "Chorus". This is the exact principal that Roland engineers used when devising the "Jazz Chorus" feature of their amps. 103

YOU'RE IN GOOD COMPANY WHEN YOU PLAY ROLAND

When you are lead guitarist with one of the most musically talented bands in the country you not only have to have the best equipment, but gear that is going to faithfully reflect your music.

That's why Ray Flacke of fast-rising country rock band Meal Ticket recently changed to Roland to add the final embellishment to his amazing country guitar technique.

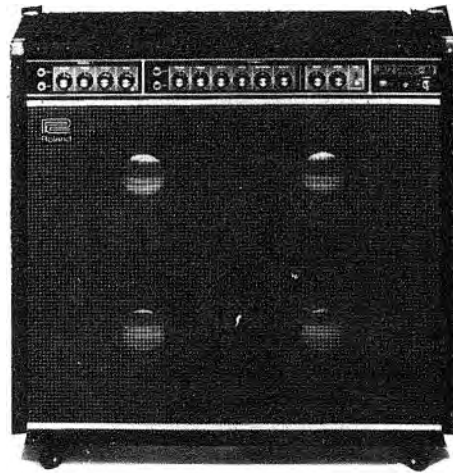
Seeing and hearing Ray in action with his axe and Roland JC160 is an experience to impress anybody who has ever played a guitar. When Ray plays, a waterfall of sound pours out of the four 10-inch speakers on his Roland retaining all the highs and nuances his fingers extract from the guitar.

And another thing. Ray Flacke is a purist guitarist with no time for pedals and effects which he feels place a barrier between him and the natural sound of his guitar. Yet he is in love with the Jazz Chorus effect on his Roland and shows how, in the hands of a tasteful musician, the Jazz Chorus can enhance music that is already perfectly played by the musician.

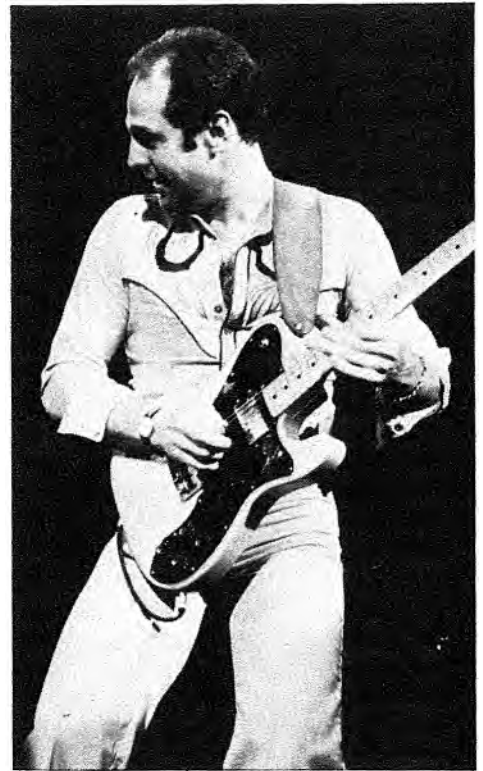
Go to a Meal Ticket gig and marvel at Ray's playing and the power and pureness of tone he gets from his Roland. And listen to the two Meal Ticket albums

"Code of the Road" and "Three Times A Day" to hear how Roland is equally at home in the studio.

Ray Flacke's choice of Roland says it all about the equipment. The best amplification for the best musicians.



JC160



Ray Flacke

COCKNEY REBEL AND ROLAND

It is not only amps and synthesizers that create the sounds that top musicians want from Roland. A full range of extra effects are called upon by players to give full expression to a musician's playing.

Duncan Mackay, who has played keyboards for Cockney Rebel for example, uses quite a few Roland effects.. like the 104 sequencer and the TR77 rhythm box.

Among his favorites is the Roland DC-50 or digital chorus. This unit gives a full range of chorus sounds.

The DC50 is also a very effective delay unit. A full range of controls give a player total control over any modification of sound he needs. These controls including volume, echo intensity and chorus intensity controls as well as inputs for foot switches and mikes. The DC-50 is also a very effective echo unit that can make any vocal sound better.

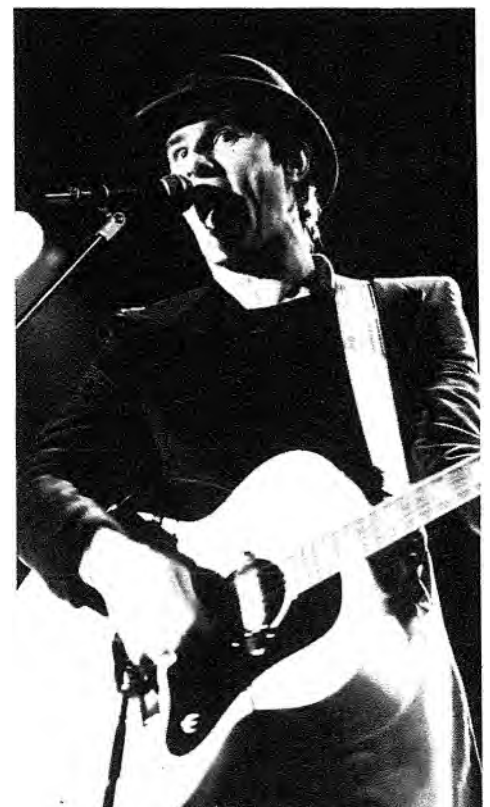
Roland not only make the DC-50 but produce another popular echo unit, the RE-201. This uses a free running tape system and will give tremendous

depth and body to vocals and instrument. When you play through one of these echo chambers you'll wonder at how you ever managed to get by without one before.

If you can imagine playing for thirteen days non-stop day and night, that is how long the tape in a Roland RE-201 echo chamber will last. And Roland estimates this is approximately six to 15 times longer than the life of tapes in other echo chambers.

Roland also now carry an RE301 echo incorporating chorus and sound on sound, only the most up-to-date components and technology is used in producing Roland effects. These include the use of LED's as well as VU meters to monitor sound produced by electric guitars

If you are a performing musician you will know the problem on stage with VU meters; they just cannot be seen clearly and easily. With the Roland LED, you know in an instant whether or not you are running into distortion because the diode lights up as the peak level is reached.



THE BEST EFFECTS COME FROM ROLAND

If you really want to get into good effects pedals, look no further than Roland. Hot Chocolate find the answer to their effects needs with Roland and the band uses several of the units in the Roland range.

Part of the exciting range of Roland accessories give you sounds you wouldn't have thought possible a very short time ago. You want sustain? An AS-1 non-distortion sustainer at your feet will make your guitar cry out with a power and excitement that will astound you.

The AS-1 is a unique sustainer which sustains an original sound without any unwanted distortion. Just press on your strings and the sustaining effect will be automatically produced for as long as you fret the strings.

You know how many distortion units introduce harsh raucous tone into your playing when you want a softer sound? Well Roland has the answer with its "Funny Cat" soft distortion sustainer which tailors distortion to your exact playing techniques. It doesn't matter if you are a heavy-handed player or finger-pick your instrument lightly. The AG-5 will respond exactly to the distortion setting you choose for your own playing. In other words, the player controls the sound NOT the effects pedal.

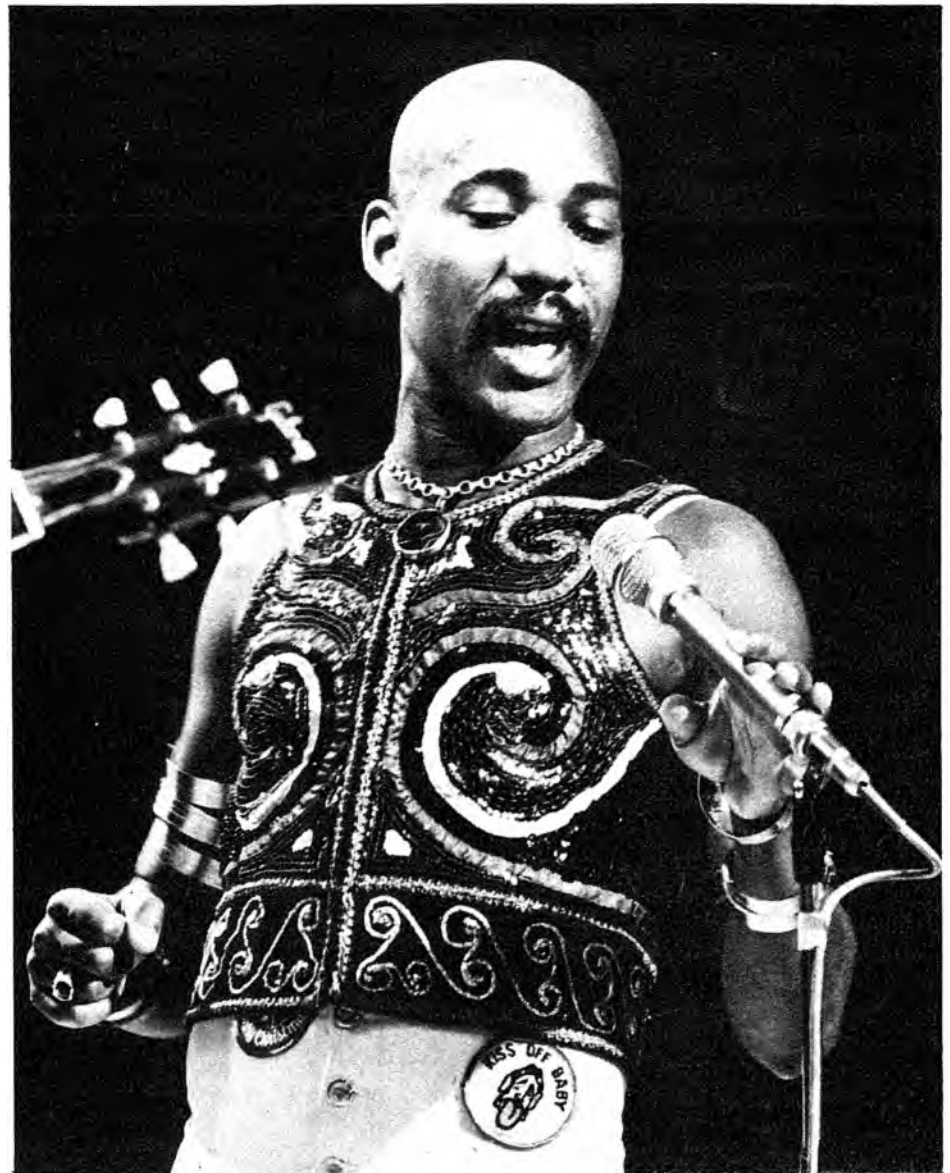
If you've ever heard, or played through a Jazz Chorus amp, you'll know that unmistakable sound which fills out your playing and makes a six-string instrument take on the full overtones of a 12-string.

Roland knows how popular this chorus sound is and have produced the Boss Chorus Ensemble so you can have the famous Roland Chorus sound regardless of the amp you play through.

This unit is one of the strongest and best-made effects units you can buy. No flimsy plastic for Roland, the CE-1 is sturdily made from the die-cast metal. This is a new type of sound effect. It will make anti-effects guitarists think again and will become an obsession with players who already have multiple pedal boards.

Main connection means you never have to worry about flat batteries on stage. Play on forever, and your Roland chorus effect unit will be right there with you. All the most modern devices have been built into this unit: the peak level indicator allows easy level setting — when the level is too low, the indicator does not come on, when you are using too much of the effect the indicator lights brightly.

The CE-1 is the way all pedals should be made; strong, sturdy, and with every thing available to ensure any player can get the most from his instrument at every performance.



Hot Chocolate: Roland users



BJ NEWS

ASK MIKE OLDFIELD ABOUT ROLAND



There can't be many more musicians who are more meticulous and thorough than Mike Oldfield who will spend days in a studio to get just one small overdub right. Mike Oldfield is a perfectionist and he demands that the equipment he uses be able to deliver the sounds he has planned in his head.

Mike uses the Roland SH-2000 synthesizer which was developed especially for home playing and is ideally suited to someone like Mike Oldfield who does the majority of his work in his own recording studio at his Hergest Ridge house.

The Roland SH-2000 that Mike uses is a preset-type synthesizer, easily set at any one of 30 preset sounds by merely pressing a single key. A musician who uses an SH-2000 has at his control 21 preset instrumental sounds and nine special sounds making up the 30 presets.

Once you set an SH-2000 up you'll find a touch-sensitive effect control on the panel which automatically gives six different kinds of performance effect: volume, wow, growl, vibrato, and pitch bend. These effects can be used throughout a song by just applying more pressure to the keys.

An SH-2000 will give you a range of sounds that cover practically the whole of the musical spectrum. With an SH-2000 you can get sounds like those produced by: tuba, trombone, bassoon, oboe, hawaiian guitar, banjo, fuzz guitar, piano and harpsichord among others.

Even these preset sounds can be modified or completely changed by use of the special filter control. You can make one tone float up or down to another tone by using the Portamento control and you can raise or lower the tone by one octave by simply pressing another switch on the SH-2000.

All the sustain a musician needs is on the SH-2000 and sounds can be consecutively repeated at regular intervals with Roland feature.

These features, and the overall unrelenting professional performance the SH-2000 is capable of, makes the instrument an obligatory buy for serious keyboard players.

Precision instruments.

From handmade guitars to the most technically advanced amps, Yamaha is dedicated to superlative quality. We work hard to get things right; and we are happy to know that our skill and attention to detail are noticed and appreciated.

The three instruments shown here are representative of an unsurpassed range.

Electric guitars. The exciting new SG2000 leads a field of brilliant guitars: solid, semi-acoustic, electric-acoustic and bass. All are beautifully built and outstandingly reliable.

Classic and folk guitars. Patience, skill and the use of the finest materials available, make these Yamaha guitars matchless in their superb sound and unfailing tonal response over years of use.

Amplifiers. From the compact range of 30, 50 and 100-watt G & B combo amps to the most sophisticated of PA mixers and bins, Yamaha bring their own special brand of experience to ensure reliability.



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FREE 'N' EASY MUSIC HEMEL HEMPSTEAD

During the early seventies a band called Free and Easy were enjoying a fair amount of success in and around the Aylesbury area of Buckinghamshire. Two of the guitarists in the band, Dennis Fowler and Stuart Darling, had been friends for seven years and had, like many of us, experienced the difficulties of getting what you want from music shops.

They decided to open their own music shop in Aylesbury in 1976 and called it, naturally enough, Free and Easy. Dennis Fowler takes up the story, "We'd both always fancied having a music shop so I persuaded Stuart to sell his house and his car, as I did, and put what money we had in to a music shop to be run the way we would like it. We opened Free & Easy in June 1976 in Aylesbury's High Street."

It was a small start which was to lead to bigger things. Most of the gear in the shop originally, in fact, belonged to Dennis and Stuart but business rapidly grew and they started to stock many leading names in musical equipment.

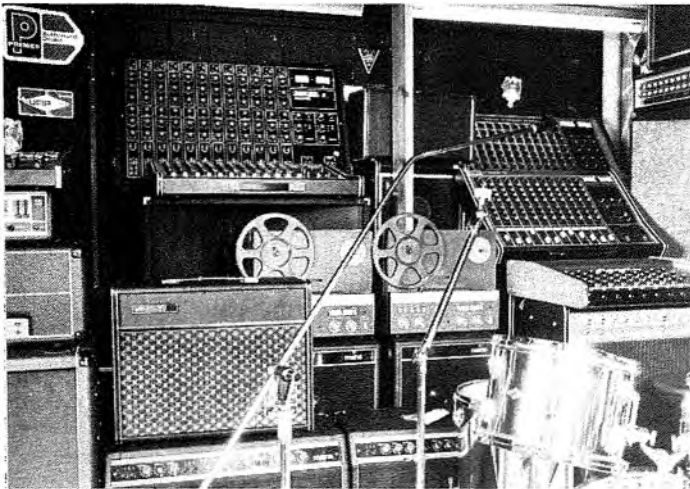
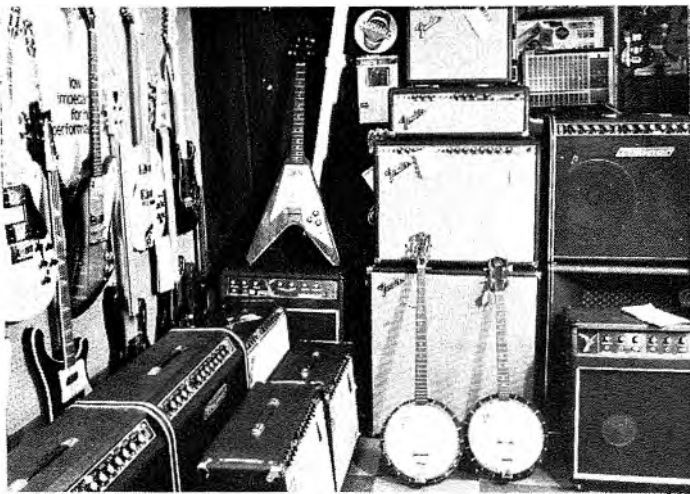
"The most important thing which sums up what we stand for," said Dennis, "is that, having played in bands, we knew what we liked and what we didn't like about music shops. For instance, the ego-

tripping salesman/guitarist you often find in some London shops. You know the type — he's not interested in selling you what you want, he's more interested in impressing you with his playing! It really brought it home to me a few times because Stuart is a quiet, retiring type and when he wanted to buy a guitar he wouldn't even try it out in a shop. I'd have to try it for him because he felt a fool in front of these "guitar heroes". We decided we'd run a shop the right way and sell the right name at the right prices."

Initially, Dennis and Stuart worked "part-time" in that they both held their day jobs — Stuart was a plasterer and Dennis sold micro-wave ovens — and worked alternate days in the shop. Free and Easy was such an instant success however, that their entire stock was sold within two weeks and they had to turn their attentions to it full-time. The gamble paid off, as did their second — opening a branch in Hemel Hempstead

"The Aylesbury shop is still there and thriving", explained Dennis, "but although it had lots of atmosphere, we couldn't stock drums or keyboard because of the lack of space. We took a gamble and opened the Hemel shop in November last year. It's definitely worth it and we now feel we can compete with anyone in the country."

Little things are important to Dennis. Like the fact that if somebody who



wasn't local phoned up the shop and said they were coming in to buy something, he would have the customer picked up from the station.

"I think that's the way things should be. We're a couple of miles from the station here, and it doesn't take a minute to run out and pick a customer up. We're very lucky. There are a lot of regular customers who have bought a couple of things here and they're only too willing to help out - they helped us paint the inside of this shop, they often run down to the station to pick someone up for us, and last week, we had a Yamaha demo with Mick Abrahams. In the morning we had four or five local lads in who were only too willing to help us move the gear around for the demo in the evening.

The full time Free and Easy staff at Hemel Hempstead consists of Dennis, Ed Poole, Adrian Connolly and Graham Robb. Adrian and Graham will soon be moving to Free and Easy's latest new enterprise - a separate disco centre soon to be opening in Warners End, Hemel Hempstead.

"We'll be opening the disco shop in about four weeks because it's a better idea to have it separate and it'll give us more room for keyboards and percussion here. Graham and Adrian will then move to the disco centre.

Further expansion for Free and Easy

includes another branch in Oxford which will be opening on December 1st. Stuart will be in charge of the Oxford branch and the latest recruit, Colin Ryan, a musician from one of the top bands in Aylesbury, will take over the running of Free and Easy in Aylesbury.

"We have a lot of customers both here and in Aylesbury who travel to the shop from Oxford, there are a lot of gigs over at Oxford and it naturally follows that there must be a lot of musicians there. Stuart will be in charge of that and will work with Mick The Idiot who plays in a local new wave band."

The Hemel shop covers two floors - ground and basement. The ground floor is mainly amps and guitars while the basement houses percussion, disco gear and keyboards. Apart from an excellent coffee machine, there is also another piece of equipment not quite in keeping with a music shop - a pinball machine.

"If you're a local muso and you go into your local shop every day," explained Dennis, "you get fed up looking at each other so we got the pintable. We're not the sort of people who throw people out of the shop if they don't buy anything. The point is that we're exactly the same type of people as them - we've just changed our jobs, that's all. Nothing else has changed."

Something that has changed from the early days of Free and Easy is the am-

ount of equipment carried in the shop. Amps include Roland, Peavey, Music Man, Fender, Traynor and Yamaha. Their enormous range of guitars features: Gibson, Travis Bean, Rickenbacker, and Ovation. Although they have only been retailing keyboards for three months, Fender, ARP, Yamaha, Roland and Hohner are big sellers at Free and Easy. Their percussion lines include Premier, Ludwig, Rogers and they are about to take delivery of a Pearl consignment. Dennis also believes in holding a good stock of effects pedals and, in addition to MXR, Morley and Roland, the complete range of the new Bell effects are in stock, a line about which Dennis is very enthusiastic: "The Bell phaser is one of the best we've ever had."

One of the aspects of Free and Easy of which Dennis is justly proud, is their specialisation in left-handed instruments.

"One in ten people are left-handed so it must follow that one in ten guitarists are left-handed, so it's not that much of a minority to look after. We used to have a left-handed guitarist in our band and when he went to buy a guitar, there would usually only be one in the whole shop, so we made it our policy to always stock at least twenty - and most of those are Gibsons or Fenders and not cheap, left-handed copies. We won't make a million out of it but it's really important."

FREE 'N' EASY MUSIC

57 High Street, Hemel Hempstead. 0442 59659 / 100 High Street Aylesbury, Bucks 0296 86913

GUITARS

Fender

Tele Standard RN	£200
" " MN	£230
Tele Custom	£265
Strat RN and trem	£275
Strat MN and trem	£295
Strat RN	£230
Strat MN	£250
Precision Bass RN	£210
Precision Bass MN	£240
Jazz Bass RN	£250
Jazz Bass MN	£275
Tele Bass MN	£215
Mustang Bass RN	£175
Mustang Bass MN	£195
Musicmaster Bass	£120

Gibson

SG Standard	£450
Les Paul Custom Black	£550
Les Paul Custom Natural	£590
Les Paul Wine Red	£500
Marauder Natural Satin	£250
Firebird Natural	£555
Explorer Natural	£475
Ripper Bass Natural	£364
Grabber G3 Natural	£300
Grabber Natural	£280
Thunderbird Natural	£580

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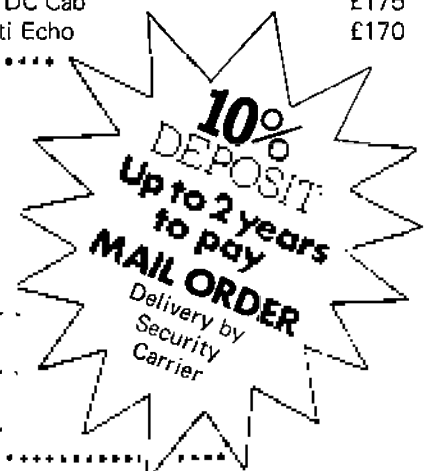
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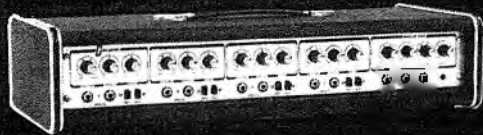
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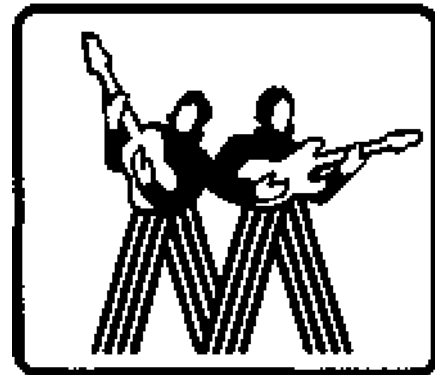
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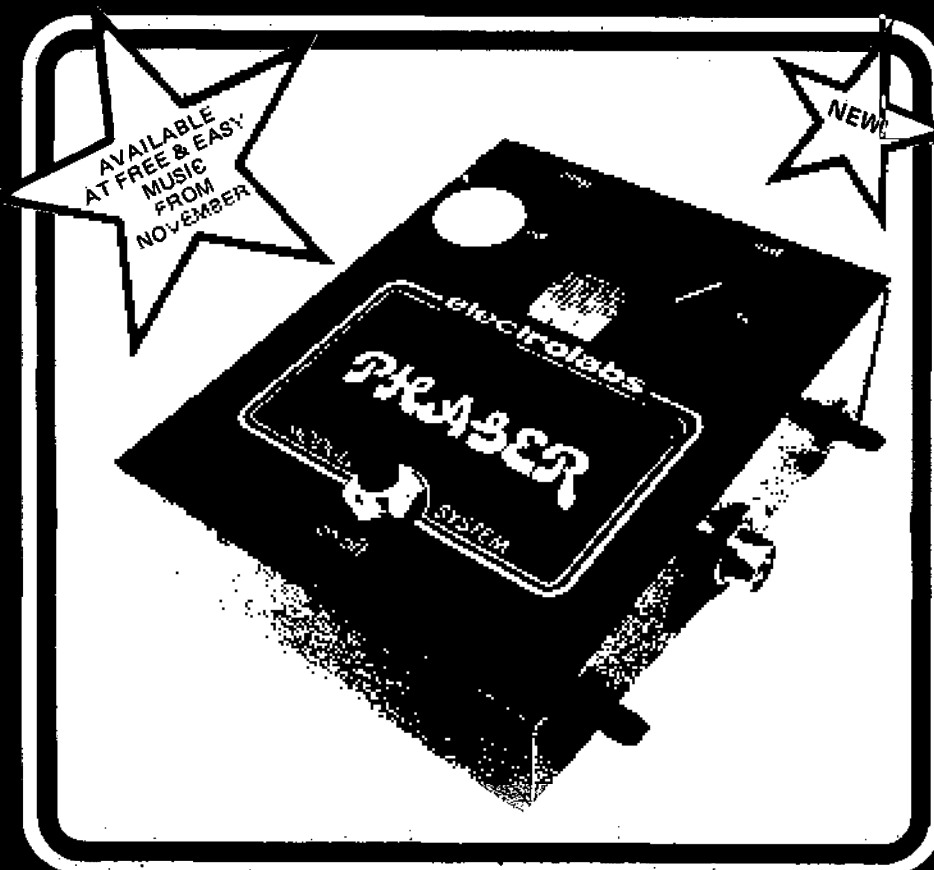
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Approximate Weight: 93 lbs.

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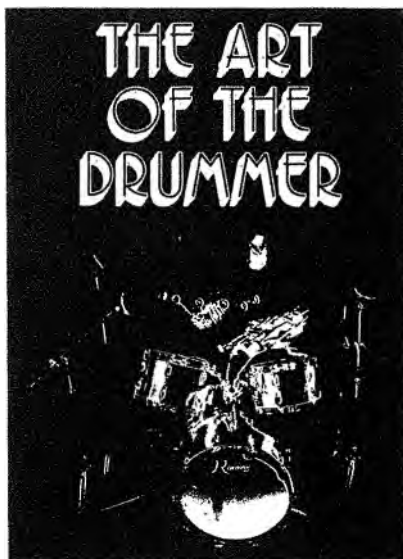
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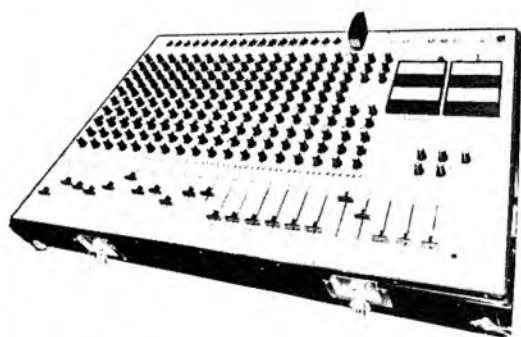
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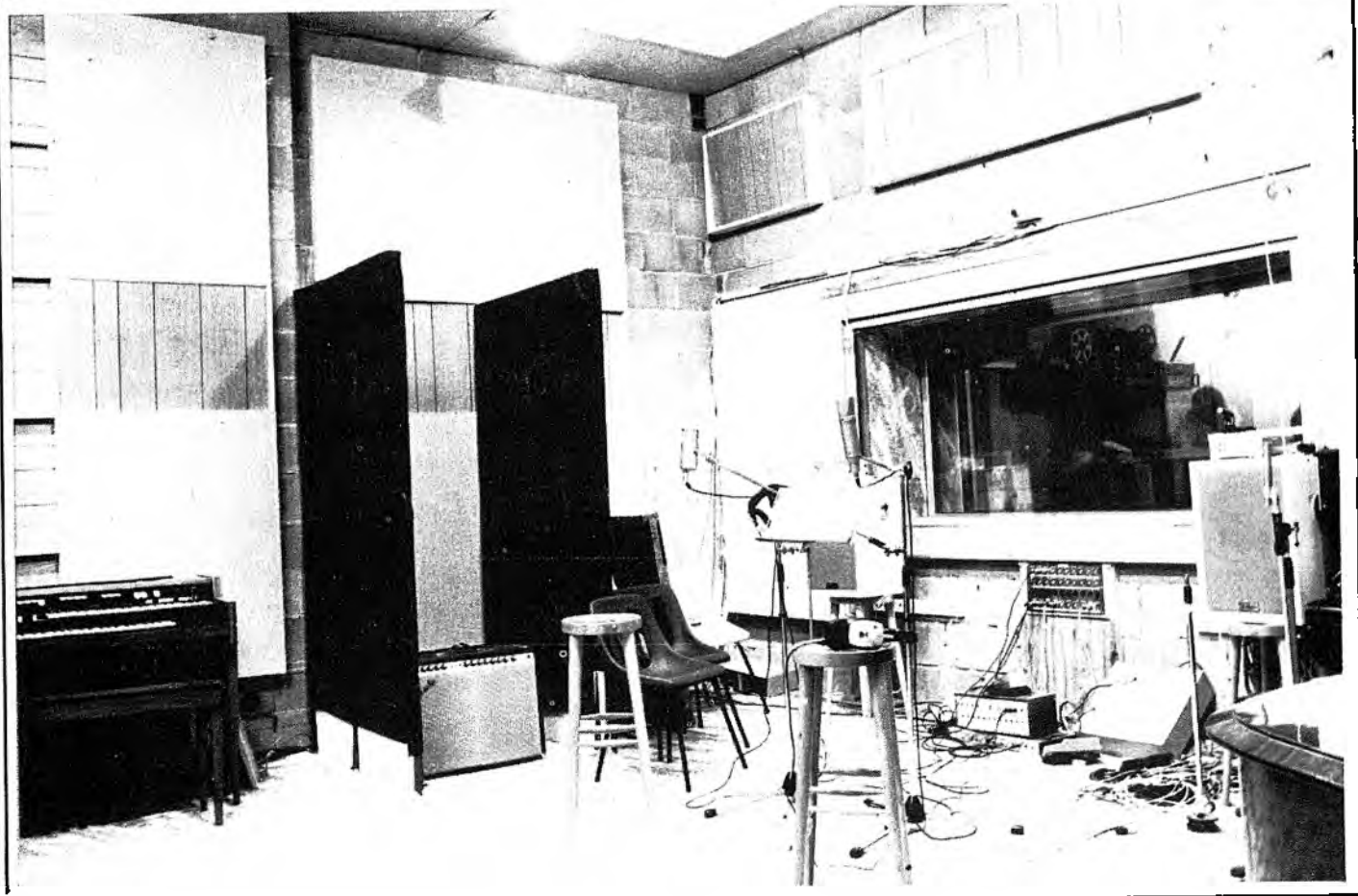
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The Old Smithy

Recording Studio



The Old Smithy Recording Studio

Few studio managers can have had such a varied career as Muff Murfin, the founder and owner of The Old Smithy Recording Studio near Worcester. At various times in his life Muff has been a builder, a painter, a PE teacher, an entertainments officer, a DJ, a manufacturer of disco equipment, a music shop proprietor and a singer.

These days Muff still manages to find time to sing in his own band, manage a girl singer and run a local disco, but most of his energies are concentrated on running the studio. His studio, which was opened just two months ago, stands in two acres of grounds in the attractive village of Kempsey just four miles from the centre of Worcester.

It's about 40 minutes from Birmingham and about two and a half hours from London, which means that it's reasonably sited for bands from both cities. Up to now the bulk of Muff's business has come from London-based bands, who are no doubt attracted by the clean country air, the tranquil setting and free parking.

The studio, which was designed by Keith Slaughter, is comfortably sized at 30 ft. by 30 ft. and can take a small-size orchestra of up to 35 people. It currently has 16 tracks, but Muff intends to go up to 24 tracks within the next 12 months. The control room is equipped with a Neve desk, a 3M 16 track machine, a Leavers Rich eight track machine, a Sculley four track, a Klarke Teknik SM2, three Revoxes and a pair of Lockwood speakers.

A wide range of musical instruments are available including Sonor drums, a Hammond organ, a Bentley Emminent String Machine, a seven-foot Steinway grand, an upright Bechstein, a Korg synthesizer, a Farfisa Syntorchestra, a Hohner Clavinet and various percussion instruments. Besides providing the instruments, Muff can also supply extra musicians. His chief engineer, Colin Owen, can also double as lead guitarist, bassist or keyboard player, while Muff himself has been known to help out with vocals. A pair of local girl singers, Sue and Allison, are also available to provide back-up vocals.

When IM visited the studio it was being used by Pilgrim Records, a company that specialises in religious records, and has become a major customer. Although the studio was fully operational, at the time of our visit, various ancillary features had yet to be added. By the

time you read this article Muff should have installed a television, a pool table and cooking facilities.

Says Muff: "I think it's very important that a group has somewhere to relax away from the studio while the producer is busy mixing. In any recording session there are bound to be periods when a group is not required to play, so a separate room for them to watch TV, play pool or have something to eat, is quite essential.

"It's also a useful place to have for people not involved in the session who the group may bring along, such as wives and girlfriends.

"There's no bar in the studio, but I don't think one is needed. The pub is just 20 yards up the road and if people want to they can always bring drinks back to the studio.

"As far as overnight accommodation is concerned there's no problem. Most groups find that the bed and breakfast hotel down the road is very convenient and quite reasonably priced. It costs £5 a night, which compares very favourably with London rates."

Up to now Muff has managed to keep the studio fully booked, some days working as long as 18 hours.

"Most of our advertising has been done by word of mouth. A group tries us out, likes what we have to offer and then spreads the word to other bands.

"At the moment we're booked about three weeks in advance, but it's not going to be like that for long. The waiting list is going to get much longer, now that I've started advertising.

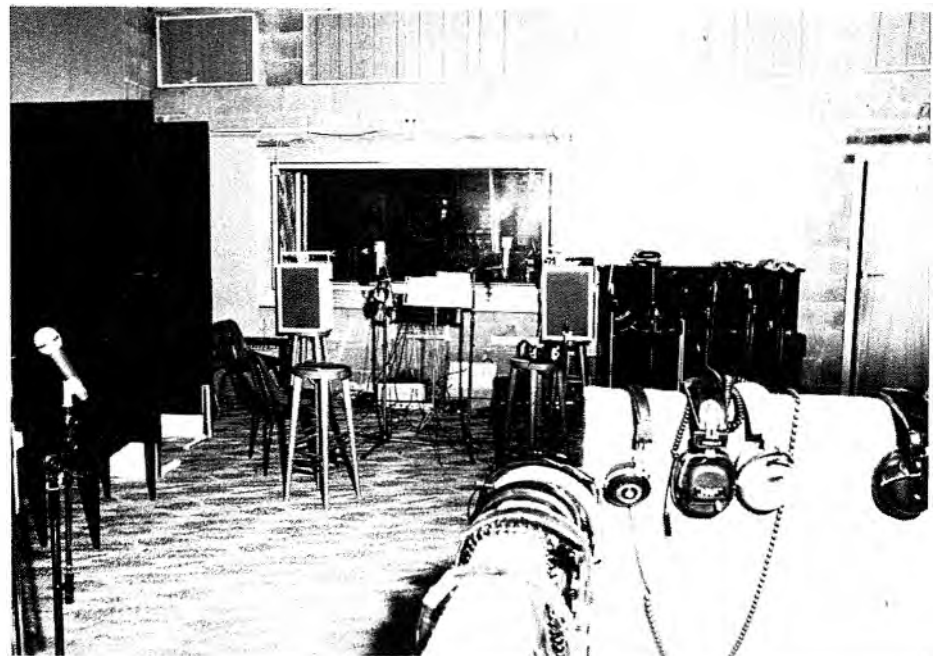
"We usually start work here at 9 a.m. and sometimes work all the way through to 3 a.m. If necessary we can even keep the studio running through the night and work a 24 hour day. I have a stand-by engineer who can take over from Colin and work a night shift."

In anticipation of commercial radio coming to Worcester, Muff has already registered a company called Radio Worcester Sound and now believes he has a good chance of getting the IBA licence for the area.

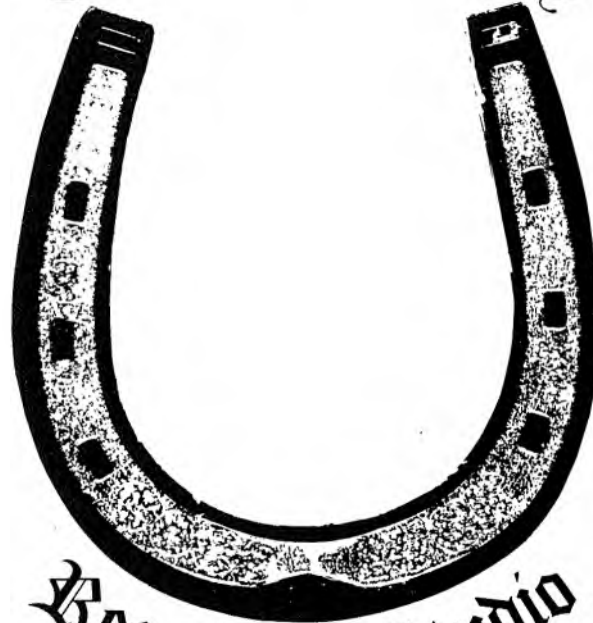
"People think you need £150,000 to open a radio station. The fact is I could open one for about £7,000. I am in a position where I could quite easily launch a new station, without incurring too much expense. I have a studio which is ideal for recording jingles and I am also an experienced DJ. Finding a site for the station would be no problem. There's plenty of room at the back to build an extra office and studio."

For the time being though all Muff's efforts must be concentrated on providing his customers with a reliable service and establishing a reputation for himself as a leading record producer. To date he has already seen a couple of his productions enter the top 20, the most recent success being John Asher's Let's Twist Again, which reached number 12 in 1975.

If you're interested in using the studio, the rate is £20 an hour and you can write to Muff at The Old Smithy Recording Studio, Post Office Lane, Kempsey, Worcester (Tel: 0905 82065916).



The Old Smithy



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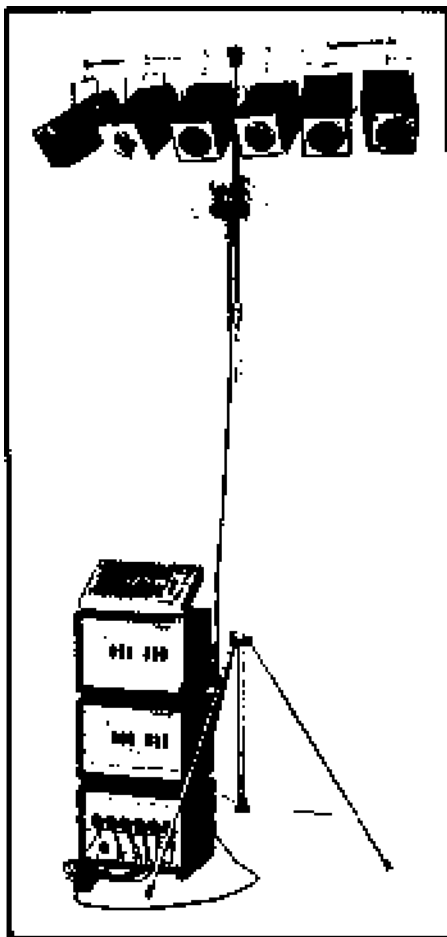
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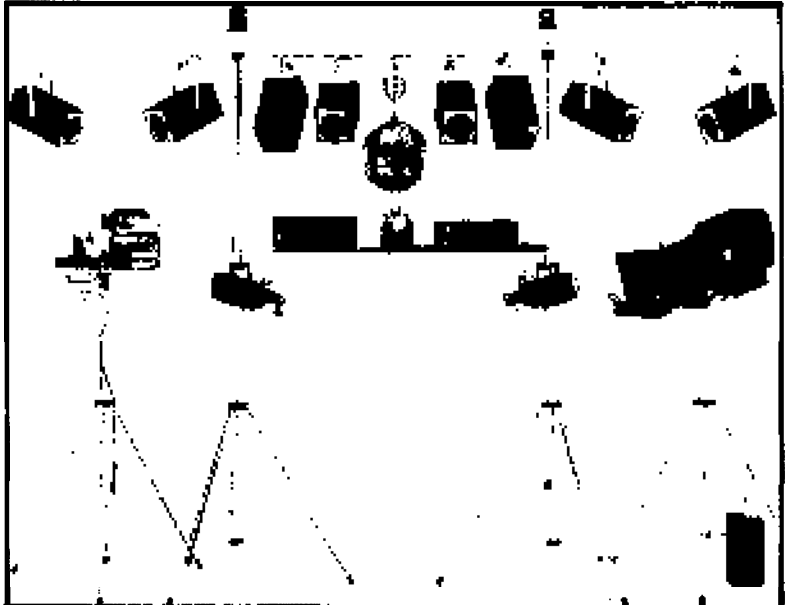
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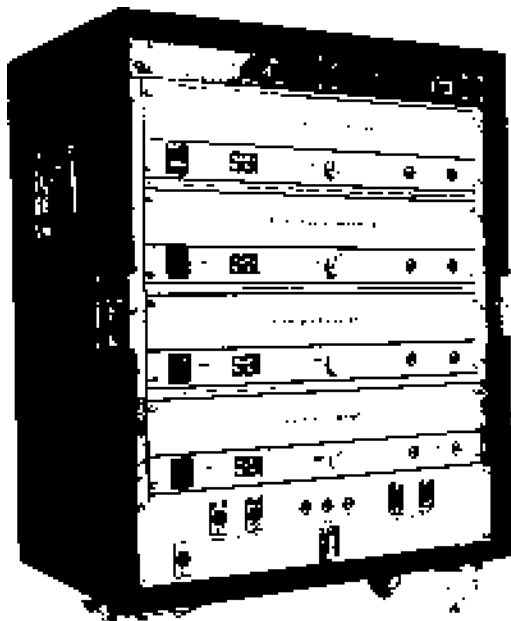
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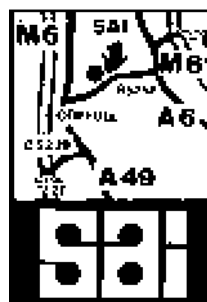


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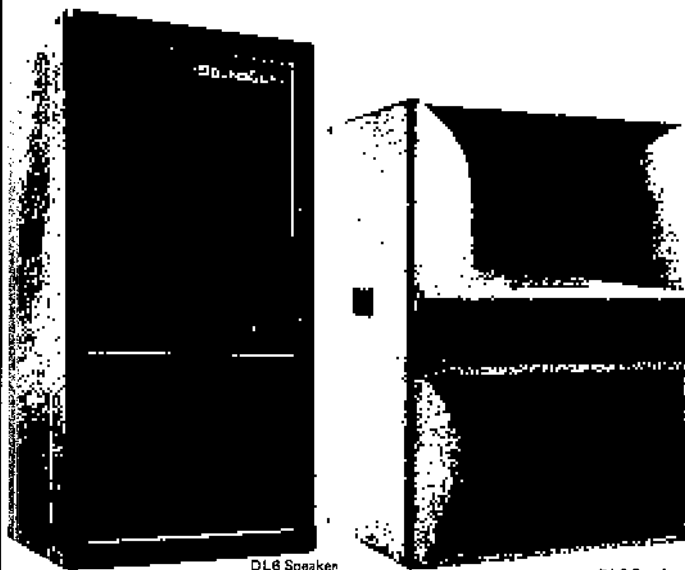
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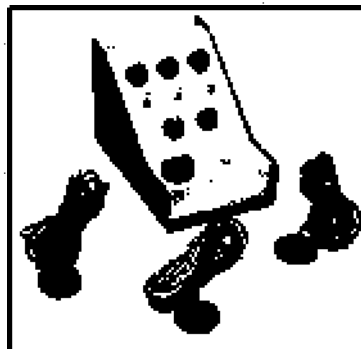


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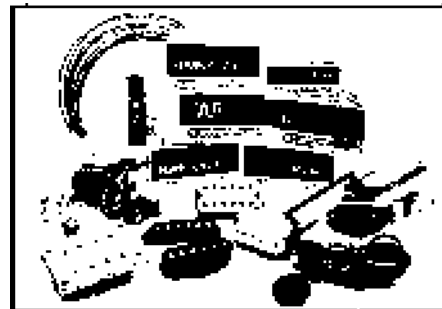
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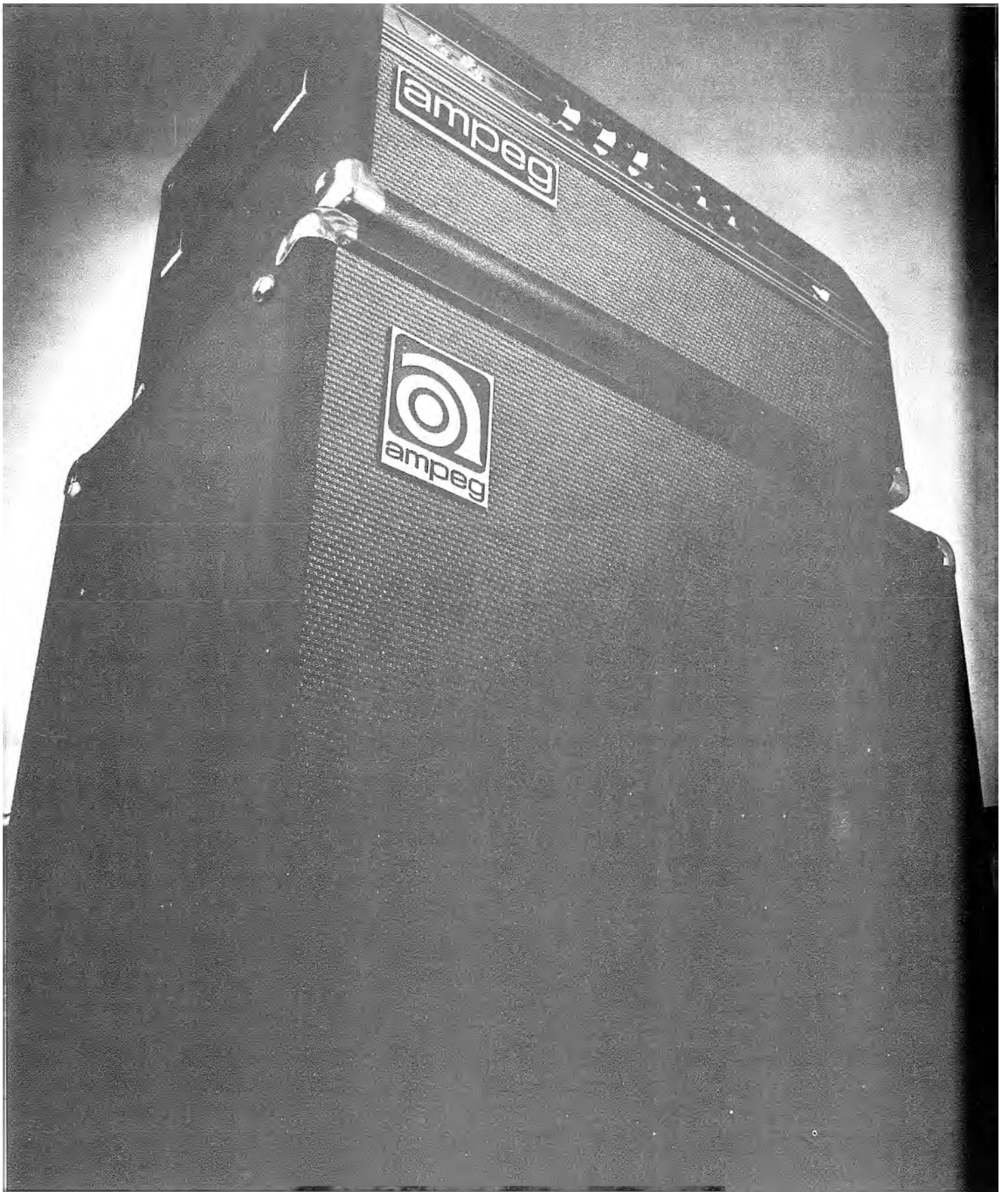


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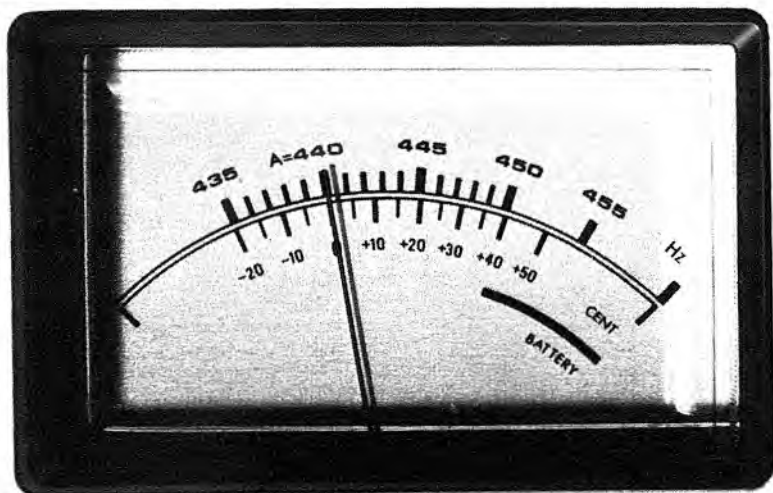
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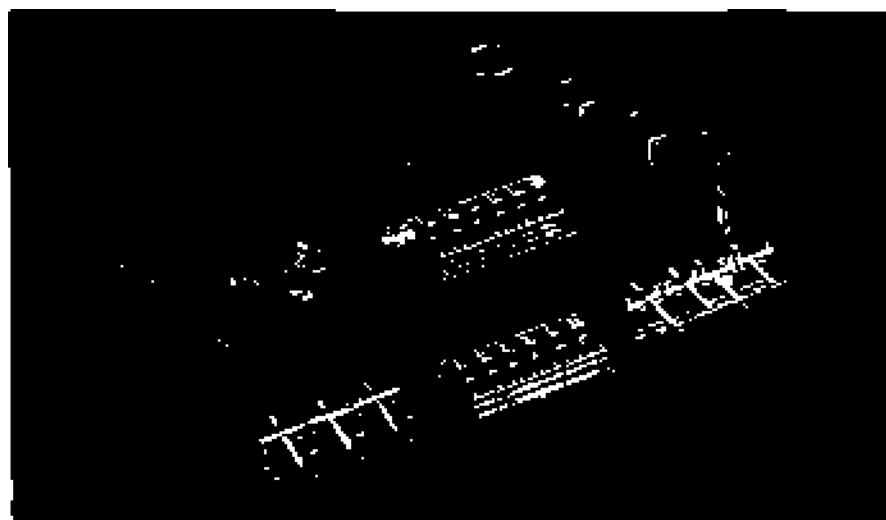
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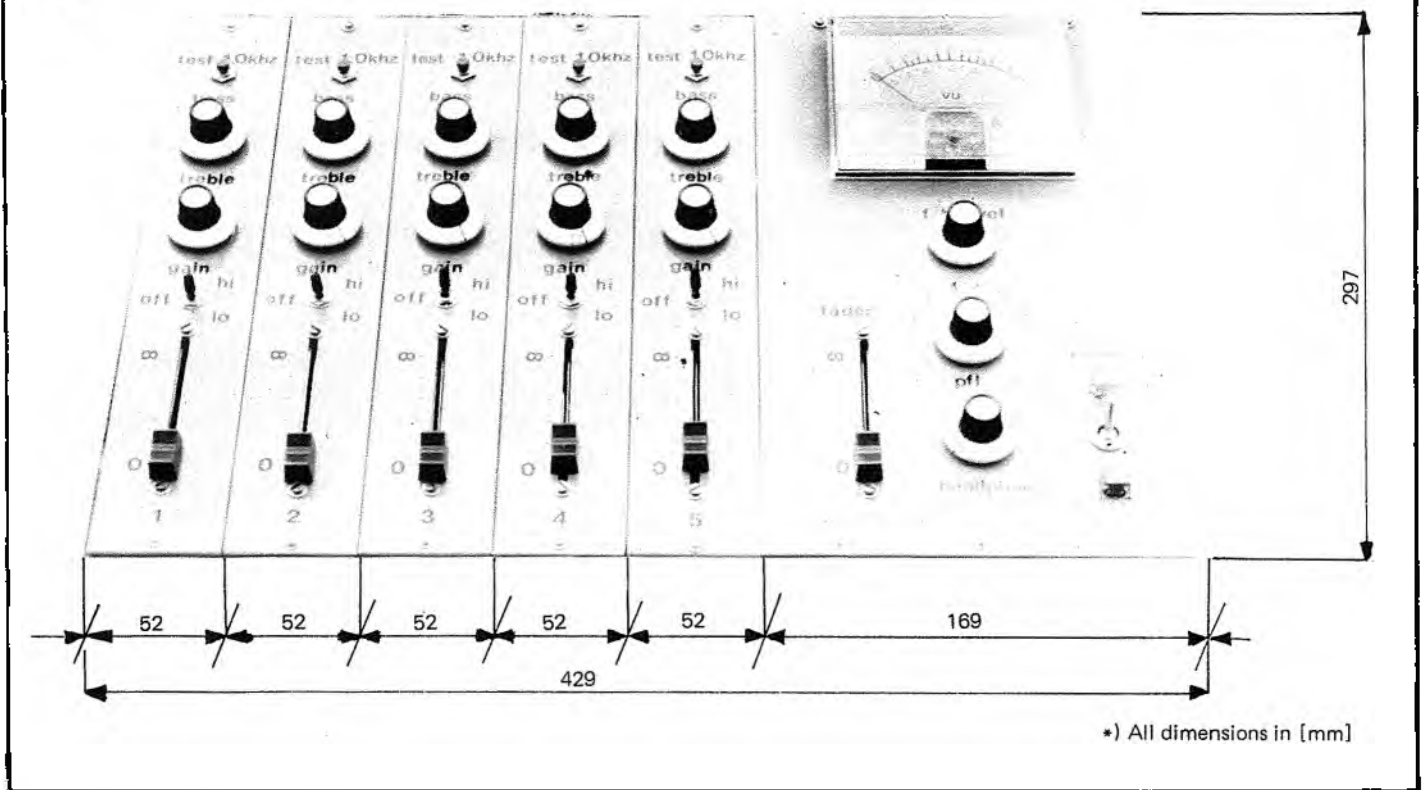
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Fig. 1



*) All dimensions in [mm]

Build a Mixer Part 2

Part Two of an International Musician DIY project, in which Mark Sawicki explains, step by step, how to build a simple, modular 5-channel mixer.

The construction of the front panel consists of five separate mounting plates for each channel in addition to the Master Fader plate, all of which are cut from a 2.0 mm thick duraluminium sheet. The main dimensions of these plates are shown in Fig. 1.

Each channel module plate is cut as a separate entity using either a metal guillotine (if available) or a metal hacksaw. The main problem here is the form-

ation of the slide potentiometer slit and, although there are several ways of dealing with this, the simplest is to drill a set of closely placed holes (vertically), which can then be filed out to the required shape and length. This work is certainly not the easiest but with a little patience and attention you should be able to obtain a very passable result (see photograph).

In Fig. 2(a) additional dimensions of the channel modules are shown, taken from my prototype construction, but since you might possibly use components of a different size, drilling details are not given. However, always bear in mind that the controls should be symmetrically aligned for a neat, professional finish. The following controls should be fitted from the top downwards on each mounting plate: a single-pole miniature push-button, two rotary (100K ohms/Lin potentiometers for Bass and Treble respectively, an on/off/on - DPDT (Double Pole Double Throw) biased miniature rocker switch and, finally, a slide carbon potentiometer (10K ohm/Lin 'Ruwido' type), screwed to the mounting plate with two 3 x 1.5 mm screws supplied as standard with the potentiometers if purchased from Future Film Developments Ltd., Wardour Street, London W1..

All the important dimensions of the Master Fader area are given in Fig. 2(b), and here again, from the top downwards, the following features should be mounted: The V.U. Meter supplied by Anders Electronics Ltd., London NW1, a fold-back level rotary potentiometer (50.0K ohms/Lin), PFL (pre fade listening) selector switch, in my prototype I used a single pole 12-way switch kit from Doram Electronics Ltd., built from a single

25 mm wafer (glass-filled diallyl phthalate stators with acetal rotors and silver plated contacts), headphones volume rotary potentiometer (25K ohms/Lin), a Master Fader slide carbon potentiometer (the same type as used in the channel modules) and finally an on/off rocker mains switch with two illuminated neon power indicators in different colours (i.e. red/yellow). After all the preliminary pre-drilling and cutting, all the above mentioned subassemblies can be colour-sprayed using a simple car paint (aerosol), making sure that all surfaces are perfectly free from grease and dirt. When spraying, hold the can 10 or 12 inches from the surface, keep moving in even strokes, releasing the spray head at the end of each stroke. Spray two or three quick-drying coats. Allow to dry properly. A start can now be made on the Letraset artwork, when this is completed, finish off with a clear lacquer spray for a hard transparent chip-proof protection. If you want a higher gloss use a heavier coating. If you prefer a more heavy duty process, you can arrange for silk screening or engraving work to be done at an increased cost. Engraving is worth it if you can afford it.

Assuming work on this stage is complete, we can move on to the rear panel assembly. Shown in Fig. 3. The Rear panel as well as the front side acts as the main frame of the mixer and is made from steel electrical trunking elements, which I came upon at home after a recent rewiring job, but are available at all good electrical suppliers. More information about the framing assembly is given in Fig. 4(a) and (b), you will see that the front panel is

Fig. 2a

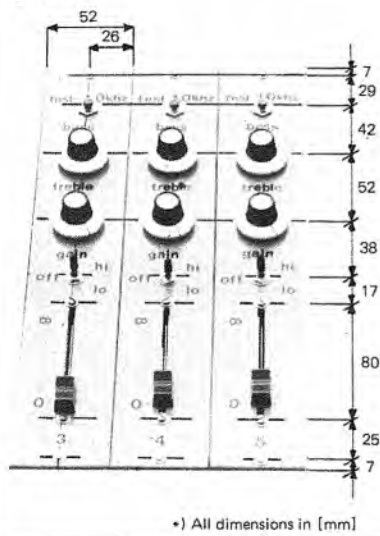
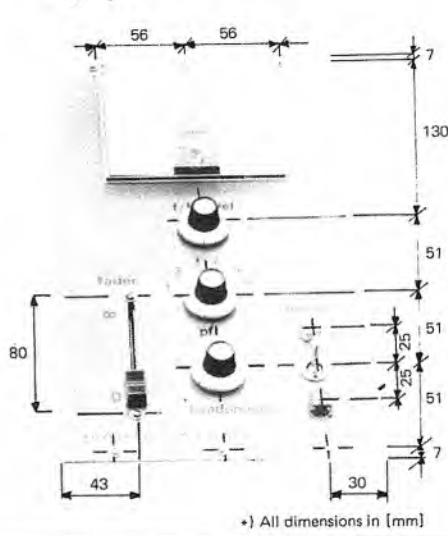


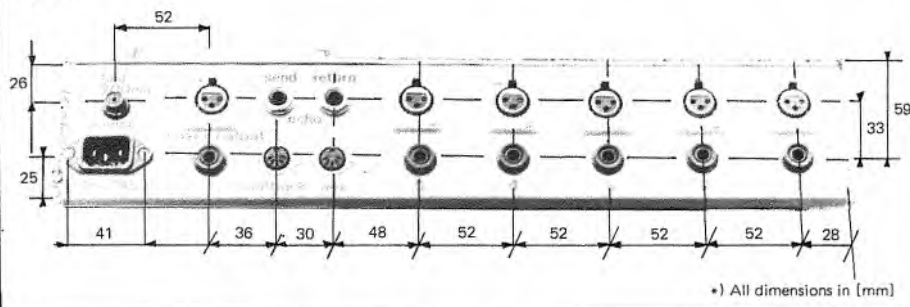
Fig. 2b



*) All dimensions in [mm]

*) All dimensions in [mm]

Fig. 3



*) All dimensions in [mm]

screwed to the rear/front side walls using 16 small 3 x 1.5 mm screws, washers and nuts. Finally, a word about the base which is not shown in Fig. 4(b) but should be prepared from dur-aluminium also. I have not described the sides (both left or right) at this point, but will return to them in detail at a later stage.

Apply all paint and artwork to the rear panel. Then mount a 1/4" jack socket at the front wall, which will act as the headphones monitoring socket. For economy, you can fit standard jack sockets at the mixer inputs rather than the more expensive Cannon sockets. I leave this up to you but, I personally found it is extremely convenient to have both. For

the mains connector use only a 3 pin rectangular (IEC) safety earthed type. All dimensions in Fig. 1, 2(a) (b), 3, 4(a) apply to the 5-channel version of the mixer so if you wish to increase the number of channels, do remember to add the extra number of channel plates you need at this point, and extend all the framing hardware dimensions to the appropriate lengths. Another point to mention at this stage is that there is no earthly reason why you can't build the mixer box from ordinary 1/2" chipboard and finely veneer the surfaces but, in this case, the inside of the box must be lined with metal foil (you can use aluminium cooking foil) and this should be earthed to the metal front panel. This will provide a good magnetic screen, something required in most audio constructions. There are obviously lots of ways to further enhance the outside appearance. For example, adding two miniature pilot bulbs under the scale of the VU Meter would then illuminate the scale and, apart from looking good, is useful in certain situations, but any extra dressing up is left to personal imagination.

Fig. 4b

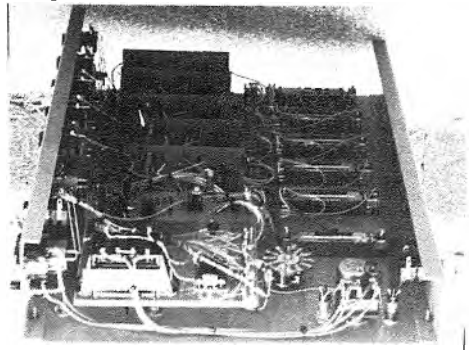
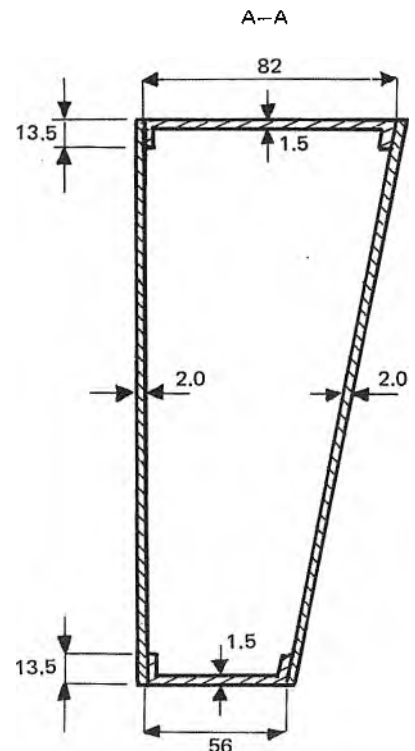
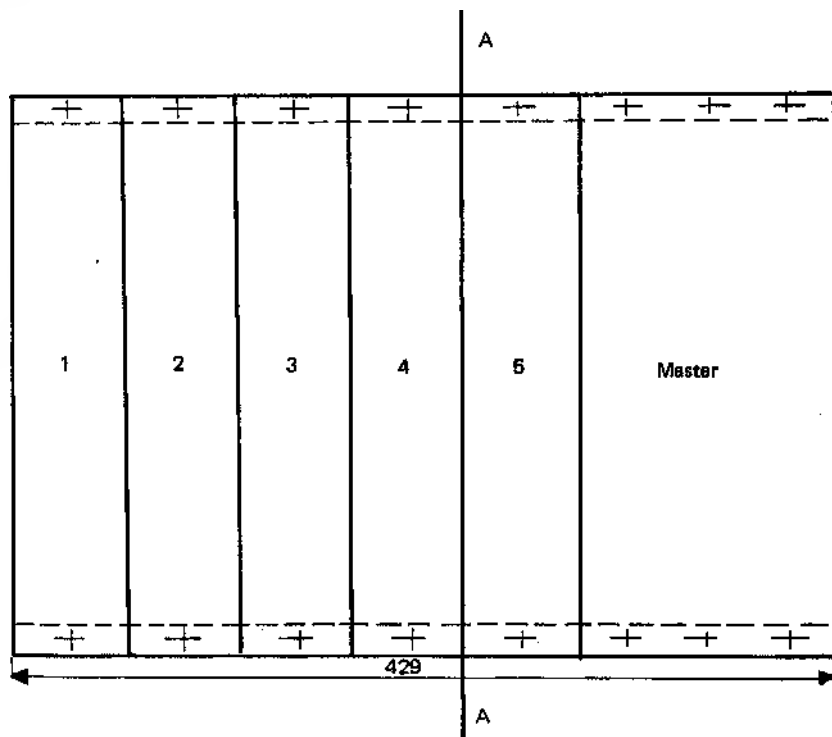
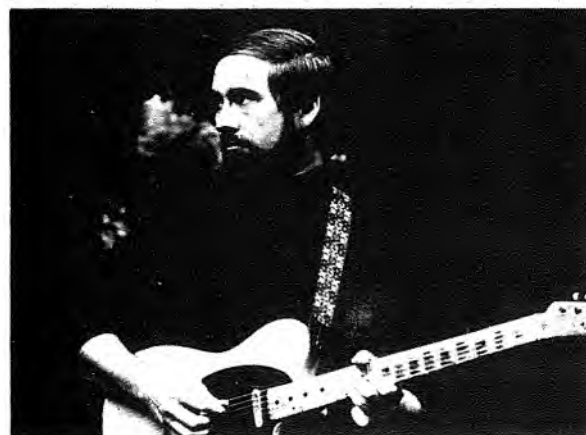
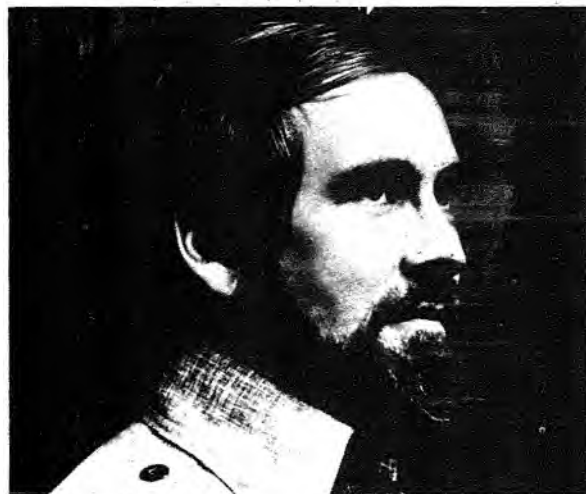


Fig. 4a



*) A-A - Cross Section view
 **) All dimensions in [mm]

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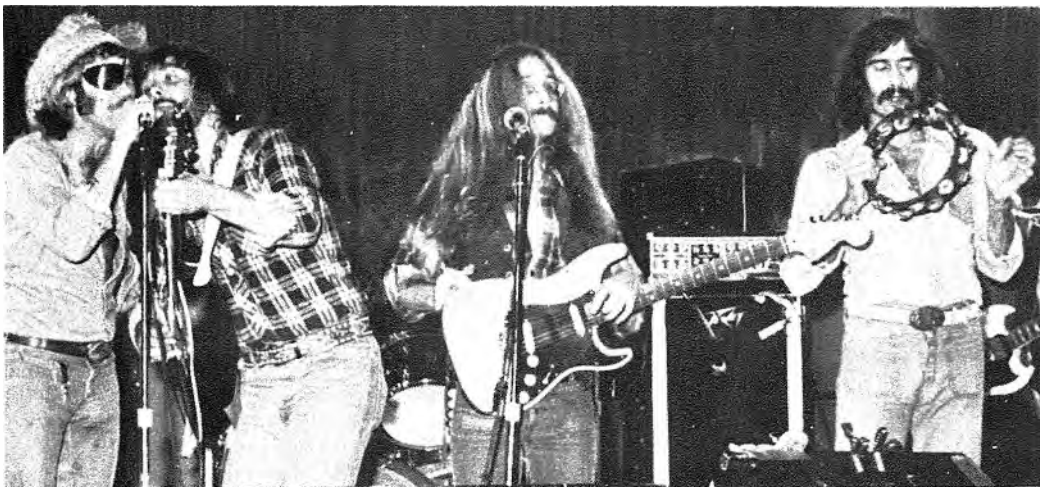
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SWITCHING ON THE BRASS AND IRONING OUT THE BUGS

Part two

By

Alan Holmes

Having amplified our horn in such a way that it sounds like a record, providing you play the right notes of course, we move on to the bugged channel and something completely different. Most bugs need a pre-amplifier as the signal is very weak and these are either a separate unit, like the Barcus Berry studio pre-amp, or a part of the octave divider, as in the King Octivoice, Conn Multivider or Tootalbug Octave divider. Care is needed on the volume controls of these pre-amps as they can produce a lot of hiss if they are flat out, or when the battery starts to go.

Although the most important effect, as far as brass is concerned, is echo, we have already got our bug plugged into the octave divider, so a few words on octave octave divider. So a few words on octave pugged sound of the horn, amplifies it through its pre-amp and then, depending on what you have selected, adds an organ or synth-like note one octave below the note you are playing or two octaves below or both together, with the original bug sound being mixed in with the volume control if the unit has one. It latches on to the note and follows whatever you play although, on the King Octivoice, when you reach top E on a tenor or its equivalent on other horns, it starts to hop up and down producing a rather disconcerting effect as if the note is bubbling. This is because it has reached the limit of its range and when you continue up it has changed from two octaves below to one.

The Tootalbug, on the other hand, will stick like glue all the way up to the top note of a flute, and will do three octaves below, which is very low and only really suitable for the flute and higher instruments. The claim for an octave above the note is a bit dubious, as the ones I have tried only made a very thin synth sound which was not a true octave above. However, it is quite a useful device and is most effective when blended with the straight mike sound where it can sound like three instruments playing; mike, bug, and octaves. The octave sound can be either sine wave or smooth like an organ fundamental, or saw tooth wave form which is like a synth, depending on the make of unit.

A useful modification of the very low octave, which you may find rather excessively low in the organ bass pedal range, is to use a wah-wah pedal as a tone control (left in its full treble position) where a whole new range of tones is possible. One of the main problems in using the octave divider is to stop the volume leaping up and down as you switch the various octaves in and out. One way of overcoming this is to use a mini limiter to limit the volume and stop the sudden leaps in volume as you switch about and, if you are using a lot of

gadgets, a noise gate might be necessary to stop the mighty hissing and humming. Two of the best octave divider units are no longer in production but well worth getting hold of second-hand; the Gibson Maestro for woodwind and the Selmer Varitone. They were ten years ahead of their time when no one was ready for today's electronic complexity. Now that synthesizers have become popular perhaps they might put them into production for a more enlightened clientele.

Having amplified our horn in such a way that it is recognisable and sounds like it does on record, now for the fun and the "unrecognisable" channel. After all, ten years ago no one would believe that a PA could fill a truck half the size of the halls they were playing, or that one player would need six key-boards, or that guitarists would have six or more foot pedals and gadgets. This brings us to effects.

As far as brass is concerned, the most important effect is echo or reverb, which is present in varying degrees on recordings and is an essential part of the instrument, as we never hear it on the radio or record without it. Most classical recordings are using around 1.8 secs decay on their reverb and the flute sound is odd without the accustomed sustain. You may be lucky enough to be in a band with a large PA that can add reverb at the mixer but, even so, a repeat device can be useful.

The usual type of reverb is of the Hammond spring variety, originally built into Hammond organs and now built in to some mixer/amp units. It passes some of the signal along a double spring around 12" to 15" long but this type of unit is prone to external vibrations setting off the spring. A lot of jumping about on the stage, for instance, could be accompanied by some loud ringing noises. The very latest digital electronic echo units would seem to be the answer as they claim not to lose the treble, which is a fault of most echo units. Tape echo's are plagued by tape hiss and the revolving magnetic type, as in the Binson, whilst being very effective, do lose treble and make a rustling sound through the PA. Another plus for the digital units is that some of them offer 'double-tracking' which means delaying the signal so that it is a fraction later than the original and, in some units, the pitch of the note is altered slightly which increases the effect of two instruments playing. Well worth checking out.

Phasing can be very effective on horns but this effect does need high frequency speakers to be really audible as a lot of the movement in the effect takes place at quite high frequencies like, the flanging or 'skying' effect which would not reproduce properly through just 12" speakers without treble units.

Some digital delay units claim to do flanging as well, so you would need a separate reverb to keep some life in the sound while it is phasing/flanging which are similar effects, phasing being a 'turning inside out' and flanging a more cosmic and intense form rather like a jet passing overhead and then coming back as the sound is dying away and repeating the process.

There are other devices, like Envelope Followers. But they are up to the individual taste as to whether they are musically valid, as even an echo machine in the wrong hands can be tasteless. Effects are not going to compensate for poor playing nor are they sufficient by themselves. All they can do is enhance something that is already musically valid, a bit like being your own record producer/recording engineer while you are performing.

You may find it difficult at first to think in terms of buttons and knobs whilst playing and it is another dimension as, in some cases, you might think ahead and alter settings before you reach that particular section, while still playing the first part. This is good

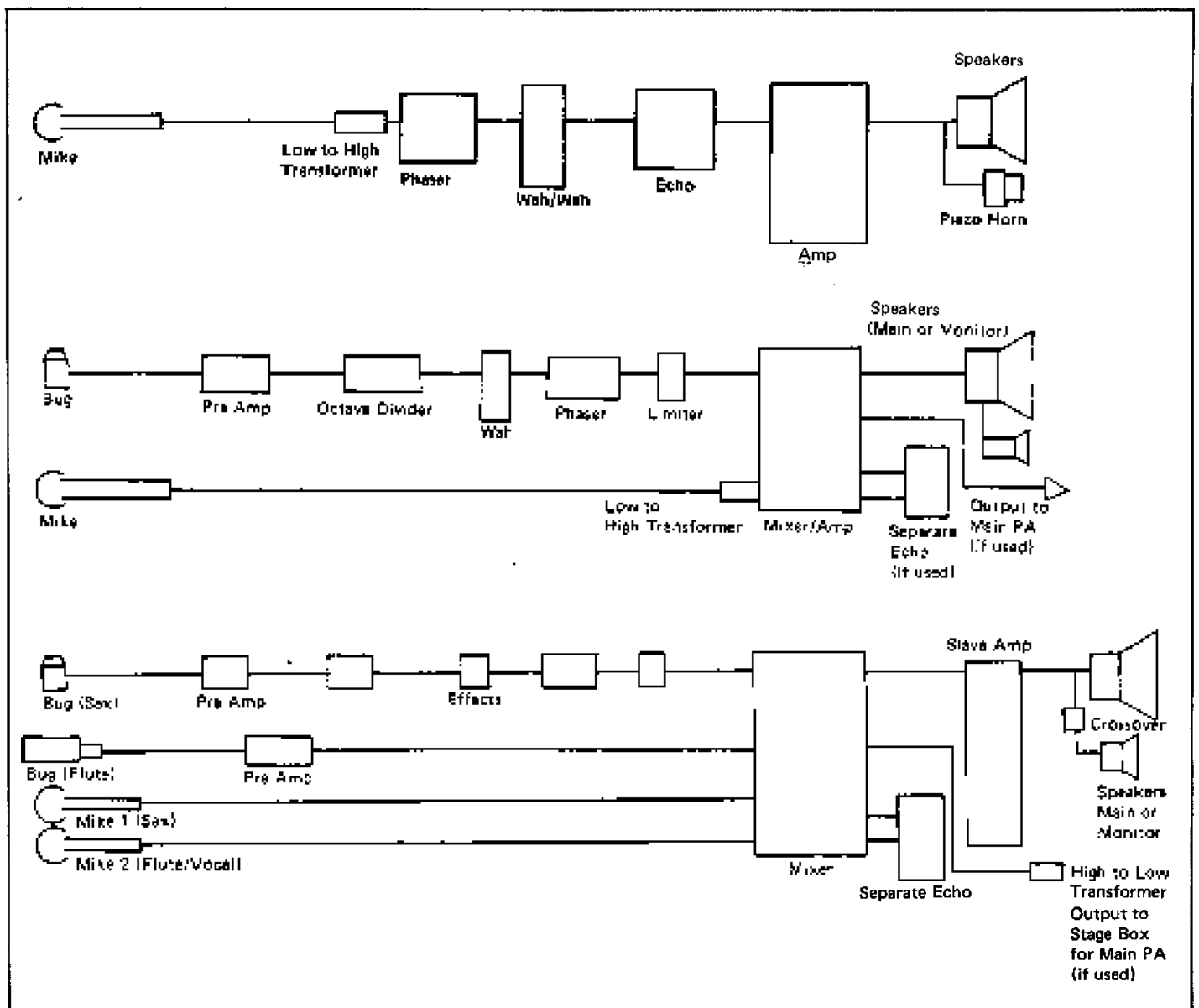
practice as you should be able to think ahead but plenty of private practice is advisable, as it's the same as learning a new instrument.

When you set up all your equipment, about one out of four times it won't work properly immediately. So you have to logically check each stage starting with power. Are the mains getting to the units? Are the batteries OK? Then check the wiring. You can save some trouble by mounting all your floor button units and pedals on a board, screwing them in position so that they fall most comfortably under the toe. If several of them have 9-volt batteries, you could get a mains to 9-volt transformer and connect them all together permanently as the battery is normally switched on when you plug the jack into the unit. The wiring of the transformer should be done professionally as a mistake could lead to a nasty shock. Another useful modification is for the expert to put LED lights into the circuit so that you can look down on the board at the beginning of the show and see what sound might come out by the lights, and during a performance it is

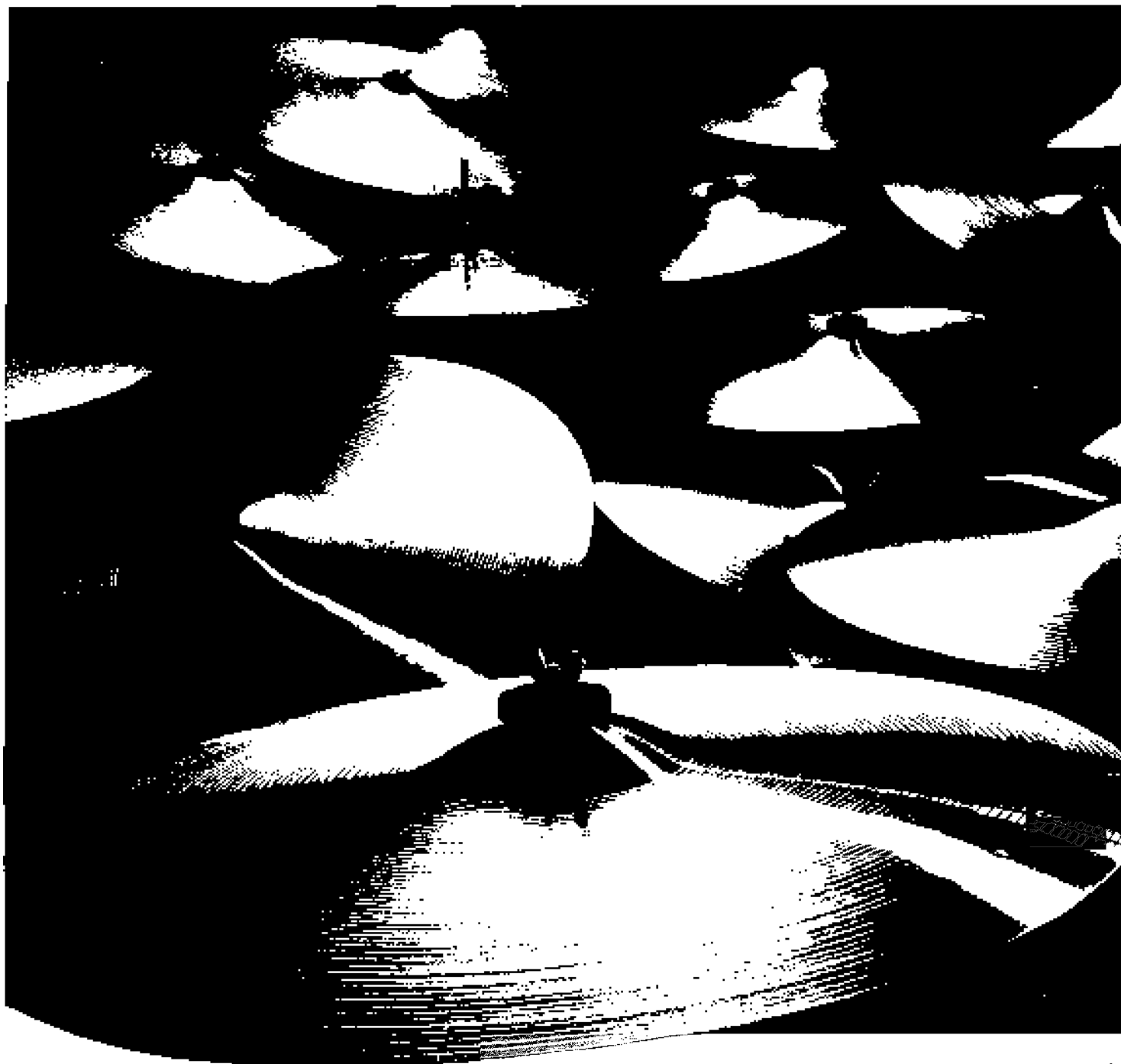
sometimes difficult to tell whether a phaser is on or off by listening, so check each stage directly into the amp if there is a fault until you find the culprit. A common mistake is to connect the input and output sound the wrong way, so check the routing carefully – and beware of dud leads.

Even if you just plug a mike into a phaser or wah or echo, to going the whole way, electricians are an avenue well worth exploring with new devices being invented all the time. Get plugged in to progress!

Barcus Berry, King and RB bugs and (horn and King octave dividers are obtainable from Manny's, 156 West 48th Street, New York, New York 10036 USA. Telephone PL7-0576-7-8-9 and is one of the few places that stocks bugs for all instruments. Tootalbugs and Tootalbug octave dividers and Gemini wind synthesizers (which I hope to review soon) are obtainable to order only from: Ashton Tootal 9, Mendip Close, The Ridgeway, St. Albans, Herts., England. Telephone (56) 60525. Any queries can be addressed to me at the mag.



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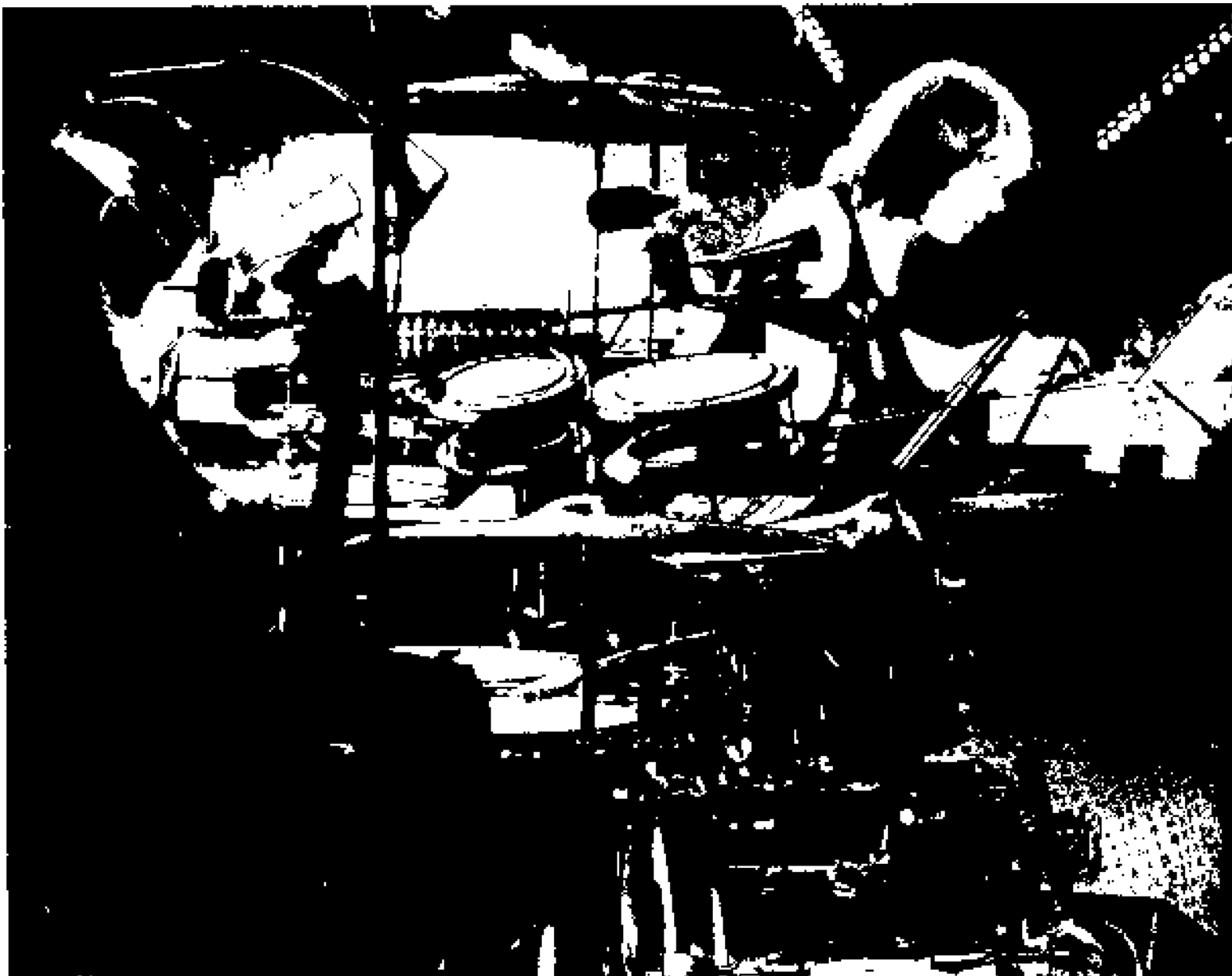
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PREMIER

TRILOK STANDS

Premier have brought out a new range of tripod-based stands called Trilok. These are a logical progression from their Lokfast which, over the past decade, have been well tried and tested.

They have unique 'U' section pressed steel legs, along with all the other refinements to be found on modern stands and are the first to embody substantiability with portability and lightness. Their power-to-weight ratio, which is an important and often disregarded consideration, is second to none.

All of the stands have one thing in common. Normally, when setting up a tripod stand, it is necessary to grab one leg (of the stand) with each hand about half way down it and just below the pivot arm. However, as the Trilok stands are made from the 'U' section drawn or pressed steel, there are two edges per leg with the potential to cut your hands. The leg is made of approximately 16-gauge steel or its metric equivalent.

If you were in a real hurry to set up you could damage your fingers. I appreciate Premier's problem and sympathise since the 'U' sections of the leg and its stay both locate into one another, Premier couldn't put any hand protectors inside them half way down. So, the safest way to set up the Trilok stand is by gripping the actual feet (of the stand) and pulling outwards. This shouldn't be too much to manage for the ambidextrous drummer. All the stands have self-levelling rubber floor-guide attachments. Hidden inside these is a substantial sharp spike. So you have the alternative of rubber foot or spike. To bare the spike it's only necessary to screw the rubber foot cone up a little.

Every stand has Premier's substantial bass drum tensioner matching 'T' - handle wing-bolts for height arrest and adjustment. These locate into a large captive nut which is held by a saddle. So no adjustment bolts actively penetrate the tubes. The top of the bottom tube on each stand is split to enable this wing bolt to exert pressure on half of the circumference and force it against the tube inside it.

The second stage of the cymbal stand has a split plastic insert inside it at its top to take the wear and be replaced when, or if, necessary. The cast titter is attached to the larger

diameter 5/8" top tube by an Allen screw. So this too is conveniently replaceable. The legs extend 14" from the centre. The result is a substantial wide-based stand. The bottom tube on all the stands is 1 1/4" outside diameter and the second 1 1/8". The stand can be elevated to a maximum height of 66".

HI-HAT STAND

The Trilok hi-hat is a monster. Its cast one-piece footplate matches the 252 bass drum pedal's and features a built-in adjustable toe stop. The tripod legs are, as I've already described, with the rubber levellers or alternative spikes. In addition, there are a pair of adjustable spring spurs just to make sure. The spurs follow the centre angle of the base framework which is ingeniously angled forward at its bottom and allows the drummer's toe to be even more underneath the centre pull.

This pull is via a plasticised, industrial fibre strap (like the bass pedal's) which works well enough but I prefer the rigidity and "feel" of a non-flexible strap. Mind you, this is the first hi-hat I've played which felt exactly the same as the bass drum pedal. This could be quite a practical consideration, especially if you play two bass drums where it's necessary to go from one to the other with the left foot. This plastic strap is fixed back on to itself after it goes round the parallelogram-type linkage to the centre rod. This will help it to wear longer. This strap/pull is adjustable in length with a drum key-operated screw beneath the footplate. This is the first hi-hat I've seen to boast this feature. The action uses double expansion springs which are joined to the centre rod diametrically opposite each other and move up and down in two slots. These springs are adjustable at the top of the base tube in a most convenient position. There's a plastic saddle which locates two threaded rods which are joined to the springs.

Each rod has two knurled, threaded washers which locate on each side of the plastic saddle. So, one tightens these washers from above and below against the saddle. There's a spring washer in between to make sure. If you want a harder action you tighten the top nut whilst alleviating the bottom one. For easier playing you adjust vice versa. While the action goes from extremely loose to extremely tight with ease there was no way I could do this while playing.

As the top washer turned so did the thread and so did the spring. I don't

think this rotation would harm the spring, but it does mean you need two hands to adjust each spring. One to turn the top washer/nut and the other to hold the rod attached to the spring.

The top tube has a completely new bottom cymbal cup. It's plastic, large, and adjustable in angle with a sprung knurled-screw. I found this a little too close to the tube for comfort since it was parallel to it. This made it reasonably tricky to adjust upwards.

Downwards was easier since it was unscrewing itself. The cup had the normal dished washer inside it with a felt washer on top of that. The top cymbal clutch seemed as before. It's turned, and has two metal threaded washers above and two below and a larger wing bolt which matches in shape, but not size, the others on the stands. I think the felt washers could be of a more dense consistency. They seem a little bit flimsy which is strange on a hi-hat of this size. Still it's a very smooth, and fast, hi-hat pedal and the perfect complement for the already well-accepted 252 bass drum pedal.

SNARE DRUM STAND

The snare drum stand is innovatory in almost every feature. It too has the 'U' section tripod legs with the floor levellers and spikes. It has the large wing bolts and the slot at the top of the large section bottom tube and an unusual drum clamping mechanism and playing angle arrest.

This latter facility is, like most good drum inventions, very simple. There's an omega-shaped clip which fixes round the top tube and can run up and down it freely. The omega open ends can be squashed together with a wing bolt which tightens the cup around the tube. This wing bolt also retains a small pivot arm about 3" long which is loose - rivetted to the cradle part of the stand. The omega collar, once loosened, runs up or down the top tube. Because it is attached to the cradle, which is able to pivot, it moves the cradle to the desired angle. It's really simple and effective. To secure the angle, one merely tightens the hi-hat clutch-type wing bolt. It's ingenious.

The cradle itself has two fixed arms and one moveable arm which can be adjusted for length and locked with a drum key operated screw. This arm has a dozen holes in it so should accommodate 12", 13" and 14" snare drums as well as 15" and 16" tom-toms. The final fine adjustment is then actuated by a bass drum tensioner matching wing bolt which

pushes the moveable arm vertically through a captive nut until it presses hard against the drum. These arms are sheathed in white rubber. As far as I can see, the stand has no drawbacks.

BASS DRUM PEDAL

The 252 bass drum pedal is the same as I reviewed last year. The rod for the beater has been "beefed-up" a little and is all the better for this since there is now no possibility of it whipping and bending from energetic playing. It has a single post and industrial plasticised fibre strap. The cast one-piece footplate has one adjustable, and one fixed, toe stop. Its angle to the bass drum can be adjusted either to left or right to ensure really comfortable playing.

The whole unit is clamped to the drum hoop and can be tightened sensibly and conveniently from the playing position. Non-slip rubber feet are positioned under the clamp and heel and two adjustable forward angled spurs are fixed to the pedal to immobilise it.

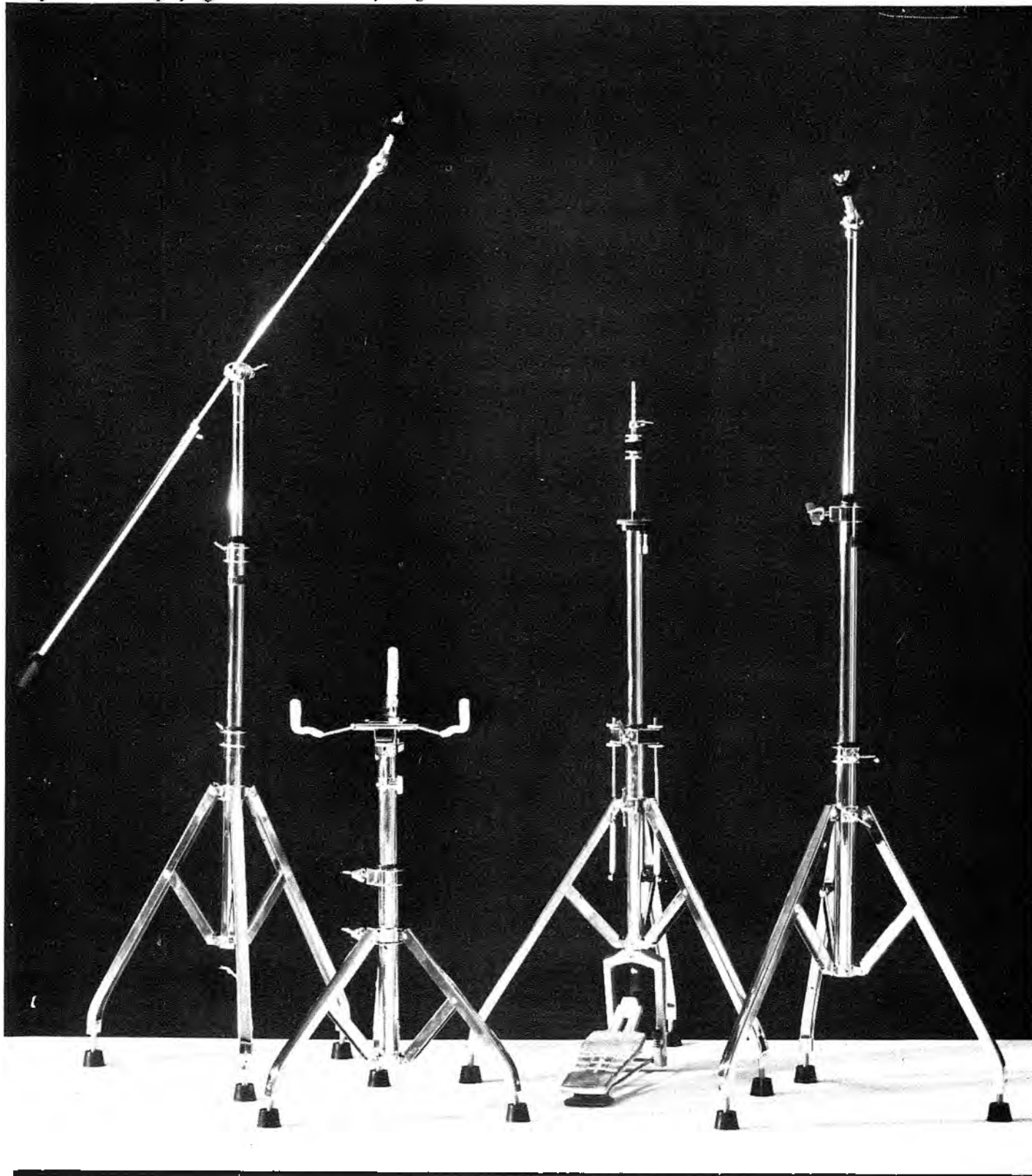
The accelerator-cam action has needle bearings and a compression spring which is also adjustable from the playing position. The stroke of the felt beater is adjustable on a splined ratchet which has a large knurled knob.

The 252 has a positive, speedy action which I became used to in a very short time. For my money, it's as good as anything else on the market at a similar

price. It has just the right amount of adjustment to enable it to fit any player and not vice versa.

It is possible to buy a Trilok boom stand which resembles the old boom stand in every way except for the legs. It should be possible to buy a double tom-tom stand with a tripod-base which would definitely improve the stability. Likewise, we should be able to find a tripod-based stool eventually. Anyway, Premier have come up with the goods again and at a very competitive price too. Boom stand; £27.78, snare stand; £23.15, hi-hat; £32.41 and normal straight-rise cymbal stand; £20.37.

Bob Henrit



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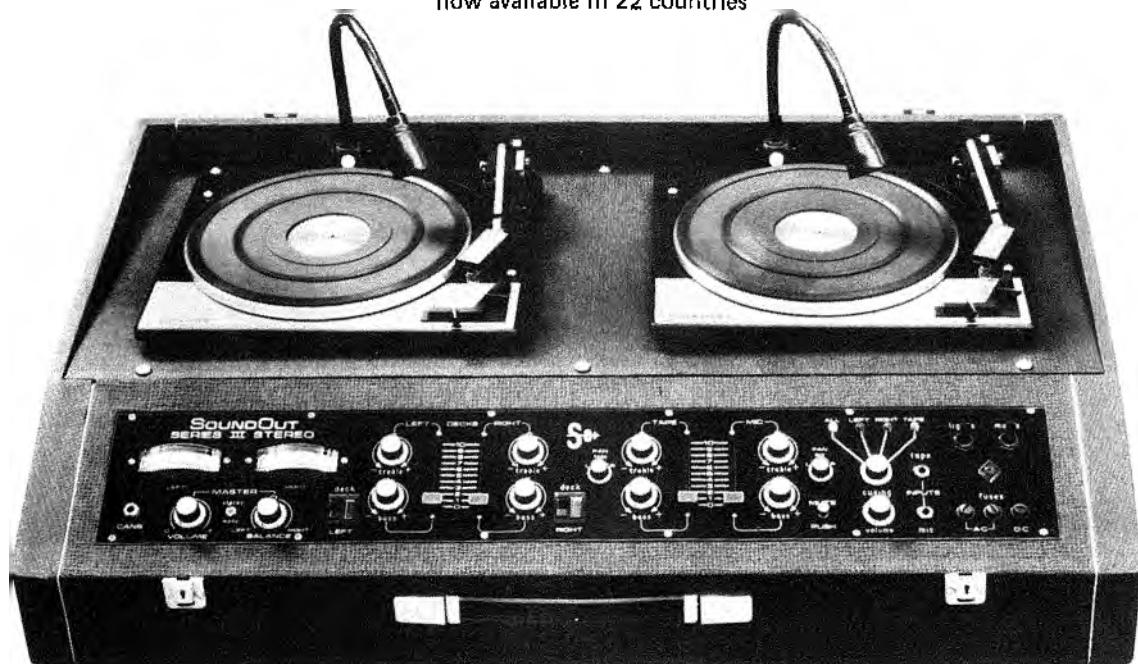


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FLANGING

by Stan Wilson

Like phasing, flanging sounds originated in the recording studio. It is important to realise that, although phasing and flanging have a great deal in common from a basic technical viewpoint, they are completely different in sound.

So how was flanging first produced? Like phasing, by using two studio tapes of the same recording, out of synchronisation but introducing a 'wobble' on the

tape and 'feeding back' the signal on itself. (Diag. 1).

There are various means of controlling the flanged signal; movable tape heads, an uneven tape capstan, altering tape motor speed, pulling the tape too!

The first stage in designing an electronic flanger was to analyse the basic principles of the effect. These are: delay, phasing and harmonic modulation. Delay is produced by using multiple tape heads,

phasing by varying the tape speed, harmonic modulation by tape capstan etc., with the signal fed back.

Only very recently has it been possible to achieve solid state audio delay. Space research came up with an integrated circuit (IC for short) called an analogue delay. Previous methods of audio delay were, spring line reverb, and tape echoes neither of which can be used for instant flanging.

Instant flanging is the name used for an effect where the guitarist can actually hear the flanged sound as it's being produced, without having to wait for the studio engineer to produce it after the take has been made. Instant flanging obviously has the greater appeal as it allows the performer to produce the exact sound that he wants at the time and thus control the artistic content of his own sound.

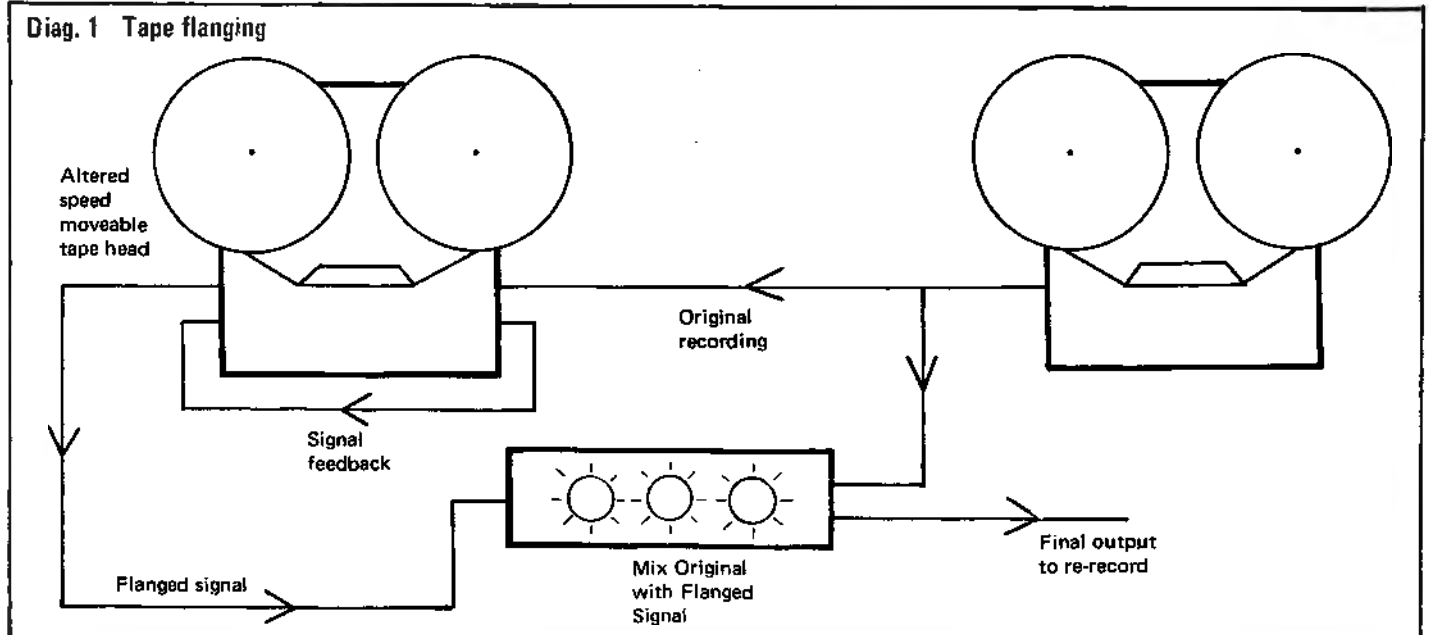
To produce instant flanging required real time circuitry, that is all the work is done there and then in the magic box without involving the user in unnecessary processes. Most instant flangers on the market today use a form of short electronic delay line either digital or more usually analogue, it is the latter form of delay that is described in this article.

The analogue delay line consists of many hundreds of "sample and hold" cells connected in series. (Diag. 2) Each one of these cells is capable of taking the voltage presented to its input and holding it without decay until it is required for output at some later time. This operation is often referred to as a "bucket brigade" because it is analogous to a line of people passing buckets of water from hand to hand, in a line, when fire fighting.

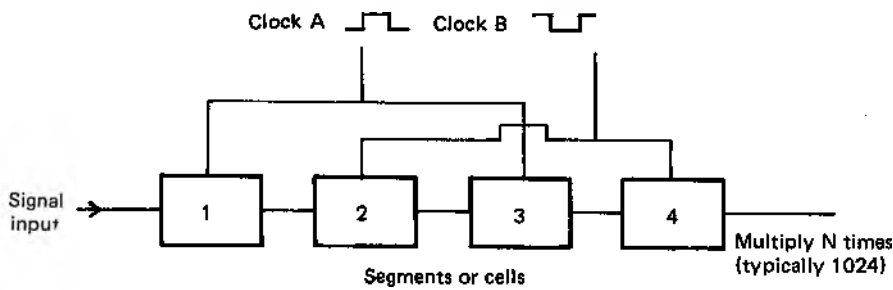
In the analogued delay IC however each person becomes a cell, the bucket a capacitor and the water a signal sample. If the sample rate is high enough then small samples of the pure waveform at the input are sequentially sent down



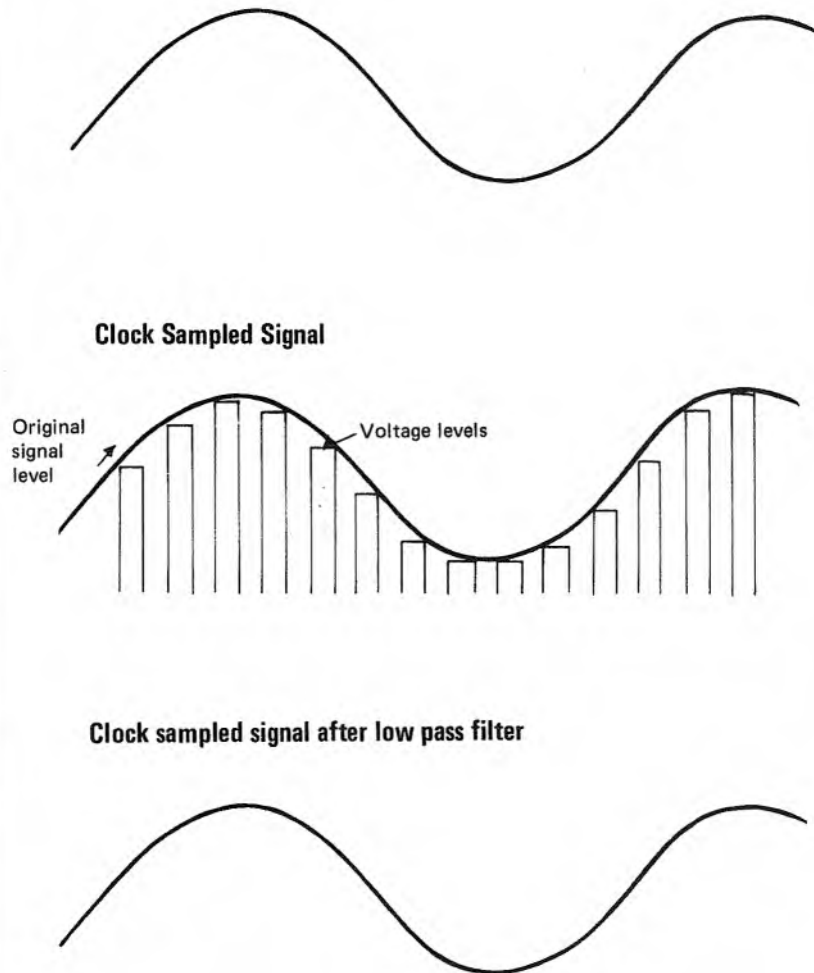
Diag. 1 Tape flanging



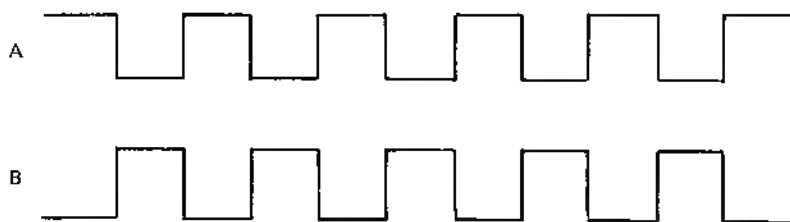
Diag. 2 Control Inputs



Diag. 3 Original Signal



Diag. 4 Clock Waveforms



the lines as discrete voltage levels. (Diag. 3).

All that is required then at the output is some form of filter to remove the clock frequency, and what remains is the original signal, delayed by the time it took to be sampled down the line. If, for example, there are one thousand cells and the clock causes it to be sampled one thousand times per second, then obviously it will take one second to travel down the line. In practice clock frequencies are usually kept up to a very high value (fifty to five hundred thousand cycles per second) for two reasons; (a) The required delays are very short. (b) The clock frequency should not be audible as it would interfere with the signal. Clocking refers to a square wave oscillation, the clock is provided in two phases. (Diag. 4).

Clock B is one hundred and eighty degrees out of phase to clock A.

Our delayed signal is then mixed with the original signal to produce phasing, also it is fed back through the IC to enhance the effect and produce harmonic modulation. Thus the flanger produces a comb filter response as well as delaying the signal.

However our clock wave form is not just a static frequency but is in fact modulated. It is speeded up and slowed down. Generally, flangers have three controls; one to control the amount of signal fed back to the input of the IC, the other two control the clock wave form. One sets the clock wave form frequency which determines the IC's response, the remaining control varies the speed at which the wave form speeds up and slows down, that is its modulation.

A common mistake that can be made in experimenting with flangers is to leave the depth on maximum which makes the really fast modulation settings sound rather silly. It is quite impossible to describe the actual sound of flanging. It has to be heard and experimented with, you will find that the bass response is altered considerably which is a function of the effect.

However a well-designed flanger should have the absolute minimum of clock noise. Also, flangers are mean on batteries so keep spares or purchase a power unit; the delay IC can be damaged by just handling it! so don't interfere with any of the IC's as they are expensive.

Diagram 2 text

A clock pulse on the control input of segment one allows the signal to be sampled, then a clock pulse arrives at segment two and it accepts the sample from segment one. On the next pulse segment two "empties" its sample to segment three which is ready to accept a sample. By this time of course segment one has a new sample and the process continues.

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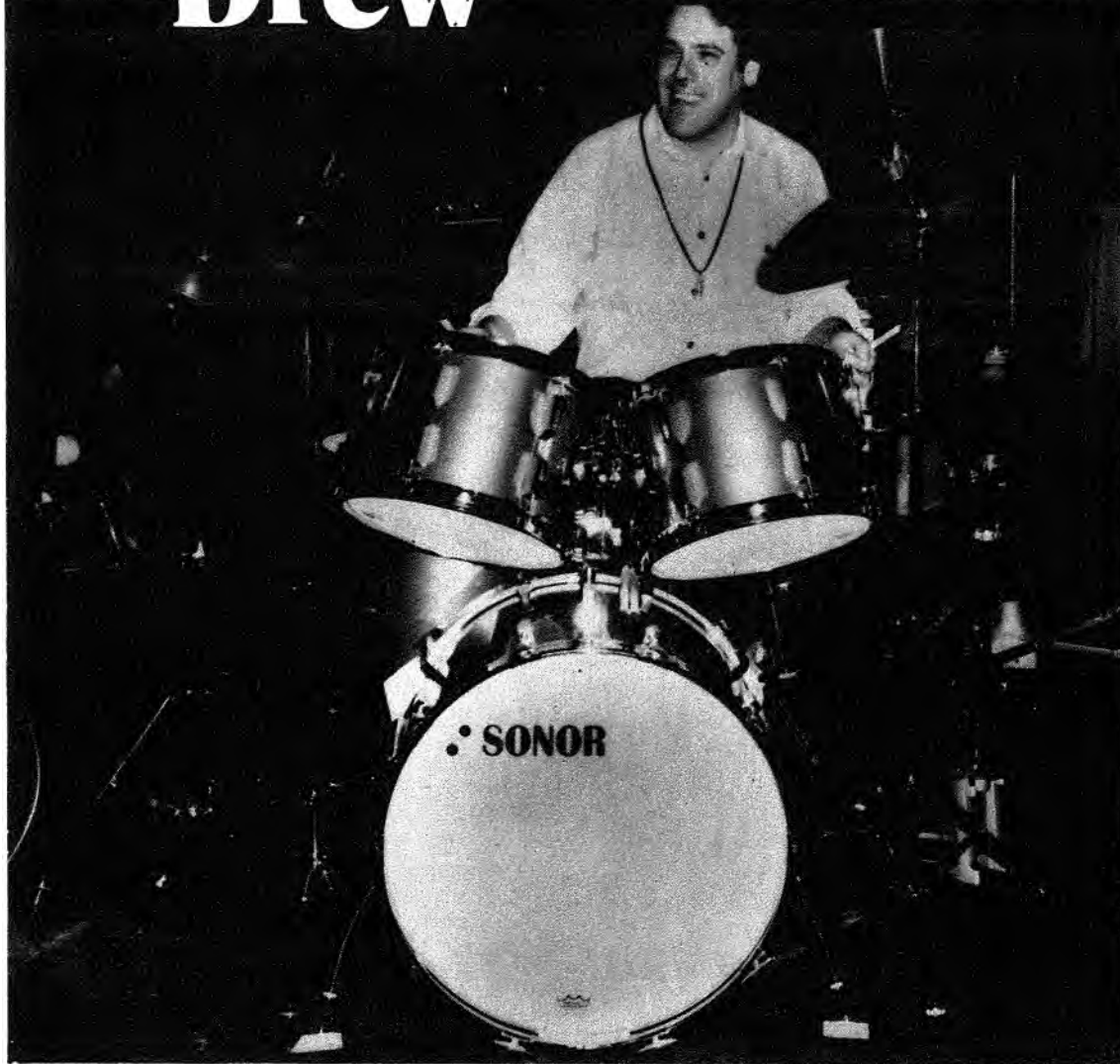
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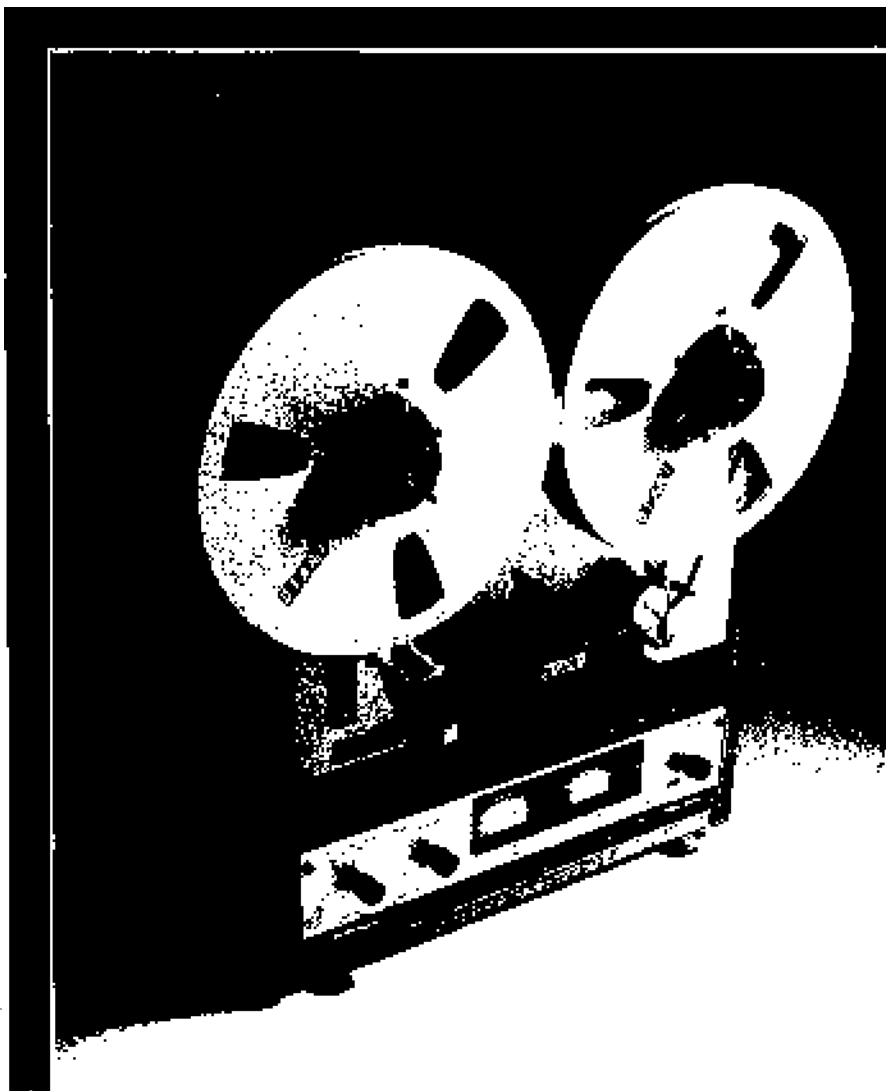
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SMALL THINGS

by Stephen Delft

I have, from time to time, suggested the use of Bone or Ivory for guitar nuts. Ivory is becoming increasingly scarce, and will soon cost as much as other highly specialised engineering materials.

Good Ivory is probably the best material for nuts, but if everyone starts using it, we will soon have no Elephants left! Hard, clean Bone comes a close second, but is not easy to obtain.

New supplies of bone to my workshop are usually accompanied by Beef-bone soup for dinner. I ask the butcher to cut the bone at each end, not in the middle as usual for making soup. Unfortunately, most butchers' bones come from fairly small animals, and are thin and hollow. One has a lot of work, for very few nuts — on the other hand, the soup's excellence is only limited by the skill of your cook!

After the soup-making process, the bone then has to be boiled in soda and then in detergent, to remove grease and bits of gristle, and the whole job can easily take days.

If you want bone for nuts in rather more of a hurry, you may be interested in something I found while wandering round Leadenhall Market. (See Photo) I don't know how the rat got in on all this I think he is stage-struck. The point of interest is the Petcraft Sterilised Natural Bone.

Spotlessly clean, wrapped in a plastic bubble, and 33 pence each. It may have gone up a few pence since I bought this one but it is still cheap. Because the bone is cut into short lengths, you can pick the bits with thick, straight walls, which convert efficiently into nuts. You can cut bone with a hacksaw, if you rub a bit of soap on the blade.



Avoid the porous bits, they are too soft. I believe Petcraft products are available all over the Country, so you should now be able to obtain bone for making guitar nuts. This may all come

as something of a shock to Petcraft Ltd., who intended this little gift-wrapped package to be given to your favourite pet beastie to keep him busy between mealtimes. That rat is nobody's fool!

Who had the last word in rock?

Drummer/visitor Perry Robins tests the strength of Sonor shells



Drummers' day out to Sonor

by Ray Hammond

The charabanc arrived early outside Assembly Music in Bath. Fifty eager drummers climbed aboard and rumbled off along the M4 en route for a tiny village in the Westfalian Mountains of Germany where Sonor drums are made.

Steve Gardner, boss of Assembly Music, dreamed up the idea of the package visit and drummer/customers of his each paid £49 towards a visit that was sponsored jointly by Assembly, Sonor and Hohner (UK) who distribute Sonor in Britain.

A short-bodied jumbo jet thrust the party towards Germany — many of whom had never flown before, and many who had been abroad before — and a bus met the party at Frankfurt to start the slow climb towards the mountains.

Aue is a small township of about 2,000 people. It's a resort town and permanently acts as host to the walkers and nature lovers who like taking healthy vacations in the hills. Despite this, the town is still hard-pressed to accommodate 50-plus visitors in one go and the party

willingly spread itself out around the various small hotels and pensions. Everybody had to share double beds, but that sort of thing doesn't matter when you're young, a musician and abroad for the first time.

The first evening the visitors met their hosts, Mr. and Mrs. Horst Link, President and First Lady of Sonor and sat down to a fabulous meal of venison.

A trip around the Sonor factory was scheduled for the following morning and, at this point, the "technical" freaks of the party became really excited and plied Horst with questions concerning the method of making Sonor drums.

Sonor drums have been made for 102 years. Originally the factory was in East Germany but, after the division of the country in 1945, continuation was impossible. Horst and his father managed to escape to the West — Horst on a bicycle and his 66 year old father by shinning down a drainpipe!

"When we arrived here the problem was in finding the skilled people to start

working again," Horst told the drummers assembled in the factory canteen. "Two or three of our old staff managed to get here but we really had to start all over again. It took us ten years to get sufficient skilled people to get back to the point we were at before the war."

The drummers split into small groups and were shown around the large, modern factory. Sonor lets its workers work any shifts they wish. This allows many people to start at 6 a.m. and finish at 2 p.m. or to start later and finish later. The company report absolutely no union trouble and the productivity of the factory is said to be four times greater than other equivalent factories.

Sonor drums are still made principally from wood. As all drummers must know, the brand is famous for its nine-ply shells and a favourite party trick is to invite visitors to stand on a shell to demonstrate its robustness.

The use of rosewood at Sonor is particularly interesting. It's a very difficult wood to work with and, on one

Tuning Sonor snares before despatch.



particular range of drums, rosewood is used for internal and external facing. Another development of which the company are justly proud is the seam-

less hoop. This item is "projected" out of a flat disc of steel and really does produced a hoop without seams.

As a contrast to the ultra-modern

efficiency of the main plant, the skin curing sheds just across the drive to the plant continues the tradition of skin tanning and curing that have been used

Who'll be the new name in rock?

Hofner

We're gonna do it again!

Drummers day out to Sonor

for thousands of years. Here, skins from goats, pigs and calves are prepared for use as drum heads. Despite the emergence of plastics for rock drum heads, many percussion instruments still need real skin heads and this large (and very smelly) complex washes skins, stretches them on old wooden-peg racks and then cures them.

At the end of the tour, Tony Wallis, European boss of Zildjian, took time to explain a little of the history and philosophy behind Zildjian cymbals.

The relationship between Zildjian and Sonor is a very close one. Within the Sonor warehouse, Zildjian have a "bonded" storage area which serves as a duty-free transit zone for emergency supplies for Europe.

This store holds contingency supplies available to any of Zildjian's European distributors if they are desperately in

need and can't wait for the regular shipments from the USA.

In explaining the details of the vast range of Zildjian cymbals, Tony also provided a brief explanation of the art of cymbal-making. Explaining that Zildjian have their own bronze factory, he stressed the importance of using the right materials for cymbal-making. The Zildjian "secret" of cymbal-making is world-famous, but some indication about the care taken is provided by the information that each piece of bronze cast is allowed to stand for eight or nine months while the constituent parts settle down.

The programme for the afternoon of the visit took place in the local community centre. Here, a buffet lunch was provided and the full range of Sonor-Phonic drums were on display. After lunch, Sonor revealed the big surprise of the trip and the eager drummers were

treated to a fantastic display of drumming by top European session man Charlie Angelo. His performance brought the house down and he testified that his use of Sonor drums with Zildjian cymbals is not a promotion idea. He said they are the best in the world.

Gordon Williamson, European Promotions Manager for Hohner working exclusively on Sonor, explained some of the finer points about the Sonor drum-making philosophy. In a particularly interesting and humorous mini-lecture, he revealed some of the design points that make Sonor the most popular drum in Europe.

The coach delivered the drummers back to Frankfurt for an evening of the particular type of entertainment that city is best at providing and the tired but happy musos winged their way back to Britain the following day. ☺



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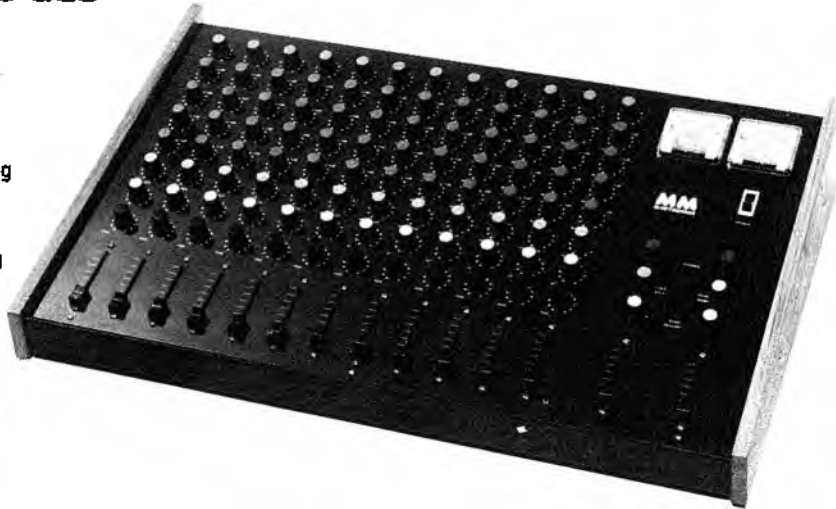
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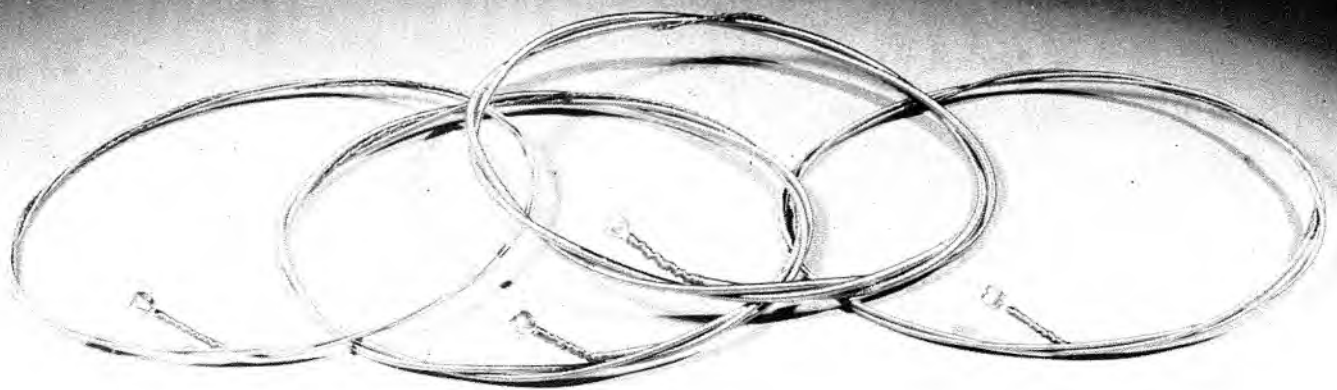
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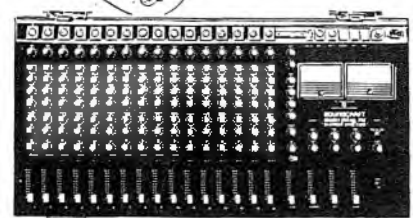
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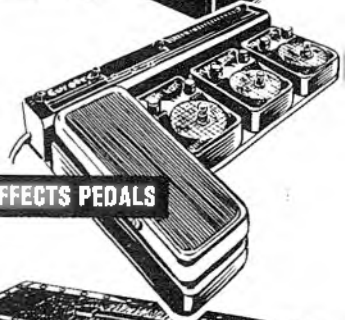
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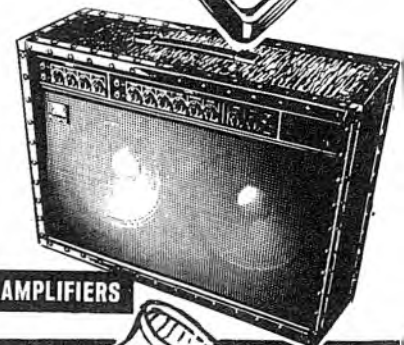
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MAKING A SOLID GUITAR

Part 11: by Stephen Delft

If you have completed the work described in last month's instalment, you should have a neck which fits securely into the socket in the body, at a precise and repeatable angle, and which has been trimmed until, at this angle, the outside of the joint looks good. The next stage is to cut the holes for mounting the bridge, pickups and controls.

Bridge mounting

Slide the neck fully into the body socket and clamp it in place. If the socket is wider than the neck tenon, permitting the neck to wobble sideways ('in a plane parallel to the front of the body', if you prefer Engineering terminology), decide at this stage, where and how you are going to wedge or shim the joint.

Make the packing pieces and mark them so that you can repeat their alignment and the order of assembly. Ideally, your joint should fit perfectly. But if it does not, you must at least find out how to pack the joint so that the neck has the same setting each time you assemble it. When you have achieved this, consider the packing pieces as an integral part

of the neck assembly and use them every time you fit the neck to the body.

Either by skill, or determined persistence, you should now have a neck which fits all the way into the body socket and does not wobble. Now hold it in place with a clamp from back to fingerboard, roughly level with the centre of the joint. Next, the alignment of the neck must be transferred to the front of the body, so that the bridge and pickups can be placed correctly.

In doing this you will establish a new 'centre-line' on the front of the body, which is an extension of the centre line of the neck. This new line supercedes the original line down the centre of the body, because an exact alignment of bridge, strings, pickups and fingerboard is more important than having the bridge exactly in the centre of the body. You may find it convenient to remove as much as possible of the original centre-line with a sharp-edged pencil eraser.

To find the new body centre-line, you will need the same straight-edge which was used last month for setting the neck angle. Lay this straight-edge flat on the front of the body and along the edge of the fingerboard. The upper surface of the straight-edge will probably be below the underside of the fingerboard at the neck/body joint, so the straight-edge could possibly slip into the gap left for the wedges supporting the end of the fingerboard.

If this happens while you are marking the bridge positions, any hope of accuracy goes out of the window. Fortunately, the solution is very simple: put a piece of plastic sheet, or very thin plywood underneath the straight-edge so that it is still level with the edge of the fingerboard, but not so low that it can slip into the gap.

A scrap of 2 mm Perspex is usually about right. Draw a faint pencil line across the front of the body at 235 mm from the neck joint. This is not an exact measurement.

Hold the straight-edge along approximately the middle of the edge of the fingerboard and draw a short line where its far end crosses the faint line you have just drawn on the body. Repeat on the other side of the fingerboard. If the straight-edge is not long enough to reach from the nut position to this line, it can be moved down the neck until the far end does overlap the line, but I would not recommend using a straight-edge shorter than about 600 mm. If you can get help to hold the straight-edge onto the fingerboard edge, you can press the other end gently down onto the body while marking from it. This is more accurate, but *only* if you can ensure that the rest of the straight-edge is still pressed along the *centre* of the fingerboard edge. The faint line is not needed any more and may be erased.

Mark the centre of the width of the fingerboard at each end, and draw a centre line down the front of the fingerboard. Check the nut end of the fingerboard. It should be square to the front of the fingerboard and to the centre-line, and 386 mm from the neck joint, taking the average of measurements down each side. If necessary, clamp the neck to the bench, or hold it in a padded vise, and trim the nut end of the fingerboard until it is correct. (If you have just less than 386 mm to the neck joint, don't worry). Trim the end of the fingerboard square both ways, taking off a minimum of wood. As the bridge position is measured directly from this end of the fingerboard, the exact distance to the neck joint is not critical).

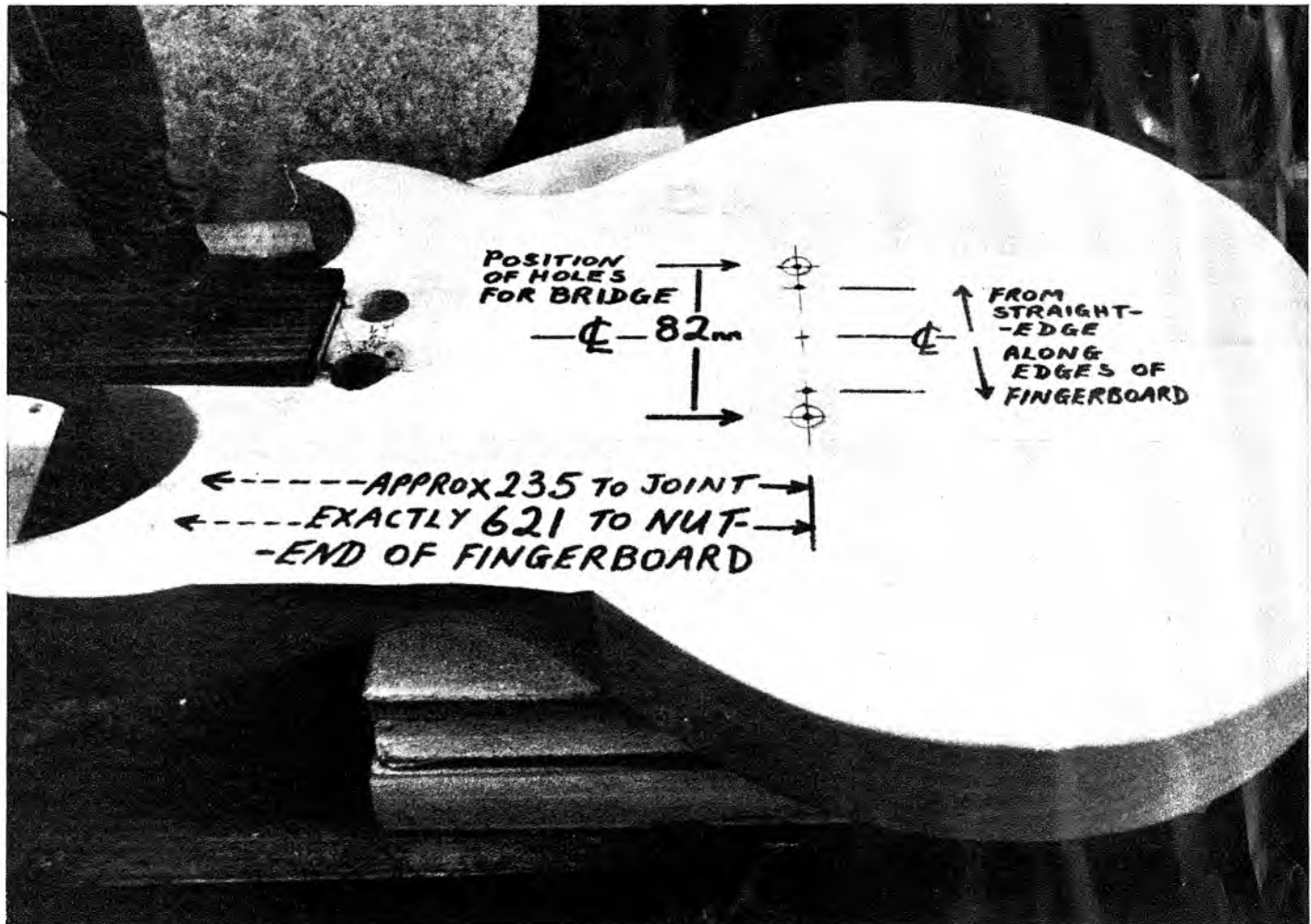


Photo 1

You will probably find it impossible to trim the end of the fingerboard properly, unless your chisel is sharp and is really flat on the side which ought to be flat. I normally use a chisel about 15 mm wide for this job.

When this end of the fingerboard is right, measure exactly 621 mm down each side of the fingerboard and draw short lines, intersecting the two short lines you already have on the front of the body. You now have two points of intersecting lines on the front. Join them with a pencil line and you have the line on which the bridge-mounting holes are drilled.

Find the centre of this line between the two marked points, and mark 41 mm out each side along the extensions of this line and you have the exact centres of the holes for the bridge-mounting pillars. Check that the distance between them is 82 mm + or - 1/2 mm.

Draw a line also from this centre point, to the centre of the body-end of the fingerboard, and you have the new body centre-line for aligning the pickup holes. As you may have noticed, this part of the job has a lot of detailed marking out which does not seem to be leading anywhere, and then, at a certain point, everything should suddenly fall into place.

Now you have read so far, take a look at photo no. 1 which shows all the important details for marking the bridge holes. The centre-line indicated is the one which is generated as described in the above paragraph. The original line down the centre of the body has nothing to do with these measurements and any faint trace of it which cannot be erased should be identified, and then ignored.

If you feel you may still be confused by the remains of the old line, cover it up with masking tape. Its only purpose was to assist in marking out the neck joint at the beginning of the work on the body.

Pickups

I suggest you use Guild Humbuckers. They are well made, relatively easy to fit, and are roughly in the middle of the possible variations of tone from humbucking pickups. Almost any pickups could be fitted to this guitar, but these instructions are for a pair of bridge and fingerboard Guild Humbuckers which should be available from any Guild stockist.

The same fitting principle could be applied to other makes of pickup, but accuracy will depend on how well the surrounds are moulded, as I am going to use the surrounds as mounting templates.

Unwrap the two pickups, and examine them for any damage to the fine wires leading to the connections underneath. It is normal for one pickup to have 2 tags and the other to have 3. It is also normal for each pickup frame to have 3 height-adjusting screws, not 2. One of the surrounds should be higher than the other: This is the one which is fitted next to the bridge.

Both pickups surrounds have the double-height screws on the Bass side of the body. Mark one pickup and its surround underneath for identification, and take off the surrounds. Keep all the screws and springs. Make a fine scratch in the exact centre of each longer side of both surrounds. These scratches must be aligned with the new centre line drawn on the front of the body. The fingerboard pickup surround is fitted up against the end of the fingerboard and the bridge pickup is fitted against a line drawn 20 mm in front of the centres of the bridge mounting holes. See photo no. 2.

With the surrounds held in place, take a sharp pencil and draw round the inside of all the holes and (lightly) round the outside. Remove the surrounds and place the pickups in position so that the threaded holes in the

mounting brackets underneath, line up with the marked positions of the height adjustment holes. You may need to bend the brackets a bit to line up all three holes at once. Make sure you have the right pickups in the right positions and draw round the bottoms of the brackets. This will show you how much clearance is required for the pickup support brackets. The outline of the hole for the pickup body will be too small and you should draw another outline carefully, 1 mm outside the first one, for each pickup.

Practically all the recessing needed for the pickups can be done with either an Engineers Pillar Drill or a Woodworkers' Brace. You will need an 11 mm or 7/16 bit. Either a spiral 'Lip and Spur' bit for the machine drill or a 'Jennings-pattern' bit for the brace. You could use one of the better and more rigid portable electric drills on a vertical stand, and a Ridgeway or Irwin 'Flat-bit'. Beware of Oriental flat-bits; most are inaccurate. Check the length of its central point to ensure that it will not come through the back of the guitar by the time the full width of the hole is 27 mm deep, at its shallowest point.

Draw 11 mm and 12 mm circles around the centres for the bridge-mounting holes. These will give you a check on the positioning of the drill as you start the hole. Remember, the distance between the centres of these two holes needs to be accurate to + or - 1/2 mm. Mark the centres of the bridge holes and the centres of the positions of the height adjustment screws for the pickups, with a sharp centre - punch. Do not punch the centres of

the holes for fixing the pickup surrounds to the guitar body. These are not drilled until the guitar is nearly finished.

Drill out the bridge mounting holes to 7/16 inch or 11 mm, by 27 mm deep and the holes for clearance of the pickup brackets to 7/16 inch or 11 mm, by 25 mm deep. You will also need a smaller hole also 25 mm deep between each pair of bracket clearance holes to assist in removing the waste wood. 6 mm or 1/4 inch is about right. (The pairs of holes are just too close for the safe drilling of a third. 7/16 inch hole between the first two). See photo no. 3.

Then drill a series of adjacent holes to remove the waste from the pickup recesses. The fingerboard pickup will need a recess 15 mm deep and the bridge pickup will need 10 mm. Clear out the remaining bits with a chisel. Do not try to drill overlapping holes unless you are using a "Forstner bit", (which is expensive, a pig to sharpen, and intended for drilling overlapping and/or flat bottomed holes). That completes the pickup holes for the moment. For next month you will need either a Jennings-pattern bit and a Carpenters' brace or a pillar drill (or good drill stand) and a 'Flat-bit': in either case to drill a hole approx. 1 1/4 inch diameter. If you plan to use a powered drill, you *must* be able to clamp the guitar body to the drill table, and you should preferably also have some sort of face shield. You will also need about 300 mm of 6 mm Silver Steel rod, a hammer, and something to use as an anvil, such as a sledge-hammer or an old "flat-iron" of no particular value.

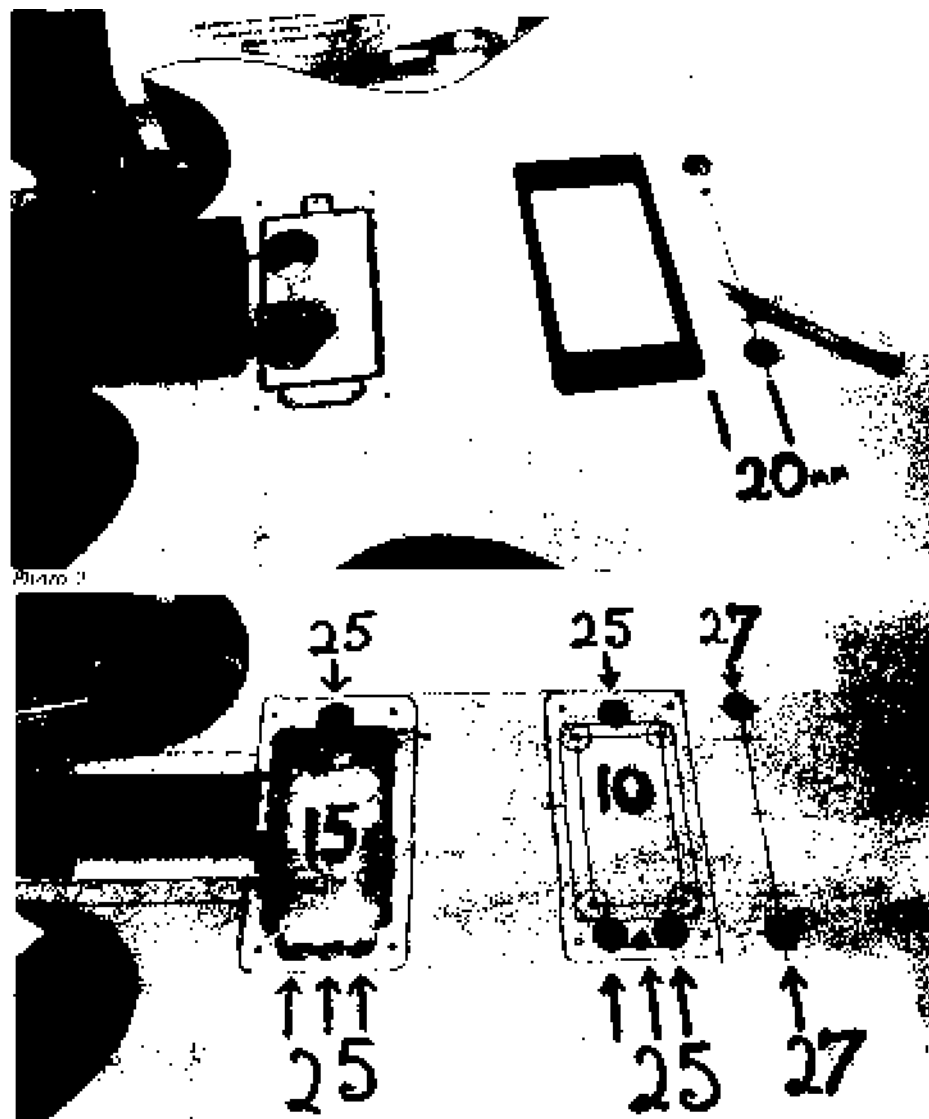


Photo 3

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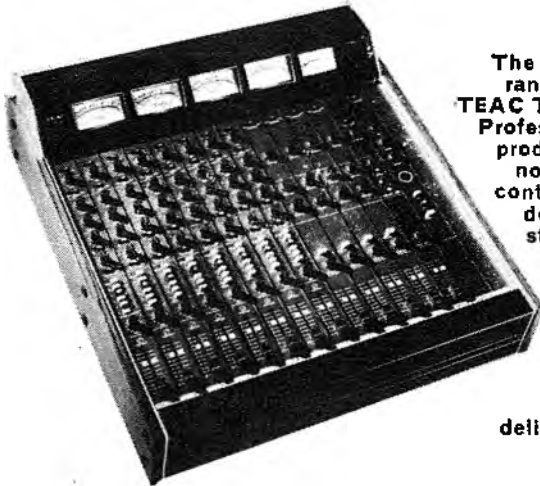
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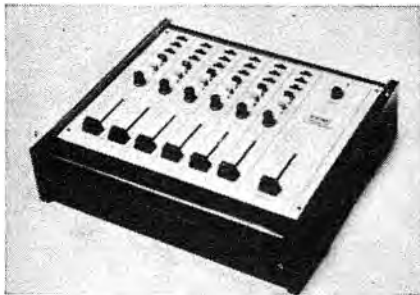
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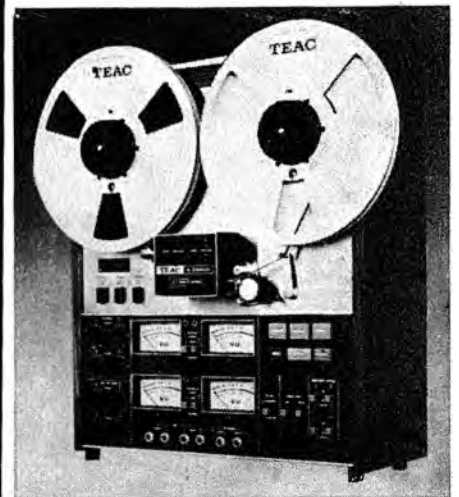
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market report

CARLSBRO



Stuart and Sheila Mercer launched Carlsbro Sound Equipment 16 years ago. In the early days the company consisted of just two people (the Mercers) and had a turnover of two units a month. Today it employs 55 people and has a monthly turnover of about 350 units.

All told the company manufactures about 40 different types of equipment ranging from effects units and speaker units to amplifiers.

Stuart, who has designed most of the company's equipment, believes rightly that Carlsbro owes its tremendous success to the quality and reliability of its products.

Throughout its 16-year history it has been the company's policy to provide the customer with the right equipment at the right price and there can be no doubt that this policy has paid off.

In recent years the company's growth rate has been quite considerable. Two years ago it was forced to double

its factory size to meet the extra demand and in all probability it will have to do the same again before the end of the decade.

With customers now in almost every country in the world and in almost every field of entertainment, Carlsbro has established a reputation for itself that many other companies envy.

Today, particularly in the the pop and rock fields, more and more musicians are turning to Carlsbro, to provide them with sensibly priced, durable amplifiers that won't let them down on the night.

As one dealer put it to us when we asked him about the company: "Carlsbro seems to have got it about right for the market it's aiming at. It's the ideal equipment for the semi-professional rock, pop or cabaret band. I can think of no other company that can meet their needs as well as Carlsbro does!!"

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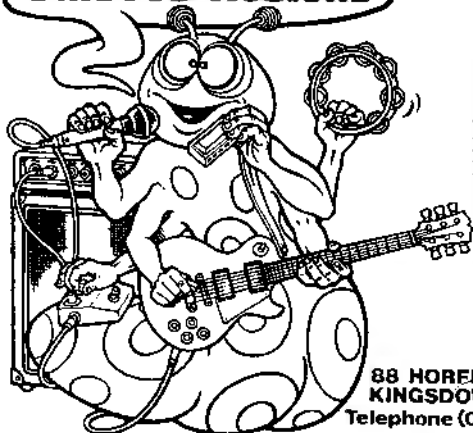
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DO MANY CUSTOMERS BRING BACK CARLSBRO AMPS AND WHAT IS THE MOST COMMON COMPLAINT?

1. We only get a very small percentage of the amps returned because of faults. Up to now all the faults have been very minor ones.
2. Not enough bring them back for there to be a common complaint.
3. We've had no problems with them.
4. We've had very few back and there's been no common complaint.
5. If there's any common fault it's foot switches breaking.
6. We hardly get any back and we very rarely get complaints.
7. Very few complaints. Everyone says what cracking amplifiers they are.
8. One of the major selling features of the Carlsbro amps is that we have so little trouble with them. They're technically very reliable.
9. We've never had one back.
10. No, there isn't really a common complaint.
11. We don't have any complaints at all.
12. One or two have been bought back with the output stages burnt out, but we don't know whether that was the fault of the customer or the amplifier.
13. No, we don't get many back.
14. Very few complaints. Those that we have had have been largely without justification — a case of people expecting more than they should for their money.
15. We get the occasional fault, but there isn't a common complaint.
16. Very, very few bring them back. It's usually the power stage of the amplifier that's gone faulty, but Carlsbro have always been good in sending a replacement.
17. No, they don't bring them back. They are very reliable.
18. We don't get a great deal back that are faulty. I couldn't really pin down a common complaint.
19. Not many people bring them back, so there aren't many complaints.
20. No, they don't bring them back and there is no common complaint.
21. In the two years that we've been selling them, we've only ever had two back.
22. The failure rate is very, very small. I don't recall one coming back.
23. They're not troublesome by any means. Occasionally we have to deal with a blown-up output stage, but that's usually through customer misuse.
24. No and no.
25. We very rarely get them back.
26. It's very rare that anyone brings them back. The only fault has been with output transistors, but it hasn't appeared that often.
27. Virtually none.
28. The biggest problems we've had with them have been through customer misuse. We're quite happy with them.
29. We've only ever had two back.
30. Not many bring them back.
31. It's not often that they bring them back. There's no common complaint.
32. I couldn't pinpoint a common complaint, because we've had so few back.
33. No, we don't get many back, but when they do come back it's usually a minor fault.
34. They're reasonably reliable. We get very few back.
35. Not many bring them back. There isn't a common complaint.
36. Not many bring them back. No common complaints.
37. We get very little trouble with them. It's the most reliable make we sell.
38. We've only ever had two back in three years. There's been no common complaint.
39. We've never had one back.
40. Never had one back.
41. We don't get them back.
42. Not many people bring them back and there aren't any common complaints.
43. In two years we've only ever had one back. That was an IC fault.
44. In the three years we have been selling Carlsbro only a very few units have been returned for repair. There have been no common faults.
45. Only a very low percentage are brought back and all the complaints we've had have been minor ones.
46. We've had none brought back so far, but then we haven't sold that many.
47. We've repaired a few Carlsbro Amps. The main faults have been cracked valve bases and output transformers going.
48. The only time they bring them back is to trade them in for new ones. We've never had any complaints.
49. Not too many. No common complaints.
50. Very few get returned for repairs. The faults have always been minor things.
51. We don't get an awful lot back for repair. They're very reliable.
52. We get little or nothing back. There are no common complaints. Everything is very satisfactory.
53. We had a bit of transformer trouble with one, but otherwise there have been no other problems.
54. We do get a reasonable amount back, but half of those are due to customer misuse. The main complaint has been blown output transistors.
55. We've been doing them for two years now and we've only ever had one complaint.
56. I've only ever seen one back and that was due to a fellow connecting up something wrongly.

HOW MANY DO YOU SELL ON AVERAGE PER MONTH?

1. Eight.
2. About five.
3. Four or five.
4. 12 units.
5. At least 50.
6. Between 10 and 15.
7. About three.
8. Eight or nine.
9. Probably about two or three.
10. It varies a lot. Between six and twelve.
11. About three a month.
12. Not too many. About two or three.
13. About 20.
14. Four or five units.
15. Six.
16. About three.
17. Between four and eight.
18. Two or three.
19. Twelve to fifteen.
20. Fluctuates between two and eight.
21. I really couldn't tell you.
22. Four or five.
23. Two or three.
24. Six or seven.
25. Four or five.
26. Approximately ten.
27. It varies. About four.
28. One.
29. Three or four.
30. About fifteen.
31. About three.
32. About five.
33. Two or three.
34. Fifteen or sixteen.
35. About two.
36. Three or four.
37. I would think about forty.
38. Between four and five.
39. Ten or twelve.
40. Two or three.
41. About four.
42. Four or five.
43. One.
44. It varies from six to ten.
45. Fifteen.
46. At the moment it's about two, but it should go up.
47. About five.
48. Probably about 20.
49. About two.
50. Eight.
51. Twelve.
52. Between ten and thirty.
53. Impossible to say. We've just started to sell them.
54. Ten.
55. Three or four.
56. Probably somewhere between eight and ten.

How would you describe CARLSBRO AMPS' VALUE FOR MONEY?

1. Extremely good.
2. Reasonable.
3. Very, very good.
4. Good value for money. We have no grumbles with Carlsbro.
5. Very good. Otherwise we wouldn't sell as many as we do.
6. Exceptional, particularly the bass combo. We're selling them like sausage rolls.
7. As good as anything you'll get for the money.
8. Terrific, best on the market.
9. As long as they keep their prices down they're good value for money.
10. As far as the British amps go it's the best value for money.
11. Excellent. They're worth the money.
12. Very presentable. Good value for money.
13. Definitely the best on the market. Not over-priced.
14. Yet to find one to beat it.
15. Although it's not cheap, it's excellent value for money.
16. Very good value for money. Only exception is the Mantis Echo, which is a little over-priced, compared to the competition.
17. They offer excellent value for money.
18. They provide well-made equipment that functions well and is reasonably priced.
19. Extremely good value for money, especially the new bass amp and combo.
20. Excellent value for money.
21. It's the best that we've had in that price range.
22. Their value is second to none.
23. Extremely good value for money.
24. Excellent.
25. Very good. Particularly the tops.
26. It's the best value-for-money amp we've got in our shop by a long way.
27. For the semi-pro and cabaret market, it's very good value for money.
28. It's good value for money.
29. It's good stuff, well-made and not as expensive as other amps of a similar quality.
30. Yes it's good value for money.
31. First class, worth every penny.
32. The price is in accordance with the quality. I doubt whether you could get better value for money from another make.
33. Excellent. Worth the money that they charge for them.
34. Very good value for money. The new bass combo is one of the finest on the market for value.
35. Good value.
36. In my opinion the best in the British range of amps.
37. It's bloody good stuff. A great company to deal with. No messing about.
38. Pretty good value for money.
39. The best amp on the market in its price range.
40. Very good value for the money.
41. Very reliable for the price. I'd say they were well worth the money.
42. Good value for the price.
43. About average value for money. Carlsbro are a bit better than their nearest rivals.
44. A well designed range with features that are both practical and reliable.
45. One of the top amps for its price. As good as you'll get for the money.
46. I think they are one of the best available at the moment.
47. The old valve ones were much better value for money than the new transistor ones.
48. Pound for pound they're the best value for money.
49. You get your money's worth.
50. Good value for money. They're competitively priced.
51. It's the best you can get for the money.
52. In comparison with other makes they have a lot more to offer.
53. Same as the rest.
54. They're cheap compared to some of the stuff on the market.
55. Good value for money.
56. Very good value. Very reliable.

How do CARLSBRO AMPS COMPARE WITH THE COMPETITION

1. Favourably.
2. They're good value for money.
3. They're very good indeed. The new bass Stingray is very competitive.
4. They're OK both for price and reliability.
5. Very well. The PA's are magic.
6. We sell a hell of a lot of them and they compare exceptionally well with the competition.
7. In my opinion they are as good as the competition. They're very reliable.
8. Very favourably. Particularly the Marlin.
9. Very favourably. They're on a par with their nearest rivals.
10. They compare very well. Especially on power ratings.
11. In my opinion they're the best. I've stocked them for years.
12. They seem to be growing in popularity. They're as good as the competition.
13. Very favourably. They're the most competitive in the market.
14. Prices compare superbly well. Particularly on the bass top amp and the bass combo, which, in my opinion, are fantastic.
15. In my estimation they are good quality equipment. You get more for your money with them.
16. The PA and bass amplifiers compare very well. The combo amp is good, but not as good as some of the competition.
17. They compare very well indeed. As good as the opposition.
18. Very favourably.
19. I'd say in their price range they offer things that other makes don't.
20. No doubt about it, they're the best for the price.
21. We haven't found anything better in that price range.
22. They're as good as their nearest rivals.
23. They compare very well. We're quite happy with them.
24. Much better than the competition.
25. Very well. They're the right equipment at the right price.
26. It's a lot louder than other amps. It's got a lot more depth.
27. Favourably.
28. They're OK in their price range. There are a lot better amps, but they're more expensive.
29. Very favourably.
30. Very well. They're reliable and offer a good after-sales service.
31. In their price range they're the best value for money.
32. They're better than the opposition.
33. They hold their own. For the price they're as good as the competition.
34. As far as price and quality are concerned they're every bit as good as the competition.
35. They compare very well, for price and reliability.
36. The power handling is better than the majority of amps. They're very good.
37. They haven't got any competition for the price.
38. They knock spots off their nearest rival.
39. Price for price they are much better than the competition. They're far ahead in sound and quality.
40. Price and performance are very favourable.
41. Their performance is very good, though on looks they don't compete well.
42. Very favourably. Their Mantis is a knock out.
43. We only sell Carlsbro so we have nothing to compare them with.
44. Very favourably.
45. They're all the same in that price range.
46. Best value for money in the solid state market.
47. On the average run of the mill competition they're about average.
48. Favourably. Good value, good sound, could be better in appearance.
49. Quite favourably. As good as the competition.
50. Very well. As good as their competitors. Perhaps not so attractive to look at, but it's a good amp.
51. We sell more Carlsbro than anything else. They're the most popular.
52. In their own field they are very good.
53. I've found them pretty good.
54. Fairly well. They're as good as . . .
55. They compare very well.
56. They compare very favour.

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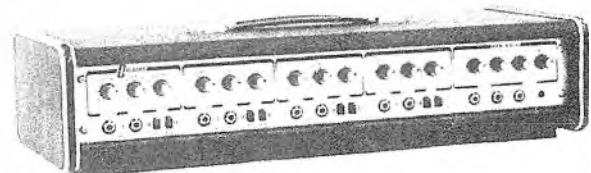
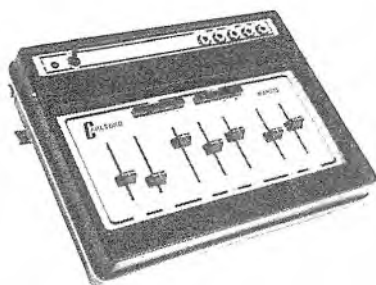
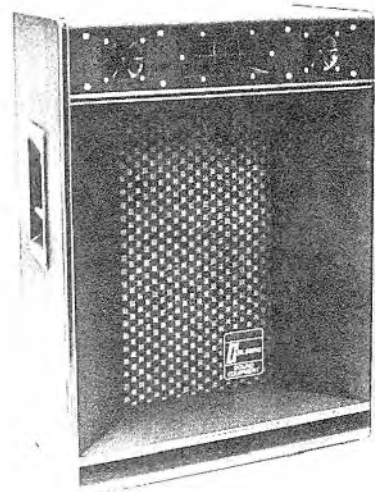
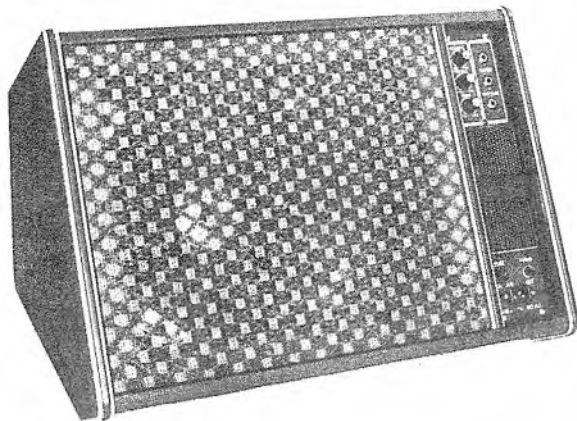
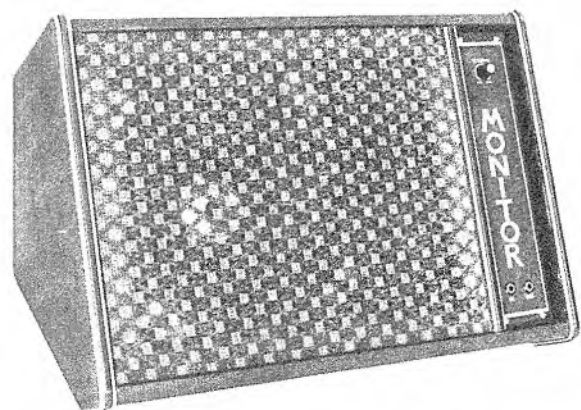
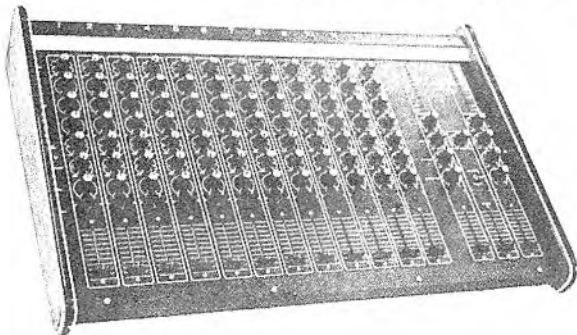
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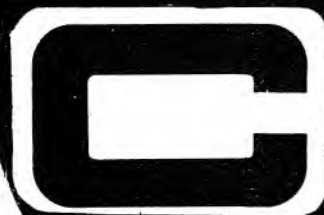
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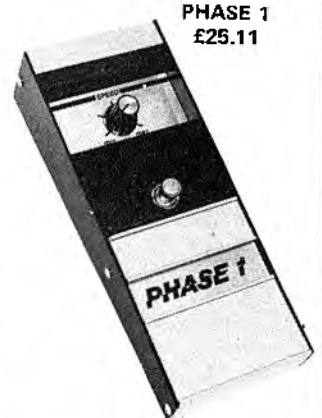
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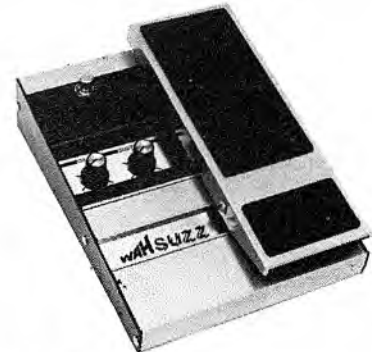
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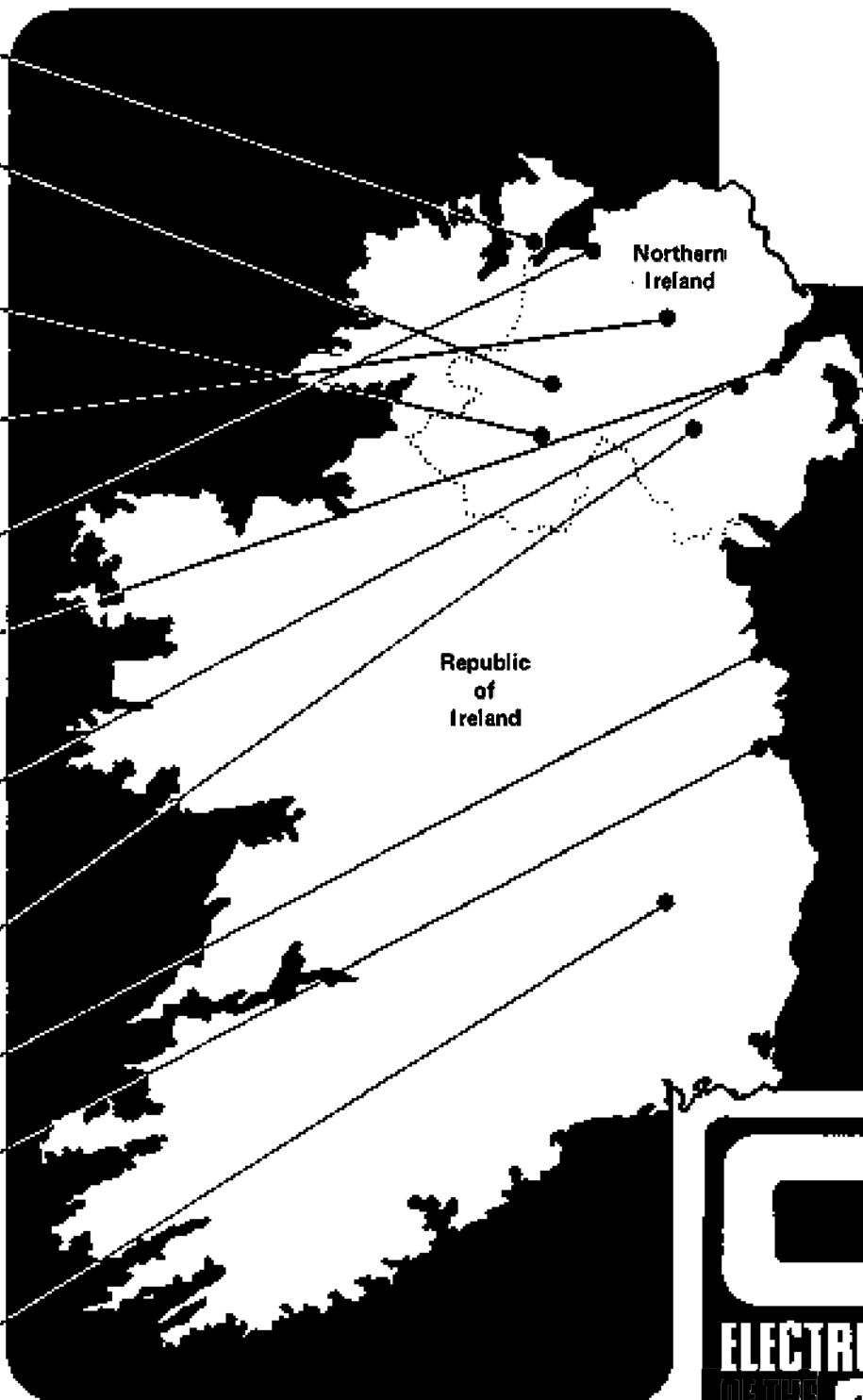
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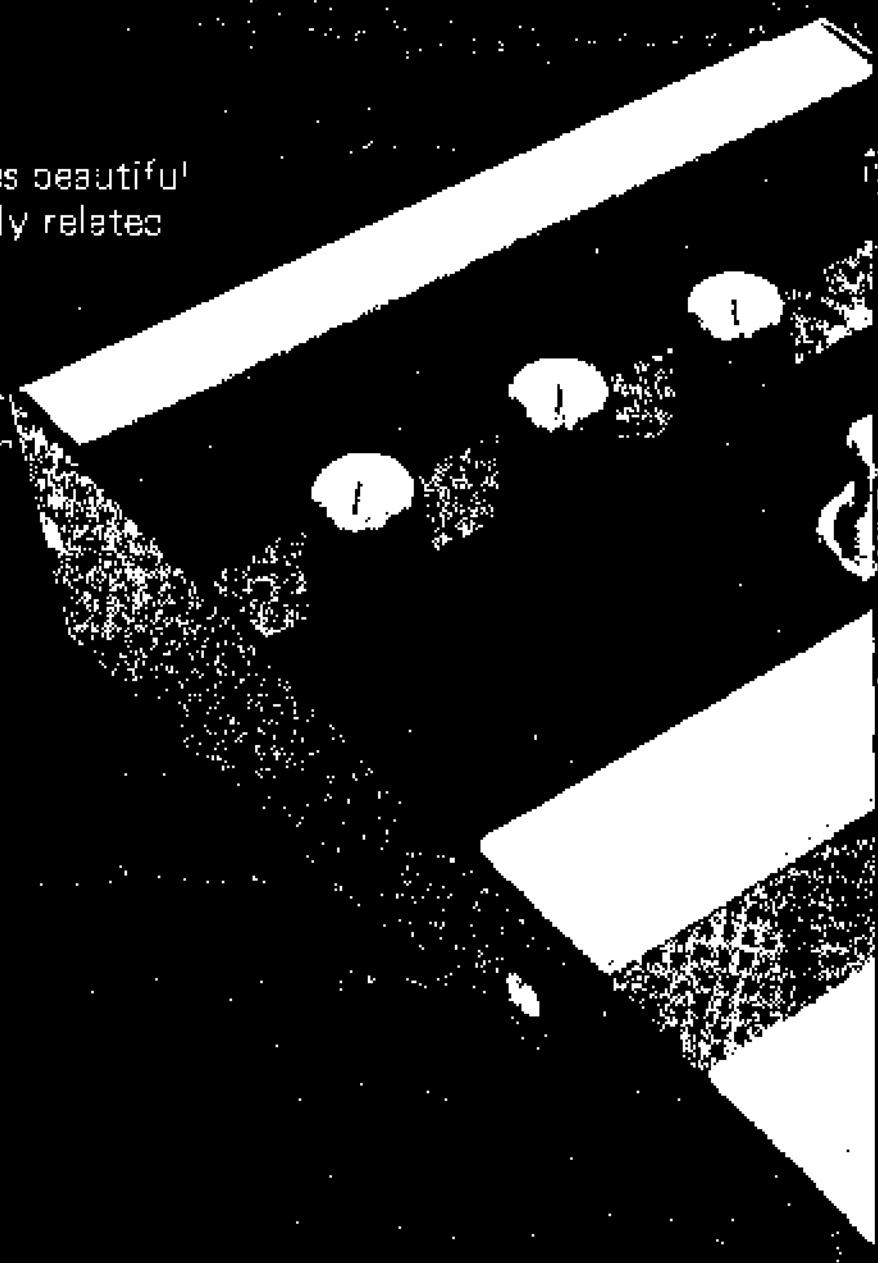
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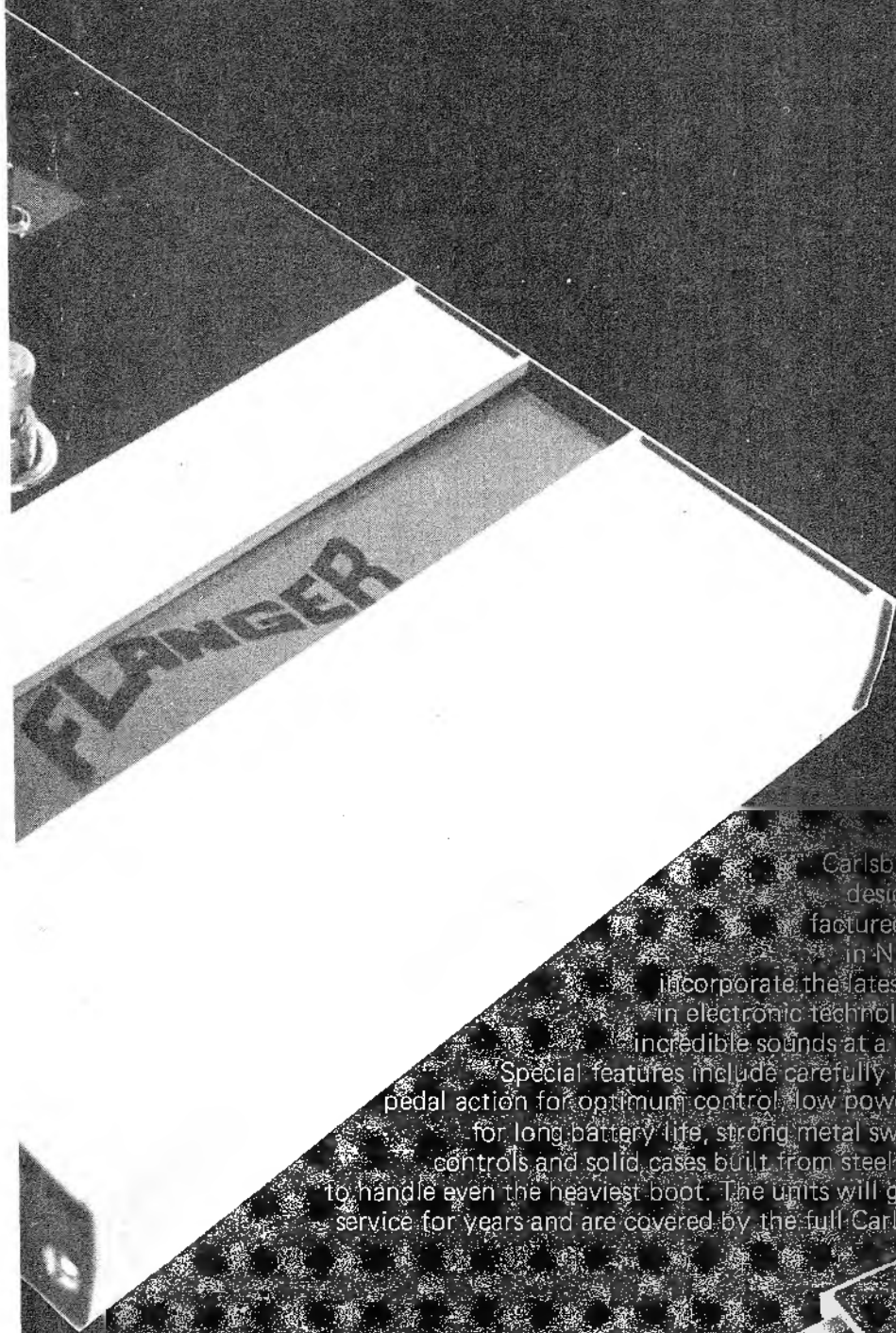
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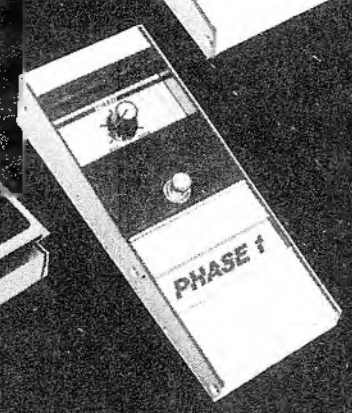
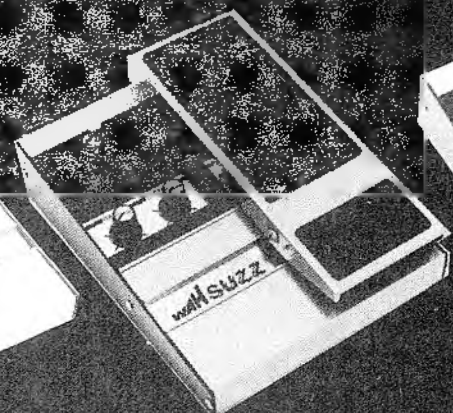
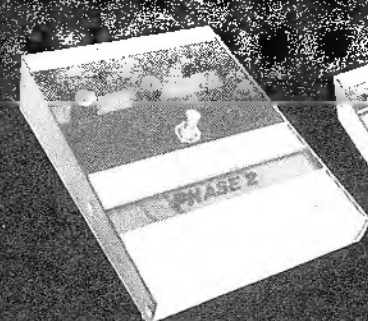
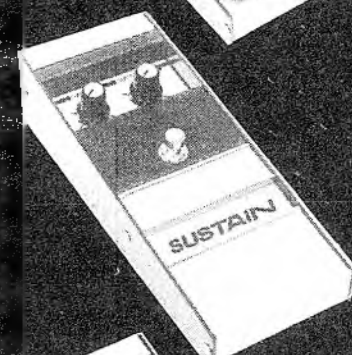
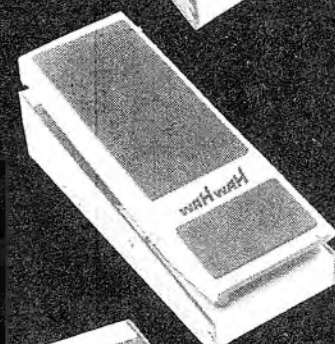
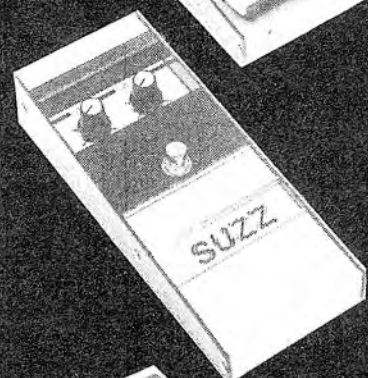
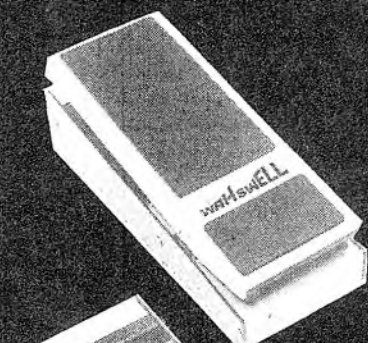
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MUSEX 77 **REVIEW**



Above left: Dennis Holloway of Yamaha showing the new acoustics.

Above right: Top brass from CBS/Arbiter visiting the show. L-R Mark Goodwin, Ivor Arbiter, Andrew Wallace and Jim Ledgerwood.

Bottom left: Richard Desmond of I.M. chatting with Roland (U.K.) boss Brian Nunn.



Centre: A visitor tries out Ludwig "Maple" drums.

Below: David and Gillian Burrows of PKP.



Musicians from all over Britain flocked to the North West of England last month to visit a very special type of musical instrument exhibition. The event was called Musex 77 and it was organised by Hesty's Music Centre in Liverpool.

The idea behind the show was to let musicians try out every type of instrument thus promoting music as a leisure activity. Most of the major companies in the field enthusiastically participated and mounted highly professional shows at the Holiday Inn in Liverpool.

Obviously, the big talking

points were the guitar synthesizers on show, but the exhibition attracted every type of musician and those interested in musical electronics.

The man behind the show - Bernard Michaelson - told IM that he was delighted with the response to the idea. He indicated that the show may be well something he will mount again and the general consensus of opinion from exhibitors was that it was a very worthwhile investment. Several went so far as to say that they wished the annual trade-only show

held in London could open its doors to consumers and give the industry a national musical instrument show in the same way that the Boat Show and the Motor Show are shop windows for those industries.

Musex 77 was naturally a noisy show, but all involved proved remarkably patient and visitors really did have a chance to sit down at a synthesizer and spend an hour on it if they so wished. A great success is the unanimous verdict.

Ray Hammond

FOLDBACK

PART 4

Fig. 4 Alternative splitter circuits

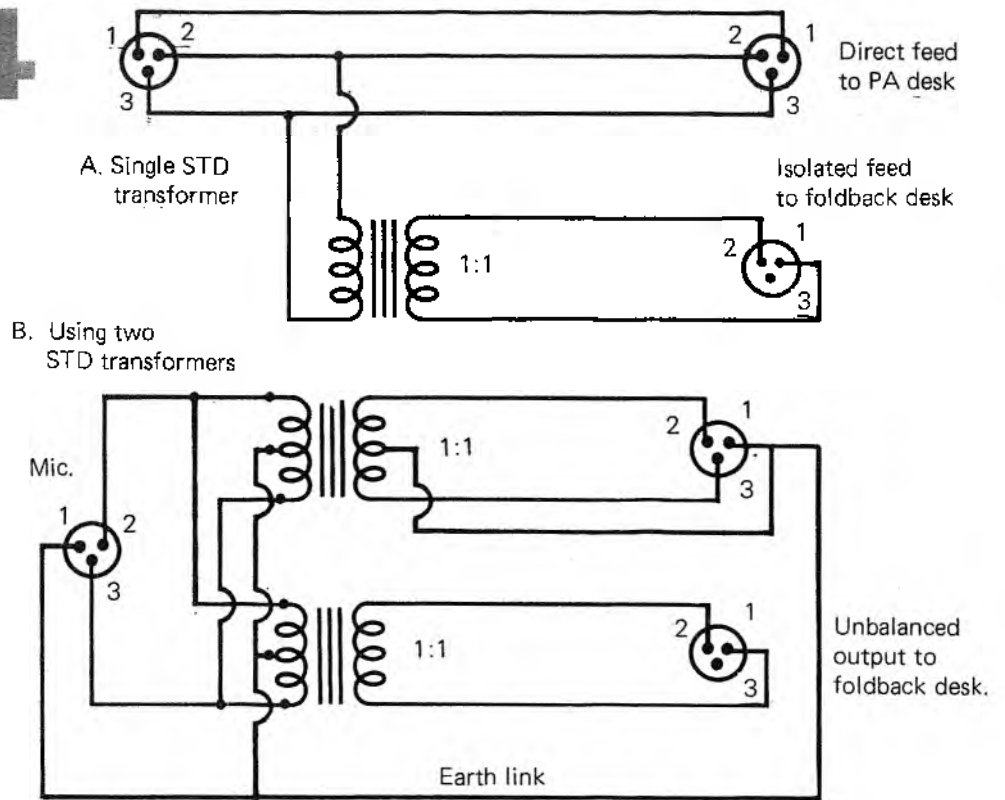
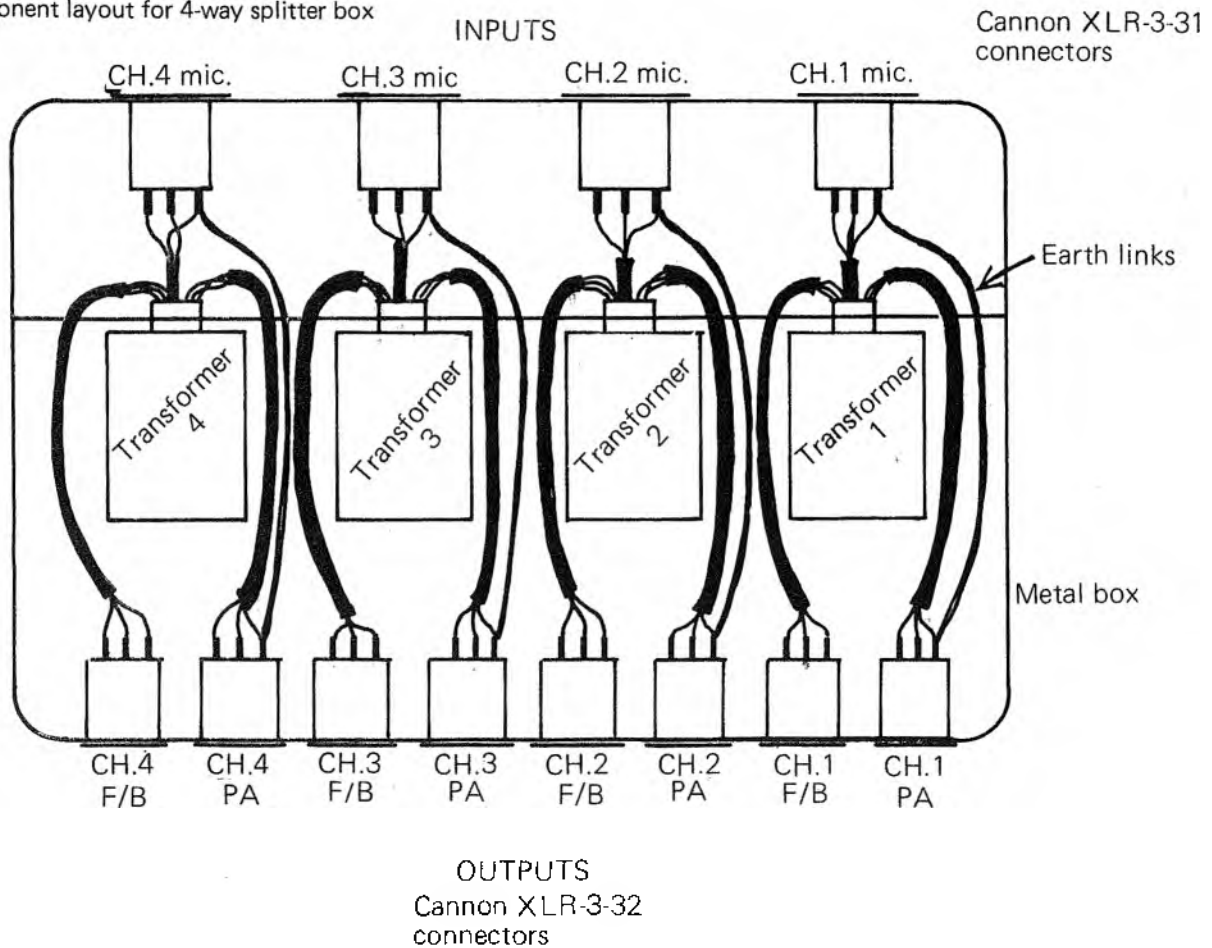


Fig. 3 Component layout for 4-way splitter box



FOLDBACK

PART 4

by Ken Dibble

Last month, we looked at ways and means of providing an adequate foldback system for the band who have reached the stage of buying their first small PA mixer and need to add foldback at a modest cost. In this final part, we shall go one stage further and look at a foldback system using one of these small mixers as a foldback desk. This will be a somewhat more ambitious system in terms of complexity and cost and is intended for the band who have gone one stage further and acquired a more sophisticated PA desk, probably leaving a small MM or Canary 12/2 desk, previously used for PA, kicking about as a spare. As with the previous systems, we will base the project on the foldback monitor cabinet described as a construction project in Part 2 in the August issue but also incorporate the 1 x 15" with horn cabinet (described in the September, October and November 1976 issues of IM in the series "How To Build A Loudspeaker Cabinet") as a side monitor.

The basic foldback arrangement is shown in "Foldback Part 1" in the June 1977 issue as Fig. 1, system C and a more detailed variation of this is shown in Fig. 1 here. Apart from using a specially-made foldback desk, which will allow all input channels to be mixed into any combination of several output groups simultaneously, the arrangement now discussed will provide maximum flexibility of control of up to five separate foldback channels, depending upon the number of auxiliary send facilities provided on the mixer available for the purpose. It will be seen that, basically, we are using the normal PA outputs from the desk to feed the side monitors and the auxiliary sends (i.e. echo send, monitor send, cue, etc.) to provide separately-controlled feeds to two or three floor monitor positions, all via separate slave amplifiers.

Alternatively, if side monitoring is not required, the two PA outputs can be used to feed floor monitors in the prime locations — say for the lead singer and the drummer — and the remaining three used for secondary foldback to the rest of the band. The actual arrangement used will depend upon your band and your requirements and any sensible combination can be used with the basic system described here.

The arrangement will provide considerable flexibility of control over the foldback system and, apart from common feedback paths, will be totally independent of the PA system. Separate level control and EQ will be available for each microphone connected to the foldback desk, separate level and EQ will also be available for the feeds to the two prime monitor positions and separate level control only for the two or three secondary monitors. It is normal practice for a band using a more sophisticated foldback system to locate the foldback desk just off-stage and to employ a second desk operator to do no more than mix the foldback system, with the obvious advantage that the desk operator is then working on stage with the musicians and can keep his finger on the pulse of the gig and of the musicians' needs throughout the gig.

The major practical problem in setting such a system up is that of connecting a single microphone to two desks at once. It is not possible to simply wire the microphone to an input on each desk in parallel, because serious earth loops between the two systems will give rise to unacceptably loud humming from both PA and foldback systems, and degradation of microphone performance will reduce reproduction quality and increase acoustic feedback. This is due to the fact that microphones are particularly fussy over the way in which they are loaded and their performance will depend on this factor to a large extent.

The solution is to use a microphone splitter with every microphone. Its function is to ensure that the microphone is properly loaded, that it is properly matched into both mixers, and that the inputs of the two mixers are isolated from each other. This is achieved by the use of a special transformer with three sets of windings, one of which is used to accept the microphone output, one to feed the input of the PA desk and the third to feed the foldback desk.

From a practical aspect, there are several ways in which such an item can be assembled, either as a number of individual splitter boxes, as a single unit accommodating a number of individual splitters, all wired to separate input and output connectors, or again as a multiple unit, but with either or both outputs wired to a multi-way connector

to feed the respective desks. As splitter boxes of this type are not readily available on the market, and such a box is the whole crux of this type of foldback arrangement, we shall devote the rest of this article to its construction.

We will take as a typical unit, a 4-way splitter with separate connectors for all functions. You can use jacks or Cannons to suit your own preference. If your need is for a 6-way or a 12-way, you simply use a larger box and build more channels. The number of microphone channels you are likely to need for foldback should be given some careful consideration. Often, even on a rig with twenty or more mics on the PA, less than half this number are needed for foldback purposes and so the remaining PA mics can bypass the splitter box and feed directly into the PA desk. This means that a smaller desk can usually be used for foldback, and that fewer channels are needed in the splitter box. If you need multiway cables to either or both desks, you simply replace the output connectors with a suitable multiway connector.

There is no reason why you cannot use a multiway cable terminated in a number of Cannon connectors at each end and connect up that way. This does have the advantage of being able to use the system with other gear if yours should break down, or with standard cables if the multiway should fracture.

On the other hand, you have the hassle of sorting out the channels at every gig — it's up to you to make up your own mind on these aspects and this is one of the many reasons why no manufacturer has yet come up with a standard professional PA rig and so much custom building goes on in this industry.

Fig. 2 shows the circuit diagram for a single channel of the mic. splitter and any number of identical channels can be built as required. Whilst the use of the Cannon connectors given is strongly recommended, if this is not on because of cost consideration, you can fit three pole jacks instead.

The connections for this are shown in the inset. The transformer is the only component likely to create problems. In this situation, a standard item cannot be specified as it is important that this shall properly match the microphones, the PA desk and the foldback desk and will probably have to be specially ordered. Sowter Transformers Ltd. will

be able to supply a suitable item provided that you can specify your needs.

You need a fully-screened microphone transformer with electrostatic screen, one primary winding and two secondary windings. The primary winding must match the microphone impedance and should have a centre tap as shown in Fig. 2. This impedance is likely to be somewhere between 30 ohms and 600 ohms and can be established from the microphone manufacturers' specifications. The two secondary windings must match the input impedance of the respective mixers. If you are using a more sophisticated desk for PA, the chances are that the input impedance will be between 50 ohms and 200 ohms and that it will be a transformer coupled balanced input. If this is so, then the first secondary winding to feed the PA desk must have a matching impedance and a centre tap as shown.

If you have 'demoted' a smaller desk to the foldback system, you are likely to find that the inputs are directly coupled (i.e. without an input transformer), unbalanced and with an input impedance of between 200 and 1000 ohms. If this is so, then this winding will not require a centre tap. These details should be carefully checked with the manufacturer. Remember, that in the case of the mixers you need to know the actual electrical input impedance, not the recommended load impedance, while for the microphone, the ideal load impedance is the important factor.

A typical specification for the transformer might look something like this.

Pri. 200 ohm with Centre Tap, when both secondaries loaded.

Sec. 1. 200 ohm. with Centre Tap.

Sec. 2. 600 ohm.

Fully-screened microphone transformer, bush mounting with flying leads termination and E.S. screen. Frequency Response 40 Hz to 16 KHz. at -3dB points.

Fig. 3 shows a suggested component layout for four channels and the arrangement of the internal wiring. It is suggested that the transformers are mounted on a strip of 16 swg aluminium bent to form an 'L'-shaped bracket the length of the inside of the box, and drilled to accept the mounting bushes of the transformers. Additional holes should then be drilled and fitted with rubber grommets adjacent to each transformer for the wires from the transformer

to the output connectors to pass through.

Building the unit is very straightforward indeed. Start by tightly twisting the flying leads from the transformers into pairs or threes so that you have one twisted 'tail' from each of the three windings.

Include the wire from the ES screen in the tail from Sec. 1 winding. Mounting all the components as shown and connect the three 'tails' to their respective sockets, taking great care to ensure that phasing or polarity of windings is observed.

Finally, connect the earth link between pin 1 of the mic. input connector and pin 1. of the PA desk output connector. After carefully checking the wiring, screw on the lid and you have your mic splitter box.

As mentioned earlier, there are several optional arrangements, including multi-way output connectors to the desks etc., and you could take this one stage further by building the unit as a stage-box-come-splitter unit by adding mic input connectors for all the PA mics that are not being fed to the foldback system and wiring these directly to the PA desk multiway connector without transformers.

There are alternative possible arrangements for mic splitting. One system was using two standard mic. transformers for each microphone, and another in which the microphones are connected directly to the PA desk, but fed via a standard transformer to the PA desk. These arrangements are shown in Fig. 4, but the snags with either are those of obtaining a good electrical match between the microphones and the mixers and of properly loading all three components.

At that point, I think that we have covered the important aspects of foldback. I hope that the series has helped you to understand more about making foldback work and possibly, saved a good deal of hard-earned cash through the do-it-yourself projects that have formed part of the series. Next month, we start an exciting series of tests on loudspeaker units and systems. We shall be carrying out laboratory tests on a whole range of units from several manufacturers and comparing these on a performance and value for money basis. We don't intend to stir up a hornets nest, but you might well be surprised at some of the results!

Fig. 1 Basic foldback arrangement using separate foldback desk

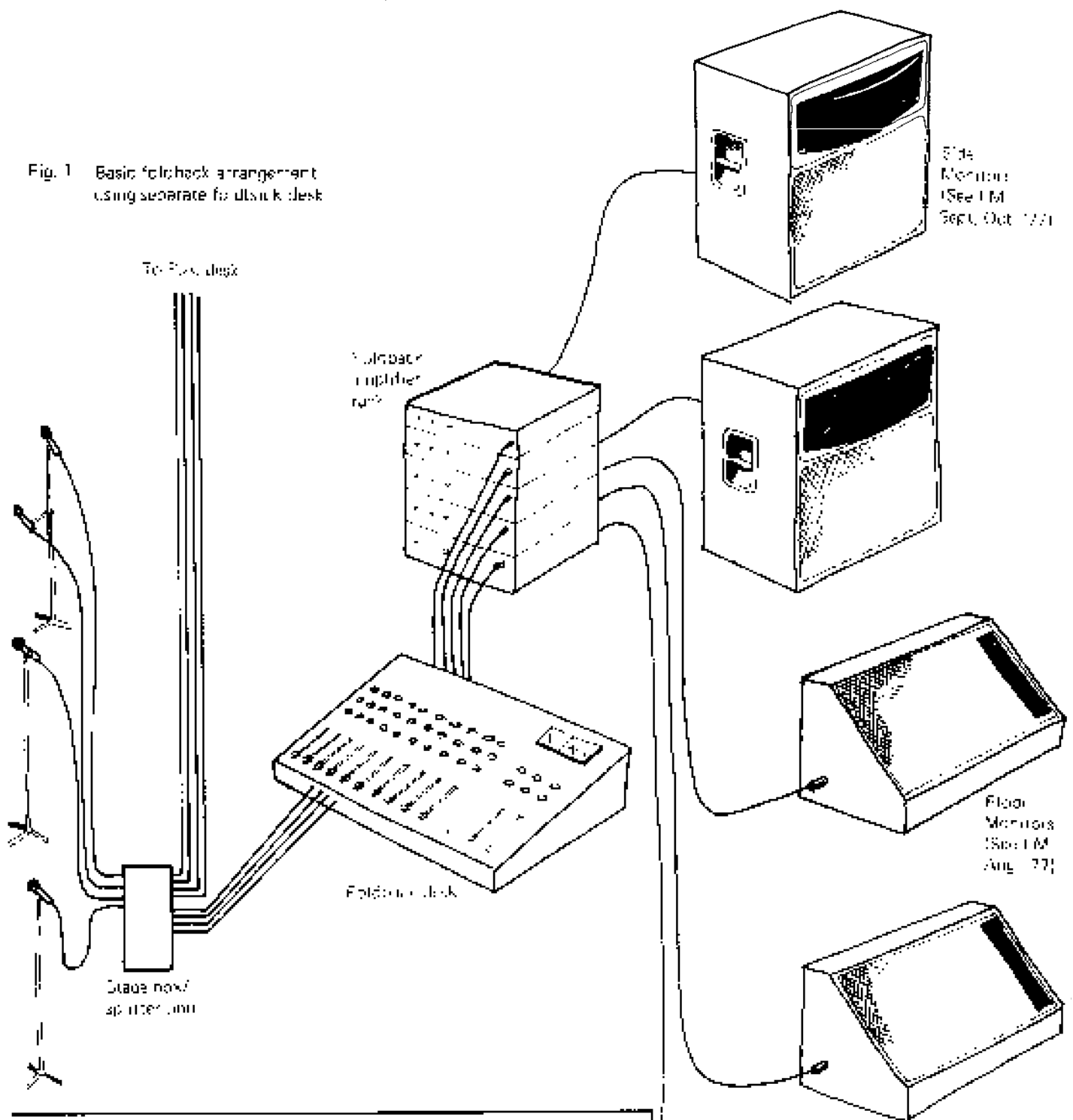
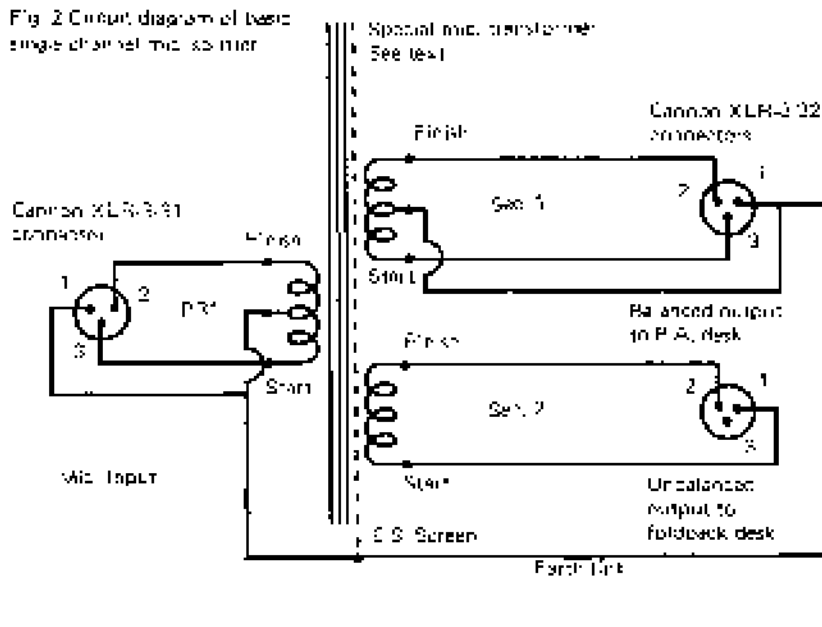


Fig. 2 Circuit diagram of basic single channel mic. as mixer



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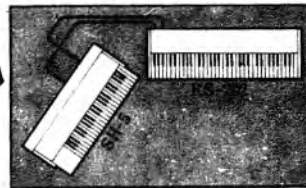
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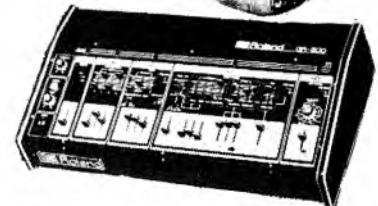
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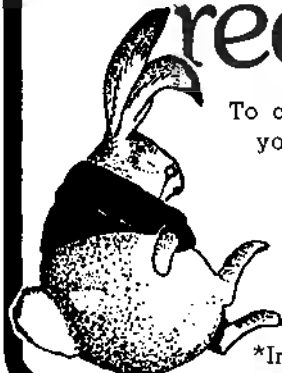
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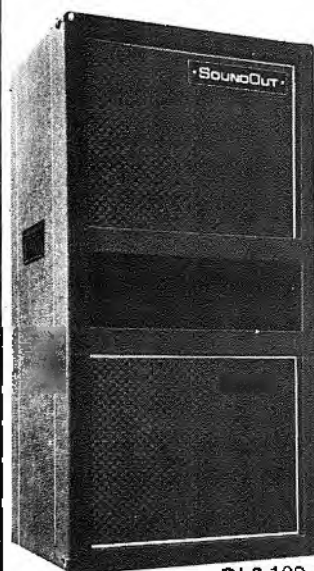
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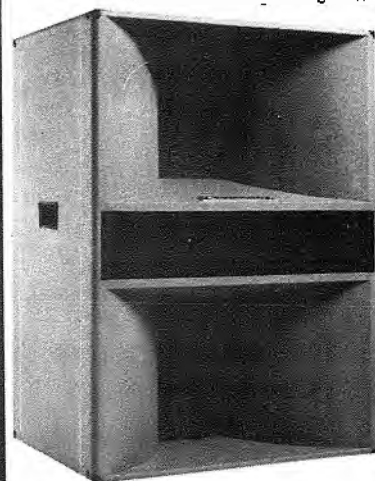
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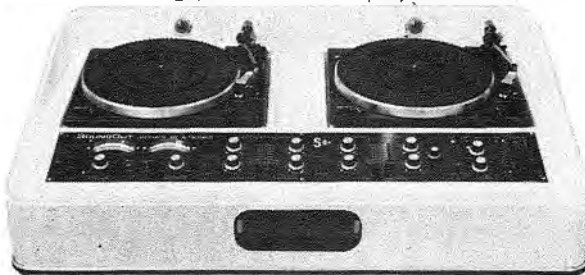
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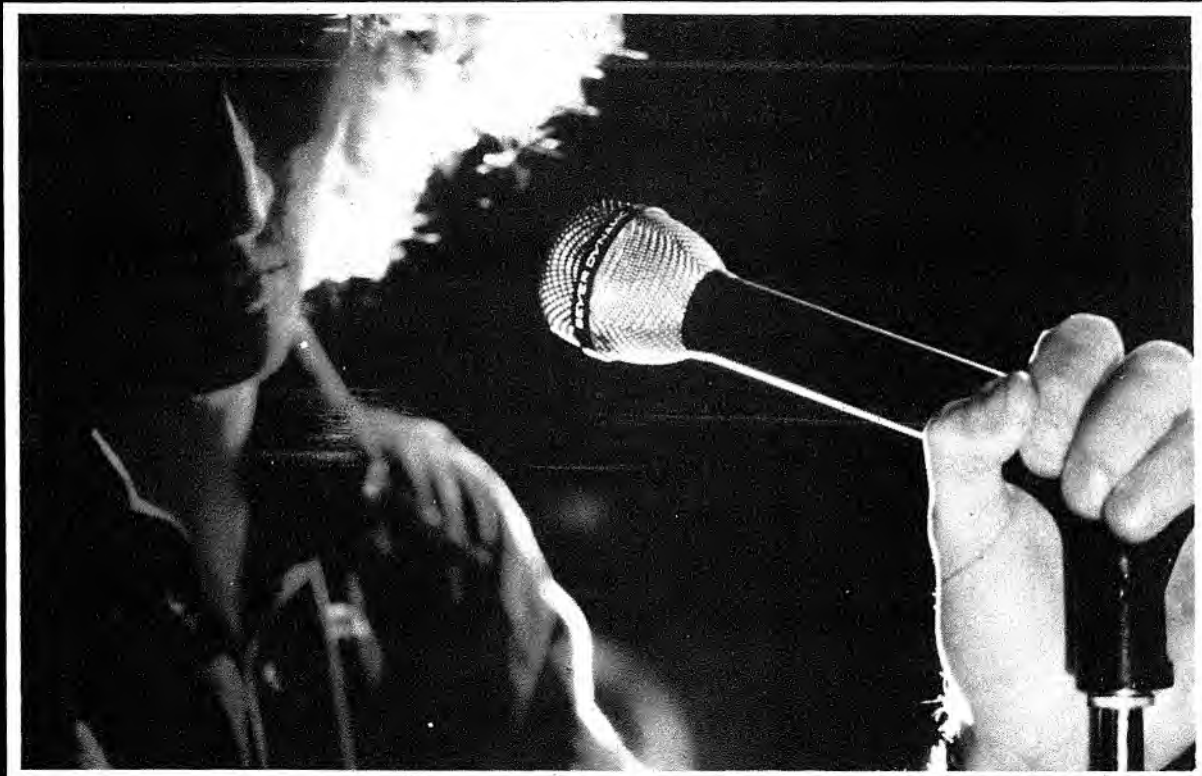
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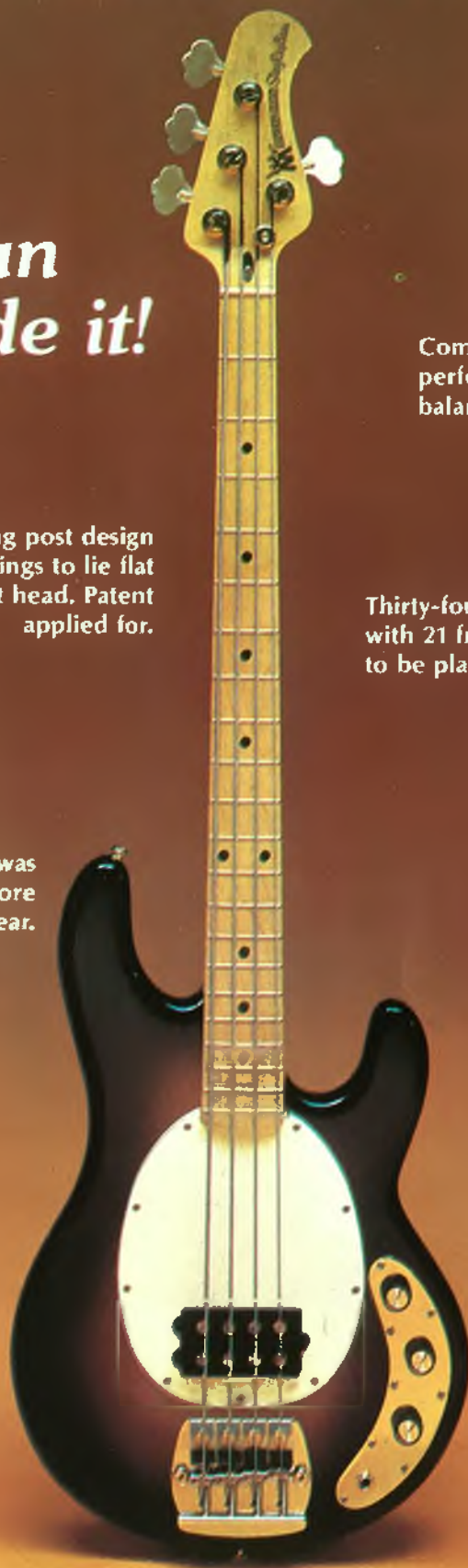
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