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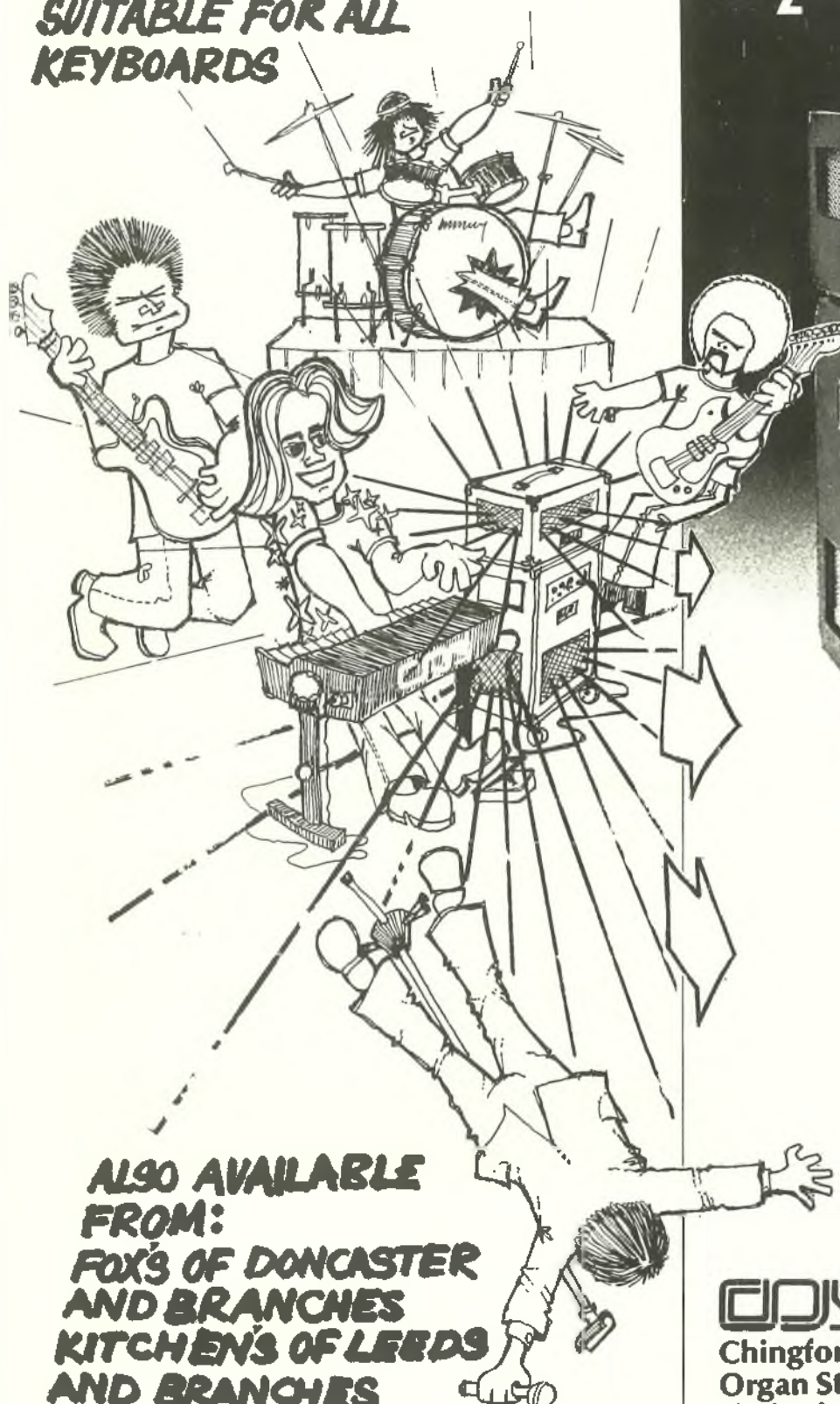
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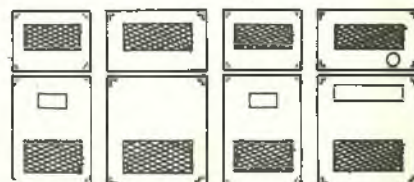
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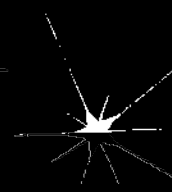
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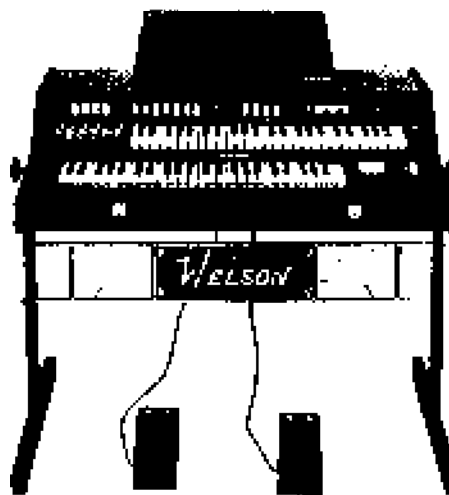
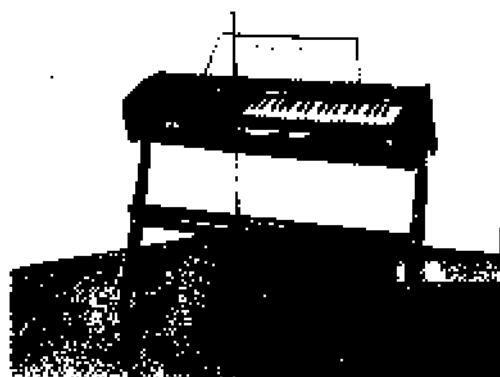
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# Contents

# Contents



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## Editorial

For International Musician you might read Practical Musician — this month we feature two important build-it-yourself projects: Build a Solid Guitar (page 132) and Build a Fuzz Box (page 78).

UK musicians suffer from inflation and the sagging pound, US readers seem OK and even our Australian readers need to save the odd dollar. That's who we're running these articles for, we also think that understanding how something is built leads to greater understanding of the instrument or item of equipment itself.

Do yourself a favour and collect all issues covering these subjects. Last year we ran several "Build" projects and, since then, we've been inundated with requests for "a missing part" of the series. Many of our back issues are totally out of print and recently an advert appeared from a German enthusiast in a British weekly music paper asking for back copies of I.M. at twice the usual cover price. Elsewhere in this issue you'll find an ad for a hard-back binder, this will help you protect your investment.

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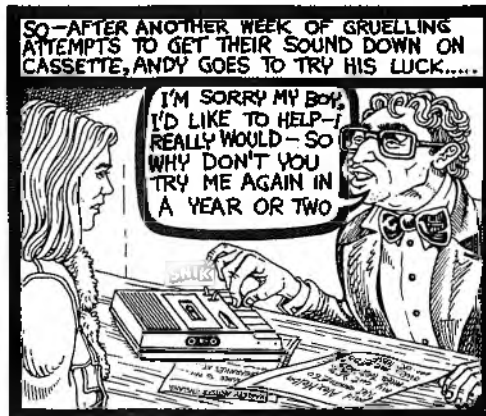
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# So You Want To Be A Rock 'n Roll Star

BY DAVE BOWYER

The story so far: It's time for the band to find their first gig but it's not that easy.



VI JANUARY



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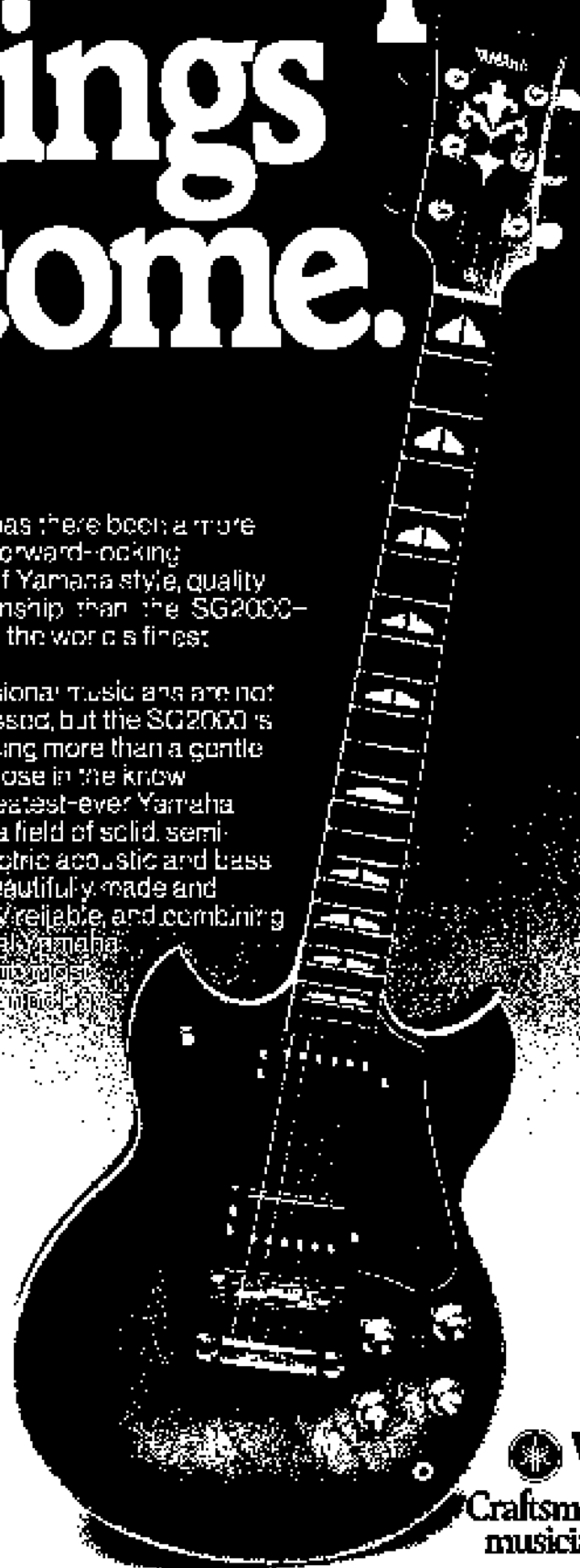


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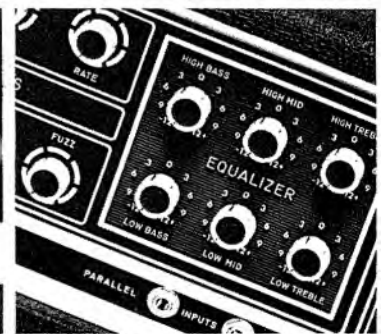
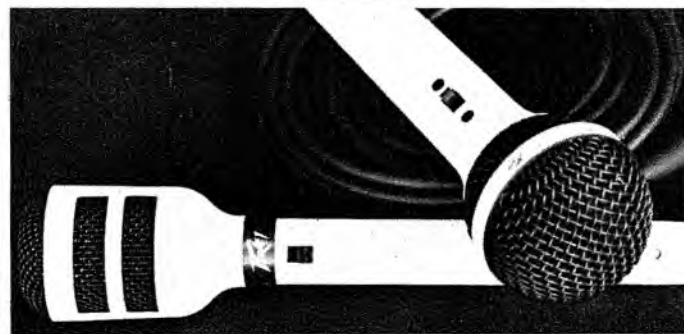
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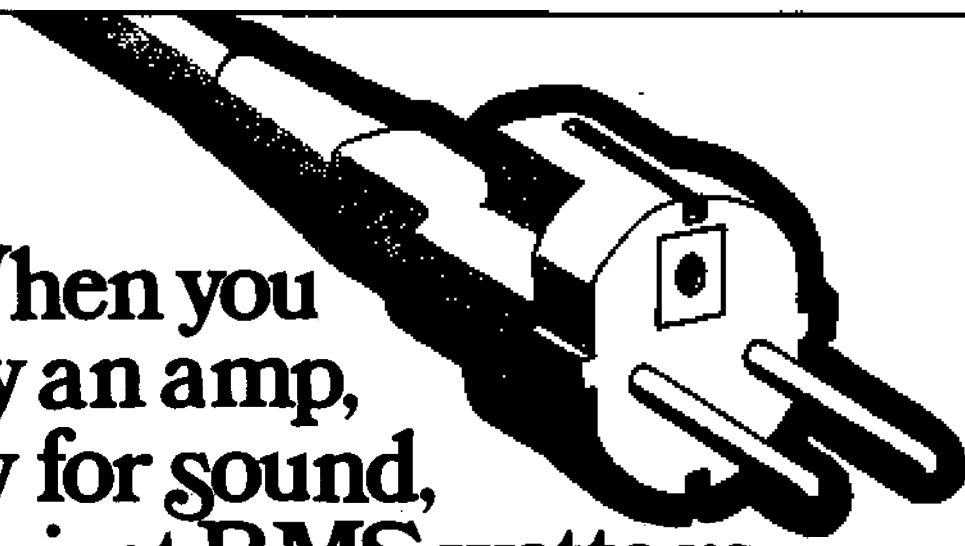
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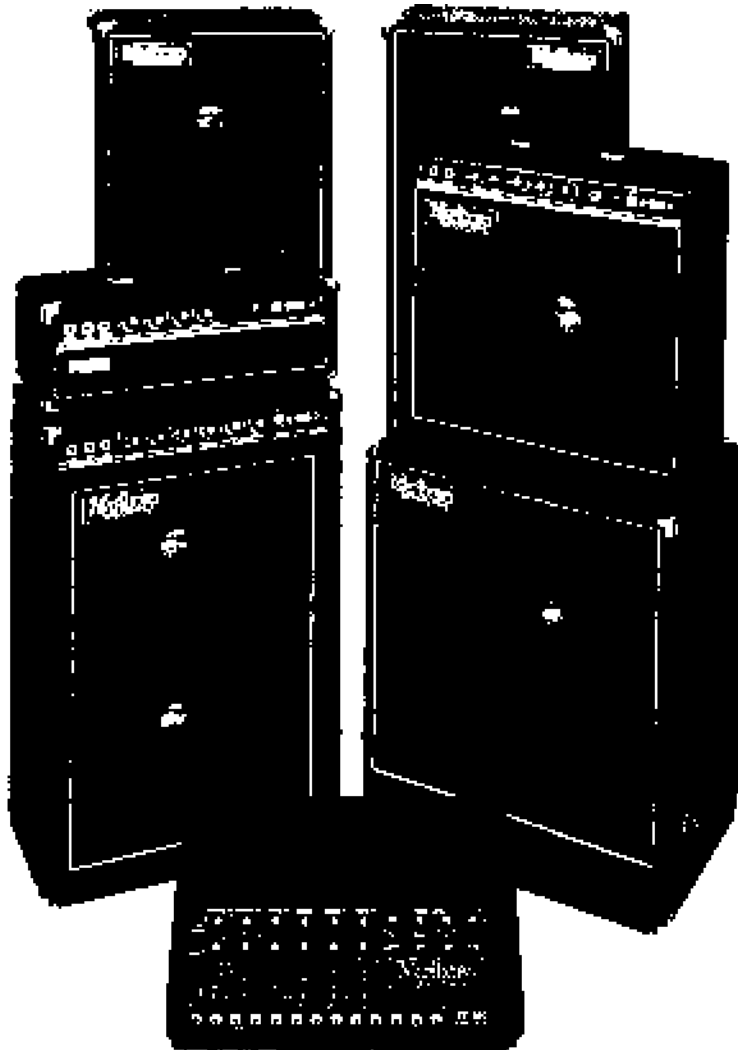
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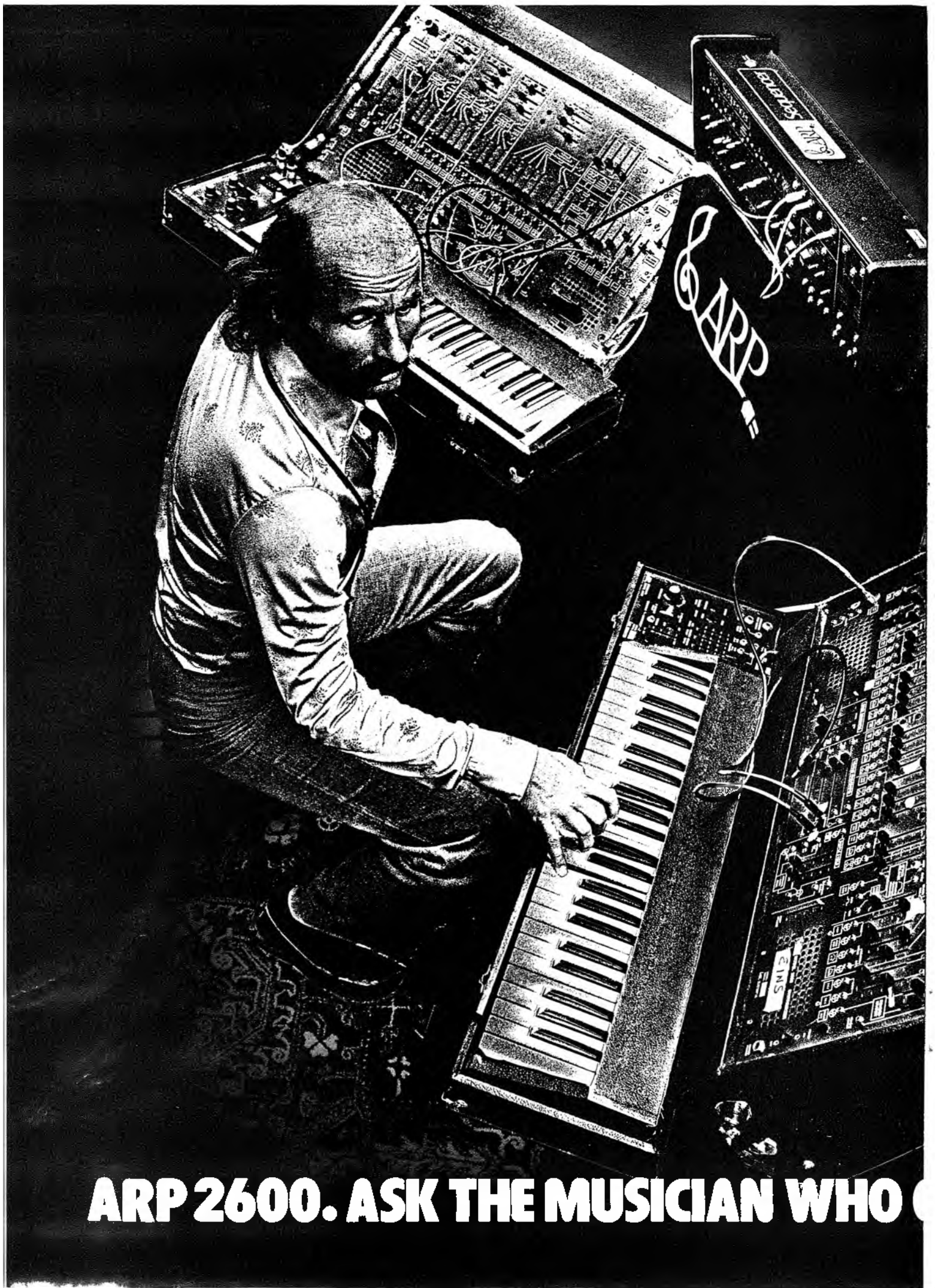
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Joe Zawinul's enchantment and musical success with the ARP 2600 speaks favorably for the instrument's famous "human engineering" concepts and musical flexibility. The 2600 control panel permits fast visual and physical access to every synthesizer function. A musician can alternate between pre-wired connections for "live" work and patch cord over-ride for more complex studio sounds and effects. The combinations of electronic music functions are endless. And the inspiration provided by such unlimited sound potential cannot be translated into words — only music.

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# International Musician **NEWS**

## Gizmo 'Concept' Planned

FOLLOWING ON the story of the split in 10cc half of the band – Lol Creme and Kevin Godley – are hard at work on the album which will introduce the 'Gizmo' to the public.

Entitled 'Consequences,' the work will now stretch over three albums, and it is a complete story and musical idea in its own right.

Lol told IM: "We've had the story for some time, but it needed some special sounds and sound effects, which the gizmo seems to be able to create, so it's killing two birds with one stone, being a demonstration record for the instrument at the same time.

"When we have finished the record, there will be a stage show as well, which is planned to be temporarily global – the story board, which includes the choreography and various other ideas – is done and all the

preliminary arrangements have been made. We might be involved in the live show ourselves, or we might prefer to watch other people doing it.

"But at the moment, we are concerned with getting the album done. It's taken us five months to finish one side, so we're working 18 hours a day, seven days a week to try and get things finished."

The album is being recorded at Strawberry Studios, Stockport, and the instrument is expected to be on the market during 1977. It will be manufactured by Musitronics, and the price is expected to be somewhere between £75 and £100.

## Meal Ticket

MEAL TICKET, one of the most popular bands on the pub/club circuit, last month signed a recording deal with the newly-formed O & H label. The label is the brainchild of Olav Wyper and Geoff Harrington, and the principal shareholders are Marshall Cavendish. Geoff was formerly Managing Director of RCA Records and, prior to his move to Essex Music as Creative Manager, Olav was General Manager with RCA. The band, consisting of Ray Flacke (guitar), Steve Simpson (guitar, mandolin, fiddle), Rick Jones (keyboards), Jack Brand (bass), Chris Hunt (drums) and Willie Finlayson (guitar), are busy recording tracks for an album and single to be released in April.



## Island Sign Ultravox!

NEW BAND Ultravox!, who toured with Eddie and the Hot Rods in 1976, have been signed to a long-term recording and publishing contract by Island Records.

The band whose material is written by lead singer John Vox, have their first single out in the second week of

January, with an album, co-produced by Brian Eno, Steve Lillywhite and the band, released in February. The band, described by Island as "rock'n'roll with an IQ" will be back on the road in January for a University tour with the Hot Rods.



## BRONZE SIGN HERON

HERON, THE band led by former Incredible String Band member Mike Heron, has been signed by Bronze. Their debut album, 'Diamonds Of Dreams' is released in January. The album coincides with the release of a double-album String Band compilation on Island.

## Stranglers To U.A.

PUNK BAND the Stranglers, signed to United Artists, have their first single released in late January, and a live album recorded at London's Nashville in December should be out in February.



# Willis Fights For Record Lending Rights

LORD TED Willis has pledged to continue his fight to reverse the Government's ruling not to include records and tapes in the provisions of the Public Lending Right Bill, which was drawn up to ensure payments to authors of books borrowed from public libraries.

Lord Willis, vice-president of the Songwriters' Guild, says that the amendment extending the legislation to include recorded product has the support of Labour, Conservative, Liberal and Scottish Nationalist MPs in the House.

However, Margaret Jackson, the Under Secretary for Education and Science, told the Commons that the Government felt that the widening of the scope of the bill was unacceptable in order that proposals which were known to be practicable should be kept down to reasonable costs and implemented soon. She added that in 1974, only 1.5 per cent of the total issues from public libraries concerned records and tapes.

## Atlantic Promotion

DAVE GLEW, formerly senior vice-president of marketing, has been promoted to senior vice-president/general manager of Atlantic/Atco records in the States. Glew has been with the company for seven years.

## SWAN SONGS

THE SIXTIES reggae label Black Swan has been re-activated by Island. A single and album, both called "Bionic Dread" by Dillinger are the first release.

# ANTI-PIRATE LAW URGED

MICHAEL FREEGARD, general manager of the Performing Rights Society, warned delegates of CISAC — the Confederation Internationale des Societes d'Auteurs et Compositeurs — that authors and composers must band together to establish collective licensing machinery to ensure continued control over the use of his works.

Freegard laid special emphasis on 'piracy' as an aspect of technological advance: "It gives rise to a

most urgent need for legislation to enable the authors' societies to act far more swiftly against infringers than is at present under many of the outdated copyright laws in force.

"Simplification of legal proceedings, and the widespread provision of severe criminal penalties, as well as civil remedies for infringement, are urgent contemporary considerations to be borne in mind by copyright legislators."

# Songwriter's Earnings Have Increased

ROGER PARKER, QC for the British Phonographic Industry, speaking before the mechanical copyright tribunal recently, claimed that songwriters' and publishers' earnings have increased more in the last ten years than the profits of the record manufacturers.

The Tribunal is hearing a plea from the Record Royalty Revision Association for a higher mechanical royalty rate, while the BPI argues that they should take a cut from the present 6%.

Alluding to written evidence, Parker pointed out that while the artists' royalty percentage had gone up more than the writers', copyright owners still benefitted through the records' increased selling price which resulted,

Parker made the point that the star was the draw (during cross-examination, Tony Hatch had stated he would rather earn 3% on an Elton John record than 6% on that of an unknown), and refused an RRA claim that costs were not relevant to the fairness of the mechanical royalty rate.

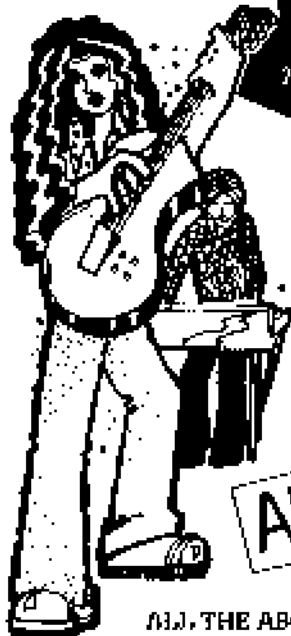
Both the BPI and the RRA rejected the possibility of attempting to categorise different types of music with different statutory rates.

Parker referred to a report prepared for the BPI, which stated that the average royalty per composition was 1.165p in 1975 compared to .641p in 1956, when the minimum royalty figure was agreed by Parliament.

# GRAINGE FORMS ENSIGN RECORDS

NIGEL GRAINGE, head of A & R for Phonogram, whose successful signings include Thin Lizzy, Twigg and the Steve

Miller Band, has left the company to set up his own venture, Ensign Records.



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Pearl Rock Kit (wood/f. glass)	450.00
Pearl full dimension (wood/f. glass)	540.00
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Rogers Starlighter IV super 10	375.00
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Xylo-D'Etude 3 oct	168.00
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## CYMBALS

Paiste 602, Paiste 2002, Ufip, Izmir, Hayman, Avedis Zildjian, K Zildjian, Tosco, Paiste Gongs/Ufip Gongs.	
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## LATIN AMERICAN

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## ELECTRICS

Fender Strat Trem White	265.00
Fender Jazz Bass M/Neck Nat.	280.00
Gibson Les Paul Deluxe	430.00
Gibson Les Paul Special Ltd Edition	495.00
Guild S100 – White	250.00
Large range of copies	

## ACOUSTIC

Guild F30	220.00
Epiphone FT 145	80.00
Yamaha FG180	92.00
Fender F85	95.00

## AMPLIFIERS

Fender Super Twin	385.00
Fender Bassman 50	295.00
Vox AC30	210.00
Fender PA100	390.00
Roland JC160	445.00
Marshall 30 watt Combo	135.00

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Fender Stage 73	760.00
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# Pearl Family

## Pearl on TV

TV EXPOSURE for Pearl has soared to a new peak recently. Out in front has to be BBC's recent "Omnibus" about rock workshop music. In the programme, Glyn Thomas, Pearl's new promotions manager, played Pearl percussion instruments and talked about the instruments. Included in the section were congas and tablas.

On Granada TV's recent "Saturday Scene," Bob Henrit, drummer with Phoenix, talked about his Pearl necklace. This is the now famous necklace of miniature drumsticks that is available only to Pearl drummers. Viewers were so enthusiastic about the necklace that a competition was held on the spot and hundreds of replies were received to win six Pearl necklaces.

Director of the show, Mike Smith can currently be seen in only the most trendy establishments wearing Pearl necklace - a special gift from Bob.

The ATV programme which features the Arrows regularly, uses a Dyna-Family Pearl kit each Tuesday.

Another TV first was on "Swapshop" featuring Noel Edmonds and Dave Mount of Mud. The subject of a five minutes televised conversation was - Pearl necklaces.



## PUNKS ON PEARL

EVEN THE punks demand the best when it comes to drums. The Damned, one of London's leading punk bands, chose Pearl when it came to deciding on drum kits.

The band have taken delivery of a wood/fibreglass Powermate kit finished in Snow White and have taken it on their recent headlining UK tour.

Rhythm is at the basis of punk rock. Perhaps more than any other factor, a fresh attention to rhythm has given the movement its momentum and Pearl are delighted to provide the means.

## Pearl Switch



STILL MORE top bands are switching to Pearl! That the announcement made recently by Pearl's UK promotion man, Glyn Thomas.

Phoenix, the band formed by ex-Argent members Bob Henrit (who's also International Musician's drum consultant), Jim Rodford and John Verity, are currently touring the European capitals with a full Pearl set-up and they are about to undertake a States tour.

Drummer Bob Henrit has been a convert to Pearl for quite some time. He's had many compliments about his black Pearl kit and the drums included are a mixture of fibreglass and wood/fibreglass. Some tom-toms are single headed.

The band recently released their first album, "Phoenix," on the CBS label, and a single, "Easy," has been released in the last few weeks.

## KAT KRAZY FOR PEARL

KRAZY KAT, one of the hottest new signings to Mountain Records, have opted for a Pearl drum kit. The band, which includes three members of much respected band Capability Brown, have a rock-kit.

Also on Pearl are Landscape, the winners of a recent UK contest for a band with the best live sound! The band say they owe winning the award - The Vitavox Sound Award - to the sound made by their Pearl kit and they now have £1,500 to enjoy.

Also currently on Pearl are Mud, Deaf School's Tim Whittaker, Jeff Allen with Barbara Dickson, and Arrows.

Also currently on Pearl are Richard Burgess, Landscape, Andy Ward, Camel, Paul Varley, Arrows, Barry Ford, Clancy, Art Morgan, Bob Henrit, Phoenix; John Gilson, Heron; Martin Drew, Russ

Briant, Akker Bilk; John Burnip & Vic Chaulk, "Mr. Big;" George Barr, Duce; Brian Hudson, Sparrow; Pete Meritt, Lonnie Donegan; Terry Jenkins, Tom Jones, Tony Crombie, George Fame, Andy White, Bill Eyden, Joe Loss, Dave Mount, Mud; John Richardson, Rubettes; Robert 'Congo' Jones, Sassafras; Gerry Evans, Freddie and the Dreamers; Rod Coombes, The Strawbs; Kenny Hislop, Slik; Jeff Allen; Tim Wittaker, Fid Little, Bilbo Baggins, Rat Scabies, The Damned; Greg Terry Shot, Asylum; City Boy, Simon King and Alan Powell, Hawkwind; Peter Van Hoek, Rock Follies; Gerry Husband, Syd Laurence, Les Binks, The Eric Burden Band; Chris Karan; Alan Boughton, Cesars Palace; Bobby Worth, Talk of the Town and Bob Jenkins of the Surprise Sisters.



# NEW PEARL MIKES

YOU CAN have everything it takes — a good voice, good looks, poise, confidence, the right songs and a good band — and you get out there and the bloody mike doesn't work!

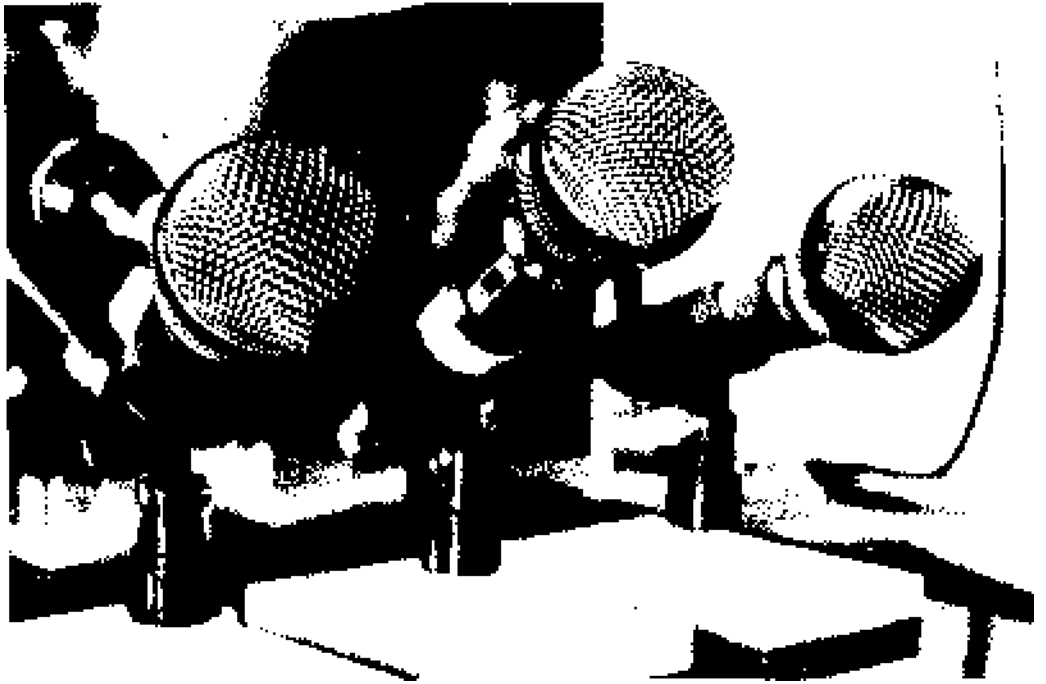
If that's ever happened to you (and it's happened to most at some time or other) you really need to soak in the information about the new range of Pearl mikes.

There's only one way to find out about a mike, that's to plug it in and try it and for that reason we're not going to drone on about how they're the best, don't give feedback problems and have a great sound, instead we've asked Pearl dealers to allow everybody who wants to know to personally try out the mike and decide for himself.

Pearl have designed their microphones for band use. They're not the more delicate types that have been sold for road use as an afterthought, they're made to handle the load.

## ALL NEEDS

The mikes in the Pearl range cover all costs and all needs. Top of the range is a new dynamic microphone called the DM-7500. This mike is very uni-directional and this helps a great deal on cutting down feedback. Feedback has always been a major problem for vocalists and often the real cause of feedback is a microphone which is as sensitive round the back and at the sides as it is in front. This means that the mike picks up the sound from the PA speakers either side and this causes feedback. The Pearl mike, however, has it's most sensitive spot right on axis with the mike head and elsewhere the sensitivity is way down. Try this out in your local music shop: Get the DM-7500, plug it into an amp and turn the amp up. Put the mike close to the speaker facing directly towards the sound and you'll get feedback. Slowly turn the mike to one side and very quickly the feedback will reduce. The degree of this reduction is the key to Pearl



anti-feedback characteristics!

It's equally important that a mike should sound right, and the same sort of care and attention that has gone into the making of Pearl drums, amps, keyboards and (now) guitars has been taken on the mikes. The DM-7500 is a dual-impedance mike with a 600 ohm head and a high impedance matching cable. It comes complete with swivel head (for the stand) and a carrying case. An on/off switch is integral.

As with all things Pearl, there's a real choice of mikes. The dynamic range also offers the DM-7000 and there's a really good condenser range with three mikes now available; the CM-500, the CM-4000 and the CM-3000. Two new condensers are coming soon, they are the CM-2000 and the CM-1000.

## EFFECTS PEDALS

The guitar is much more than a stringed instrument now that the age of electronics technology has arrived; In the last few years micro-circuitry has offered the musician sounds he'd only dreamed of before and because of advances made in ICs (Integrated Circuits) and LSIs (Large Scale Integrated Circuits) it's possible to put a whole new dimension of sound in a metal box just a few inches cube.

Pearl has unleashed its mighty resources on designing such items and today the company announces the launch of a range of effects

units priced reasonably enough to allow musicians to add several of them to their standard guitar amp set-up.

Musicians who have been lucky enough to try out the range of Vorg amps by Pearl know all about the wonderful effects units that are built into these amps. Now these same effects units are available in pedal form for musicians who have not yet got their Vorg or who want additional effects. Perhaps the best known Pearl effect is the Phaser. This beautiful unit will shortly be available, along with all the other famous effects, in pedal form.

# PEARL VORGS

THE HEART of almost all bands today is the back line amplification. From this source, emanates the sound heard by all audiences (even if it is re-amplified via a PA) and choosing the right amp to go into a back line has long been a source of concern to choosy musicians. Pearl took some time to introduce Pearl amps to the European market and a considerable amount of time was concerned with getting the amps right. Now there's a vast range of Pearl amps — all finished in popular American styling — and every electric instrument is catered for. No less than six combo amps are marketed by Pearl. These range from V-051 50 watt combo to the mighty V-120GX which delivers 100 watts via two 15" speakers.

Providing the musician with a real choice is Pearl's aim in almost every marketing operation they undertake, and this is clearly underlined with Pearl combos. The V-051 and V-052 both use 12" speakers (the 052 delivers 100 watts) and these are designed for the guitarist or keyboard player who needs to keep his equipment ultra-portable. The V-101 and the V-102 both deliver 100 watts via two 12" speakers but the V-102 has an envelope time phase-shifter built in to channel 2. Both V-101G and the V-102GX put out 100 watts through two 15" speakers and the 102GX has built-in phase.

International Musician recently tested the Vorg V-102 here's their conclusion.

## CONCLUSION

The amplifier is versatile and ideal for musicians requiring a wide range of facilities on their amplifier. The price of £298 includes V.A.T., a double foot-switch, add-on castors, a built-in mains lead and a waterproof cover, and for my money (considering the extra Phase Shifter facility) this must be a good buy by any standards. This is also the first product that I have reviewed from Pearl and I was extremely curious to see if the Japanese had made any significant improvements on the vast range of combination amplifier products on the UK market. The answer is in fact that I am impressed and it is no wonder that the Japanese have an export boom with attractive modern products such as this



Bass players have always faced a problem of finding an amp good enough to reproduce the heavy bass end of the frequency spectrum. The VB-101A (and VB-101S) have been specially designed for bass players. Through a newly-developed circuit for bass and presence control, this amp offers bass players depth of sound never before obtainable. Output is 100 watts delivered via two 15" speakers and, like all Pearl amps, it's mounted on castors for easy moving.

For the musician who, for one reason or another, prefers separate amp heads and speaker cabinets, Pearl make the V-101A and V-102A amp tops. Both offer 100 watts output but the V-102A has a built-in phase-shifter. The V-101S is 2 x 15" enclosure and it's capable of handling 200 watts.



# MAPLE PEARLS

HAVE YOU ever noticed how awkward drummers can be. It's always the drummer the joke's about and probably there's some real reason for this. Pearl drums offer the drummer some stunning choices. In fact the company offers the widest range of shell materials available from any one company today. The range of finishes is also fantastic. But drummers want more; and instead of complaining Pearl are happy to increase the options!

Latest range of drum shells is natural maple wood, and it's very understandable. Maple is one of the hardest woods available in the world. The leaf is the national emblem of Canada and the "rock hard" maple is an ideal material for producing really gutsy sounds — it's widely used in the new Pearl guitars where reliability is absolutely essential.

The maple shells have a really good interior finish and they are available in all the usual exterior Pearl finishes.

Pearl maple drums are available now!

How's your guitar — getting a little long in the tooth, a bit scratched up, perhaps not exactly the thing to take on stage with you? Musicians so often find it hard to choose a new guitar, so Pearl thought it might be nice to offer the guitarist a really good choice.

You won't have seen Pearl guitars before — they're brand new! You know all about Pearl drums of course, and Pearl amps, and mixers and mikes and flutes and keyboards — well now it's about time you found out about Pearl guitars.

Pearl launch their guitars with no less than 27 different models and the guitarist who can't find the right instrument among that bunch really does want something odd.

Many guitarists find a guitar they like and discover it hasn't got the right neck — for instance a good Stratocaster type guitar might have a Rosewood finger-board when the player wants a maple one. Pearl have tried to offer as many options on the same model as possible.

There are two main ranges of guitars — electric and acoustic (the semi-acoustics are included under the electric heading). These instruments will be available from your local music dealer shortly and it is expected that there will be a considerable rush to get the most popular models.

One of the things that Pearl are insisting on is complete pre-delivery check. In recent years guitarists all over the world have placed increasing importance on well set up instruments and have been rejecting many new guitars in their search for "playable" examples.

Pearl is passing every guitar through professional hands before it reaches the music shop. Here each instrument will be individually examined for many things. Finish: a total examining of all aspects including checks of hairline cracks in paint work and spots on metal parts. Tuning: an examination to ensure that each fret is in exactly the right place, that the bridge is tuned correctly and that nothing else could cause tuning problems. Neck stability: each guitar is fitted with a truss-rod to ensure long-term neck straightness, but each guitar is individually checked to ensure necks are correct. Electrics: tests are run on pickups and wiring to make certain that the hand-built circuitry is as it should be. Woodworking: all guitars are examined — almost microscopically — to ensure that there are no woodworking defects like bad neck/body joins or weak heads. In this way Pearl ensure that you will be able to take any Pearl guitar off a wall and, other than having to tune it, you should find it totally playable. In this way every Pearl guitar will be equal to its brother. How good you are then depends only on you!

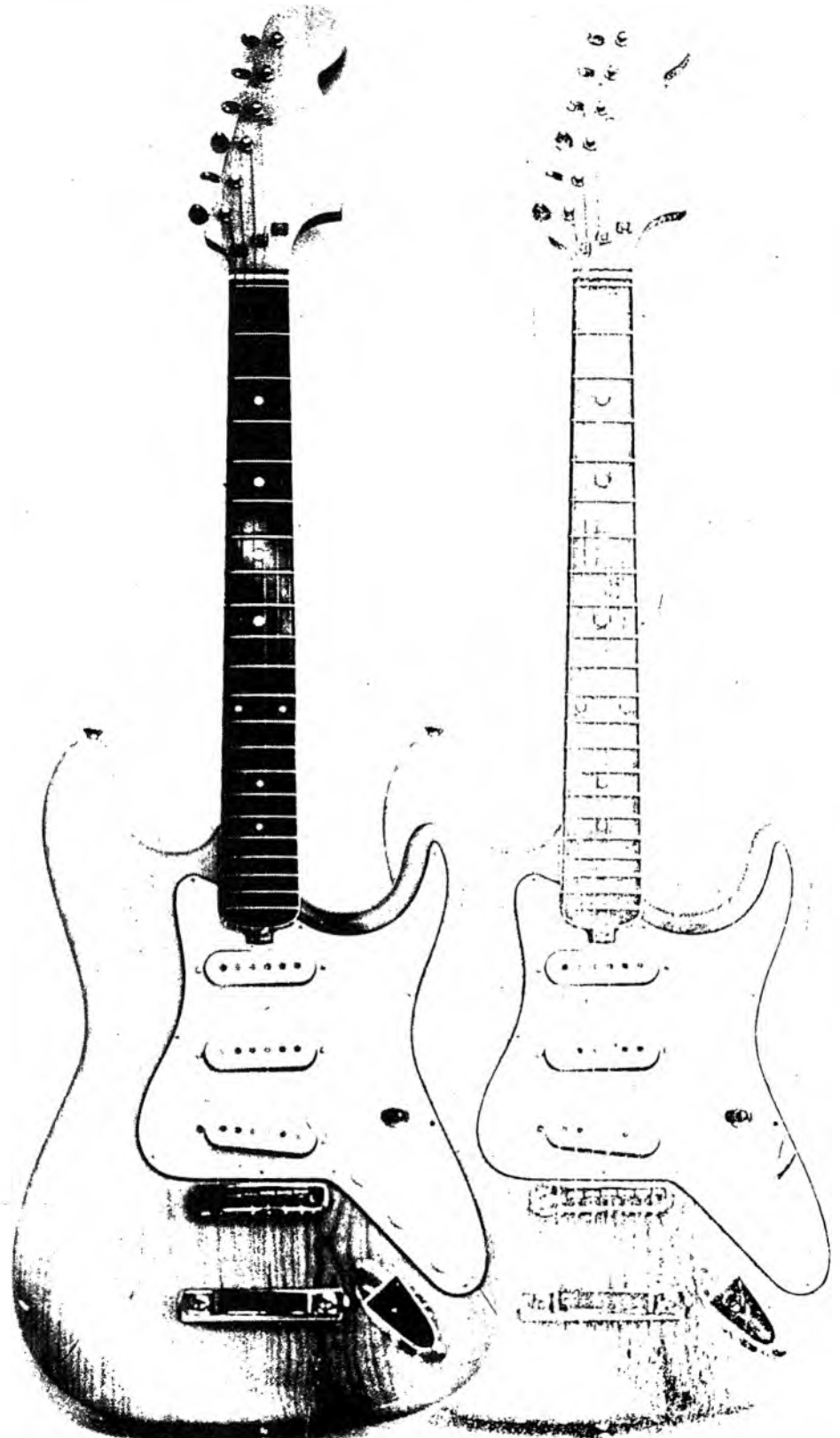
In deciding which guitar types to offer Pearl have spoken to guitarists all over the world. It is now accepted that certain guitar shapes are popular not because of fashion, but because of practical considerations. The shape and size of a Les Paul (for instance) contributes much to the sustaining qualities and it's clear that if a solid sound and sustain is required then deviation from the design should be minimal. A Stratocaster type, on the other hand, requires certain slimming of the body wood to create that "middle" sound that is so popular; thus guitars designed to produce this type of sound will always appear similar. A violin looks like a violin because that's the best shape

# 27 NEW PEARL

for the tone. The search for new shapes continues, but variations on a theme usually mean a deviation on a theme and Pearl's policy is to make the best even better.

Pearl offer the new guitars in total confidence. But recognising that the best laid plans of mice and men aft gang etc.,

Pearl have laid on a super service plan. This means that guitarists who choose Pearl can rest easy in their beds in the knowledge tht if the worst should happen there's a local service centre available who can deal with problems fast and efficiently.





# GUITARS LAUNCHED



## “PEARL VORG 8” PROFESSIONAL GUITARS ACOUSTIC

Model	Top	Back & Side	Neck & Fingerboard	Machine heads	Finish
1250	Spruce	Rosewood	Nato & rosewood	Individual covered	Natural
1350	Spruce	Rosewood	Nato & rosewood	Individual covered	Natural
1400	Fine grained spruce 1 pc	Rosewood	Nato & rosewood	Diecast rotomatic	Natural
1500	Fine grained spruce 1 pc	Rosewood	Mahogany & rosewood	Diecast rotomatic	Natural
1600	Fine grained spruce 1 pc	Rosewood	Mahogany & rosewood	Diecast rotomatic	Natural
1800	Fine grained spruce 1 pc	Rosewood 1 pc	Mahogany & rosewood	Diecast rotomatic	Natural
2250	Spruce	Mahogany	Mahogany & rosewood	Individual covered	Natural, Cherry sunburst
2300	Spruce	Maple	Maple & rosewood	Individual covered	Natural, Cherry sunburst
2400	Fine grained spruce 1 pc	Mahogany	Mahogany & rosewood	Diecast rotomatic	Black sunburst
3350	Spruce	Rosewood	Nato & rosewood	Individual covered	Natural
3500	Fine grained spruce 1 pc	Rosewood	Nato & rosewood	Diecast rotomatic	Natural
3800	Fine grained	Rosewood 1 pc	Nato & rosewood	Diecast rotomatic	Natural

## ELECTRIC

Model	Body	Neck	Fingerboard	Pick-up	Machine-Heads	Scale	Finish
G-110	Ash 1 pc		Maple 1 pc	3 wide-range high-fidelity	Chrome, Rotomatic	25 1/2	Natural Sunburst
G-111	Ash 1 pc	Maple	Rosewood	3 wide-range high-fidelity	Chrome, Rotomatic	25 1/2	Natural Sunburst
G-120	Ash 1 pc		Maple 1 pc	2 high-fidelity	Chrome, Rotomatic	24.7	Natural Brond
G-121	Ash 1 pc	Maple	Rosewood	2 high-fidelity	Chrome, Rotomatic	24.7	Natural Brond
G-130	Ash 1 pc		Maple 1 pc	2 deluxe-humbucking	Chrome, Rotomatic	24.7	Natural Brond
G-211	Maple/Mahogany	Maple built-in	Rosewood	2 pro-humbucking	Chrome, Rotomatic	24.7	Cherry Sunburst Gold Top
G-221	Maple/Mahogany	Maple built-in	Rosewood	2 pro-humbucking	Chrome, Rotomatic	24.7	Cherry Sunburst Black
G-231	Natowood 1 pc	Maple built-in	Rosewood	2 deluxe-humbucking	Chrome, Rotomatic	24.7	Winered Walnut Venered
S-111	Maple	Maple built-in	Rosewood	2 pro-humbucking	Chrome, Rotomatic	24.7	Sunburst Winered Walnut
F-111	Maple	Maple built-in	Rosewood	2 pro-humbucking	Chrome, Rotomatic	24.7	Sunburst
B-110	Ash 1 pc		Maple 1 pc	1 Bass	Chrome, Deluxe	33.9	Natural Sunburst
B-111	Ash 1 pc	Maple	Rosewood	1 Bass	Chrome, Deluxe	33.9	Natural Sunburst
B-120	Ash 1 pc		Maple 1 pc	2 Bass	Chrome, Deluxe	33.9	Natural Sunburst
B-121	Ash 1 pc	Maple	Rosewood	2 Bass	Chrome, Deluxe	33.9	Natural Sunburst
B-211	Birch	Maple	Rosewood	2 Bass	Chrome, Die-cast	33.9	Natural Cherry Sunburst/Green Sunburst

# Pearl P.A. Made in UK

PEARL PA cabinets are to be built in Great Britain!

This boost for UK comes as musicians are being squeezed harder than ever before over the prices of PA cabinets and it means that as well as offering musicians real value for money, Pearl will be bringing employment and prosperity with them.

The components for the PA cabs are all Pearl. Pearl chassis speakers, crossovers and horn units will be shipped in bulk from Japan

and will be incorporated into cabinets manufactured by Leech Manufacturing in Manchester. It's a similar deal to that set up between Datsun and Chrysler UK in which parts are shipped here and assembled on the spot. In this instance it's British workmanship that will be creating the cabinets!

The cabs themselves are similar in design to the American type set-ups. This means that musicians can rely on well proven designs.

## New Pearl Echo Unit

Have you really listened to Queen. Like so many top groups today they rely on echo to create their sound and, like so many groups, they've had problems with various echo units.

Seeing this problem the Pearl scientists set to work to produce a really superb echo unit. Everyone said the echo had to be deep and long, but controllable so that it could also be short and sharp and building in this versatility has been Pearl's main task.

Now musicians will be able to add a Pearl echo unit to their range of Pearl products. Like everything else Pearl, the unit is the best, but the price has been kept right down so that the group at the beginning of its career will be able to afford an echo to keep right up their with the biggest bands in the world.

Commenting on the new unit, Gerry Evans, European Marketing Director of Pearl said: "Echo's an expanding market and we realised it was wide open for a unit that worked well and reliably. We've managed to do this and still keep the price down and I'm sure it will be an absolute winner."

## Pearl Original Guitars

AS ANNOUNCED elsewhere in this issue of the Pearl Family, a new range of guitars has been launched by Pearl. Pearl have also launched a range of ORIGINAL guitars, designed throughout by Pearl and intended to offer the musician who's looking for something a little different the widest possible choice.

There are three new entirely original Pearl guitars. They are solid electrics and UK musicians will be able to play them by March or April this year in all Pearl dealers.

# PEARL PROMOTE



THE WORLD is switching onto Pearl! The famous Pearl drums and percussion items are leading the revolution and the man steering the promotion ship in the UK is well-known session percussionist Glyn Thomas.

Glyn's been a player for more than a few years, starting out in heavy rock with various "name" bands on the British "beat" scene and in recent years he's spent his drumming life inside the world's top recording and broadcast studios laying down the rhythm for hit after hit. Today, he's still making hits — but none so big as he's making for Pearl.

Glyn is Norlin UK's Pearl percussion promotion man. He's opened his home and his heart to the country's percussionists and they've responded by listening to him rave about Pearl and by switching over to the kits themselves.

A major part of his work on Pearl is taking the sounds to the drummers where they live. In the last few months, he's toured the UK with a band of some other very fine percussionists including Andy White, Richard Burgess etc., and he held Pearl clinics at towns including Glasgow (McCormacks), Dundee (Largs), Nottingham (Percussion Sounds), Southampton and Derby.

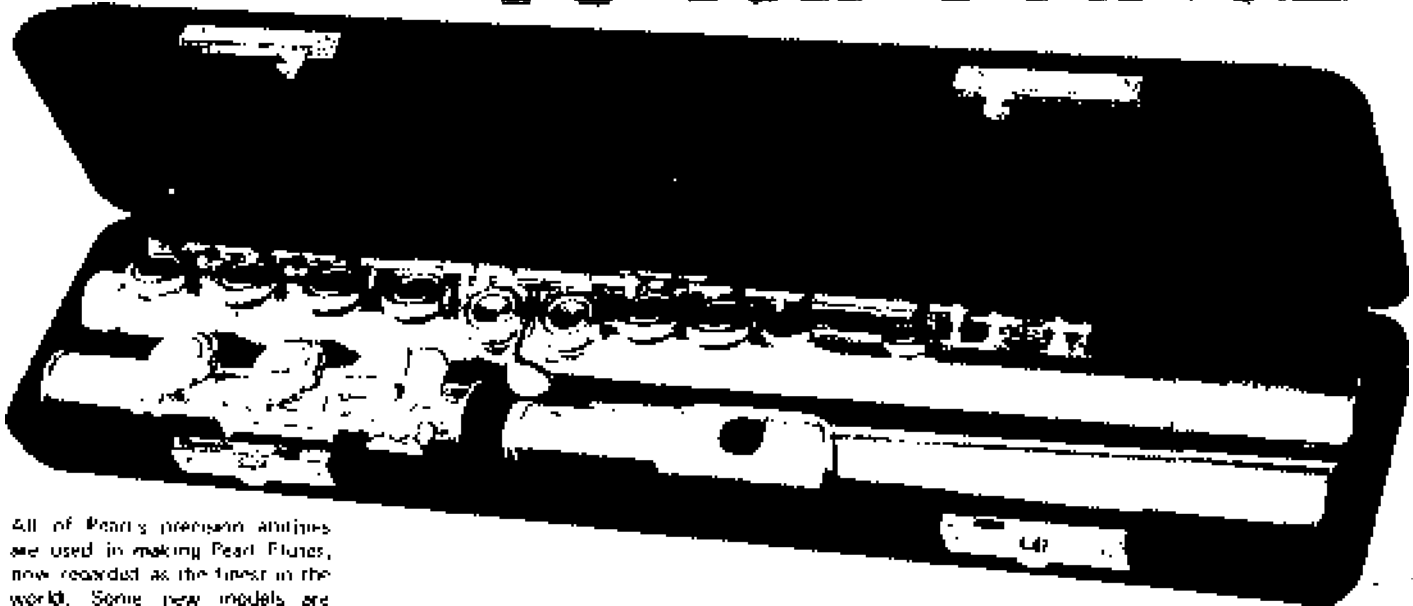
Major plans are being laid for a sharp increase of Pearl's promotion activities in 1977.

"We're planning a completely new concept in presentations," Glyn told Pearl Family. "We're taking a major show on the road including audio-visual presentations. Sometimes we may be linking with other lines to present a multi-instrument show, often it will be a show just for percussionists."

On the shows Glyn will be concentrating on percussion instruments such as Pearl congas and tables.

Musicians may expect to see announcements of these shows in the next few months.

# NEW FLUTES ADDED TO THE RANGE



All of Pearl's precision techniques are used in making Pearl Flutes, now regarded as the finest in the world. Some new models are joining the well established range and it is expected that these will increase Pearl's penetration into the world's orchestras. The flutes are entirely hand-made, all manufacturing processes being undertaken inside the Pearl complex (the work is too precise to be entrusted to sub contractors) and nearly every operation is made entirely by hand.

## FAMILIAR

Professional players will, of course, be fully familiar with the Pearl flutes, but for those who have yet to graduate, here's some specific details. The 96s is the junior of the range but it must be stressed that Pearl flutes all enjoy the same design, it is only in materials used that the differences occur. The 96s is silver plated (silver is regarded as being the very best resonating material by all flute makers) and offers the best possible compromise between economy and tone. The Du Luxe is next up the graduated scale and on this flute the vital part of the instrument — the head—is made from solid silver. It should be made clear that the silver used is not identical to the hall-marked silver available from jewellers, that is not the most suitable material, rather the silver used is a fine blend of silver with some vital trace elements important to robustness of tone. Top of the flute league is the Super De Luxe. This supreme instrument is made entirely from "precious metal" and represents the finest flute available anywhere in the world.

Why are Pearl flutes so popular? Perhaps the answer can best come from British dealers Jack and Lindsey Dawkes — one of the many thousands of Pearl

dealers scattered around the world.

"When we first stocked our Pearl flutes we let the professionals see them and the RAF took some samples away. What we did not know at that time was that the RAF was preparing a full treatise of flutes and after all their investigations the Pearls came out the best," explained Jack Dawkes.

"Now the Central Band of the RAF insists on Pearl flutes for its principals."

## B.B.C.

A similar story relates how the BBC Radio Orchestra also fell under the spell of the Pearl flutes. Professionals used to trying various flutes discovered the richness of the lower register and realising it has a strength and purity unlike any other instrument, insisted on Pearl.

Tiny design features in Pearl flutes are responsible for the particularly good sound. Each key is not held by a pin (as on most other flutes) but is secured by a tiny Allen screw and this will allow some adjustment if a flute is subjected to extra heavy treatment. Little features like the height of the chimneys all contribute to Pearl's success, and it's the attention to detail which counts.

## PEARL INTO KEYBOARDS

MOST KEYBOARD players start on the piano — perhaps as a child. The technique is developed and then the player transfers to an electric instrument and he has to say goodbye to much of the finer points of playing he's learnt.

Now Pearl bring the keyboard player a "touch sensitive" stage piano which gives back the subtleties of the instrument which are lacking in so many keyboards designed for stage work.

The new stage piano is a 73-note instruments and first supplies to the UK are just about to land! It is expected that this new stage piano will help to revolutionise on-stage keyboard playing!

After lengthy research and development, the Pearl Piano enters the keyboard market at just the right time. For some years, the market has been dominated by the very expensive American stage pianos and the distinctive sounds produced on these instruments have been used repeatedly on recordings and in live stage work. Now comes the chance of something different — the ultimate answer to that old problem "How do I get a different sound?"

Just like an acoustic piano, the new Pearl stage piano offers the player dynamic control in the individual key. The harder he plays the louder it is, the sustain depends on the pedals, the subtle accents possible with an acoustic piano are possible on this stage portable.



# Pearl Family

## HAND BUILT CRAFTSMANSHIP SURVIVES

**HAND CRAFTSMANSHIP** survives. In an age when almost every manufacturing process is automatic, the mighty Pearl Corporation of Japan insists on maintaining standards of hand-building and hand-assembling most of their musical instruments.

You may think of Pearl simply as makers of fine drums and amplifiers, but this is only a tiny part of the story. Pearl started in 1947 and from that moment on this family industry committed itself to standards high enough to have made it a world leader in all music areas.

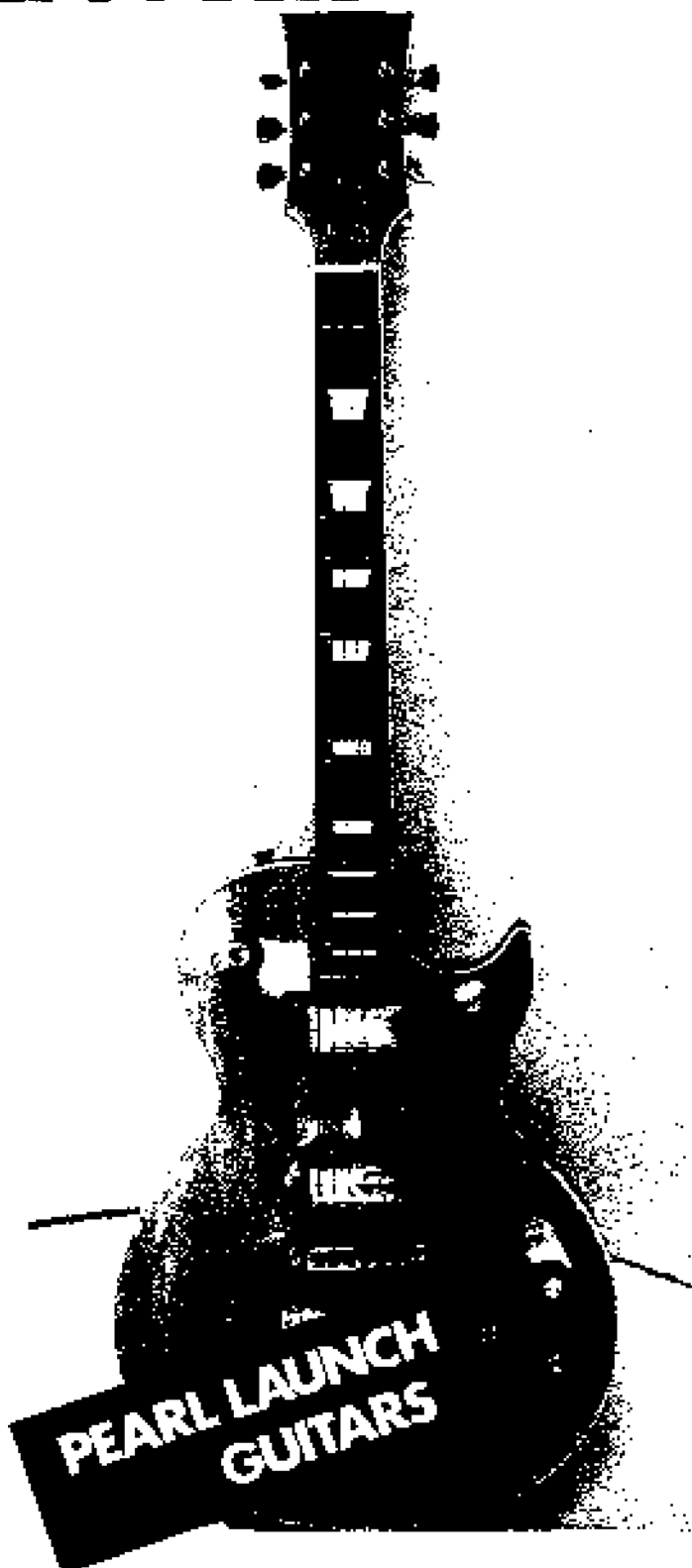
Typical of this dedication are the Pearl flutes. Just as the greatest rock drummers in the world will insist on Pearl drums, so the greatest orchestral flautists of the world symphony orchestras refuse to play anything but a hand-made Pearl flute. These instruments are made almost entirely by hand, bringing together age-old skills and ultra-modern plating processes that ensure a unique marriage of both skills and modern materials.

Visit the Pearl factories if you can. If that sounds like a joke, think again. When on tour in the Far East many groups (both famous and up and coming) have taken the opportunity to stroll round some of the many Pearl plants dotted around the island. If you're in that part of the world, do take the trouble to see the world's finest instrument makers at work, words can't convey the care and traditions still exercised in industrial settings far in advance to the dream of the 1980's that Chaplin, Orwell and others romanced about in the 1930's.

You might think that very technical items like amplifiers are made under entirely automated processes — but you'd be wrong: Unlike some American companies who openly boast about full automation doing all the soldering and wiring, Pearl believe that the highly skilled human cannot be properly replaced while still retaining quality. In an age of mass produced cars, Pearl insists on being the equivalent of the hand-built prestige model. The difference is that Pearl's price is, if anything, cheaper than competitors.

How do they do it? You might well ask. It's an involved answer that takes into account the recent history of Japan, its geographical position, and the incredible amount of capital investment that has poured into Pearl.

## THERE'S MORE TO PEARL THAN YOU THINK



Sir: I have recently purchased a Fender Telecaster, serial number 397323. Please could you tell me when it was made.

S. Povey,  
Chatham, Kent.

*Your Fender Telecaster was made between 1970 and 1973 — any Fender guitar with a six-digit serial number commencing with 3 was made in that period.*

Sir: I have no complaint — quite the reverse! Most readers will know the excellence of HH equipment, which is growing in popularity, but I can also testify to their quality of after-sales service. Recently I had a mishap with an HH combo which resulted in a broken handle and protecting cover plates, and I am pleased to report that I received stronger replacements by return of post at no charge to myself. This is a small item, but of considerable inconvenience if ignored, and in my opinion such attention to detail reflects great credit to the firm concerned.

J.A. Burton,  
Milton Keynes.

*It certainly is pleasing to hear from somebody who's had a good deal from one of the larger concerns; with companies getting bigger and bigger it's always heartening to receive a letter proving that no matter how large a manufacturer gets, they still care about the individual case.*

Sir: I would like some information on the Shergold Marathon stereo bass — if possible, a list of agents and music shops in Northern Ireland where I could buy this instrument. I would also like to compliment you on your excellent articles and reviews which this country badly needs.

Shea Cafferkey,  
Dublin 3, Ireland.

*According to Barnes & Mullins, who distribute these guitars, there are about 20 dealers in Northern Ireland selling their guitars, the two biggest of which are probably Marcus and Crymbles of Belfast. However, as your address is in Dublin, you might care to visit McCullough Pigott, at 11 Suffolk Street, who also stock Shergold guitars.*

Sir: Firstly, my appreciation for the best music mag available — keep up the good work! Being a regular reader, I have noticed that you often do articles on the top Recording Studios and sometimes articles on the more modest Home Recording gear. I wondered, therefore, if my own project would interest you. I have just completed my own four-track Mobile Unit aimed at the smaller bands who want some recording experience, or a demo, without moving from their own front room or local village hall. I hope also to record live gigs, for which there are no facilities in this area (unless they can afford any of the larger mobiles!) My equipment consists of relatively cheap units, i.e. Dokorder 8140, MM Electronics mixer, Tannoy Lancasters, Binson echo, Akai 4000DS and microphones by AKG and Shure. This is all connected by thirty yards of 18-way multicore to a stage-box. The gear is all permanently installed in a large van, insulated with Hessian wall covering and cork tiles to make a perfect control room. Despite the low budget, the gear performs surprisingly well and I've had some excellent results — can't be bad for £3 an hour!

Neil K. Foreman,  
Maidstone, Kent.

*Congratulations on fixing up a fine low budget recording set-up which we are sure is bound to go down well with the local musos. Anybody else got details of their own set-ups?*

Sir: I've just bought a Fender Strat and was given an owner's registration card to return to the manufacturers. Is there a place in Great Britain where I can return the card, as the details on it seem to refer to residents of the U.S.A.?

Steve Grosvenor,  
Wednesbury, West Midlands.

*New owners of Fender guitars in Great Britain should send their registration cards to CBS/Arbiter Ltd., Dallas House, Vanguard Way, Elm Road, Shoeburyness, Essex.*

Sir: I have a Fender Super Combo, and just recently one of the 10" speakers in it has blown, the reason for which is its age. However, after visiting all the music shops in the area I discovered that none of them could get me a replacement, apart from a Gauss which I thought was too expensive for what I wanted. The speakers which are in the combo are Celestions, which I don't think are made now. I was wondering if you could give me the names of any manufacturers who make 10" speakers at the rating I require.

C. Sopworth,  
Poulton-Le-Fylde, Lancashire.

*It would seem possible that you haven't visited the right shops. CBS/Arbiter, the distributors of Fender equipment in Great Britain, tell us that they have plenty of Celestion 10" replacement speakers in stock — they see no reason why you shouldn't be able to obtain, or at least order, one from a local dealer. They suggest you try the Blackpool Sound Centre. These Celestion 10" speakers retail for £19.17 each, excluding VAT.*

Sir: I am a singer (a good one so I have been told) and young, but I have a problem which I hope you will help solve. I have just re-formed a band but, due to lack of money, we cannot afford a good, big PA, and we do need one because of power and clarity. So I've decided to build my own bins, together with someone who has worked with wood for about ten years. I was thinking of the JBL type with a 15" speaker — could you please let me know of some layout or design of this sort of bin? I know it is a big step for a young band to take but we are determined and we don't want 'bum gigs.'

Paul Siddens,  
Birmingham.

*As a singer it's natural that you're going to be as fussy over the PA you use as your guitarist probably is over his amplification. Certainly the PA is a very important part of any band's equipment and no short cuts should be taken in this department, although it's usually money that sets the eventual ceiling. A good start if you're thinking of building your own system would be to take a look at Ken Dibble's series of articles in I.M. (September, October and November 1976) on building speaker cabinets in which he goes into some detail concerning bass-bins.*



Sir: Regarding your write-up on the discos in England in your August edition, we have far greater problems than those I have read in your magazine. I am English, came out to Western Australia in 1974 and got my band on the road within months of coming out. The crack is good, each member of my band scrapes an average of \$200 a week, although some weeks it can be as high as \$500 (roughly £300). We perform every kind of music from "Danny Boy" to funk, and this includes old time dance-band stuff. We have to do this to get work, one minute we are a Country & Western band, the next gig old 50's rock'n'roll, with maybe a change to Deep Purple the next day, with comedy and showmanship on the way, including dressing up in suits. The disco sound has just got here, and is giving us hell — people ask us to perform the stuff and think it's just a matter of turning the record over. We do perform music that has a flare of disco, so my band is lucky in this respect, reviving Wilson Pickett and Sam 'n' Dave etc., with a disco type beat. Western Australia is not like the Eastern States, our scope is limited and we are suffering at the hands of agents as they pull in Eastern States and out-of-country bands. The venues are limited to the number of bands in Perth and Freemantle, so we lose a lot of work by being local. The public can see us in the clubs and hotels nearly every night of the week, this gives outside bands all the work and a bloody good run. To combat this we either go South or North, which is a bastard; it's not like leaving London to go to Bristol. Between our gigs we could cover over a thousand miles. A month ago we had a gig in Bunbury, the next night we had to be in Carnarvon (nearly 800 miles away), the following day was in Perth (600 miles away from Carnarvon), then we went back toward Carnarvon to Northampton, another 400 miles. For all this labour to do one night stands, each member averaged £300, with the total hours performed at twelve — what with travel etc. we were away for five complete days and nights. The M.U. here is a lot weaker than in England and although you have to be a member, we have a state award system for wages, which doesn't work too well, the union gets on our back for working under the state award. If we didn't do this, there are many bands who would, and we wouldn't be working. Believe it or not, I act as organiser for the M.U. but do not get along with a hell of a lot of its ideas. Our secretary does his best, but half the time it's not good enough. Anyway, next time your musos have a moan, get them to come out here and see what the Aussies ain't got, you'd have a shock. We get sheet music a month after it leaves the hit parade. I have British gear: HH — everything is O.K. until it goes wrong and then getting parts is a hard task. Australian musical equipment is not a lot of good. Well, I could go on and on . . . but I won't. The country is a good place to live, and with luck we might get a chance to be a name band, more so now that Sherbet and AC/DC are doing their bit in Britain. Once again, tell your boys to give up on the groans and moans — there's a lot worse going on in the music world.

J.E.A. Farleigh, (Troubled Waters),  
Freemantle, Western Australia.

*We're always pleased to receive letters from our more distant readers as they nearly always provide an insight into a lesser-known music scene, and your observations are certainly a good example of this. Mind you, it's not exactly an easy road here in Pommy land either. We'd be interested to hear from other readers on the problems of playing music and earning money, wherever you are.*

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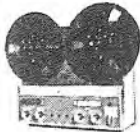
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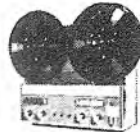
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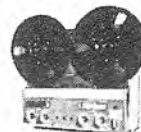
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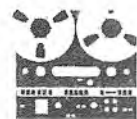
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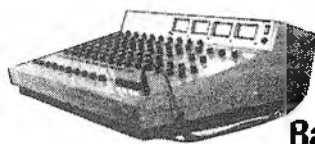
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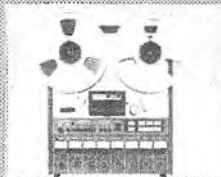
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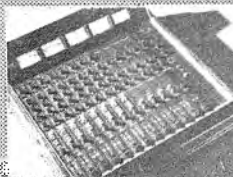
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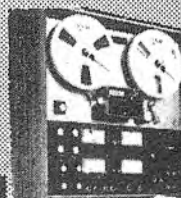
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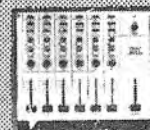
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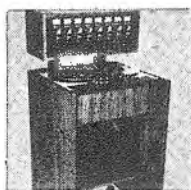
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# Entwistle

## Thinking aloud in the Presence of Eamonn Percival

*The Who have always been innovators in many ways. Pop-art, auto-destruction, even Marshall stacks had not been heard of until The Who graced the club and ball-room circuit of Britain. In the bass playing department too, there were many new departures in style. Apart from the sheer volume John Entwistle played at, the amount of treble he obtained was unbelievable. Until then, bassists had always had to rely on a flat, dull, floppy bass sound. Suddenly, here was a bass player with a sound like the bottom strings of a piano! The secret, of course, was that Entwistle*



was one of the first bass players to use wirewound, or roundwound bass guitar strings in this country. Since then, The Who have gone from strength to strength, and Entwistle himself is no longer the man in the shadows thanks to his solo projects and those with his own bands Ox and Rigor Mortis. I met him at his home in Ealing, where he has a well-equipped studio upstairs — a duplicate, in fact, of the studio in his Gloucestershire mansion. A long-time collector of guitars, he recently changed over to using an Alembic bass, about which he was full of praise.



*Are you still using Alembic basses?*

Yeah, I'm still using them.

*How did you come to start using them?*

Well, I'd heard about Jack Cassady using one and I'd seen photographs of them and Rick Turner from Alembic 'phoned me up one day — he'd heard I was in New York — and he brought along a bass for me to try out. It was a short-scale, but it felt quite nice and so I asked him if he could make me one to my specifications. He sent me an estimate and a description of what he was going to make me but I never followed it through — in fact, I lost the bit of paper! Later, I was on holiday in Los Angeles and I found a guitar shop that sold nice old guitars. The guy asked me if I'd be interested in a second-hand Alembic. I tried it out and I really liked it, so I bought it just for the collection and never really bothered with it. We had a rehearsal one day and I had five basses made with an Explorer body and Thunderbird pick-ups and Fender necks — I'd had them made up for the next bout of touring. I was getting all the necks straightened at the time, so just for a laugh, I brought along the Alembic and plugged it in. The sound was really amazing, so I changed over to Alembic — the five Explorers never got used.

*How different was the sound?*

Well, it's got a . . . whole frequency sweep on it. You can get any sounds you like, just by varying the switches and by turning the tone controls backwards and forwards. It's also about three times as loud as a normal bass. It's a lot clearer — in fact, it's very hard to get it to sound dirty. You have to wind it right up. It's also got this feedback effect — when you have all the frequency switches right down in their lowest positions, you get this sort of singing sound.

*Are you after a very clean sound?*

Yeah, I sort of pioneered the trebly bass sound, the piano sound, and I use an awful lot of treble. The Alembic's got such an amazing amount of treble — it's almost ear-piercing. But you don't lose the bottom. A Fender is perfect for treble, but there's no bottom and a Gibson is perfect for bottom but there's no treble. The Alembic has both, and it's much louder. And also when I get bored with playing trebly, I want a bass sound that really cuts through — not just a boomy sound.

*Tell me about the Alembic's "lightshow."*

Well, at the side of a guitar neck, you've usually got small marker dots. On the Alembic they're red lights instead — L.E.D.'s. Mind you, you have to plug the guitar into a power supply. That supplies power for the lights as well. It also works on battery but the lights are connected directly to the mains power supply.

*What do you play through?*

I use two stereo Stramp pre-amps and four big Sunn slave amps. They go through two 3 x 12" in big PA-type cabinets, two standard pressurised 4 x 12" s, two pressurised 18" s and two 18" s in PA-type cabs again. So I've got some of the cabinets pushing the sound right out, and others which are just for the stage. It's all miked through the PA as well. The guitar, I have about two-fifths up and amps are on number five — of course, the pre-amps are virtually right up, so I'm using about half volume.

*You don't suffer any loss of tone with the guitar down?*

No, because the Alembic has individual pick-up pre-sets on the back, so if you wind them up, you don't lose anything on the volume control. There's also a dummy pick-up in the middle and two controls to eliminate hum and buzz, so I never get any buzzes or anything.

*Do you still experiment with other basses?*

I fiddle around with different ones. Gibson are trying to make me something similar using the same tone circuitry as the Alembic. They're getting together with Moog to work something out. They made a prototype which they were going to put Alembic electronics in, but we managed to convince them it was going to be senseless to make me twelve Gibson guitars all with Alembic stuff on. There's one thing about Alembic — it can be hard to vary the controls while you're playing because there are so many, so it would be nice if, when they did the Gibson one, they could give me some floor controls so I can either control it from the guitar or the floor.

*How many guitars have you got altogether?*

Well, basses — about 76 I think. And I have about 26 six-strings. I just don't like getting rid of any guitars. I bought a Fender bass a long time ago and it was a really nice bass. I had a couple of 15" speakers and they always seemed to distort, so we figured it must be the bass. I sold the bass for £50! After that, I realised it wasn't the bass after all and from then, decided I wouldn't get rid of any guitars. If I found a guitar I really liked, I'd hang onto it — if I found something else better, I'd buy it and still keep the old one. So that's what I've done. I also buy a lot of nice old guitars for investment. I've got an original Explorer and quite a few old Gibson basses from 1953 and a complete collection of Fender basses from 1951 through to 1965. A lot of those are duplicated because I've bought one and then found one in better condition later. Before the Alembic I used different basses to get different sounds — woody and bassy and trebly —



all different. I just ended up with 76 of the things!

*Have you tried fretless basses?*

Yeah, I've got three. An Ampeg and an Ovation and a Rickenbacker. The trouble is they're the kind of instruments you can't play on your own — you really need to be playing with someone else to get used to it. I can play them — I can stay in tune, but it's difficult knowing your capabilities if you haven't used them with other people. It would be nice to use on an album maybe.

*Apart from bass and brass instruments, what others do you enjoy playing?*

Mainly keyboards and synthesizers I suppose. I've got a double bass which I've yet to get to grips with, I've got a flute which I can just about play a scale on. I've got a sax which I can play a scale of B flat on and that's about all.

*What keyboard instruments have you got?*

I have an ARP 2600, a Pro-Soloist, an ARP Odyssey, ARP Explorer, an Oberheim sequencer, a clavinet, a Fender Rhodes, and a grand piano. I've got a Moog with a sequencer which I use for changing melodies around. If I have a melody and want to change it, I set the sequencer to play the melody and start changing the notes around to see if I can get anything better. I also use it for strengthening brass parts down the bottom. I just mix it in so you don't know it's a Moog but it sounds like trombones. The ARP Odyssey I use for random sequences which it's pretty good for. I use the Pro Soloist for imitating other instruments. There's also an Oberheim which I use with the 2600 for strings. I've got a string synth as well, but I think string synthesizers sound like church organs at the moment. The only one I really like is the new Poly-Moog and it does actually sound like strings.

*You don't like Mellotrons?*

No, they always sound like "Strawberry Fields Forever"!

*What do you use your studio for?*

Well, basically as a practice and composing room, but I also do finished demos there from time to time, just going backwards and forwards from machine to machine. I used to have an eight-track and was thinking of going to sixteen-track and all that business, but most of the time, I was working on my own and it's stupid just rushing back and forth when I could do it as I used to do it. I found that I'd done about three demos since I got

the bigger equipment whereas before I got the big gear, I must have done about a hundred. It suddenly occurred to me one day "well, why have I got all this bloody stuff when I could just go back to how I was . . . and it was easier for me." So, that's what I did. Got rid of the eight-track and bought two-tracks instead. They're Studer two-tracks and I use a Neve Melbourne desk. Down in Gloucestershire, I've got a couple of the new Ampex two-tracks and the same Neve desk. It's a pretty good set-up — there's not too much noise because I record at 30 i.p.s.

*Some of your early songs like Boris The Spider and Whiskey Man were very bass-orientated. Do you still write on the bass?* Well, it's changed over the years. I stopped writing stuff on bass for a time and I used piano to write from "Whistle Rhymes" onwards. After the last solo album, I went on to writing on bass again. Then I got an eight-string Rickenbacker and had an eight-string Alembic made. I write quite a lot on that now, I write for the eight-string to try to introduce the eight-string into the stage act. I try to circulate — if I can't think of anything playing piano, I'll go to bass and if I can't do anything there I'll go onto synthesizers and so on. About the only thing I don't write on is trumpet, so I get around everything.

*Was "Success Story" written on the eight-string?*

Yeah, that was the eight-string. There's no guitar on that at all. It's all eight-string bass.

*Have you got anything ready for the next Who album?*

Well, we go into the studios about February. I've got a couple of songs written in my head, but I haven't done demos of them yet because I'm still getting the studio together. Pete's written some songs for it. We're not sure yet if it will be a concept album or a straight, up-tempo album.

*What do you think of The Story Of The Who compilation album?*

It's not really a story of The Who — it was just a case of whatever tracks we could get on it, tracks we actually owned. We're still going through this thing with Shel Talmy.

*Was that the reason for "Can't Explain", "Anyway, Anyhow, Anywhere" and the original "My Generation" tracks being omitted?*

Yeah, we had to sort of skirt around a bit. I think it catered for a certain market of new fans who haven't got the old material. It's amazing that "Substitute" got back in the charts as well. I think it only got to about number ten, and that was about nine years ago.

*Did you get a kick out of that?*



Yeah, I got a kick out of it because we didn't have to do Top Of The Pops — they used a film instead.

*Are there any plans for a full-length Who film?*

Well, we're still planning to release a film of all the concerts and shows that have been filmed. There's a lot of concerts and TV shows on film around. When you actually see them again, they're quite remarkable. Like the Smothers Brothers Show and Shindig and a couple of Swedish TV shows way back in the days of "Substitute" and "My Generation." They're all still kicking around and we're gradually collecting them together. That really would be a story of The Who because I don't think there's anybody else that could do that sort of thing, apart from maybe the Stones but then they had different members. I think ten years of The Who on film would be pretty amazing. Some of the old pictures of us were ridiculous. Tight trousers and short haircuts.

*Are there any plans for another live album?*

Well, it's difficult. You go on stage thinking that the gig's being recorded and you don't want to make any mistakes and you try to make sure the singing is in tune. We have a lot of trouble with backing voices anyway. On tape, they sound out of tune but on the night, they sound fine.

*Didn't you overdub some of the vocals on "Live At Leeds"?*

No. We tried, but it didn't work. The only thing we added was a bit of tape delay on it. It sounded too clean for a live recording. Once we added the delay and cut the audience out, it sounded fine. There was a bit in "Magic Bus" where we couldn't get it to flow properly, so Pete just edited the tape, cut a bit out and turned it backwards — a backward tape thing.

*When you record in the studio, how loud do you play?*

Up to now, I've been playing very quietly because it was the only way I could get a clean sound. Consequently, as I'm playing quietly I get a very bassy sound — a normal sort of bass sound which I don't like. But now, with the Alembic, I'm probably going to be able to play a lot louder in the studio — and more trebly. I'll be playing through two cabinets and there'll be a separate sound coming out of each one. It'll be more or less a stage sound that I try and put on recording, unless the number merits a normal bass sound.

*Didn't you have a hand in designing the Rotosound Swing Bass strings?*

Yeah, I went along to their factory years ago and sat there all afternoon while they made me bass strings, and finally got a set

that sounded right — the sound that I wanted was like a piano sound. They said "Do you mind if we put them on the market?" and I said "No, just give me free strings!" They were made to my specifications and they brought them out as the Swing Bass set. Up until that point, everybody was using flatwound strings and I hated the sound of them. I got the idea from a Danelectro bass — I had the first one that came over because I wanted a short-scale bass. I'd been using this bloody awful Gretsch which was like a plank — I was getting worn out after about ten minutes on it, so I bought this Danelectro and it had these tiny, thin wirewound strings on. They were so thin, they sounded just like a piano — an unbelievably clear sound. The only thing was that you couldn't buy these strings. We were recording "My Generation" at the time, so I ended up with three of these Danelectros just for the strings! The last one I had, the string busted before we actually got into the studio to re-record "My Generation" so I did it on a Jazz Bass in the end with tape-wound La Bella strings.

*What !!!!*

Yeah, they were tape-wound. But the La Bella strings in those days were a bit like the strings they've just released now — sort of polished roundwound. I've got a couple of sets actually that were given to me to try out and they're called half-roundwound — they're just roundwound, polished flat. The trouble is the sound only lasts about five minutes — they sound twangy when you first put them on, but when the windings start filling in with dirt, it sort of disappears. I think the idea is to make them more comfortable for your hands but I've got big enough callouses to handle Rotosound now. Playing Rotosound is a bit like rubbing your fingers up and down a file, but your hands get used to it. I get the strings straight from the factory, unpolished, they sound twangier before they're polished. I get the sets off the assembly line, about 30 sets at a time, and I use one set per concert. On a normal tour I get through about 25 sets.

*After all this time, do you still like touring?*

Yeah, I prefer it to anything else. I don't particularly enjoy myself in the studio. I might start enjoying it now I'm using the Alembic. I used to get very depressed because I wasn't getting the right sound. I was settling for something that any bass player can get. Anybody could go in with an old Fender with tape-wound strings and probably get a better sound than my roundwound strings trying to sound like tape-wound!

*Were you pleased with the sound you got on The Who By Numbers?*

I can't hear it on the album. The bass seemed to disappear. It's a strange thing with Who albums, I can never hear the bass on them. With my solo stuff, the bass comes flying out. With the Who albums, it disappears for some reason. I still insist that you can have bass really loud on a record and it doesn't interfere with the rest of the track. All that happens is you can go and turn the bass down, but you can't turn the bass up. If you turn it up on an amp, all you get is a woolier sound — you can't hear the bass anymore. If the bass is too dominant, you can turn it down and it will disappear — it only works one way.

*You mixed most of the "Odds And Sods" album yourself. Do you enjoy that side of things?*

Well, I think it's such a relief when you get to mixing, that it's quite enjoyable, that part of it. The thing that gets me a bit tense is the backing tracks — the basic drums bass and guitar track. That is the suspense thing. Overdubs are quite enjoyable because there's usually only one of you doing the overdubbing, and it's very easy to go back or drop in, whereas backing tracks have always got to be right — they've got to happen then and there. I'm always petrified that I'm gonna make a mistake or get lost or something. I mean, we're not worried about making mistakes but if we continually make them . . . in the end, you start getting brain-washed and getting metal blocks as to where you are in the song, and that's the worst feeling in the world. It's like having a tooth out. You start thinking a little bit ahead and then forget where you are. Actually, it's nice to have rehearsed the songs before we go into the studio. We've only done it on a couple of occasions. Usually, we go in, and we learn the number as we record it. I always look back at the bass parts that I've done on albums and, as well as not liking the sound, I always think I've never particularly played at my best, except for a couple of tracks on "Quadrophenia" like "The Real Me" and a couple of others.

*Are there any old tracks you are really embarrassed about?*

The only song that I really get embarrassed about is "Call Me Lightning." I'm always continually embarrassed when I hear that solo. When you think that the song came years after "My Generation," it's . . . I'll illustrate what I mean.

*(John walks over to his jukebox and selects "Call Me Lightning," a really driving song with a hilarious bass solo. After the last part of this horrendous solo, he breaks up laughing and unplugs the jukebox).*



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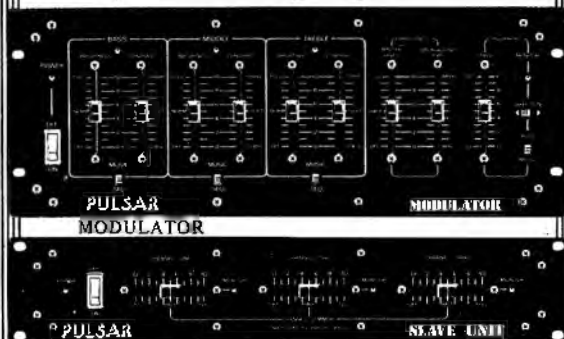
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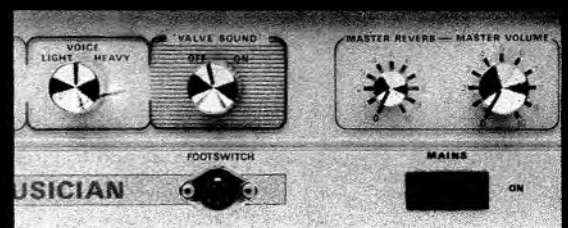
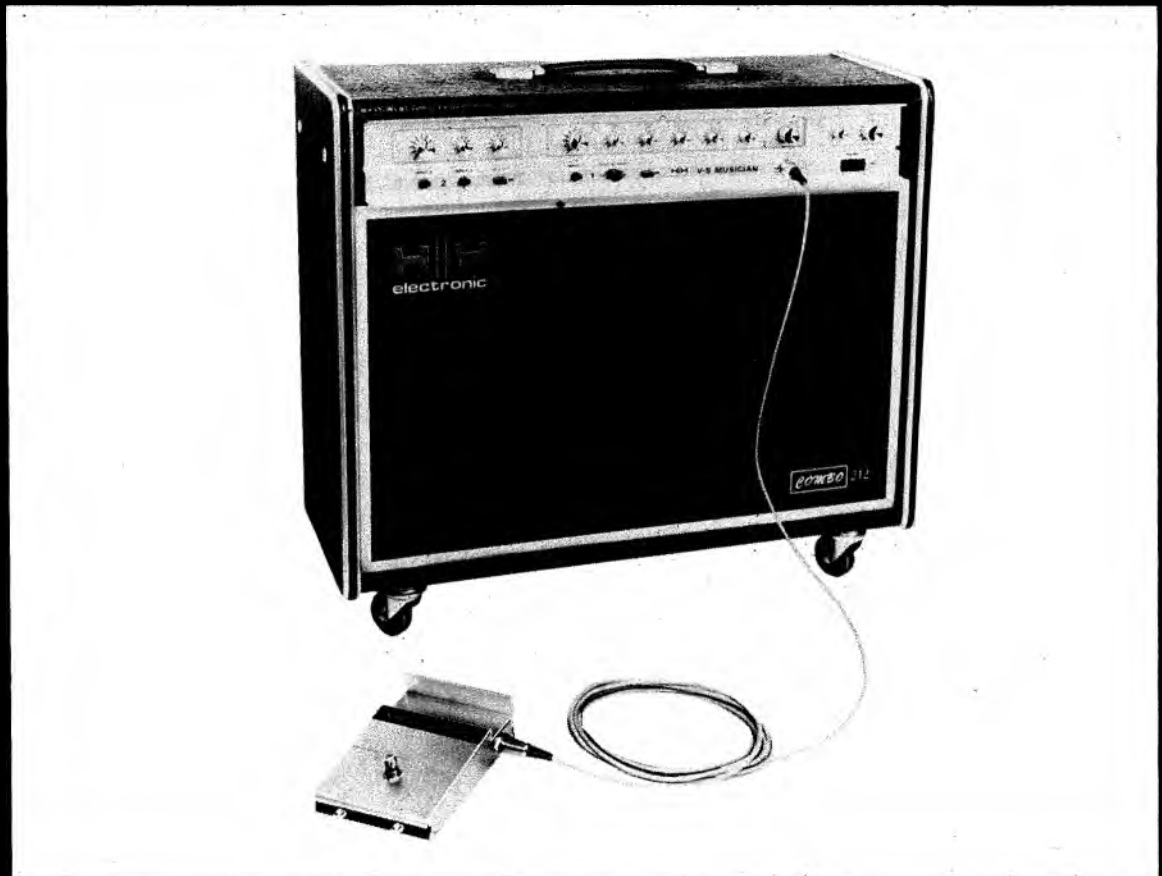
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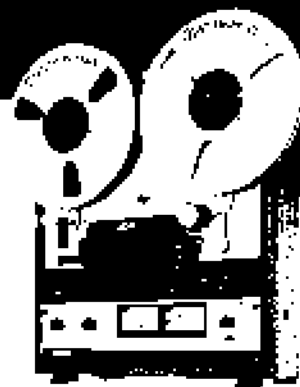
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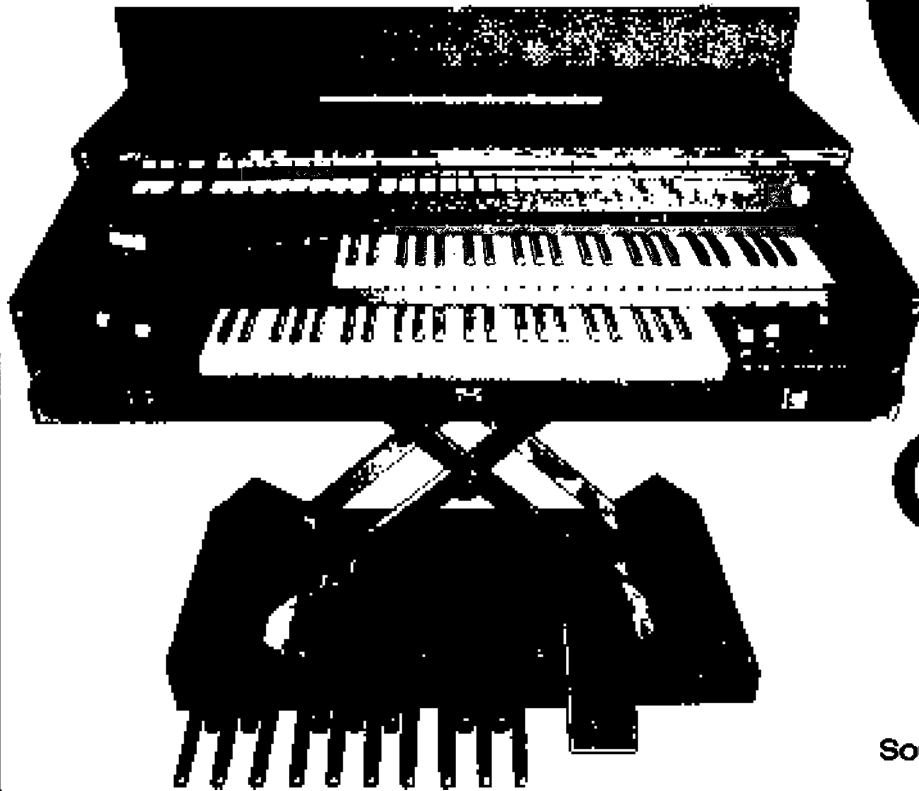
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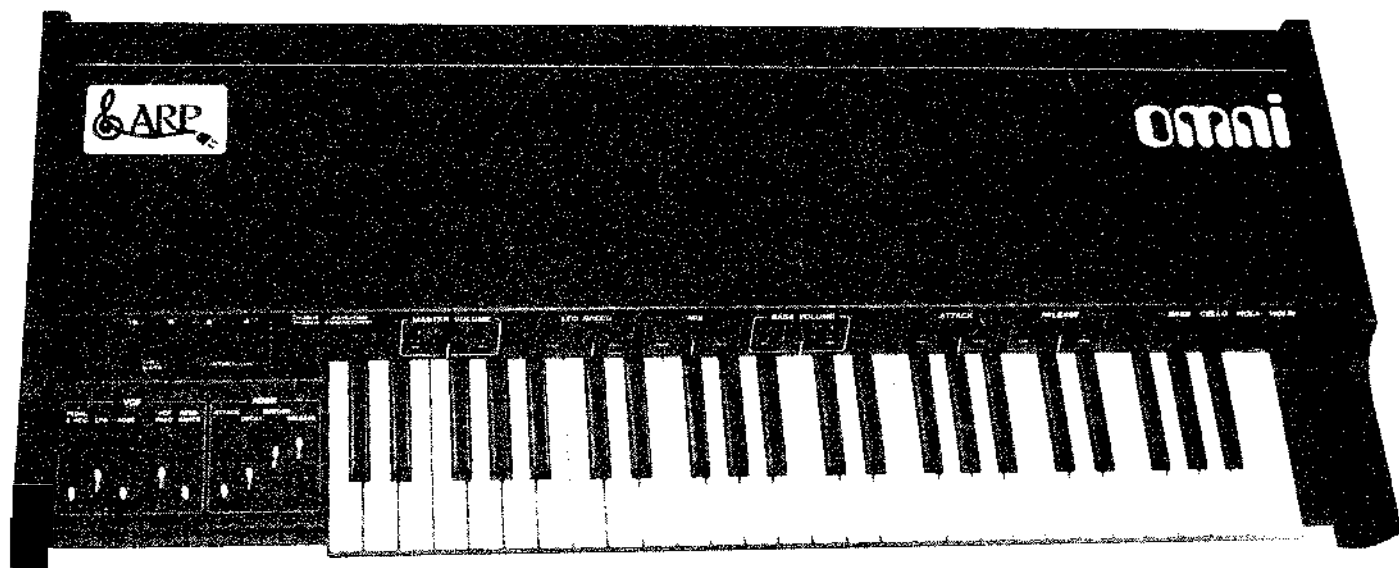
December 1977

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TEST BY

Rod Argent.



If Dr Moog invented the synthesizer, I think one other company can claim to have developed its technology in an alternative and characteristic way in the earlier years, and that company is ARP. The Odyssey, in particular, seems to have made its mark with musicians, being a portable, effective and sensitive instrument, but of course is only one of a wide range of models which extend upwards to the most sophisticated levels.

The latest offering from the ARP factories comes in the form of a polyphonic synthesizer which retails at less than £2,000, and contains some striking and effective features. At that price, of course, there has to be a catch, and there is a slight one inasmuch as the synthesizer is driven by a single oscillator. This means that while the keyboard circuitry of the Omni produces a separate tone for every key on the keyboard, every note that you might be holding down with, say, the right hand, would be re-keyed by the introduction of a bass line. In other words the synthesizer is polyphonic, but doesn't have total polyphonic independence. This does not have to be a major disadvantage, however, and your technique should soon adjust.

## THE STRING SECTION

The ARP Omni is really two instruments in one — a string synthesizer

coupled to a conventional synthesizer with the voltage control filter and envelope generator controls which provide the characteristic sound-moulding possibilities of the instrument. The makers claim that special attention has been paid to the string voicings, and they are indeed excellent. There are four settings — violin, viola, cello and bass, and they are graded not only in pitch but also in tone — i.e. the viola section, while pitched an octave lower than the violins, sounds slightly less toppy, and, similarly, the cellos are slightly mellower than the violas. The cello voice only plays one note at a time, and in the bottom octave and a half of the keyboard. ARP say that this is a deliberate device based on sound orchestral principles — that quite simply chords played with cellos come out sounding muddy. To that I would reply, yes . . . but not always. What is a shame is that although the cellos cover only the bottom half of the keyboard, the upper strings cannot be made to keep to their half, so that when they are introduced they are also keyed in to the cello line. This lack of separation, of course, denies the possibility of orchestral effects in which higher and lower strings are given different parts to play. Also, the instruction manual stated that bass and cello had fixed attack and decay times, whereas on the model I tried, the release

was set but the attack obeyed the overall setting control of the rest of the string section. This is also a shame because the effect whereby the higher strings would gradually sweep in over an already stated cello chord would be a nice one. I love the variable attack control, which, on this synthesizer, seems to work especially well. It's slightly unfortunate, however, that the single oscillator means that the delayed attack only works when the hands approach the keyboard for the first time — you can't, for instance, introduce a swelling note if you are already sustaining some other note or chord.

The bass voice is set one octave below the cello, and observes the same restrictions. There is a bass volume control which controls the volume of both the lower string voices and enables a perfect balance between high and low strings to be obtained. Generally the string sound is extremely good, and the rich effect of stringed instruments playing together is most realistically achieved by the action of a number of phase shifters built into the synthesizer. There is also a 'chrous phaser' button which slows down the speed of the phasers for different effects and also feeds the output of the 'synthesizer section' (as opposed to the string section) into the phasers, along

with the strings. Actually the string tone and chorus phaser provides a great church organ sound! This is in fact the second string synth on which I've heard this sort of effect. It's really quite incredible — and unexpected — to hear mighty church organ sounds issuing from little single keyboards perhaps 3ft in length!

#### THE SYNTHESIZER SECTION

Controls for the synthesizer section lay to the left of the instrument and are reasonably comprehensive, although there is not as wide a range of sound modification possibilities as you would find in the well-known portables such as the Odyssey or the Mini-Moog. Basically there are two pitch controls, 8' and 4', a voltage control filter (V.C.F.) and an A.D.S.R. (attack, delay, sustain and release) envelope generator. There is also a 'synthesizer bass' section and a low frequency oscillator to provide tremelo effects. The V.C.F. controls, five in number, are set in a box and operated by sliders. These consist of a 'pedal and accompaniment' control, which sets the range whereby an additional pedal control can be used to open and close the filter, leaving two hands free for other things, a low frequency oscillator control, an A.D.S.R. slider (which determines the amount of opening and closing of the

filter that the A.D.S.R. causes), a V.C.F. frequency control and a fader which controls filter resonance. To the right of this box is a set of sliders controlling the A.D.S.R. characteristics of the synthesizer. More than a 'lead line' type of synthesizer, the ARP Omni seems to concentrate on the possibilities of orchestral imitation with such effects as brass, piano, harpsichord etc. These sounds are not 'pre-set' of course, as you have the infinite variability offered by the filter and envelope generator. In producing these sounds, the instrument is very effective, and there is even a sustain switch which comes with the Omni and operates exactly like the sustain pedal on a conventional piano. With the help of this, the Omni's four octaves produce a very interesting piano sound.

The brass sound obtainable from the instrument is also very good, and lends itself particularly well to the chorus phaser. In fact the alliance of these two produces a superb effect. The 'synthesizer bass' buttons, operating at 16', 8', or in combination, unlike the bass strings can be played with no attack delay, while the strings can be brought in gradually over the top. In fact one of the main strengths of the Omni lies in the independence of the two sections and the fact that each section has its own output. In practice,


this means that sounds such as brass, bass, piano etc. produced from the synthesizer section can be fed to one side of a stereo system, while strings are routed to the other side. This, of course, produces a widening of effect and sound which is very striking.

The actual construction of the Omni, both externally and internally, seems to be of a high quality. Line-level Cannon XLR output connectors are provided, along with alternative jack plug connectors. Each of the computer grade switches has an L.E.D. status light to tell you what's happening when the lights are low and, the makers' claim, have a minimum life of three million operations. The rear panel of the Omni also provides facilities for interconnection with other ARP synthesizers or sequencers.

#### CONCLUSION

Generally, I found the ARP Omni to be a very useful instrument capable of some superb effects. For a reasonable price, it produces a very realistic string section and a polyphonic synthesizer, both of which may be set against each other stereophonically. I would see its greatest strength as a textural, colouring instrument rather than as a burning, guitar-like lead-line instrument, and, as such, would heartily recommend it.

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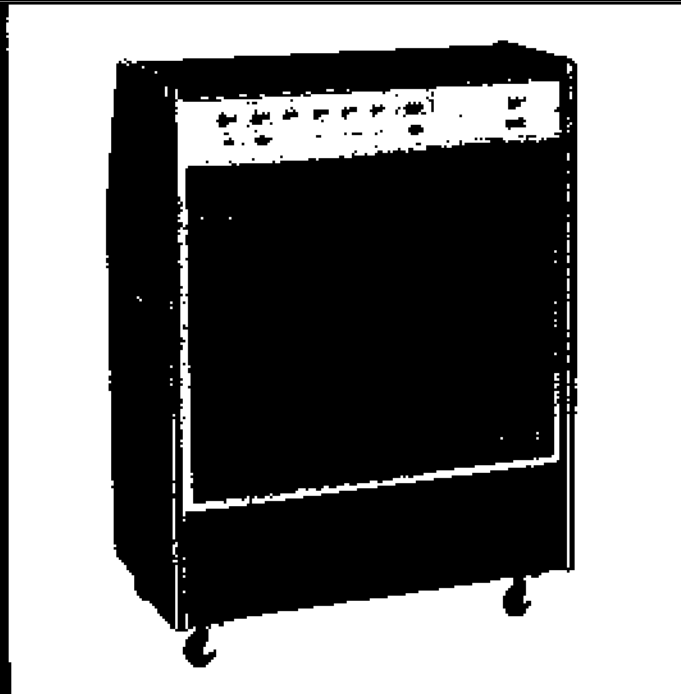
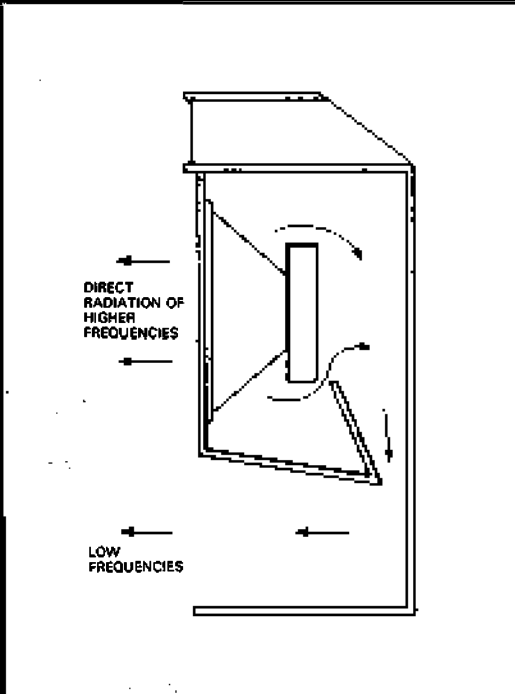
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# Guitarcheck Guitarcheck

by Stephen Delft

Gibson Marauder. £260.44 ex VAT. (Natural finish).



*Wine-red version of the Marauder*

*As from this month, with the help of some unlikely pieces of photographic equipment, and the constant support and enthusiasm of the staff of the Leeds Camera Centre, I shall try to include photos of the inside of review instruments, where it seems appropriate. Particularly with acoustic guitars, the bits which you can't see may be more important than the quality of the external finish, (although a roughly-cut strut may be more use than one which is made beautifully, from poor wood). Anyway, the results could be quite interesting!*

The Marauder is one of the family of relatively new Gibson guitars which also includes the L6-S and the Ripper and Grabber basses. It retains the same basic shape as the Les Paul models, with a flat front like the early 'Junior.' Beyond this, the design is entirely new. I imagine many musicians would say that it can produce a 'Gibson-type' sound or a 'Fender-type' sound, or a combination of both. While this is not strictly correct, there is certainly a tendency in that direction. Its tonal range is, in general, rather brighter and less 'creamy' than one has come to expect from Gibson humbucking pick-ups, and this would seem

to apply to all the instruments of this new family. The mechanical construction of the Marauder is also something of an innovation for Gibson; the neck is bolted onto the body, the body and neck are made from Poplar and hard Maple, instead of the usual Mahogany, and the instrument is finished in clear satin lacquer, not tinted gloss.

I particularly like the variation available on the Marauder between three distinctly different tone settings on the selector switch. The pick-ups work together very well, which is surprising for a mixture of a humbucking pick-up by the fingerboard and a single-coil type by the bridge. The humbucker works roughly on the same basis as the S.G. type Super Humbucker, with small additional magnets, reinforcing and directing the field, while the bridge pick-up has a single, iron-cored coil, with a magnet below, and iron strips from the lower magnet pole, up around the outside of the coil. Both pick-ups appear to have a satisfactory output, while exerting relatively little magnetic damping on the string vibrations. Both pick-ups have the two usual screws for height adjustment, and a

third screw on the side facing the neck, to adjust the pick-up parallel to the strings. The fingerboard-end pick-up on this review sample gives a first string output noticeably lower than the others, with the strings supplied.

Neither pick-up has individual adjustments for each string, and while this does raise certain problems of balancing the relative loudness of the strings, it is possible to arrange an acceptable balance by careful choice of string gauges. If balancing is done by adjusting the heights of individual pole-piece screws, it can often cause certain strings to 'fade away' when bent across the fingerboard, as they are then pulled away from their own pole screws. Until there is some new breakthrough in pick-up design, a compromise

this point. I notice that the pick-up designers have finally fixed the fellows who take covers off pick-ups. These are encapsulated in glass-clear resin. (Pick-ups, not fellows). I like the 'natural wood' appearance of the Marauder but this look is cheapened by the shape of the scratch plate, and its rather 'synthetic' white colour. You may like the scratchplate, and find it in keeping with the 'modern' image of the instrument. As the plate appears to have been made entirely in a mould, and such moulds can be fabulously expensive, the shape is unlikely to be changed in the near future.

It is a pity, when so much effort has gone into the efficient production of the plate, that so little effort has been spent on screening the wiring underneath it. There is a small patch of metal foil underneath the controls, but the cable-runs to the pick-ups and selector switch are made with ordinary wire and do not appear to be screened or shielded in any way. I have commented before on the fact that, as interference levels on stage become higher,



*Internal Wiring*



*Mis-placed screw hole*

is necessary between ease of balancing the outputs from the strings, and consistency of output and sustain when bending them. Most recent American guitars seem to put the emphasis on sustain rather than string balance, and the Marauder follows this pattern.

I have not had the opportunity to test the guitar at very high levels. There could be some problems because the pick-ups are mounted directly on the scratchplate. Perhaps Norlin would like to comment on



*Marauder neck recess*

screening inside some guitars seems to become worse. Try looking inside an early Firebird. Apart from this point, the electrical system employs a high standard of components and workmanship.

The bridge used is a considerable improvement on the standard Tuneomatic type and appears to be made by Schaller in Germany. It has a wide range of octave adjustment and is easy to adjust exactly. I am pleased to see that the screws which support this bridge are more substantial than those used with the Tuneomatic type. The thinner screws are too easily bent or loosened by misuse or energetic playing.

The neck of this sample is almost perfectly straight, and careful adjustment of the truss rod would probably improve things further. The

limitation on the lowest action I could usefully obtain was probably from very small irregularities in the heights of the frets; I think they have been evened up and rounded by hand, but later operations seem to have removed more from some frets than from others, possibly because the abrasive used was too coarse. This is particularly interesting, when you consider that the Grabber Bass, which I reviewed in July 1975, had one of the best commercial fret-finishing jobs I have ever played, and I am convinced it was done with some sort of mechanical assistance. Why has this technique not been applied to the Marauder? The frets on my sample are scratchy when one bends strings, and the point where the string actually rests on the fret varies from one to the next. This can make fretted notes slightly out of tune just as surely as if the frets were wrongly placed. Fortunately, the problem is easily corrected by re-working the tops of the frets.

The shape of the back of the neck is relatively shallow and tends towards Crescent, rather than Rounded. I find it very comfortable; Individual tastes vary so much, that it would be more relevant to try one yourself. Although the frets are of a very convenient height for bending strings, the surface of the fingerboard is rather rough and 'sticky'. It also looks very dry and uninteresting. Both problems would be improved if it was dressed and burnished with 6-600-grade W/D paper and Boogie Juice. (This is a penetrating and preservative fluid which I find very useful for slightly rough, new fingerboards).

The neck is made from good quality Canadian Maple, and, unusually for a Gibson, the head is a separate piece, grafted on. There is nothing wrong with this, as the joint angle has been chosen to give a sensibly large gluing area. I am a little disappointed to see that the shaping of the area between neck and head has removed rather too much wood from my review sample. If others are the same, there is a potential weakness here. Such a weakness may be inevitable with old designs and the sort of Mahogany which is available these days, but is not easily justified in a recently designed neck made from good maple.

The neck is attached to the Poplar body with four bolts, which are held by captive nuts inside the end

of the neck. This is, in theory, more sound than using screws into the wood of the neck, but in practice, both methods can be made to work reliably if the neck is hard maple. The recess in the body, which takes the neck, is well over size, and the neck is only held firmly by a piece of wire gauze clamped between neck and body. This does appear to work, but the gaping joint does nothing to inspire confidence in the accuracy of machine assisted guitar making.

The machine heads fitted are rather too stiff for easy tuning. Although experienced players can usually overcome this difficulty, no one actually enjoys such machines, and beginners could have some problems when using very light strings.

You might be interested in the photograph of part of the body, underneath the scratchplate. I am not certain, but it appears that someone has routed away a part of the body which was needed to take one of the scratchplate mounting screws. A piece of wood has then been glued in to replace the missing part, but has broken away when the screw was inserted. (This still does not explain why there are two screwholes, or why this body was allowed out of the factory without any check that the repair was satisfactory). I am also unhappy about torn end-grain on the point of the cutaway by the neck socket in the body. There has been no attempt to make this good at all. Someone must have passed this body as satisfactory for an instrument carrying Gibson's name: I must respectfully disagree with him.

I am disturbed by the difficulties I have experienced in obtaining certain spare parts for even quite recent Gibson guitars. Electric guitars are often used in conditions where they are likely to suffer minor (but very inconvenient) damage. It is obviously a sensible move, before purchasing any piece of complicated and/or imported equipment, to enquire from several independent sources, about the availability of spare parts for current and recently discontinued models.

Scale length, 628mm; string spacing at bridge, 52mm; string spacing at nut, 36mm; fingerboard width at nut, 41½mm; action as supplied, 1.8mm (treble), 2.1mm (bass), lowest action possible under standard conditions, 1.5mm (treble), 1.8mm (bass).

## Mark Griffiths Stereo Pick-up System.

This is not so much a review of an instrument, as a review of the possibilities of an innovation in pick-up design, the brainchild of Mark Griffiths. Mark describes himself as a musician and unemployed inventor, and plays bass with a band called Ignatz.

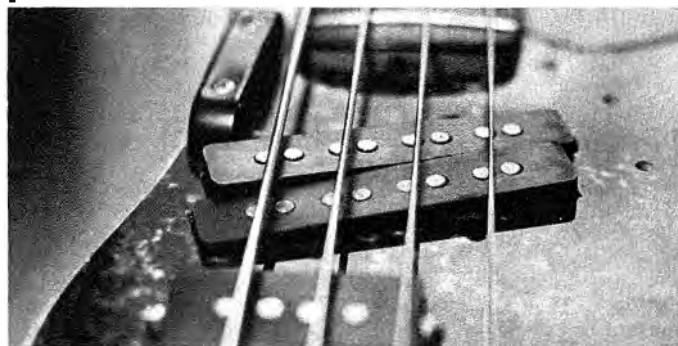
The story starts some time last year when Mark bought an English made bass, because of its superb feel and action, to supplement his old Fender Precision. Under stage conditions, its electrics were not as good as its mechanics and it eventually acquired the pick-ups from the Precision, and some mods to the tone controls. The guitar already had a form of 'split-pick-up' stereo wiring, where the output of the top pair of strings went to one channel and the other pair to the other channel.

While relaxing after a rehearsal in a mildly alcoholic state, Mark began thinking of the way a drum kit can be 'panned' across a stereo P.A. or record, and hit on a way of applying this to electric string instruments which was so basically simple that absolute secrecy was essential until patent protection had been arranged. It was at this point that Mark came to me for general advice, and I too had to be sworn to secrecy until the patent had been granted - in return for a promise that I could publish the idea for the benefit of all our readers as soon as possible.

Well, the day has arrived: the patent has been granted, and all can now be told. Those of you who wish to modify your own instruments will see enough from the photographs and description to go ahead. However, optimum results require a certain amount of experience in placing the pick-ups, and Mark is in the process of setting up a small business to modify existing guitars and basses to this system. He is also interested in any other enquiries from manufacturers, distributors, retailers and musicians, and his address can be found at the end of this article.

The final pick-up assembly has now been transferred back to the Fender, using Fender pick-ups, so that it is essentially a modification to a well-known guitar, and one may more easily assess the advantages or disadvantages of the stereo system. Also, the same system has been applied to a Fender Strat fitted with standard Strat and Gibson humbucking pick-ups. Both instruments are in good condition and sufficiently 'vintage' that their unmodified performance is a well-known 'standard.'

There is a widely-held opinion that any attempt to produce a 'stereo' output from an electric instrument counts as superfluous electronic trickery, has little to do with real music, and is in the same category as 'reprocessed' mono-to-stereo records. I can only say that I have heard and played Mark's stereo instruments and



*Stereo Precision*



*Stereo Strat*



I am convinced of their value. There is certainly some element of added interest to the sound, and it is not because of gimmicky position changing of the source of sound. What is added seems to be the same thing which is missing when one tries to record a sitar in mono. Alternatively, try listening to a good acoustic guitar with a finger in one ear; again, something is lost. This stereo effect is easily destroyed in a large hall, but can be maintained throughout most of the audience by careful choice and operation of the P.A. system.



Stereo Humbucker

The principle of operation of the Strat pick-up is probably easiest to describe. Standard split pick-up stereo wiring has a half width pick-up under each of two groups of strings — one pick-up to each output channel. (Or, in a simpler form, the bridge pick-up goes to one channel and the neck pick-up to the other). Although the split system can give some crude directional information with a two amp set-up, these are only two-channel systems. Neither of them can fairly be called stereo. You may have noticed that the output from any string on an instrument increases as the pick-up or pole screw is moved closer to that string. What Mark has done is to combine these two ideas, by fitting two pick-ups close together, but tilted so that, while both units are sensitive to all strings, one is most sensitive to the upper strings and least sensitive to the lower ones, while the other pick-up is least sensitive to the upper strings and most sensitive to the lower ones. You can see this cross-tilting in the photographs. In this way, the resulting sounds appear 'blended' rather than 'left and right'. The blended signals sound enveloping and almost magical for an electric instrument. The 'right and left' signals, while certainly useful to the musician, sound gimmicky by comparison.

The bass is arranged in a

similar way, using crossed jazz bass pick-ups in the middle of the body. In addition, there is a 'Mono' switch setting, and a standard 'split-pick-up' twin channel setting, using the two halves of the existing Precision Bass pick-up. As an added 'gimmick' or refinement, the left and right channels are reversed between the two stereo settings. Changing from blended stereo to reversed 'left and right only' in the middle of a solo may be a gimmick, but it certainly does wake up the audience! Other switch combinations are possible including mixtures of the

standard switch settings. (The next move appears to be some sort of foot-operated routing box. Regular readers of I.M. will remember just such a device called 'Daisy' which appeared as one of my D.I.Y. articles last year.)

When the same stereo principle is applied to a humbucking pick-up such as the standard Gibson model, things become rather more complicated. It is necessary to take the pick-up apart, separate the coils, and rebuild the magnetic circuit so that coils and pole pieces can be tilted in opposite directions, while still sharing the same central magnet. This is a job which should only be considered by those with considerable experience in building and repairing complex pick-ups. In any case it would be wiser to try it first on a very cheap Japanese copy humbucker.

This pick-up system works, it is the sort of 'concept' invention which doesn't require expensive research facilities, and it was invented by an ordinary working musician. Somewhere, there are more working musicians with more good ideas. Lets hear about them! (Letters to the Magazine, marked 'Ideas' please — not to my address).

Mark may be contacted: c/o Brett Lamb-Shine, 8 Redcliffe Gardens, London SW10. Tel: 01-352-6312.

Your friendly local music shop can now obtain *Boogie Juice* for you from Mick Johnson, 4, Ennerdale Gardens, Wembley, Middlesex. 01-904-2905. This has no connection with tropical beverages, but is a preparation for preserving and improving fingerboards. The same suppliers also have silicon-free guitar polish, and proper guitar-makers' hide glue for makers and repairers.

Steve, at Rock-On Products, has excellent *guitar and piano wire cutters* from Ce-Ka in Germany. I have used the same pair for about five years: they should last most musicians for life. (Beware of sharp, flying, ends of strings). These cutters will cut even the thickest bass strings with no difficulty.

Does anyone make a cheap, high resistivity conductive paint which can be used for screening the inside of electric guitars? It does not have to be silver, but it should dry fairly quickly, and cover about 1 square foot (or more) for £5.

Your local music shop can obtain guitar-making woods, some tools, and fretwire from Stentor Music, Reigate. They hope soon to have very high quality fret wire from Germany.

## The Triad Transducer

This is a 'bug' for guitar and similar instruments, of American origin, imported by Intertron U.K. It is rather larger than most guitar bugs, and with its 'bass emphasis' cap fitted, resembles a small brass mushroom. It is attached to a flat surface on the instrument with double-sided tape pads, and is designed for optimum reproduction of the natural tone of the instrument. The claimed frequency response is 5 — 20,000Hz, but from the supplied data, 50 to 15,000 would seem more reasonable. Because of the large area of the generating element, no pre-amp is necessary, but as with the Ashworth bug, the load should not fall much below 300 K.ohms, for a full bass response. Both the data and my own tests suggest that this unit is particularly free from unpleasant high-frequency resonances, and this probably

contributes to its clean and untiring sound. The character of the reproduced sound will vary according to where it is placed on the instrument, and you will probably need to experiment quite a bit to find the best place.

The bass resonance is normally around 350Hz but fitting a heavy metal cap over the top of the bug lowers this to 100Hz and gives considerably more bass output. I found the overall tone balance much better with this cap fitted. There are two problems which may occur in use. The first is that, with the cap fitted, the transducer is quite heavy and inclined to pull its sticky tape away from the instrument and fall to the floor. This is disconcerting and probably doesn't do it any good. The second problem is one which is common to all bugs which do not fit in or on the bridge, and which achieve a more realistic amplified tone by being sensitive to vibrations of the instrument body. They are all more liable to feedback at frequencies corresponding to the (loaded) resonances of the part of the body to which they are attached. This problem may be more significant with some instruments than with others. Many bugs of similar, but less sophisticated, design have so many sharp resonances of their own that this soundboard resonance problem is swamped and remains un-noticed.

As the Triad has no problematic resonances of its own, the sound level before feedback can be correspondingly higher than with some similar looking devices, but eventually one reaches feedback from resonances of the guitar body and the only way past this would be a good graphic equaliser or spot filter. When so equalised, the Triad is likely to sound a little better than "Hot Dots" at high levels, though very sensitive to noises from hands and clothes touching the guitar body. Without very good equalisation for the particular instrument in use, Hot Dots still seem a better bet for high levels of amplification, although for small club work you may prefer the 'naturalness' of the Triad.



Triad Transducer

# To tell the truth I'd never really tried it until that night in Buffalo.



Steve Hackett

"It was after the gig and we were relaxing at the back of the stadium.

A guy I'd never met before came up to me and said he had something he wanted me to try.

I was a little dubious, to say the least.

And from his bag he produced a strange little orange box. It was an MXR Phase 90.

Up till that moment I hadn't been overly sold on phasers. But fifteen minutes with the Phase 90 convinced me that phasing had come a long way since Itchycoo Park.

Since then we've used the Phase 90 and Phase 100 extensively on *The Lamb Lies Down On Broadway*, and *Trick Of The Tail*, on guitars and keyboards.

On *Tower Struck Down*, off my solo album *Voyage Of The Acolyte*, you can hear them being used a lot on bass pedals.

I particularly love them for chords and arpeggio

work. And on single line stuff, they give a lovely delicate weaving sound to the notes.

But their big feature — apart from their basic compactness and reliability — is the variable controls on speed and intensity.

Wind them up to fast effect and they sound exactly like a Rotary (and we all know how bulky a Rotary cabinet is).

So, corny though it may sound, the MXR Phase 90 and 100 are about everything I could possibly want in a phaser.

They've changed the way I write, and the way I play. And that's a lot of changes to come from two strange little orange boxes!"

Steve Hackett writes, produces, arranges, and plays guitar for Genesis.

He is pictured holding an MXR Phase 100.

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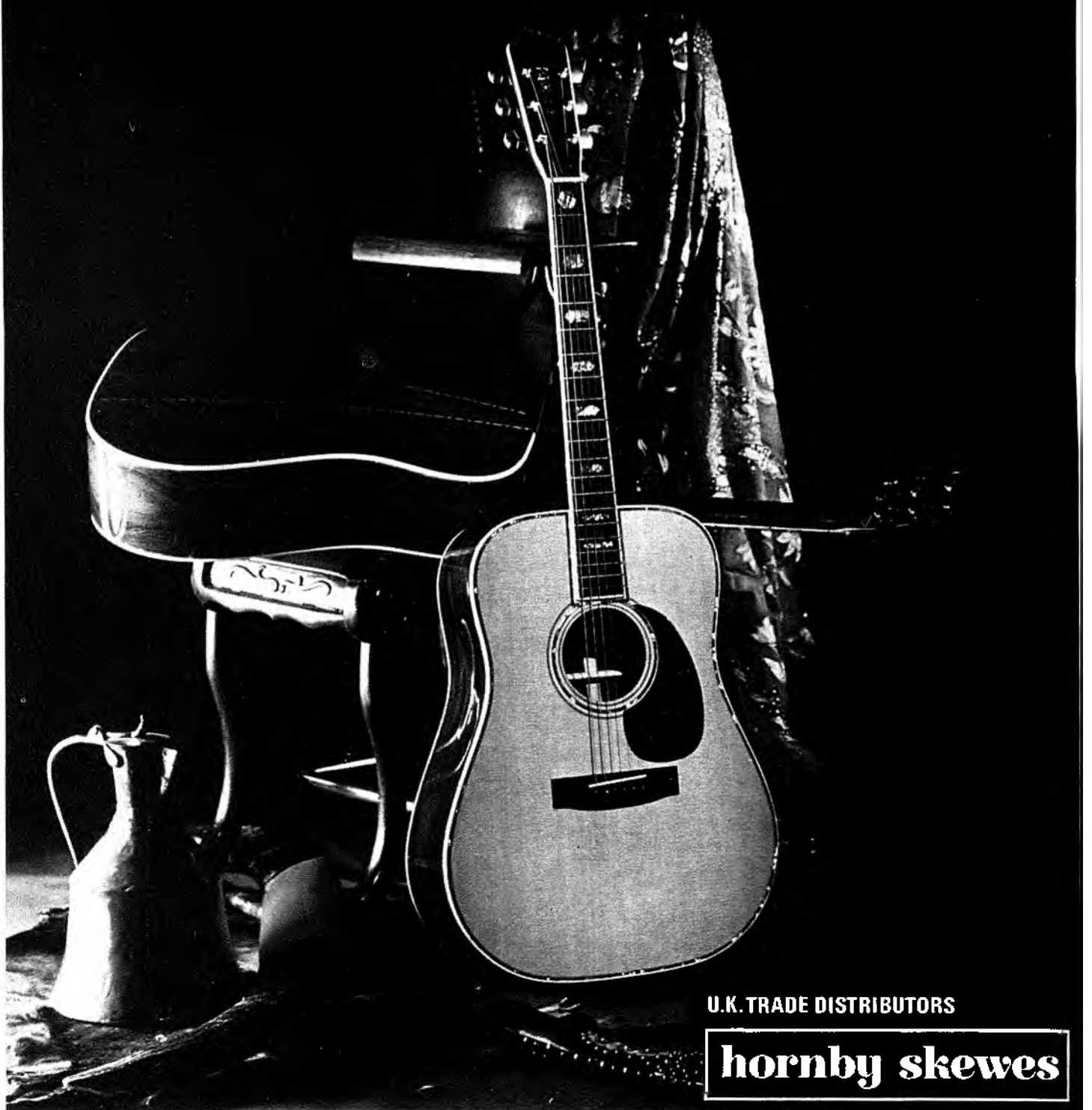
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# Drumcheck Drumcheck

TEST ON *ASBA Stainless Steel Kit*

DATE *December 1976*

PRICE *£724.07 (Drums) £199.99 (Stands and Pedals) Ex VAT*

TEST BY *Bob Henrit*



The Bondard family have been making extremely high quality ASBA drums just outside Paris for the last thirty years or so. Our introduction to them in England was in the early 'sixties, when their superlative, distinctive and, at that time, highly expensive coopered lemon tree and mahogany bongos with plastic heads first came over. At that time, for one economic reason or another, the sets weren't imported. The first actual kit I ever set eyes and hands on was one belonging to a French Chanteur called Richard Anthony. In 1966 I worked with him on the Continent for nine months or so and, during this time, became rather fond of ASBA. It was quite a surprise at the time because I was a proud owner of a Gretsch kit and wasn't prepared to believe that anything could compete with it, let alone something made outside of America. Funnily enough, I found ASBA to be very close to Gretsch with the same sort of distinctive, warm, contained sound without too many overtones. Of course this test set is a completely different kettle of fish to the one I played ten years ago, since it's made of stainless steel. I have examined two other stainless sets — the Leeman, made in Leicester, and the new Ludwig 'Pro Beat' so I'm not exactly a stranger

to metal sets.

A metal set is, by and large, more difficult to make since it demands more complex machining techniques. This, naturally makes it more expensive — indeed another European manufacturer had to withdraw his long awaited stainless steel set before it hit this market because it was prohibitively expensive once it was landed here and duty paid. However, ASBA seems to have come up with a competitive price (as far as metal drum sets are concerned) and do have the advantage of having been the first on the market. Ritchie Cole from Stray seems to have had an ASBA kit for years. The set I inspected had two 24" bass drums, 13" x 9" and 14" x 10" tom-toms mounted on a stand, a 16" x 16" floor tom-tom with a 6½" metal shell snare drum. It sounds a weird configuration, but you have to bear in mind that all ASBA drums are available ex-works so that you can have virtually any set-up you want, be it double bass drums with multi tom-toms down to a normal five drum kit.

#### Bass Drum (s)

They have twenty nut boxes with cast, solid-looking claws and smallish cast tympani-type tuners. The drum has Remo Ambassador

heads with wooden hoops. The drums have sharp pointed disappearing spurs set at an acute or grave angle (depending where you are sitting) which can be locked into position with a very sturdy thumb screw (reminiscent of the damper screws adjustment on Gretsch drums). The movement of these spurs was smooth as silk and very satisfying from an engineering tolerance standpoint. The drum had two strip dampers, one for the front head which is probably necessary for a metal drum to kill the extra ring produced by the metal shell just a little. Although the two tom-toms were mounted on a stand between the bass drums there was facility on each bass drum to mount the drums on them if you so desired. Basically the fitting bolted to the bass drum is a cast block about 1½" x 5" with a slot in it and a groove underneath to accommodate a ratchet. There is another of these blocks fitted to each tom-tom and between the two holders, an ingenious double, double-ratchet fitment. There's a ratchet at each end where the male fitting goes into its slot on the drum mount and in between these are a pair of ratchets to set angle and distance from player. At first sight, it didn't seem to have enough movement away and towards the player but having

experimented for a few minutes I found it does more than most fittings of this type and you could have up to six inches horizontal movement either way which is amazing.

The bass drum had no warmth to it but of course no one would be buying a metal drum set for warmth — it did have penetration as you would expect, but this is bought at the expense of tonal quality. It banged! To this end I removed the front head (a) to look inside and (b) to see what happened to the sound. The inside was not finished off how I expected with an inverse 45 degrees flange, but instead had a concave bead to strengthen it roughly 1/2" from its edge which was just a raw piece of metal. To be honest this didn't really matter since it was edged with a removable piece of 'U' shaped polythene channel obviously to protect the head. For my money, I would replace this with a more substantial piece of plastic channel. The nut boxes are all bolted on very neatly and the interiors of the drums are all as nice as the exteriors.

By the way, the drum sounded much better to me single headed — it had more sound and character to it, although it still had a tendency to bang when I hit it hard. The bass drum is heavy but not as bad as one would expect; it's still portable. I searched for an air hole in it but couldn't find one. Eventually when I took the front head off I spotted a pair of small holes in front of the bottom two nut-boxes. I thought at first these holes had been drilled by mistake but I should have known that ASBA don't work that way. I checked the other bass drum and this is their inobtrusive way of venting the drum. The front damper is semi-permanently fixed underneath two of the nut boxes about two thirds of the way down.

### Tom-Toms

13" x 9", 14" x 10" and 16" x 16" all with a distinctive metallic ringing sound. I think the company were wise in fitting the Ambassador heads as opposed to C.S. since they are just a little less 'live' sounding. The 13" x 9" had six screw driver tension screws, the 14" x 10" also had six and the 16" x 16" eight. All drums had cast hoops with a very heavy bead at their top edge to prevent excessive stick-wear. The mounted tom-toms and snare drum have internal dampers of spring-steel working on their batter heads (underneath), whereas the floor tom-tom is unique in having a strip damper across and underneath its batter head. This is activated on a cam like Gretsch's internal bass drum damper and looks really good. This strip is ingeniously sprung with elastic bands. It sounds crude but it works. All the drums have the concave strengthening beads at each edge. I couldn't find any evidence of air-holes on the tom-toms so I presume the designers felt that it would be enough for the air to escape where it could via the tom-tom holder fitting, the nut box holes or the damper.

The floor tom-tom has a key holder fitting with a rubber grommet which would of course help to dissipate the air. Whilst on the subject this key is extremely difficult to use since it is so small and fiddly. It took me longer than usual to take one of the tom-tom heads off. The nut boxes are sprung but not padded inside — its hardly necessary in a metal kit since it feeds off its own overtones anyway. The floor tom-tom's legs are unique in that they are on a splined ratchet at shell contact point and so can be made to spread as widely as you want — this of course would be at the expense of some height since they 'arc' outwards. This ratcheted leg is held tight by a cast wing bolt which, by modern standards, is insubstantial. The legs have rubber tips at each end so will not come off the drum for packing away. However, they fit very snugly against the side of the drum

and couldn't possibly scratch the beautiful stainless steel finish. The set is so well engineered that even the simple act of tensioning the heads feels somehow different and more positive.

### Snare Drum

The set comes with a 6 1/2" stainless snare drum but I also had the opportunity to try out a 6 1/2" ALTUGLAS (plexiglass to us) and an ordinary, but substantial, 5" wood shell drum. They all sounded great, which is a good advert for ASBA. The metal drum had twenty single nut boxes staggered (or offset if you prefer) on its shell, cast hoops, a drum key holder, internal damper, Remo heads, twin concave edge-beads, a twenty four strand snare attached to its cast cam-action snare mechanism with plastic strips. Its raw edges are finished off like the other drums with a piece of plastic (God knows what you'd do if you lost this). The snare tension is adjustable at both the strainer and the butt positions by a large round knurled-edge screw which tightens the snare by moving the carrier outwards and away from the shell in a parallel-ogram fashion. The drum has a very slight snare bed running in between two nut boxes positions.

The sound of this drum was bright although in my view not bright enough to be compatible with the rest of the set. I feel this is the only drum which would benefit from having C.S. heads fitted. Triple flange hoops would brighten it up too of course. The acrylic drum was very bright too, but with somehow more of a modern sound than the metal drum. It had a stronger bottom overtone which I preferred.

The star of their show however, is the wooden shell drum. It sounded deep although it was only a 5" yet very, very crisp. But as I said earlier, in their own intrinsic ways they are excellent.

### Accessories

ASBA make very large based substantial twin-legged tripod cymbal and tom-tom stands. These have cast bases to secure their legs to the centre tubes and cast ratchet tilters complete with cast cymbal locking nuts which match the wing nuts or bolts on the rest of the set. Every cymbal stand I saw was a boom stand of some description, one of these being an ingenious double stand with 'Y' shaped arms to take a pair of cymbals. None of these boom stands have counter-weights so I wouldn't be surprised if heavy prolonged playing with large cymbals might cause the stand to topple. There's also a double cymbal stand which has a traditional top to it where an ordinary cymbal sits and above this is a small boom-stand which takes another cymbal. This, to my mind, is much more useful than the 'Y' shaped stand.

The hi-hat has changed a bit since I used one last, and now has a nylon strap for its centre-pull instead of a fibre one like the bass drum pedal's. It has a one piece cast footplate, a tripod stand, adjustable spring, twin sprung spurs, a toe stop, a locking collar for the top tube (so you always have the pedals at the same height), a large adjustable-angle bottom cymbal seating, and an original looking top cymbal clutch. This clutch has a spring circlip type attachment underneath to retain the top cymbal which I was not convinced about. The Hayman hi-hat clutch used to have this and was never very successful for me. Anyway, the pedal is fast and easy but by present standards seems a little insubstantial — perhaps they are planning a more heavy duty pedal soon?

The Caroline bass drum pedal hasn't changed much over the years — it's a twin cast post, one piece cast footplate with toe stop, cam-action, single expansion spring model with twin spurs and a tough looking industrial fibre

pull/strap. The whole unit clamp attaches to the bass drum hoop from the sitting position with two tightening screws, one in each post. This pedal is and always has been very good. It's a pointer to the importance of this pedal in the world market that many years ago I visited a famous American manufacturer and in his office he had one of the "Carolines" — I asked him why, and he told me he wanted to make a pedal better than this one. It's my considered opinion that he never did. Incidentally, both the hi-hat and the bass drum pedal have pieces of webbing with holes in them attached beneath their heel plates and extending from them, back towards the player. The idea is you can bang nails or screws through these holes into the stage and keep the set even more stable and rigid.

The snare drum stand I am very undecided about. It has a smallish tripod base which, in my sample, rattled no matter what I tightened up. It's a basket-type stand but to secure the drum to it, you must rotate both drum and basket. This is not too much trouble when you're setting up but if you had to get your drum off quickly could be a drag, especially if you like to play with your snare drum up close to the bass drum and tom-toms. I found it bashed against everything when I turned it mostly because the snare strainer and damper stick out quite a way on any snare drum.

The playing angle adjustment is something else. Basically, it's two hemispheres inside a cast adjustable cage which is attached to the basket part of the stand. One of these hemispheres has a hole dead centre and the other one well off-centre. A rod attached to the tripod base of the stand fits first into the off-centre hole and then into the central hole. The two hemispheres are sprung to keep them apart so all one has to do to maintain and arrest the playing angle is to tighten the cage around the hemispheres with a wing bolt.

The double tom-tom stand is the tripod base of a cymbal stand with a pair of ratchet holders fixed at its top, one for left and one for right. These fit as usual into the grooved attachment on the drums shell. The stand seemed a little unstable and moved when you pushed the drums, but when they were actually being played didn't budge. I suppose that's good enough.

### Appearance

The drums were indeed splendidly finished off both inside and out. The interiors were heavily chromed too, which is, perhaps, one of my criticisms. If they were sand-blasted inside it would cut down the sound reflection and result in a warmer sound. This would mean they wouldn't have to dampen the drums quite so much. However, if you wanted to buy a metal kit you probably wouldn't want it to be warm in the first place.

This chrome finish would obviously scratch if it came into contact with anything sharp or abrasive. So with this set you would have to take extra care when packing and unpacking it.

The drums do have a truly Gallic flavour about them (in much the same way as Premier have an English one) and I'm told they have more hand-finishing processes than any other manufacturer. I'll be able to check their whole operation out soon because I'm going to visit ASBA's factory and report on it in a future issue.

Now for the bad news — These sets are not by any manner of means cheap for five drums, two cymbal stands, snare stand, hi-hat and bass drum pedal. If you want one, you will be consoled by the fact that a Frenchman would pay as much if not more for them since their V.A.T. is much higher than ours.

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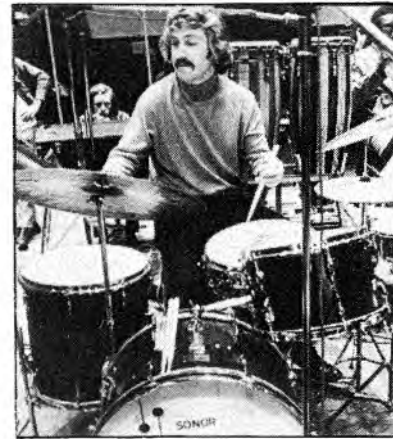
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# Soundcheck Soundcheck

TEST ON *Peavey 1200 Model Stereo Mixer*

DATE *December 1976.*

PRICE *£697.50 Ex VAT*

TEST BY *Mark A. Sawicki, M.Sc. (Eng.) Assoc M.I.E.E.*



## INTRODUCTION

Peavey Electronics, Corp. have a range of amplification products that are very much part of the establishment in the United States and are becoming more established in the U.K. now due to the effort of Peavey Electronics (U.K.) Ltd. The 1200 stereo mixing console was recently introduced to the U.K. market as a compact 12 channel portable design, suitable for all professional sound reinforcement applications.

Each of the twelve stereo channels consists of full solid-state circuitry and have their own individual controls: 73mm slide fader potentiometer, rotary stereo pan potentiometer for effective (L/R) balance control, rotary monitor send control with pre/post capability, rotary reverb/effects send control, rotary low/high frequency equalizer and, at the top of each channel, — mic/line selector as well as input attenuator (Pad) which possesses all the modern facilities, allowing operators to pad (attenuate) the input signal to any relevant level, without overloading the input of the pre-amplifier.

The master area of the 1200 mixer

locates all the master controls as well as the final output controls for the five mixing busses: left/right/monitor master — 73mm slide fader potentiometer, separate channel low/middle/high frequency equalisation, reverb/effects return control, reverb/effects pan potentiometers and reverb/effects level control.

The 1200 Peavey console has two professional class VU meters for L/R channels respectively, scaled -20, 0, +3dB in accordance with Bell specifications. The rear panel of the 1200 features the following facilities for each channel: a transformer balanced low impedance input (jacks), a family of five AUX inputs (left/right/monitor/effects/reverb), a line output section containing unbalanced (left/right/monitor) and balanced 600 ohms (Cannon XLR — male).

A special stereo tape output jack socket is provided for recording from the 1200 mixer during a performance when all the other outputs are being used. The 1200 Mixer has an On/Off/On reverse polarity power switch which is an integral part of American audio tradition, as it minimises the hum level by proper polarization of the power mains

connection.

The outside dimensions are 850mm (L), 600mm (W) and 245mm (H) and the mixer comes with a professionally edited Owner's Manual and 2.7 metres of heavy-duty mains cable.

## CONSTRUCTION

The basic construction of the 1200 Peavey mixing console consists of a large wooden frame covered with Spanish oak formica and an aluminium front and rear panel section which acts as the mixer chassis, housing twelve by seven rotary potentiometers and twelve slide carbon controls in the channel section, plus twelve rotary and three sliders in the main master area. The aluminium hardware is mounted on the wooden frame using twelve pozidrive screws and the unit is finished with four rubber steps a plastic type carrying handle.

Design features include the wide use of good quality printed circuit 'mother board' constructions and a separate power supply section. The reverberation unit located in the 'floor' of the wooden area is magnetically screened and

mounted with special hardware elements providing shockproofing and suspension.

Access to the electronics is difficult, and the protection fuse system is awkwardly placed — this could create problems in hot situations. The quality of material and elements represent normal commercial standards, and the design is clear and communicative. Workmanship and quality of soldered joints is quite

high and the outside appearance is good. The front panel, painted in standard black matt, has professionally marked black moulded knobs with a turned silver finish and trim discs.

The 1200 mixer has two meter set controls which enable the VU meters to be adjusted to the proper indications with any power slave amplifier, or other equipment driven by the mixer.

It might be a good idea to incorporate a magnetic screen on the floor of the console, as this would provide a high immunity to RF pick-up which so often is encountered in remote operations. Peavey Electronics Corporation guarantees their mixing console for a period of one year, from date of purchase, excepting the VU meters which only carry a 90 day warranty.

## PERFORMANCE

	RESULT	TEST CONDITION	COMMENT
Maximum Gain	71.0dB.	Single channel, gain continuously variable from 0dB. to -∞ /line as well as mike/	Very good — more than adequate for normal purposes.
Total Harmonic Distortion T.H.D. (%)	Less than 0.1% (0.089% — typically)	@ 1.KHz.	Reasonable
Input Impedance	(a) 150 — 600 ohms.  (b) 50 K.ohms.	Balanced (microphones)  Unbalanced (line inputs or high impedance microphones)	Balanced (symmetrical) inputs are very useful in practice. Very good.
Frequency Response	20Hz — 20,000Hz.	+ 1.2dB. @ 8.0dBm. output signal	Acceptable
Tone Controls	(a) + 15.2dB to — 15.0dB. + 15.3dB. to — 14.8dB. (b) +13.8dB. to — 15.0dB. + 14.9dB. to — 15.6dB. + 15.0dB. to — 15.1dB.	Bass at 50Hz. channels Treble at 10KHz. Bass at 50Hz. Middle at 800Hz. masters Treble at 10KHz.	Good, almost identical to the manufacturer's specification.
Maximum Output Signal (a) Left/Right/Monitor  (b) Effects/Reverb  (c) CUE — system	4.0 V. r.m.s. 3.0 V. r.m.s.  2.0 V. r.m.s.  2.0 V. r.m.s.	@ 2 K.ohms — unbalanced 600 ohms — balanced  @ 10 K.ohms. — unbalanced  @ 10 K.ohms. — stereo output	Very good
Crosstalk	— 60dB. typically	@ 1KHz.	Good
Noise Referred To Input	— 130dBm. typically	@ 1KHz.	Good
Multi Input Priority	Satisfactory on actual experiments	Twelve — stereo channels test + variations	Very good

## CONCLUSION

Assuming the aforementioned points (such as the problematic access to the internal area of the 1200 mixer, and the awkwardly placed fuse protection circuit)

can be changed, then this mixing console represents a good investment. On reading the Owner's Manual I found many practical tips for prospective users and

this booklet, I'm pleased to say is an excellent source of professional information.



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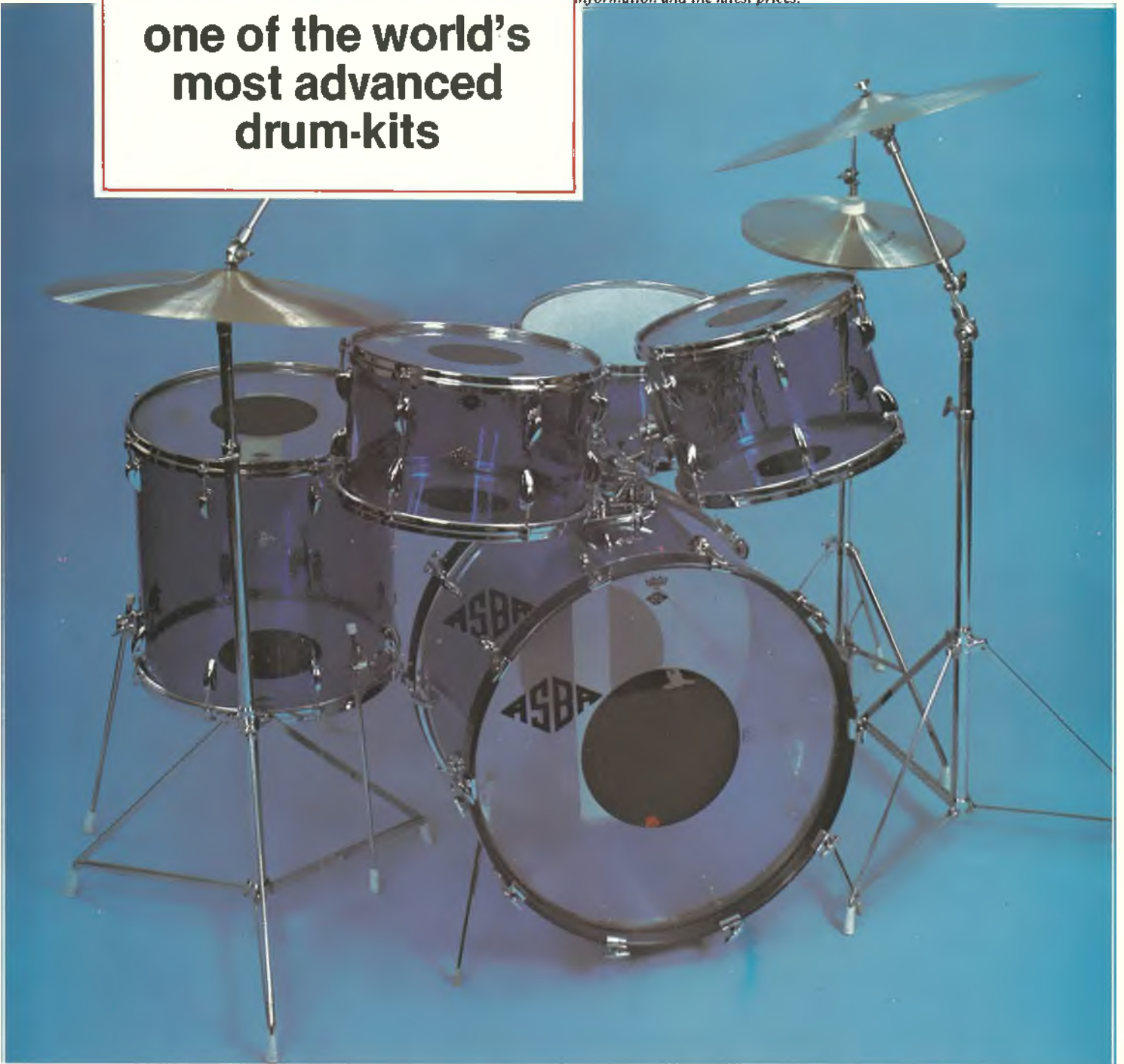
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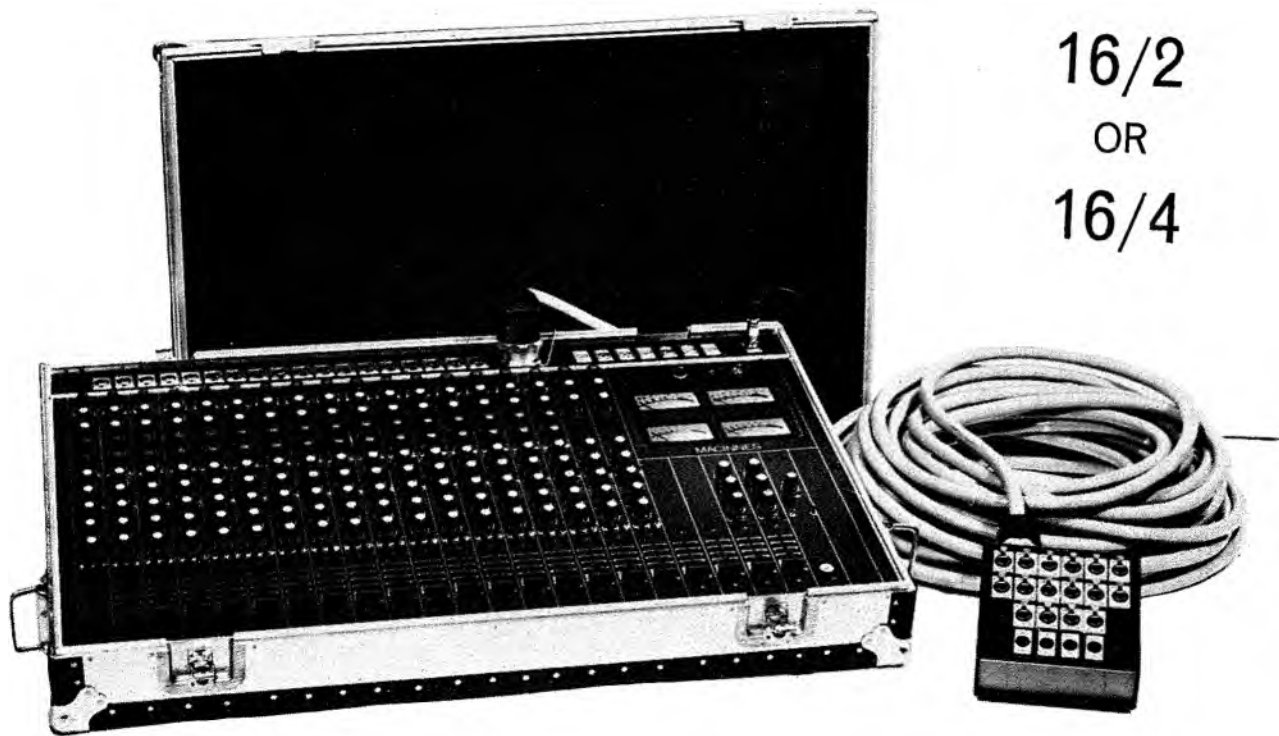
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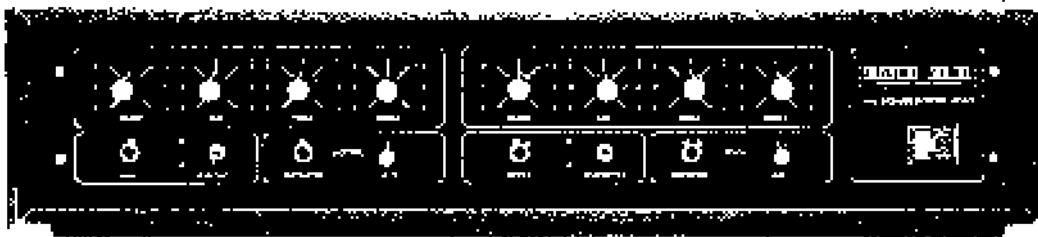
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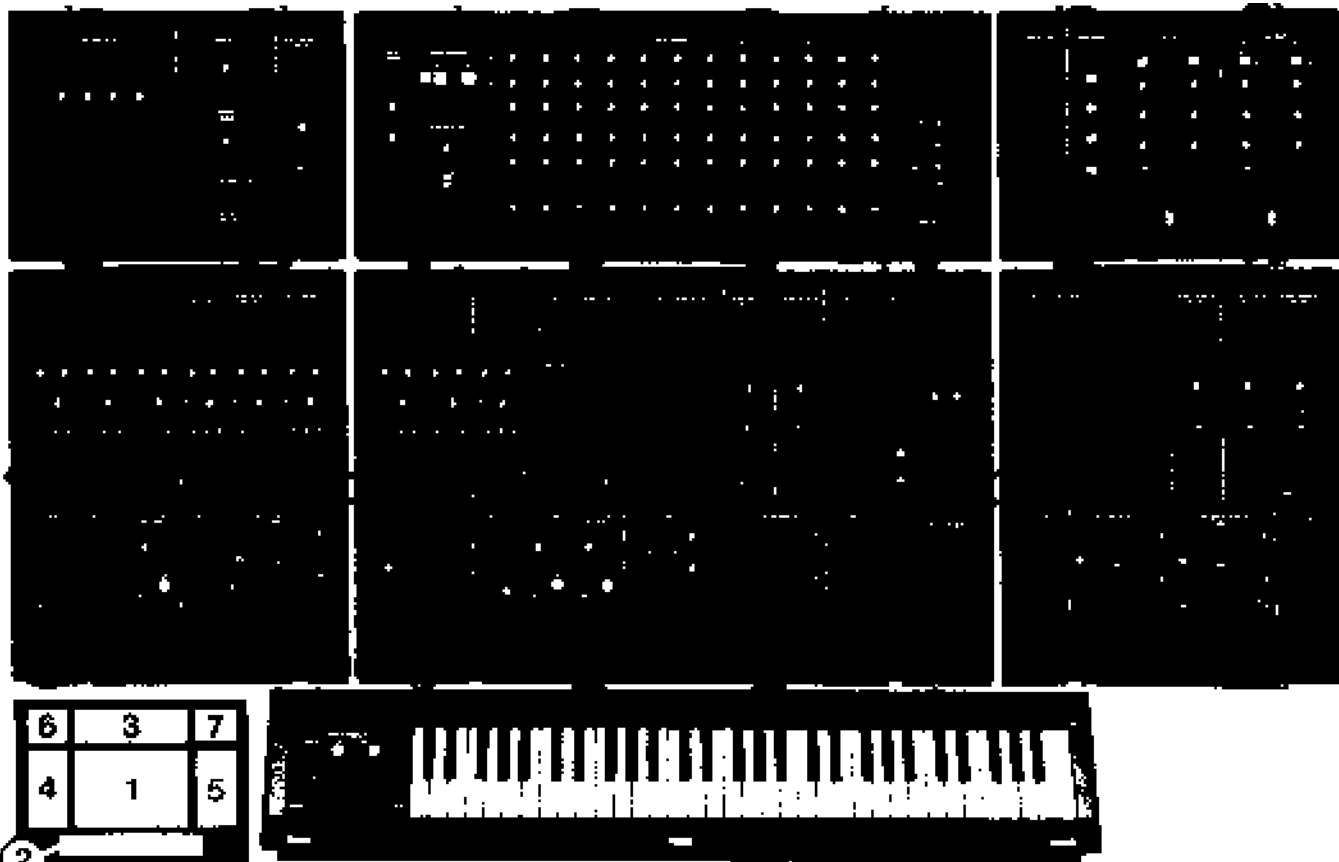
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# ROLAND SYNTHESIZER

## SYSTEM 700



The complete system consists of the MAIN CONSOLE, the KEYBOARD CONTROLLER, and five optional blocks for a total of 47 modules.

#### MAIN CONSOLE:

The MAIN CONSOLE contains all the basic modules necessary in a professional system for the synthesizing of sound and can be used alone with the KEYBOARD CONTROLLER as a complete synthesizer in itself. Modules included are: VCO (3), VCF (2), VCA (2), LFO (2), S/H, ADSR (2 x 1), OUTPUT MODULE (which includes PANNING controls, REVERBERATION, and a PHASE SHIFTER), and others.

#### KEYBOARD CONTROLLER:

The 61 key (5 octave) two voice KEYBOARD CONTROLLER has PORTAMENTO and PITCH BEND controls.

#### OPTIONS:

Optional blocks can be chosen and arranged according to the particular needs of each studio. All of the modules in the optional

blocks are interchangeable, thus the numbers and types of modules can also be changed to suit the studio. The main modules of the optional blocks are: BLOCK 3 «Sequencer»: 3 channel, 12 step sequencer; BLOCK 4 «VCO bank»: VCO (6), ADSR (2 x 1); BLOCK 5 «VCF/VCA bank»: VCF (2), VCA (3), ADSR (2 x 2); BLOCK 6 «Interface/Mixer»: frequency-to-voltage converter interface, 9 channel audio mixer, fixed filter bank, VCA; BLOCK 7 «Phase Shifter/ Audio Delay»: 2 channel phase shifter, 2 channel audio delay.

#### MAIN FEATURES:

All modules are made from high quality parts to ensure high reliability and durability with circuit designs which give high stability for ease in recording perfect sounds.

All major modules contain both audio signal input and control voltage input mixers for better signal to noise ratios and ease in synthesizing sounds.

Input and outputs are designed for matching with other professional audio equipment for

ease of use in the studio.

On the MAIN CONSOLE, most common connections are made internally without the use of patch cords. All modules have provisions for external patch cord connections for greater freedom in patching.

External sound sources (such as other musical instruments) can be used as a source of control.

The PULSE SHAPER and the sequencer's MASTER CONTROLLER input and output jacks allow the recording of consecutive sequences on tape without a break in rhythm.

Except for the MAIN CONSOLE, all modules are completely interchangeable and can be arranged to suit individual tastes. (The MAIN CONSOLE can be special ordered direct from the factory in other arrangements).

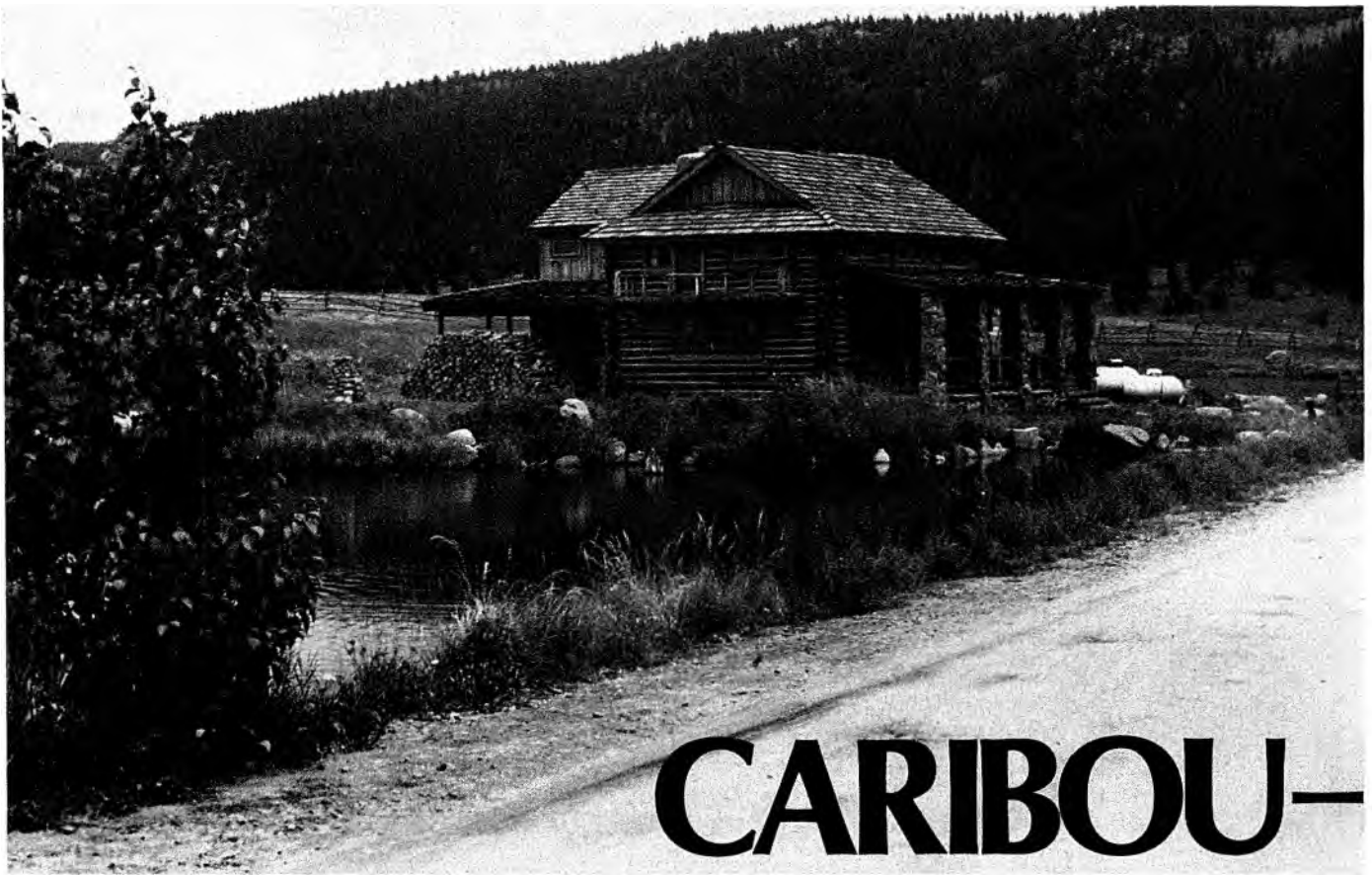
A complete system, the System 700 contains all the elements necessary for the synthesis of sound.

Roland's 'System' Synthesizer Series are specifically engineered for professional recording studios. The top-of-the-line 700 provides full control over all synthesizer functions, extremely stable output and a frequency range from 0.1 to 100kHz. And this revolutionary new product is one of the most competitively priced, full-feature units on the market today.

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## Home in the mountains

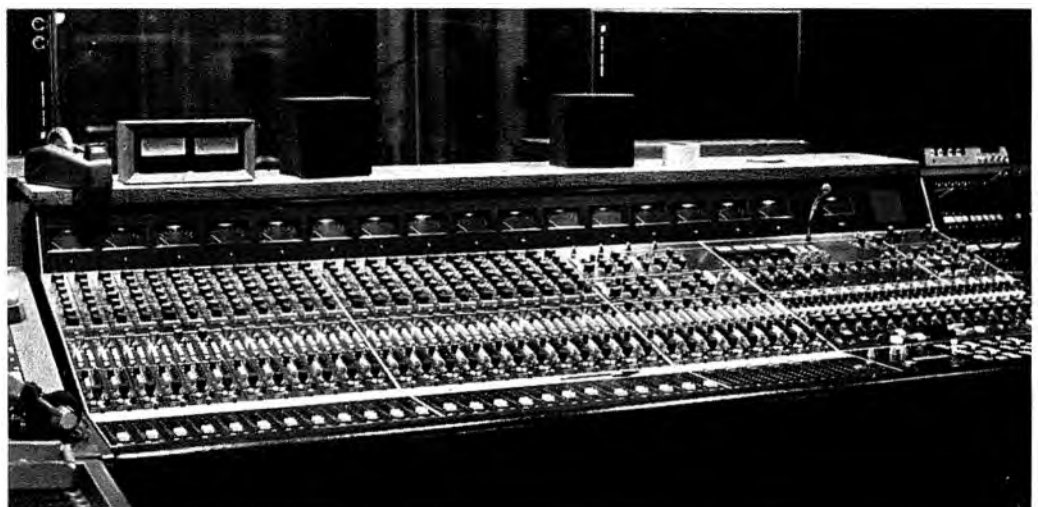
Surrounded by snow-capped peaks, glacier-fed streams and mines left from the gold rush days, the nine buildings comprising Caribou Ranch resemble anything but an ultra-modern recording studio. Situated on three thousand acres of beautiful timberline valley near Nederland, Colorado, the ranch (which has been a cattle ranch, potato farm, and Arabian horse ranch at various times in its hundred year history) consists of six completely furnished guest cabins with kitchen facilities, the "mess hall" (a spacious

lodge with a large dining area and central kitchen), a private garage and auto repair shop, and the three storey studio which was completely remodeled from an old horse barn! The cabins are built from split pine logs and the brass beds, stone fireplaces, and all wood furniture give a real feeling of the "Old West."

The ranch-studio idea was conceived by the owner Jim Guercio four years ago as a means of escaping the oppressive city atmospheres of Los Angeles and New York and creating an intimate environ-

ment in which to record the groups he produces and partially manages (Chicago, Beach Boys, Michael Murphey, L.A. Express, Gerard . . .).

Little by little things began to snowball and many other groups have sought out this peaceful and inspirational setting: Elton John (he's done three of his recent albums and written much new material at Caribou), Stephen Stills, Tim Fogelberg, Chick Corea . . . Guercio's philosophy in this respect is to have only one group at a time recording at



the ranch so that they can take as much time as they need, have full use of the facilities, bring their families and be able to record any time they want, twenty four hours a day. For recreation, musicians can go horseback riding, hiking (the high peaks of the continental divide are only a few miles away), and cross-country skiing and snowmobiling in the winter. At any one time there are from thirty to thirty five employees on the ranch including the studio staff, cleaning staff, and cattlemen to run the ranch's thousand head of cattle!

On the second floor of the ingeniously designed barn-building are the studio room and control room (the ground floor is primarily a workshop and storage area and the third floor is a creation-observation room commanding a fine view of the countryside). The studio design was one of Tom Hidley's (of Westlake Audio) earlier efforts and has been used as a prototype on subsequent studios. Around the control room's two Neve control consoles (a large one with 24 in and out used in various combinations with the smaller 12 in. and 2 out console) are a large stone fireplace, leather furniture and the tape machines (two Ampex MM. 100 twenty-four track, two 3M four track, and two 3M two tracks, soon to be replaced with the new Ampex ATR. 100 series). The main monitors are Westlake with minor modifications, and are completely tunable to create any sound curve the engineer desires. There are two MC. 2105 Macintosh and four Crown DC. 300A amplifiers to power the system and in addition three 16-track Dolbys, two digital delays (Eventide 1745M and Industrial Research DA. 4000) and five echo chambers (three EMT's and two AKG's).

The studio room is divided into several different acoustical areas and can be partitioned off if necessary. The largest part of the room is a dead area, trapped with heavy shag carpet and burlap-covered fibreglass. There are small areas of less absorption in the wall and ceiling to simulate a large outdoor room and the ceilings are high

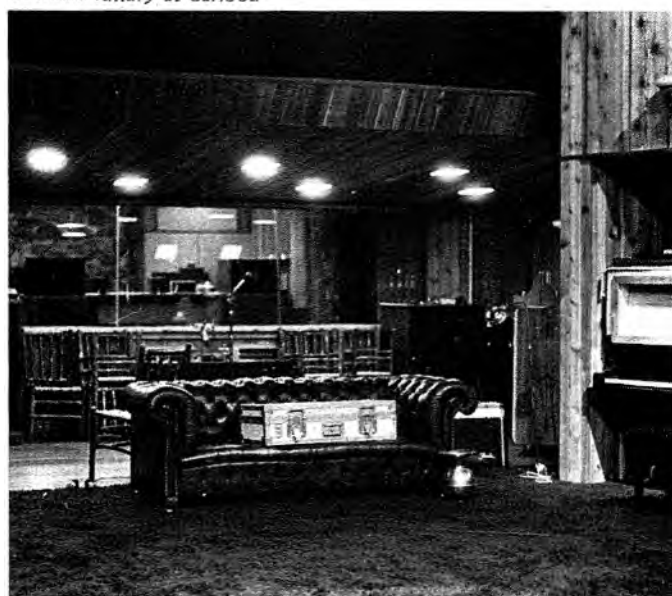
and trapped to make them seem higher. The section adjacent to the control room is all wood with no carpet and very little trapping to give a hot bright sound for drums or horns if desired. There is also a special drum booth in one corner which is heavily trapped to prevent leakage to other microphones. Studio instruments include a Hammond B3, several Fender Rhodes pianos, a clavinet, an Arp Odyssey, and two Steinway grand pianos. For scoring and editing purposes there is a projection booth with a 16 and two 35mm. projectors and a viewing screen which can cover one entire wall of the studio.

Although groups generally bring their own engineers to sessions, Caribou has a staff of assistant and maintenance engineers available day or night to help familiarize them with the nuances of the room and equipment. Musicians usually spend anywhere from two to six weeks at the ranch (there is an all inclusive package rate per day or week), and the unique combination of excellent recording facilities in a low-key creative atmosphere is what keeps Caribou's recording schedule filled up with big-name groups many months in advance.



*A corner of Caribou's control room*

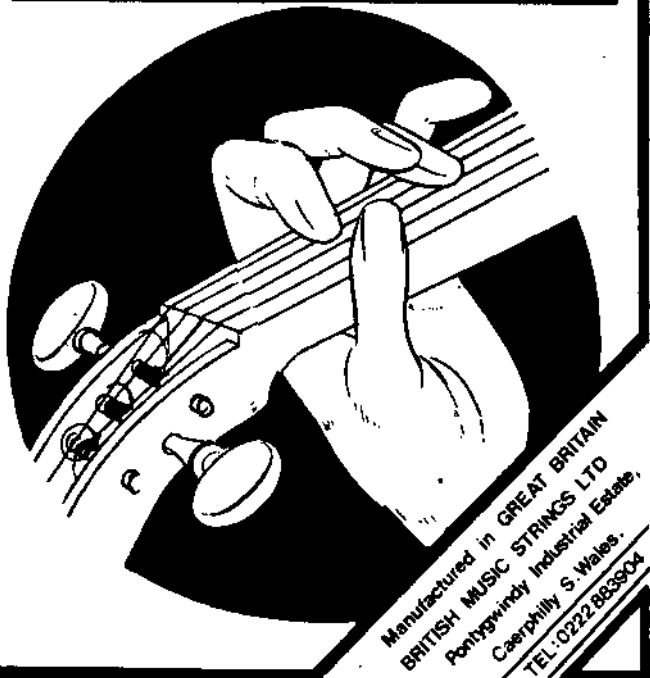
*Westlake luxury at Caribou*





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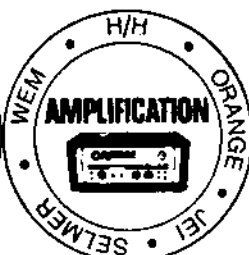
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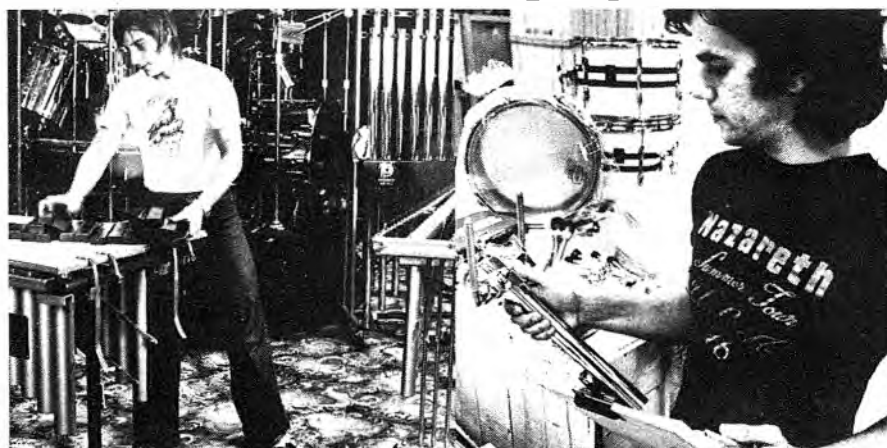


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# If anybody knows about the stick that percussion instruments have to take

## -it's these guys.



**ALLAN TERRY**  
Carl Palmer's roadie

**BARNEY**  
Nazareth's crew boss



**MICK DOUBLE**  
Keith Moon's roadie

**HOT DOG**  
Status Quo's roadie

### ALLAN TERRY

"Carl has had most of his Premier tuned percussion for almost three years, and in that time I've not had to buy a single replacement part. This reliability makes my job much easier. I think it's due to two things: Premier build quality instruments and they operate a proper test programme.

Why does Carl play Premier? He's a perfectionist. He pushes himself to give the finest performance and he expects his instruments to come up to the same standard. The cost is relatively unimportant - he spent over £10,000 getting his drum kit together!

I make it my business to keep in touch with all the latest developments at Premier. But it's a job to keep ahead of Carl - he's already visited the factory three times this year!"

### MICK DOUBLE

"I've looked after Keith Moon's kit for the last six years, both touring and recording. Inevitably, it gets a bashing on the road. But the real test is on stage when Moonie gets to work. He stands on them, jumps on them - even throws them. And that's on a quiet night! So you can see why my setting up routine includes nailing everything to the stage!

I've had this kit specially reinforced - but Premier drums are basically very strong anyway. Premier still make all their own equipment of course, that's why they can take so much punishment. Remember that scene in 'Tommy' when the kit was pushed off the stage and trampled by the mob? Well that scene had to be shot over and over, with me diving to the rescue after each take. We used the same kit in 'Stardust' and we've still got it today!"

### BARNEY

"Darrell Sweet insists on playing a totally Premier outfit - right down to the heads, stands, nuts and bolts. This is because he feels that Premier have a genuine interest in rock drumming and go out of their way to make drums that give him the sound and playing characteristics that he looks for.

From my point of view as well, Premier work really hard to get everything right. I've never had a faulty piece of kit from them. And though I like to carry plenty of spares, I still need to top up with parts in a hurry. Premier always seem to have what I need - and it's reassuring to know that wherever we are, I can call on the best dealer network in the business."

### HOT DOG

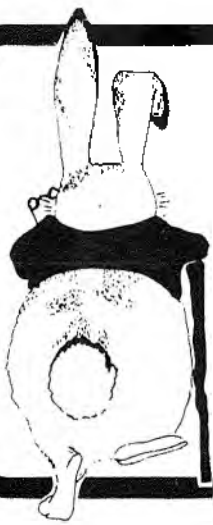
"Quo probably tour more than any other British group. This in itself is tough on the kit. Plus our crowds sometimes get a bit excited - our main kit recently survived a riot at Neumunster. I like Premier because they give me the reliability I must have. They're exceptionally strong and have better quality fittings than most. And Premier service has never let me down.

Of course, reliability is my big interest - John (Coghlan) plays Premier because he likes the sound. You should ask him about his '35' snare! He was one of the first to use one - and now he'd never be without it. In fact, he's got four of them!"

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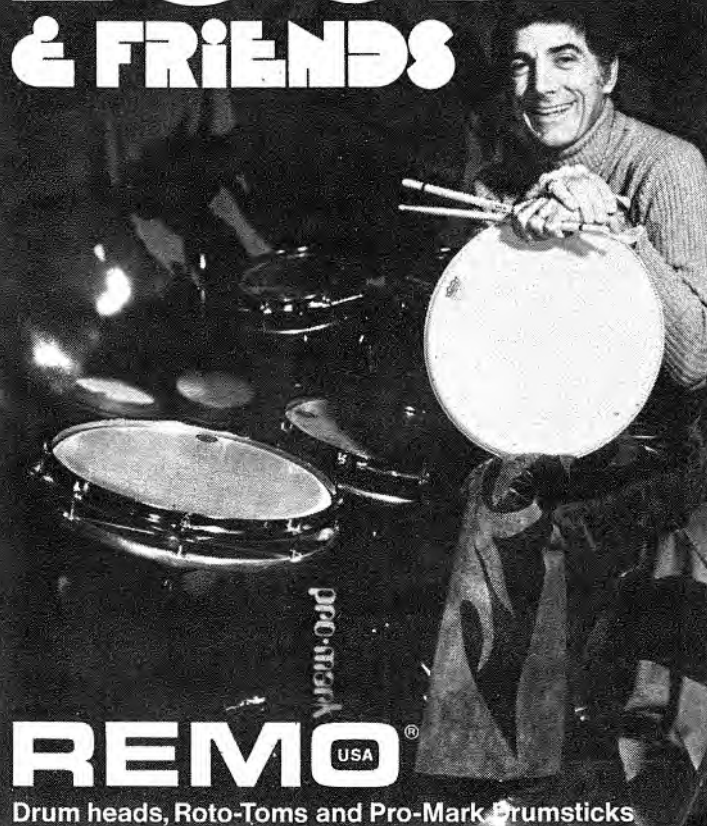


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\* Days in bold type indicate bargain days at Hessys.

JANUARY		FEBRUARY		MARCH	
Sun	2 9 16 23 30	Sun	6 13 20 27	Sun	6 13 20 27
Mon	3 10 17 24 31	Mon	7 14 21 28	Mon	7 14 21 28
Tues	4 11 18 25	Tues	1 8 15 22	Tues	1 8 15 22 29
Wed	5 12 19 26	Wed	2 9 16 23	Wed	2 9 16 23 30
Thur	6 13 20 27	Thur	3 10 17 24	Thur	3 10 17 24 31
Fri	7 14 21 28	Fri	4 11 18 25	Fri	4 11 18 25
Sat	1 8 15 22 29	Sat	6 12 19 26	Sat	5 12 19 26
APRIL		MAY		JUNE	
Sun	3 10 17 24	Sun	1 8 15 22 29	Sun	5 12 19 26
Mon	4 11 18 25	Mon	2 9 16 23 30	Mon	6 13 20 27
Tues	5 12 19 26	Tues	3 10 17 24 31	Tues	7 14 21 28
Wed	6 13 20 27	Wed	4 11 18 25	Wed	1 8 15 22 29
Thur	7 14 21 28	Thur	5 12 19 26	Thur	2 9 16 23 30
Fri	1 8 15 22 29	Fri	6 13 20 27	Fri	3 10 17 24
Sat	2 9 16 23 30	Sat	7 14 21 28	Sat	4 11 18 25
JULY		AUGUST		SEPTEMBER	
Sun	3 10 17 24 31	Sun	7 14 21 28	Sun	4 11 18 25
Mon	4 11 18 25	Mon	1 8 15 22 29	Mon	5 12 19 26
Tues	5 12 19 26	Tues	2 9 16 23 30	Tues	6 13 20 27
Wed	6 13 20 27	Wed	3 10 17 24 31	Wed	7 14 21 28
Thur	7 14 21 28	Thur	4 11 18 25	Thur	1 8 15 22 29
Fri	1 8 15 22 29	Fri	5 12 19 26	Fri	2 9 16 23 30
Sat	2 9 16 23 30	Sat	6 13 20 27	Sat	3 10 17 24
OCTOBER		NOVEMBER		DECEMBER	
Sun	2 9 16 23 30	Sun	6 13 20 27	Sun	4 11 18 25
Mon	3 10 17 24 31	Mon	7 14 21 28	Mon	5 12 19 26
Tues	4 11 18 25	Tues	1 8 15 22 29	Tues	6 13 20 27
Wed	5 12 19 26	Wed	2 9 16 23 30	Wed	7 14 21 28
Thur	6 13 20 27	Thur	3 10 17 24	Thur	1 8 15 22 29
Fri	7 14 21 28	Fri	4 11 18 25	Fri	2 9 16 23 30
Sat	1 8 15 22 29	Sat	5 12 19 26	Sat	3 10 17 24 31



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# Chicago

by Tony Bacon

It's a long time since Chicago have played in Britain and recently, with the success of their last few singles particularly in mind, several members of the band visited London on a 'promotional visit'. The intention was also to investigate the possibility of a European tour, and I managed to speak to them early one morning at their hotel.

It took a while for everybody to materialise, especially as the visiting members, drummer Danny Seraphine, guitarist Terry Kath and bass-player Peter Cetera, had been up late the previous night "with some CBS people", as Terry put it. Their producer Jimmy Guercio was also in attendance but the first one up was Peter Cetera, and I asked him how Chicago had come together.

PC: Oh, I'm not too good with dates, but we've been together going on ten years now. We all started in club groups back in Chicago, that's where we're from of course. A few of the guys went to school together and they just

started talking about how nice it would be to form a horn group — at that point horns weren't used that much, as far as groups were concerned. So a few of them thought, hey, sure, it'd be like a nice idea, and they started talking to different people in different groups — that's how it got together. It was a six-piece group at first, Bobby played bass on pedals, and they were together about maybe a year. At that time I was in another top vocal group in Chicago — the Exceptions — but was just leaving at that time, and they needed another singer, so I joined the group.

(Enter Danny Seraphine.)

When you started working with horns, presumably you had to start virtually from scratch?

PC: Well, one time or another we'd all been in bands that had a single horn.

DS: I'd been with a group that had a horn section, two or three years before that — Peter was with a band that had a horn section. The group I was with, the Executives, was probably one of the first rock bands with horns. People used to think it was strange, but it was a great feeling. Chicago, of course, was a bigger section, three horns.

How did you first get involved with CBS?

PC: The other guys had already met Jimmy Guercio, who was also at school with them. At that time he was doing The Buckingham, but he came to Chicago to see another group who had offered Terry (Kath, Chicago's guitarist) to play bass, 'cos

he's a very good bass-player too. I thought that Terry might split because Guercio was involved, but he said no, he was playing guitar which was what he really wanted to do, and we had a really good band together. So Terry convinced Guercio to come out to some gig we were doing in Michigan, and he was much more enthusiastic about us than the other group he'd come out to see, so consequently he signed us, and the other group also.

DS: And speaking of James William Guercio, here he is! (Enter Jim Guercio.)

So when did you start thinking of the first album?

DS: Well, when I joined the group they had a few songs of their own, and when we started going with Jimmy, he started saying maybe he could get us with CBS, and so we started working on more original material.

How does the band work as far as writing goes? Is it an individual effort, do you work in pairs, or what?

PC: Everybody's writing now, whereas for the first few albums there was only one major songwriter, one or two other guys had a couple of songs. Now every member of the group has written songs or is writing songs. Someone will bring along a song and everybody helps him out, he expresses his ideas about it and then we all corroborate on it.

So it's a very group oriented exercise?

PC: Some songs are, some songs the fella already has it in his head. Mainly, if someone has a song he'll stick it

down on tape, and then bring the tape to rehearsal and say, "This is a song I've just written."

Are there any thoughts of touring over here soon?  
PC: That's exactly why we're here, 'cos of the single and the new album, but also to set up a tour. It should be in January or February. We were last here three years ago.

I remember seeing you at the Albert Hall in about 1969.  
DS: That was '69, yeah, the first time we came over.

That was a great concert.  
DS: That was very good, yeah. Second time over it just didn't happen.  
PC: Third time was even worse.

For what reason? Musically, audience reaction, or what?  
JG: I think, by being successful at that time, it created a negative response at certain levels.

What levels?  
JG: Well, in '69 they were the darlings of the underground press, never had singles, whereas by the second or third trip they had 'sold-out' 'cos they'd sold a lot of records. The press were really terrible.

Was that just here, or was it general?  
DS: General. Well, Europe anyway.  
PC: We were drawing crowds in the States too, but on the second and third trips it was just, like everywhere we went, it was just . . . a nothingness about everything.  
DS: The fans were loyal, but there was no enthusiasm. That brought us down. We got such bad reviews the third time, I think the press was just so weird, that we decided not to come back for a while. Didn't encourage us at all.

You're basing most of your judgements on the press reviews, then?  
PC: Well, on the crowd too, because we weren't really drawing as many as we could have.  
JG: I think that's why we're here now. I think you have to come over here and invest a lot of time, and not just play London as the main venue. I mean like the first trip you guys played Manchester, Birmingham, Glasgow . . . that's what I think should be done. The audiences are there, it's just a different market in each country. You guys have been working so hard in the 'States you don't have the time, you don't have the energy . . .

PC: Yeah, it's sort of been non-stop on the road, studio, on the road . . . you know.

(Enter Terry Kath.)  
How do you go down outside of Europe, apart from the States?  
PC: Well, Japan is probably the place to play as far as crowds go, they're about the greatest crowd in the world.

That seems strange somehow.  
PC: Yeah, it's strange to me also . . .  
TK: America's getting pretty crazy. They might have come up to that level of intensity.

Have you recorded in Japan?  
TK: We have a double-album released in Japan only. That's the best live album, it makes 'Carnegie Hall' look like a piece of shit, it's so good.

How do you feel about live albums generally?  
PC: Usually I hate them!

What, from a sound point of view?  
PC: No, because, er, we've got good sound. I don't know, there's just something about them . . .  
TK: Horns always sound, sort of . . .

Tinny?  
TK: Yeah, tinny. It's awful. You have to have an engineer to record live, you have to have a *really good* engineer to capture what's going down, also when there's eight guys in the band it's difficult to have the recording equipment there on the night that *everybody's* good.  
PC: When you're playing live it sort of blows past the crowd one time, it's over and done with. But when you're playing live and it's on tape you're gonna get it back . . .  
TK: . . . for the rest of your life . . .  
PC: . . . and psychologically you're very aware of that while you're playing.

So you're more relaxed with studio work?  
TK: I think from the seventh album on, that's the one where we overcame the uncomfortable atmosphere of being in different studios, we started working up at Caribou, you can hear on the seventh album how more relaxed we are.

Caribou's a good place to work?  
TK: Oh yeah! I love it.  
PC: No distractions.  
TK: You have the options on going out and riding horses or motorcycles, taking hikes and all this stuff too.

A bit different to a studio in a city.  
PC: Yeah, we did the first couple of albums at CBS Studio in New York, starting at six at night and going through to all hours in the morning, walk home, jack-

hammers going off outside your window . . .

Not exactly relaxing.  
TK: Not relaxing at all.

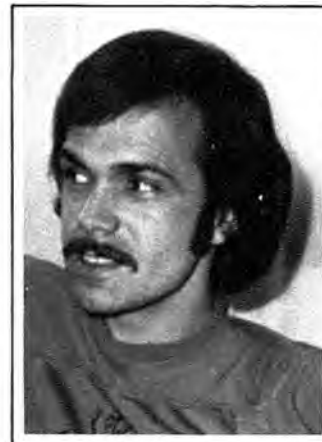
You mentioned just now that you're not too happy with the Carnegie Hall live album?  
DS: I hate it. I don't think the performance was that good.

You've got quite a complica-



ted, but they built it exactly to our needs, which is really good. I'm sure it's far more advanced than most systems.

What about backline amps, what do you use?  
PC: I've got a specially built amp now, I don't know who built it or where he got it from, but I've tried every amp there is in the world, and it's the best!  
TK: It uses PA speakers, a



ted sound, in as much as getting it all together is concerned.  
TK: Well, that's another thing within the last maybe two years or something that we've finally developed, an onstage monitor system where we can all actually hear one another, almost like in the studio and almost every night. By the end of a night we usually end up getting everything sounding good, that's why we do two sets, on the first set we sort of feel things out, and on the second set it's all ready to go! We have a guy called Mike doing the out-front mix and a guy called Chris doing the monitor mix, and if I'm out of tune, he'll pull me down in the mix until I get tuned up, if the horns are out, he'll pull them down a bit, it really compliments what we're doing. We have probably the most sophisticated monitor system going. On stage it can be just like being in a studio, I can get exactly what I want through my own monitor, each has their own.

That's your own PA system?  
TK: Well, Clare Brothers own

Top left: Guitarist Terry Kath.  
Top Right: Drummer Danny Seraphine. Below: Bassist Peter Cetera.

combination of a couple of horns and some mid-range speakers. I designed my own speaker cabinet too, that's got . . . ever seen those spot-lights that shine up in Hollywood? It's built inside this cabinet that's sort of coned in that way, and projects it all to the centre of this plexi-glass board which the speakers are mounted on, and the whole plexiglass board vibrates like one speaker. This way I can get a lot more feedback and sustain, if I just touch the guitar it'll go (makes feedback noise). I can sustain on any note. I sort of designed it and then one of our road crew built it. It works real good, and looks real psychedelic! (laughs). Everyone's going "What the hell is that!"

Are you just using a regular amp with that?

TK: I'm using a Heathkit amplifier, 35 watts.

35 watts?

TK: Oh yeah, it cranks though! It's really good! And then I've got a couple of capacitors put on the volume switch which gives it a little more EQ, a little more edge, so it cuts. And for on-stage it really cuts through, what with Bobby playing organ and ARPs, I had a tendency to get a bit lost, but now I'm really there.

You find your own speaker system helps cut through too?

TK: The speaker helps a lot, yeah. 'Cos that plexiglass projects more, with more top. It all works out real good.

Do you use many effects?

TK: Phaser, wah-wah, I have

# Chicago

an echo — I use the echo very slightly, I don't like you to hear the echo, I want you to be just . . . aware of it. Although once in a while I'll crank it up for certain things. Sometimes the halls are so echoey that I can't even use the echo!

I remember way back at the '69 gig, you were using a Les Paul. What do you use now?

TK: I've been using a Tele' for maybe . . . three years? Could be four. Anyway, this Tele' has a Gibson humbucker and a Stratocaster tremelo bridge unit. Only, if you're thinking of trying that, it doesn't work so hot on the Telecaster! I had that mounted on the Tele and the pickups are so hot you can hear the springs in the tremelo! So I guess that was a mistake . . . The humbucking pickup on my guitar now is the same that I used on the first album. I took them off

that red Les Paul and they were hanging around for a while and I put that pickup on my new guitar. And the sound had a whole lot of balls, it sounds great. I left the Tele treble pickup, it really smacks you right in the face, that one! And that in-between switch on the Tele gives you a real nice even distribution of power from both pickups. That combination of the humbucker and the Tele treble is a real nice sound.

Do you have many other guitars, Terry?

TK: Yeah, I've got a Stratocaster that I use for backup, and I've recently bought a new Stratocaster which stays in tune (laughs) — my old one I'll go up the neck, come back down and it'd be, well . . . out! So I've been looking round, and I've just bought this new one, brand new, and I'm gonna start using that more often. Gibson

just gave me a brand new L5, a sunburst one, the thin body L5 . . .

Is it light?

TK: No, it's not that light at all — it looks like it should be, but it isn't!

PC: Yeah, like when the Ripper basses first came out a few years back I endorsed them, and the first ones were really heavy, although I hear they're lighter now. They've made the body a little smaller, a little lighter. I use one on stage now, along with my Fender.

Do you find the four-way pickup selector on the Ripper much use?

PC: I just tend to use the first position almost all the time 'cos that gives you the balls.

TK: I like that Ripper too, they gave me one of those too — well, I asked for one, actually. Gibson are giving me guitars? Oh, send me a Ripper! (laughs). We were trying to get Gibson to give us guitars right from the beginning, and then all of a sudden they're sending them out left, right and centre! They're coming out with a new line of keyboards, er, some kind of synthesizer type of thing. As a matter of fact Jerry's in Portland right now picking 'em up . . .

PC: Oh yeah?

TK: I said, well, get me one of those (laughs) — I'll take whatever I can get! Might have to sell 'em one day when I'm broke.

Do you know anything more about this keyboard? Is it an actual synth? A Moog maybe?

TK: Well, yeah, that's what I





hear. I haven't seen anything about them. Jerry, one of our road crew, found out about them, so he's trying to get one for Bobby. They say they've only got about four of them ready to go, so he's trying to get a couple of them, we'll see what they're like when we get back.

(Nortin's London office say this instrument is the new Moog polyphonic synthesizer, samples of which were being sent to "leading bands" in the States at the time of this interview. It will be available in Europe for the Frankfurt Fair in February.)

What about acoustic guitars, what do you have?

TK: Well, I play a Martin, and I've got an Ovation too.

What's the Martin?

TK: It's a D35, 'cept I've had it a long time and I think it's starting to get . . . shakey. I can see where, right at the bridge, the whole guitar has been bevelled out over the years, sort of pulling away I guess. And I think it's starting to get pretty hairy.

PC: Yeah, with an acoustic, as soon as you start bringing it with you on the road, it just knocks the hell out of it, the climate . . .

TK: . . . altitude changes, and all that sort of thing. My guitars, when I take them up to the ranch (Caribou) I have to go have the necks re-aligned, and then when we go back to L.A. they usually get a little warped and they have to be re-aligned again. Up at the ranch the air is so thin, it really affects everything, dries everything out till it's dry as hell.

PC: I have a Guild 12-string, which sounds really nice.

Do you have problems amplifying acoustics on stage?

PC: We don't really use acoustics that much on stage except for 'If You Leave Me'. Mine's got one of those little mikes inside, you know?

TK: That's the first thing I've ever heard that really sounds like an acoustic guitar when you hear it through the amp, rather than an . . . electric sound, I guess. The Ovation, you know the one with the round back, has a tendency to sound like an electric guitar, but whatever you're using on yours (to Peter) it sounds pretty good.

Does it go to a stage amp or to the desk?

TK: Straight to the board . . .

PC: . . . and we get it back from the monitors.

TK: I think they tried mounting a little Sony mike inside the box at first, but that was . . . something was wrong.

PC: Too much feedback . . . that's why it goes straight into the board now.

What about studio work, are you very meticulous in getting things right? I remember on the first album there was a track that was taken live in the studio without overdubs — do you still do that at all?

TK: Well, yeah, on the last album we took a few things in one or two takes, just overdubbing the vocal. As far as time . . . I don't know. We work two weeks at a time, then we'll go on the road for a while, have some time off, come back maybe a couple of months later and do another two weeks. If you put them all together I don't think we spend that much time.

PC: I think it's been getting less. I mean we've been getting things in second or third takes. In the old days I can remember doing things in 30 or 40 takes, losing any kind of excitement.

TK: You can hear that on the second and third album a lot. On the first album, we were just downright scared! (laughs)

The first album comes across really well though.

TK: It's just got a sound, it doesn't sound like any other album of ours, or of anybody else's. It really does sort of stand out, that first album. I don't know why — we did it on an eight-track, which might have had something to do with it, having to ping-pong things around and make room which sometimes tends to . . . well I heard that 'Sergeant Pepper' was recorded on a four-track.

That's right.

TK: Well there you are. When you're doing everything and

moving it around, you really have to keep aware of what you want in and what you don't want to get buried — they did a good job on Sergeant Pepper!

Do you have a lot of material on tape that you haven't used?

TK: I think there's probably, right now, between everybody in the band, enough material, even if we stopped writing songs, there's probably enough for a few albums at least.

PC: There are a lot of songs that each person has written that aren't for the group, so maybe if someone wanted to do a solo-album or something . . . But there's no problem getting material for the group.

TK: And now everybody in the group is actually getting into writing, there's a vast variety of material coming in.

Does anybody in the group do much session playing?

PC: We've started doing more and more.

TK: The horn players are always being asked to come in now and then on different things. Laudier de Oliveira, our percussionist, he's in the studio almost every day! When we're off the road, he's always working on somebody's album.

I suppose that sort of player would be in demand.

PC: Right, there's nine million guitar players, nine million bass players, nine million drummers, but there's only a few good percussionists.

And horn players that work permanently together.

TK: Yeah, because our horn section is like a separate group, and they stand out on their own too. I mean you can hear our horn section, and say, "Hey, that's Chicago!" Three other horn players could never get that sound. On this last trip, Lee, our trumpet player, had a baby boy and three days into the tour he had to fly back for the birth. He'd already got another trumpet player to take his place in case he couldn't make the trip. This other trumpet player was really good, an LA session-man, works on the Johnny Carson Show, all that sort of thing. And it just totally changed the sound of the horn section, totally, even though he was a great trumpet player.

PC: It was kind of weird because for the first few nights we had two trumpets both playing, and it sounded really good. And then Lee had to split, and this guy, he knew all the charts and everything, but it was the first time that it really hit me how

noticeable the sound of our horn section is.

Don't you find it limiting in a way, because you have to use horns on a given song?

PC: No, if some song really doesn't need horns, then there's no problem, it's just, "Well, we don't need the horns on this song folks!" There's no big thing about having to use horns.

TK: Like my tunes, which I usually start to write on guitar, I get so into them that I can't really think horns. Being a guitar player it's hard for me to think in terms of horns, so a lot of my tunes sort of lack the horn feeling, but I think it's good for Chicago as a group, to get into a different bag for one or two tunes on an album. It diversifies the sound.

What's happening for Chicago now, any major plans?

PC: We never really plan that much. I guess there might be some solo albums. I'm sure everybody's thinking about that, but as far as the group's concerned whatever happens, happens.

Bobby Lamb had a solo album, didn't he?

TK: It didn't really break the ice too good, but I think it was a sort of political thing. It came at a sort of weird time, at the time he released the album, there were re-negotiations going on between the company and us and Guercio — I think CBS sort of thought, "Well if this Robert Lamb gets really big, he might have a tendency to separate . . ." They obviously don't know us because that just wouldn't happen. But I think they were afraid to really push that album and I don't think they gave it what it deserved. I think he got screwed, 'cos it's a good album.

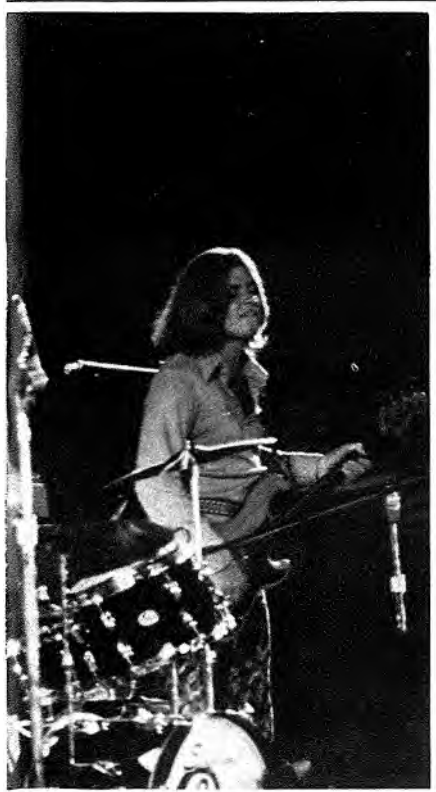
So are you hesitant about making your own solo albums?

PC: No, 'cos it's always the first one that paves the way, isn't it.

TK: Even if it did happen, I mean I plan on doing an album some day, I think I plan on starting it this year and I'm doing it strictly for my own satisfaction. If it doesn't go, I don't think it'll affect me that much, and if it does go I'll feel good, 'cos I'm doing it mainly for myself and the few people that the tunes are written about. It'll be a very personal album. I think Pankow has talked about doing movie scores, we have a couple of TV things . . .

PC: Some of the guys want to act too . . .

TK: Yeah, there's plenty of things for us to do, individually and as a group.







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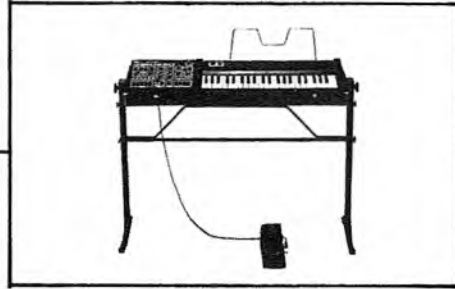
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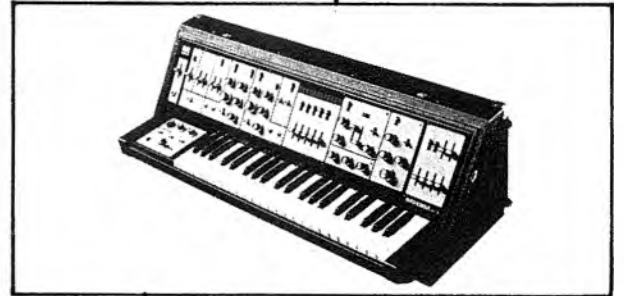
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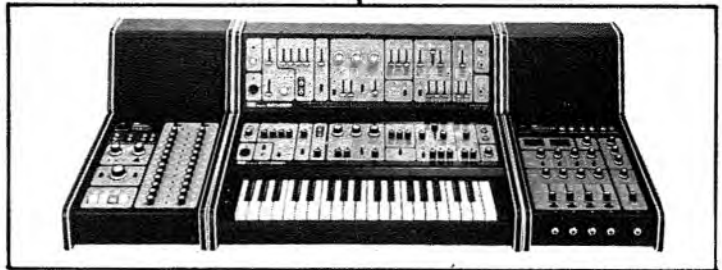
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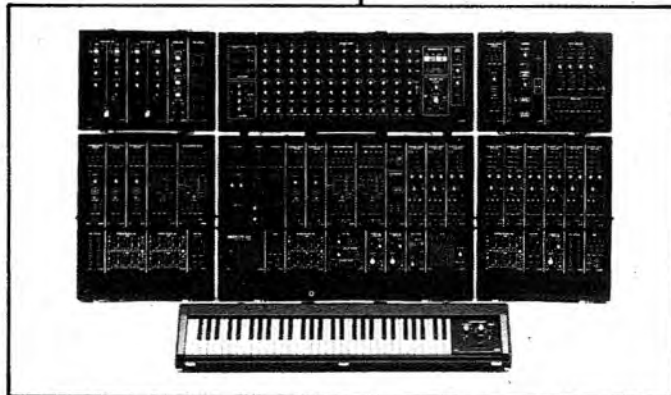
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# Build a Fuzz Box

By Mark A. Sawicki M.Sc. (Eng) Asoc M.I.E.E.



Looking back at electronic effects for the electric guitar over the last ten years, one should realise that 'fuzz' was one of the first significant effects to play a major role in both black and white rock music. This exciting effect, used very effectively by many leading artists from Hendrix to Trower, was obtained by either clipping a valve amplifier severely or, in later years, using a separate fuzz

unit with either a valve or solid state guitar amplifier. Without these progressive stages it is unlikely that the 'Valve Sound' solid state amplifiers of 1976 would have come about. Personally, I don't remember when I first heard the fuzz effect, but obviously it was quite some time ago and is still around in the business. The basic idea of understanding the principle of fuzz effect is

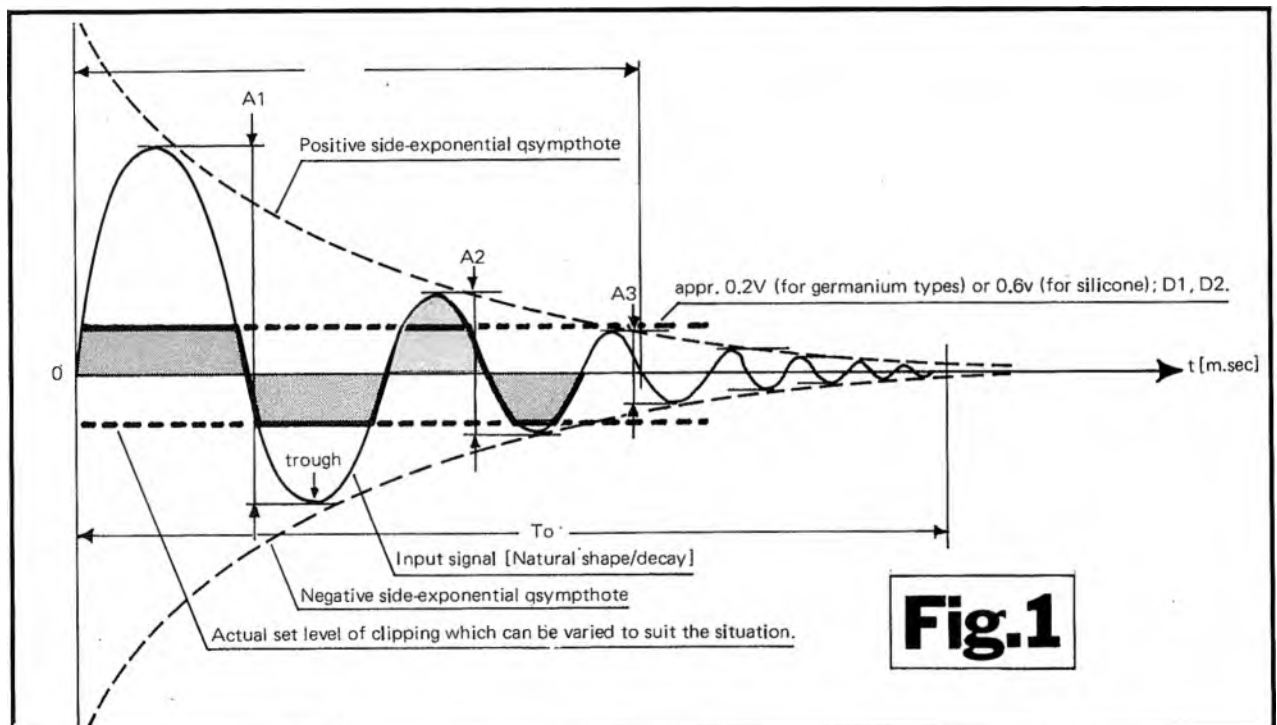
shown in Fig. 1.

The dynamic characteristic of a voltage signal or single note waveform from an electric guitar is shown in Fig. 1. We are selecting a single note example in order to conveniently explain the principle, although the clipping effect equally applies to chord playing. Fig. 1. shows how the sinusoidal waveform decreases gradually in signal strength (amplitude) over a period of time, " $t$  (m.secs.)," until it reaches the amplitude zero level (0 mV.) within the period " $T_0$  (m. secs.)." The geometric curves joining the wave form crests and troughs of the train of signal amplitudes are known as the positive side exponential asymptote and negative side exponential asymptote respectively. Symmetrical clipping occurs in both halves of the sinusoidal signals and the clipping level can be pre-set to a desired level by changing component values in the main feedback loop, as the operational amplifier's gain is the function of the amount of negative feedback compared with the input voltage.

From Fig. 1. it is easy to observe that the clipping

process is fully effective up to a period of  $T_1$  (m.sec.) and the following output waves contain no clipping whatsoever. In musical practice, this phenomena is well known, particularly when playing single notes in slow tempo. Of course this does not happen very often when we take into account the average speed of today's rock music.

The complete circuit diagram of the super fuzz is shown in Fig. 2, and the unit can be inserted between any electric guitar and existing amplifier. A well-known and easy obtainable operation amplifier — type 741 — is used here for the benefit of potential constructors, and it has all the advantages of monolithic integrated circuits, i.e. small size, high reliability, cheap, low offset voltage and current, and temperature tracking. It has, therefore, been widely accepted as a versatile, predictable and economical system building block. Most electric guitars have standardised output signals varying approximately within a range of 16 — 70 mV, but should their output signal be too high and the clipping effect occur even with a minimum setting of VR2 then I



**Fig.1**

suggest you increase resistor R1's value, and in cases where a lot of low frequencies are required, increase the value of capacitor C1 also. The standard 8 pin, type 741 operational amplifier (abbreviated 'op amp') should be incorporated with an integrated circuit holder so as to eliminate thermal damage as well as allowing for easy replacement if necessary.

The negative feedback loop of IC 1 contains the following elements: Resistors R2, R3, capacitor C2 and a rotary potentiometer VR1 — for system gain and length of sustain control. The 'op amp' specific gain can be varied and this decides the amount of clipping. There is also an output loop containing the following elements: Resistors R4, R5, two back to back connected diodes (D1, D2), and another rotary control VR2, which, when increasing its own resistance, reduces the amount of clipping. The preferred fuzz effect can then be obtained with the relative setting of both VR1 and VR2 due to rail/diode voltage. During my experiments a wide range of diodes had been tested and the best results were obtained with the low voltage germanium

types. However, some silicon elements can also be adapted successfully. The push buttons PB 1 and 2 controls are soldered parallel to resistor R3 and the variable VR1, so allowing for stage by stage increase or decrease of the system gain, and as they are mounted in the foot-switch case, the unit operates by foot only.

Since a variety of guitar amplifiers may be used, there is no external volume (output signal) control, but only a small pre-set carbon potentiometer VR3 which fulfills this role when matching the output voltage to the amplifier's input sensitivity. Once this is pre-set to match your own amplifier, you may never need to adjust it. Note that the 'op amp' circuits work best when split power supplies of equal value, ranging from  $\pm 5V$  to  $\pm 2V$  are used, ( $\pm 9$  or  $\pm 15$  being the most common). In our particular design we earth one input (the non-inverting one) working in the single ended mode with a symmetrical power supply — using 2 type PP3 — 9V batteries connected in series with battery On/Off switch mechanically coupled on a rotary VR2 potentiometer. As the constructional

space in the footswitch case was quite limited, the input/output jack sockets are shown terminated on screened leads. The majority of the components are mounted on a 0.1" stripboard (Veroboard) and, as the unit layout is quite simple, full construction details are not given. The moulded case for this unit is made by "Re-An," obtainable in your local music shop.

#### LIST OF COMPONENTS

##### Resistors:

R1	10 K.ohm	All 0.25 watt into 5%
R2	300 K.ohm	tolerance pref. metalised
R3	1.0 M.ohm	
R4	5.0 K.ohm	
R5	1.2 K.ohm	

##### Potentiometers:

VR1	2.2 M.ohm	Lin. Carbon 0.25 watt
VR2	100 K.ohm	Lin carbon 0.25 watt dp on/off
VR3	0.5 M.ohm	Log. Horiz. Pre-set.

##### Capacitors:

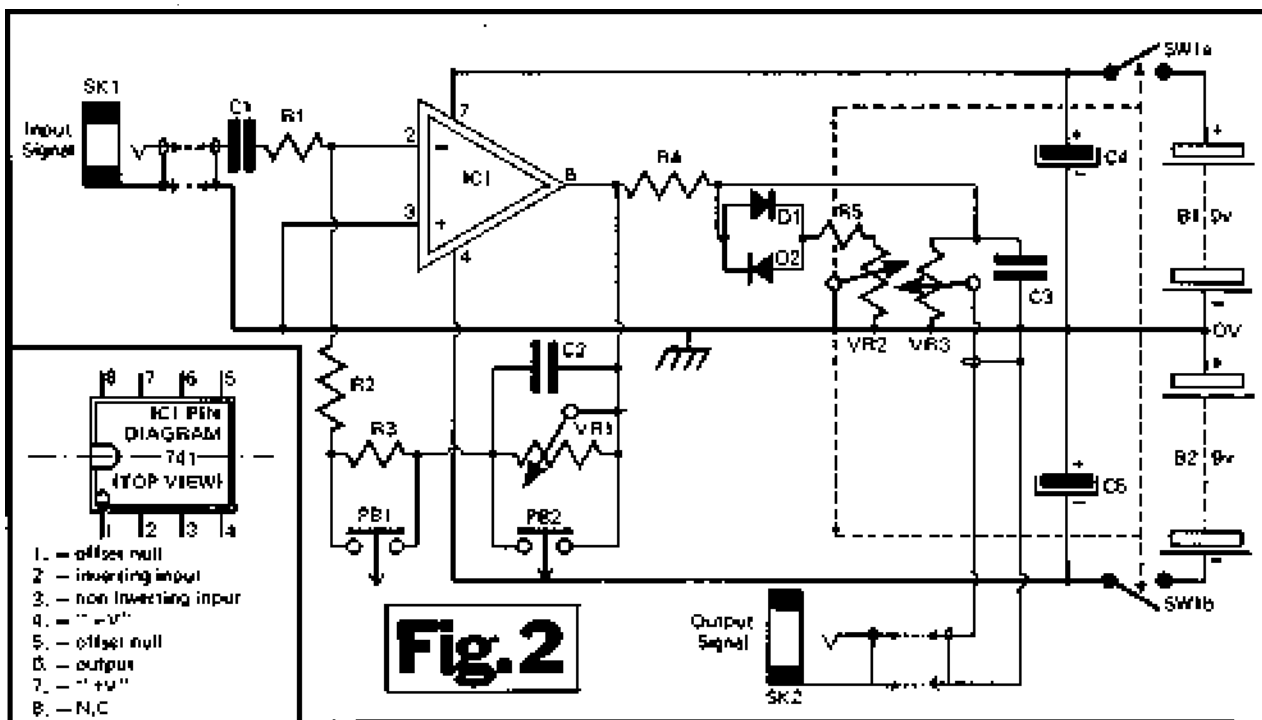
C1	0.56 uF/16v	Polyester
C2	120 pF	Ceramic
C3	300 pF	Ceramic
C4, C5	100 uF/16v	Electrolytic

##### Semiconductors:

IC 1 — Type 741 — operational amplifier  
D1, D2, — OA 90 — germanium type

##### Miscellaneous:

0.25 inch jack plug and socket (cable type)  
8 pin IC holder  
2 x 9v; PP3 batteries and battery clips  
2 single pole push button switches  
Case and hardware (0.1" Veroboard, knobs, coloured wires etc.)



TEST ON: Roland JC 120 Guitar Combo Amp  
 DATE: June 1976  
 PRICE: £350.76 Ex VAT  
 TEST BY: Bruce Gibbs B.Sc.



## INTRODUCTION

The Roland range of electronic musical equipment is very large and has been expanding at a remarkable rate. The unusual feature of the new products is their degree of sophistication. Almost every item is very much "state of the art" and little or nothing could be referred to as a basic bread and butter line. The experience Roland have gained from their synthesizers, sound effects and their "Revo" sound system is cumulative and shows in the design of the JC120 guitar amplifier.

The JC120 is a two channel 120 watt com-

ination amplifier. The "JC" stands for "jazz chorus" which refers to a built-in chorus/vibrato sound effect. This is a very close relation to a phasing effect and not unlike the "Revo sound system" sound. Two other effects are also fitted. These are a distortion unit and a very clean sounding reverberation effect. The result is an amplifier which is significantly different to the monotonous lines of ordinary 120 watt combos which at present grace the market place.

## CONSTRUCTION

The electronics are mounted on four printed circuit boards. Two of these are identical input and output amplifier boards and the others are the effects board and the power supply board. The quality of the components is good. The jack sockets look of particularly nice quality. Workmanship is of a very high order, with neat wiring and well soldered joints.

The power transistors are mounted on an aluminium sub-chassis which acts as a heat sink. An American-made triple spring folded line reverb unit is also mounted on this sub chassis.

The amplifier comes complete with a water resistant plastic cover.

The outward appearance is in no way unusual. The case is built of plywood about one inch in thickness and covered in rexine. All the edges are protected with fibre board strips which, though not very attractive, are very practical. Metal protective caps have been used on all the corners and good size castors have been fitted. There is only a single carrying handle which is surprising on a unit of this size and weight.

The lower part of the cabinet is an open backed speaker enclosure which houses two standard Roland twelve inch speakers. The amplifier chassis is mounted in the top of the case with the controls along the front edge. Each input channel has

separate low and high sensitivity sockets, volume, bass, middle and treble controls. The main channel also has a reverb level, a distortion effect control, a vibrato speed, vibrato depth control and a switch which selects "chorus", off or vibrato. The front panel also carries an on/off switch and pilot light. On the rear panel there are sockets for foot switches (not provided) to switch off and on the reverb and the chorus/vibrato effect.

The speaker system is arranged so that the full rated power is normally fed into the two internal speakers; but if two external 8 ohm speakers are plugged into the two rear panel sockets, half the

rated power will be fed to the internal speakers and half to the external pair.

There are two other outputs provided. One is a line output to drive a studio console or slave amplifier and the other is an auxiliary mains output (American flat pin plug) to power auxiliary equipment.

One unusual feature is that the 120 watts rated output is achieved from two separate 60 watt amplifiers which run from the same power supply and drive one speaker each. This means that the external output sockets must never be connected in parallel.

## PERFORMANCE

	RESULT	TEST CONDITION	COMMENTS
Power Output	75 + 75 Watts	@ clipping 1KHz. sinewave 4 ohms load (2 off)	Rated OP is 60 + 60 watts
	72 + 72 Watts	@ clipping into 8 + 8 ohms 1KHz. sinewave	
Distortion (T.H.D.)	2.5%	@ 60 + 60 watts into 4 + 4 ohms	Mainly 3rd harmonic
	0.43%	@ 6W + 6Watts into 4 + 4 ohms.	Mainly noise
	0.55%	@ 0.6 + 0.6 Watts into 4 + 4 ohms.	Mainly 3rd harmonic
	5.5%	@ 60 + 60 Watts into 8 + 8 ohms.	Mainly noise
	0.5%	@ 6 + 6 Watts into 8 + 8 ohms.	
	0.6%	@ 0.6 + 0.6 Watts into 8 + 8 ohms.	Mainly noise
Tone Control Range	37.5dB. 24.6dB. 42dB.	Bass @ 100Hz. remaining Mid @ 1KHz. controls Treble @ 15KHz. at zero	Mid range control has very broad band i.e. too low a 'Q'
Distortion Effect	Good		Works with signals above 16 mV.: interesting sound
Echo Effect	Good sound		
Chorus/Vibrato Effect	Very good sound		
Capacitive Load Test	Very good	2 uF and 8 ohms load	No detectable overshoot on square wave
Short Circuit Output	Good	2 min. short circuit	Worked when short was removed
Background Noise	-80dB. -74dB. -70.3dB. -69dB.	Both volumes @ min. 10Hz. to 20KHz. band Channel 1 @ max. tone controls central Channel 2 @ max. no input. Both volumes @ max. Levels referred to rated output	Good
Sensitivity	9.5 mV. 29.5 mV. 9.5 mV. 30 mV.	Channel 1 high Channel 1 low all Channel 2 high tone Channel 2 low controls max.	For 60 + 60 watts output into 8 ohms.

## CONCLUSION

After spending several happy hours playing my guitar through the JC120, my impression is of a very satisfactory piece of equipment.

The sound effect unit is exceptionally good. It gives bright, clear bell-like sounds rather than the raucous rock and roll sounds which most amplifier "built-in" effects give.

The distortion effect is gentle compared with most: this I find pleasing.

The speakers successfully handled all the power I could feed into them and the amplifiers performance on subjective tests was faultless.

The measured performance is also good and

confirms the subjective results. The mid range tone control, however, is too broad in its action and tends to spill into the bass and treble ranges. Even so, the tone controls are effective.

One minor point I noticed is that if all the castors happen to end up pointing inwards the amplifier can very easily be knocked over, which could cause a great deal of distress if this occurred in the middle of a show.

This one point aside, however, there can be little doubt that the JC120 will find a number of admirers.

(B-I have advised that the castor problem has already been identified and subsequently amended).



# A Conversation with



Japan is where the 21st Century is happening today. It's the country that leads the world in translating laboratory technology into usable items. Out front of the pack in this field is Ikutaro Kakehashi.

Japan has a national consciousness about technology. Whilst other countries pour millions into defence, space exploration and the righting of real (and imagined) social injustice, Japan just gets on with the job of producing more and better than anyone else. After that, they believe, the other problems will sort themselves out. The proof of this statement can be seen in any musical instrument shop (or camera shop, or automobile dealer etc.) in the world.

It is only just over a decade ago that the Japanese were imitators. When a good product was introduced by a Western company, a Japanese company would do its best to produce a rival version. In their diligence and marketing ability, the Japanese soon had resources and development potential that allowed them to produce replicas that were actually better than the originals. Then came original Japanese designs.

Roland is a new company. It's only been going four years and for that reason every item it has ever manufactured has been of entirely original design. Roland represents the new Japan, a Japan which designs and manufactures instruments that utilise the ultimate in technology.

Head of the Roland Corporation is Ikutaro Kakehashi, a younger man than you might think, who is responsible for the original design of all Roland instruments. He's an electronics engineer who, was associated with the Ace Tone in 1960. That organisation went on to produce such units as the "Rhythm Ace" and the "Ace Tone" organ and it was as a lover of organs that Ikutaro first entered the industry. Now many other things are being planned.

"Within the next year we will have developed our own electric guitar," he told me. "We're never going to produce any instruments outside of electronics — not acoustic guitars or pianos — but we are certainly interested in everything musical that is electronic."

## Staggering Growth

Roland have had a staggering growth. When they started out they had one small factory in Osaka, today they have four and a further two are opening this spring. Over 300 people are employed in the organisation.

Roland is not just a commercial enterprise, however. Because of the revolutionary aspects of some Roland instruments, the company is having a profound effect on the culture of most western-type countries. Music is adapting to the

# the Boss of Roland

capabilities of Roland instruments — the synthesizers especially — and Ikutaro explained how this interchange works.

"We are working on the electronic guitar, in other words the guitar synthesizer. This instrument will open the electronic door for guitarists. Until now, nobody has built a proper synthesizer for guitarists — four or five people have developed units they call guitar synthesizers, but I do not think they are proper guitar synthesizers. Always these units have required a new technique from the guitar player, but a professional guitar player has already invested his time and effort into being a good guitar player, he doesn't want to have to turn round and start learning all over again. My first requirement for a guitar synthesizer was that it should be playable by any guitarist immediately.

## "...very new sounds"

"Our guitar synthesizer creates some very new sounds for guitar players and I have already demonstrated the prototype to professional players and they have been finding many new things with it."

"The guitar plays completely as normal but it does some unusual things. For example when a note is held down you can make it sustain as long as you like."

"By an electronic contact under strings?" I asked.

"No, no, if that were so it would not be possible, it would then be a guitar organ. Our system works on a completely

different principal. That's all I want to say about our guitar synthesizer at the moment."

## "...cutting a programme control to one tenth"

"We have also developed a new sequencer by computer which is very compact and it will save a lot of time when working in electronic music — perhaps cutting a programme control to one tenth of the present time needed."

When we see the new guitar synthesizer, will it look like an ordinary guitar?

"Yes, the styling will be standard, nothing unusual, not even many knobs. Most will be on the control unit."

Today Ikutaro works as hard as he has at any time in his life. He isn't a lazy businessman taking golfing afternoons, but almost a demonic worker, to be found in the R & D laboratories or jetting around the world forcibly drawing the attention of the musical industry to his products.

Every Roland item is still conceived originally by him. He then passes the project on to his team of 35 development engineers who come back and consult with him at every stage of development. He doesn't take long holidays and he sees Roland as being a very new company only at the beginning of its inventive life.

## FIRST GUITAR SYNTHESIZER

Electronics have given the keyboard player everything. The synthesizer is the instrument of the 21st Century and that's a keyboard instrument isn't it?

**NO IT ISN'T**, at least not any more. Roland have produced the best synthesizers in the world and now they have freed the synthesizer from keyboard limitations and produced the world's **FIRST GUITAR SYNTHESIZER**. Not a guitar connected up to a synthesizer control section, but a corporate new instrument that this year will offer to the great

guitarists of the world (and those still to become great) the opportunity of a completely new form of expression!

### Indefinite Sustain

Imagine picking up a perfect guitar — in a Les Paul style for example — no extra knobs, no funny frets, no extra wires and it plays beautifully. But when you hold down a note it sustains — indefinitely. And when you bend a note, the sustain bends along with it. Imagine a guitar acting as a total trigger for a synthesizer — built to be controlled by a guitar.

The Guitar Synthesizer has been developed by Roland and no pictures of this exciting new instrument will

be available for some time. But the prototype has been in the hands of the world's leading guitarists and their suggestions and considerations have been built into the production model.

Designer of the "new instrument" — for that is what it undoubtedly is — is Roland's President Ikutaro Kakehashi. He says that a guitar player shouldn't have to change his technique at all to play the new instrument. It is identical to an ordinary guitar to play. But it offers sounds never heard before.

Musicians will be getting their first glimpse of this instrument in public by the middle of the year and it is said that several major recordings are being held up so that this new instrument can form part of the recording!

## NEW ROLAND GRAPHIC



HAVE YOU ever felt that the sound you want just can't be obtained? You can hear a sound in your head and no matter how many instruments and amps you try, you can't get it exactly right? Sure you have — and now there's a very simple answer.

In their fight against overpriced, poor quality equipment, Roland have come up with yet another new product, this time one that turns every amp into an item as flexible as a recording studio. It's the Roland Graphic Equalizer and it will be available to UK musicians in a couple of month's time. (US musicians keep reading, you're getting it too!)

When you're in the studio, the engineer seem able to adjust the sound of anything by tiny or great amounts, doesn't he? Well the system studios have been using for years is now packaged into a small unit from Roland that can be remotely operated by a footswitch. In the

UK, the price will be unbelievably low (around £80).

When a studio engineer alters a sound in a studio, he is able to almost pick out a certain note in the scale for accentuation and his equipment is so sophisticated that a really crummy guitar can be made to sound good (and the other way round).

This Graphic EQ works in a similar way. To explain how it works, it's necessary to forget the word Graphic, that just means that it's easy to see exactly how the controls are set and what tone is selected. The important part is the EQ — which stands for equalisation.

In the old days, recording studios had tone controls like any other item of equipment, but today the sophisticated tone controls are called equalisation because they can be used to iron out any strange acoustics or sounds and make the instrument sound natural — thus they make the acoustics "equal."

EQ is used in many ways today — often to make instruments sound far from natural! Basically, the unit offers a tone control for every musical octave. Instead of having bass, middle and treble controls, the bass end is divided again and perhaps three controls govern different areas of the bass sound, three the middle and four the treble (for example). This means that it's possible to accenuate the bottom two strings of a bass guitar without changing the balance of the rest of the sound. An important factor to realise is that the controls on the Roland EQ unit are capable of cutting sound as well as boosting, so that it is possible to boost bass, boost part of the middle and cut another part and to cut treble altogether (or any of a million different combinations). The frequencies covered by this unit are (in Hertz) 31, 62, 125, 250, 500, 1000, 2000, 4000, 8000 and 16000. Each frequency can be boosted or cut by up to 12dB (which is a measure of relative loudness).

To see how to use this EQ unit, it's helpful to know roughly which frequencies are used by which instruments. The bass guitar puts out its main frequencies between 40Hz and 200Hz (although all instruments have harmonics and overtones that cover almost the entire frequency spectrum), vocals vary from 150Hz up to 800 or 900Hz, guitars stretch from around 150Hz right up to around 4,000 Hz and pianos cover almost the entire range. The very high frequencies are important to sound, although they are not the dominant frequencies. If for instance, you are playing electric guitar, cutting 5dB off the 16,000Hz control will take the very top edge off the sound, and, at the bottom end, taking the lowest bass control down will reduce the hint of bass-warmth. Increasing the "middle" controls (around 500) will make it sound very boxy. But a combination of boosts and cuts can create miracles and that's what the game is all about!

## "Heavy" Roland Gets a Lift

"Play Roland and you'll go up in the world" might make a good advertising slogan, but from Brodr Jorgensen's General Manager Brian Nunney it all happened literally.

He was keen on making sure his new fork lift trucks

were capable of handling the stock of Roland amps with care and efficiency and with B-J's financial controller Ken Stoddard, Brian decided to allow himself to be hoisted to the ceiling. Apparently it took much pleading before he was allowed down!

More seriously the company has been getting to grips with their fork lifts. It has certainly made life at B-J a lot easier and more innovations are planned.

Of the new stock handling system, Brian says: "Palletisation is the only way

of handling the amount of stock we turn around. We worked on this system since we started in the UK, but we've now decided to acquire our own pallet storage systems and fork lifts. The up-turns in efficiency will be considerable."

## ROLAND MOVE



ROLAND'S UK operation has re-located its base in a purpose-built office and warehouse building strategically placed between Heathrow and Central London. Brodr Jorgensen, the UK offshoot of the mighty Danish empire which distributes Roland throughout Europe, have expanded into a massive warehouse and office complex on the Great West Road at Brentford and sufficient facilities are available to house the massive expansion programme planned for Roland in the next few years.

### DIFFERENT

Commenting on the move, B-J's U.K. General Manager Brian Nunney said, "I think it will make a real difference to our service, both to our dealers and, indirectly, to all Roland musicians.

"Jorgensen and Roland have only been represented as a partnership in Britain for two years and it's been staggering to see the enthusiasm with which Roland instruments have been greeted.

"In moving to our new office and warehouse complex we have invested a considerable amount of time and money — we've brought in fork lifts and programmed accounts systems and we're sure that our increased efficiency will allow us to hold back the worst of inflation and keep Roland products available at the same competitive level they're at now."

Roland's engineer Mac Fison has been able to fit out the new workshop to his own specifications and he's of the

opinion that all his new lab equipment will enable him to make quality control even tighter than it has been before.

B-J's new address is: Brodr-Jorgensen (UK) Ltd., Unit 6, Great West Trading Estate, Great West Road, Brentford, Middlesex. Telephone: 01-568 4578

### Why it will benefit all musicians

ROLAND'S MOVE to new premises will directly benefit all musicians. It's true that Roland instruments have shaped the sound of today's music — where would many hit records be without the sounds of the SH3A — and now, because of better distribution facilities, Roland are making new products available to UK musicians.

Already on the cards for this year are graphic equalisers, guitar synthesizers and a new keyboard and many new effects units are also scheduled to find their way out of the new plant.

As may be imagined, the amount of stock turned over

by Brodr Jorgensen (Roland's distributor) is enormous and, until now, this has been forcibly limited by the amount of space available for Roland equipment.

With the new warehouse, and new bulk-stock motion facilities, it means that B-J can house sufficient Roland items to ensure that musicians can find the instruments they need. Instead of arriving at their local music dealer and finding that the rival band has just walked off with the last Roland combo amp, there will now be another waiting to cancel out unfair advantage!



# Albums

## FBI: F.B.I. (RCA, GDS 802)

This album's been well over a year coming, since Alvin Lee found this band on the London pub circuit, in fact, FBI are a big band, nine-piece, and the music comes before all. Lloyd Smith stands out instantly as a superb sax player and the trumpet player, Herschel Holder, is equal. The band represent the next progression of the brass soul bands of the 'sixties and they've mixed that kind of rawness with the softer sounds of Rhodes piano and flute. The two lead singers are Bonnie Wilkinson and Root Jackson and they're the perfect compliment — he's black, she's white, and they sing well together.

There was a definite buzz going for the band when Alvin whisked them away to Hook End Manor to "get it together in the country." The only way of describing music in words is to use comparisons (as odious as they are) and in this band, you'll hear hints of Blood, Sweat and Tears, hints of Santana and a little Solution. It's a fine debut album, with most of the songs written by the band. One exception is "Keep On Running" by Stevie Wonder and (as with B, S & T) it's possible to pick on different individuals on different tracks and be amazed. Bass player Lennox Meade really did astonish me on "Talking About Love." A really superb album, one that I'll play over and over again.

*Recorded at Space Studios. Produced and engineered by Chris Kimsey. Executive producer Alvin Lee.*

Ray Hammond

## Frank Zappa: Zoot Allures (Warner Bros. K56298).

Zappa's albums are never uninteresting even if they're not particularly good, unfortunately the category that this latest offering momentarily merges into. Ever since Frank's first recorded work "The World's Greatest Sinner" back in 1960, his output has ranged quite dramatically from superbly stunning to dismally dull. I suppose we were due for an under-par collection, considering how "One Size Fits All," the last LP, was very nearly immaculate, Zappa's finest studio album for ages. But don't think "Zoot Allures" is totally useless because, as I said, Frank's albums are never *wholly* uninteresting, and the record splits fairly naturally into vocal numbers and instrumental blows. Most of the vocal numbers are typical Zappa tongue-in-cheek pastiches of various pop/rock styles; "Wind Up Working In A Gas Station" is a funny song with a 50's influence on the vocal style, telling how to "be a moron and keep in position," "Ms. Pinky" is a similar concoction with nifty synth runs from Ruth Underwood, and "Disco Boy" is a vaguely heavy rendering with five backing vocalists warning that it's "disco love tonight/make sure you look alright." "Find Her Finer" is similar stuff, only with four vocalists backing Uncle Frank on this one, and one Donnie Vliet (Captain Beefheart) featured on harmonica. Best of the vocal numbers, however, are "Wonderful Wino" and "The Torture Never Stops." "Wonderful Wino" is an amusing parody of any given heavy band, both musically and lyrically, Frank no doubt drawing on his recent work with Grand Funk. There's a classic middle section, telling how "I went to the country/And while I was gone/I lost

control of my bodily functions." "The Torture Never Stops" has a young lady providing suitably tortured screams during the length of the track, which is performed (like quite a few of the tracks on "Zoot Allures") almost exclusively by Zappa, with Terry Bozzio (the drummer throughout) the only other musician on this track. The song's an atmospheric winner about a torture chamber, promised since "Cheepnis," Frank's glorification/skit on horror movies, from the "Roxy & Elsewhere" live double. Zappa's expertise on guitar, bass, keyboards and vocals coupled with Bozzio's tight, technically proficient drumming



Frank Zappa

make the track, although possibly overlong at 9:52, one of the album's best. There are three instrumentals, of which the title track is easily the best, with cleverly overdubbed acoustic and electric guitars, exhibiting neat almost-but-not-quite feedback guitar, along with strong bass playing from Dave Parlato. "Black Napkins" is a fairly ordinary live recording from Osaka, leaning towards a blues feel — Roy Estrada's bass is unfortunately rather boomily recorded, but Frank just about rescues the track with the occasional slick lick. "Friendly Little Finger" starts promisingly with marimbas and guitars dancing over an intriguingly odd melody; but soon develops into what might be described as a guitar/bass/drums dirge. Francis Vincent Zappa is 36.

*Recorded at the Record Plant, L.A. Engineered by Michael Braunstein, Davey Moire and Frank Zappa. Mastered by Arnie Acosta at Amigo Studio. Produced by Frank Zappa.*

Tony Bacon

## Alkatraz: Doing A Moonlight. (Rockfield UA. 30001)

There's a hi-hat that permeates this entire recording and in the end becomes slightly annoying. It's recorded with just a little too much sibilance (pulling down about 5dB at 10,000 takes out the worst) and the drummer (Stuart Halliday) uses it a

little over much. That said, Alkatraz sound like a very fine band on this album. They've got the "band" concept together rather than acting as a showcase for any particular individual's talents and they play some extremely good music they write themselves. It's basically rock with just a hint of jazz rhythms creeping in here and there but there's a 1971 feel in the basic rhythms and I would lay this at the door of bass player Jeff Singer. Most of the material on this album is up-tempo and the rocker that's most solid is a number called "Nobody Like You" on Side Two. Because of the sameness of several tracks, the album's hard to listen to in one sitting, but this Welsh band has a virtuosity missing in many British outfits and it promises very well.

*Recorded at Rockfield, produced and engineered by Anton Matthew and Alkatraz.*

Ray Hammond

## Billy Preston: Billy Preston. (A & M SMLH 64587).

Unfortunately, Billy Preston has always been regarded as one of those artists that are friends of The Great. Despite the attention drawn to him by the Beatles and others, UK record buyers have been a little slow at listening to him on his own. That's a shame, because his album reveals he's treading the path of Ray Charles and producing some superb soul. Soul's a much misused word, but despite the hard rock content of most of the songs, Billy Preston has as much soul in his voice as Charles and, as anyone who's seen his live show will testify, he's capable of delivering it in almost any setting. This album gets away from the most raging of the Preston screamers and concentrates on a very high musical content. There's some superb Preston songs on the album; "Bells" on Side One is particularly good and another favourite of mine was "Take Time To Figure It Out" on Side Two. As a side point there's a clear demonstration on this album of how the synthesizer should be played. Judging by the sleeve credit to Malcolm Cecil for synth programming, the instrument used wasn't a pre-set toy, and there are some fine sounds included that I've never heard before, but they're used with great delicacy and subtlety. The pressing I had of this album was a bit duff and I couldn't get Side One to track properly, but instead of giving up in exasperation as usual, I persevered and I was glad at the end.

*Recorded at Indigo Ranch and on the Record Plant Mobile. Produced by Billy Preston and Robert Margouleff. Engineered by Robert Margouleff.*

Ray Hammond

## The Hollies: Russian Roulette. (Polydor 2383 421).

I must admit to having missed the last couple of Hollies albums, but, after listening to this, I made a note to dig them out. Quite simply, a superb album from one of Britain's oldest, and best, bands. All titles are written by Alan Clarke, Terry Sylvester and Tony Hicks and show a real development in their songwriting. The opener is a funky number with the unfortunate title of "Wiggle That Wotsit." It includes an excellent guitar solo from Hicks, while the backing is supplemented by Jim

Jewell (alto and tenor), Henry Lowther (trumpet) and John Mumford (trombone). "48 Hour Parole" opens with power guitar chords and pounding piano from one Hans Peter Arneson. A word here for bass man Bern Calvert — his playing on this track is inventive without being too busy — the mark of a good bassist. "Thanks For The Memories" is my favourite track on the album. Electric piano and echo-laden brass introduce a beautiful slow number with superlative harmonies, sounding at times like Steely Dan. Back to the roots on "My Love" — a simple song with 'sixties-type chord changes. "Lady Of The Night" follows, again with brilliant vocal harmonies and smooth piano. Jim Jewell is featured on alto for the first part of the solo, eventually being taken over by Hick's ultra-fluent guitar before drummer Bobby Elliott comes in with a tasteful, but devastating, drum break. Side Two opens with the title track, introduced by guitar and clavinet. This cut also features one of Hicks' best solos to date. Chris Karan appears on "Draggin' My Heels" on congas and, apart from a Zappa-esque synth sound, this track also features a nice acoustic piano solo, double-tracked in octaves. It's back to good old rock'n'roll with "Louise" — would you believe The Hollies meet Status Quo? "Be With You" is the penultimate track and opens with a lazy organ. The Hollies trademark to many is their excellent vocal harmonies, and this is really comes across on this track. While the first verse is just Alan Clarke, the second is two-part and the third, three-part harmony. Add Hicks' slide guitar and a wall of backing voices and you have an excellent cut. The album closes with "Daddy Don't Mind" — a heavyish number with Springsteen-like lyrics about a young lady called Sass 'E' Frass being deflowered by one Joe 'D' Glow. This song closes an amazing album from a very mature Hollies.

*Recorded at Basing Street Studios, engineered by Rhett Davies and Phill Brown, produced by The Hollies.*  
Eamonn Percival

### Robert Palmer: Some People Can Do What They Like. (Island ILPS 9420)

I always look forward to Robert Palmer's albums because they're the next best thing to Little Feat records. I'm talking about the way that most of Little Feat usually end up on Mr. Palmer's LP's, which is a fine state of affairs as Little Feat includes some of the better musicians to have come out of the New World since about, oh, 1492. But we should be talking about Robert Palmer, I suppose. You may remember him with Vinegar Joe, skulking around somewhere in Elkie Brooks' shadow. Three solo albums after the demise of Joe, (this being the third) Palmer is Nearly Famous in the States, and growing in stature in his home country too. The music is souly, with an incredible rhythm section — the accent on the rhythmic mix rather than individuals shining out, apart, of course, from Robert's vocals. But then that's how it should be 'cos his name's on the cover. However, with this very 'democratic' sound it's often very difficult to tell who is in fact playing at any given time — the sleeve is, like most sleeves these days, most unhelpful. True

it does give you a great long list of contributing musos, but doesn't say who plays what on which tracks. The members of Little Feat present (drummer Richie Hayward, guitarist Paul Barrere, keyboard player Bill Payne and percussionist Sam Clayton) are perhaps a little easier to spot, probably because their playing is a little more distinctive. Standout tracks include the single "Man Smart, Woman Smarter," to which it's very easy to sing Feat's "Dixie Chicken." Merely coincidence I suppose. "Gotta Get A Grip On You (Part II)," which opens Side Two, is also a real stunner, opening with phased guitar and including the most tasty bass sound I've heard for years — it's got to be Chuck Rainey (the other bassist on the record is one Pierre Brock). It's not that he's playing anything particularly devastating, just the overall sound and the way it blends in with the rest of the instrumentation. Great. The following track "What Can You Bring Me" is also very nice — I reckon it should be the next single — with the standout being the superbly tight drumming. Again it's difficult to say who it could be; we can choose between Richie Hayward, Spider Webb (a pseudonym?) and Jeff Porcaro (who seems to be getting in everywhere these days). The most unusual track is a short, bizarre instrumental called "Off The Bone," featuring what sounds like a harp (or maybe an odd setting on synth), a banjo, some percussion, a penny whistle and acoustic piano. Very odd. The overall feel is an album that's great to listen to if you like top-class rhythm sections, but not exactly stunning in the song writing department. I suppose I'll have to wait for the new Little Feat record.

*Recorded at Clover Studios, Los Angeles. Engineered by Phill Brown, Toby Scott and Richard Digby Smith. Produced by Steve Smith.*  
Tony Bacon

### Thin Lizzy: Johnny The Fox. (Vertigo 9102 012).

Thin Lizzy have finally made it. "Jail-break" broke them and this album will go far to consolidating their position. Without doubt, bassist/vocalist Phil Lynott is one of the finest rock lyricists around today. The album is basically very solid rock, but there's more to it than that. Lizzy's two guitarists, Scott Gorham and Brian Robertson, work very closely together — sometimes playing harmony, sometimes unison lead and sometimes lead and rhythm — all the time creating a full, rich wall of backing. Their youth and energy really comes across on "Fools Gold." After the spoken intro, the band come in with a raunchy backdrop of chords and harmony lead lines. "Johnny," "Rocky" and "Boogie Woogie Dance" are all good examples of straight-down-the-line rock. It's not all heavy rock, however. "Borderline" is a lot more relaxed, sounding not unlike The Band at times. "Sweet Marie" is also taken at a leisurely pace — excellent production and lyrical feel make this one of the nicest tracks on the album. That's Lizzy's strength — the fact that they can encompass a variety of styles with no apparent effort.

*Recorded at Rampart Studios, produced by John Alcock, engineered by Will Reid Dick.*

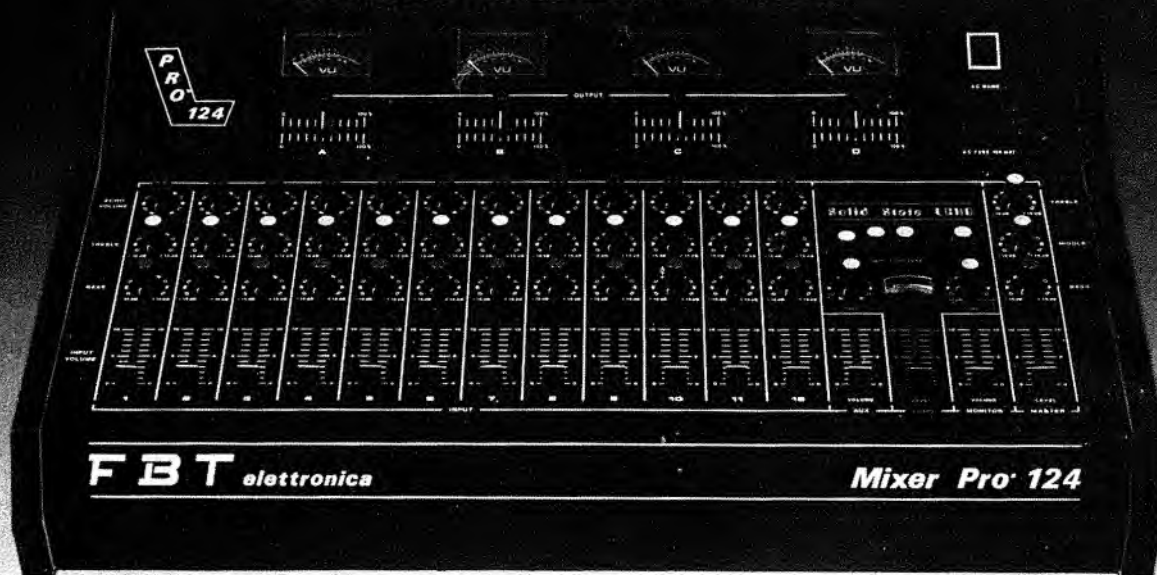
Eamonn Percival

### Flo and Eddie: Moving Targets (CBS 81509)

Flo and Eddie, alias Mark Volman and Howard Kaylan, alias the Turtles, are no longer Fluorescent. Just plain Flo and Eddie. And with "Moving Targets" they've come up with a really enjoyable album. As usual there's a very healthy sense of humour pervading the whole thing, along with some first-class singing and some very good songs. Side One kicks off with "Mama Open Up," a song about giving up rock'n'roll and going back to mother — "Mama open up/I'm coming back to you/I don't like it out here." There's a really heavy chorus, guitars thundering away, enough to make you think they're just taking the piss. But if you listen carefully, there's enough for the listener curious about Volman and Kaylan's past, lines like "I'm overweight and underpaid," and "They still say one hit and you're doing fine." "The Love You Gave Away" follows, with the vocal harmonies they're so good at becoming much more evident, along with a fine understated string arrangement and up-front ensemble brass. "Hot" is next up, presumably about groupies. There are enough throwaway lines in this song to show the way Flo and Eddie feel about the whole thing — "Play him for a sucker baby" and "You won't be sorry you came" are two of the more obvious examples. "Best Friends" follows, a "happy" song with more forward brass and fine singing. Last track on Side One is "Best Possible Me" which seems a little overdone, in a way a bit too 'complex' for Flo and Eddie, who operate best with simple straightforward songs delivered in their inimitable singing style. Side Two opens with the finest track on the album, the very excellent "Keep It Warm" which just has to be a monster single. It's a beautiful melody wrapped up with top-class harmonies; any song that opens with "Write another song for the money" just has to be good. Half way through in the middle eight, we get true Phil Spector/Brian Wilson percussion, along with two craftily worked-in vocal quotes from "Good Vibrations" and "All You Need Is Love." Superb stuff. Another stunner follows; "Guns," a perfectly arranged number damning the use of guns — "Stop them guns destroying/guns enjoying/guns a-blazing." A reworking of the classic Turtles hit "Elenore" comes next, revamped '76 style. It's a bit faster than the original if my memory serves me well, but it still comes across as the great song it always was, with a definite plus in this new version being the harmony guitar part behind the second verse. Penultimate track is "Sway When You Walk," a slow acoustic-feel song showing off Volman and Kaylan's vocal abilities to the full. The title track closes the album, and sounds like any given 'heavy' band, with the chorus "Can't catch those moving targets/You'll never get your hands on me" fading out on another rather over-done arrangement. On balance the album has a lot of pluses, the most obvious being the really stupendous "Keep It Warm," and it would be good to see the band (who remain anonymous on the sleeve) over in Britain soon.

*Produced by Ron Nevison, Skip Taylor, Mark Volman and Howard Kaylan.*  
Tony Bacon

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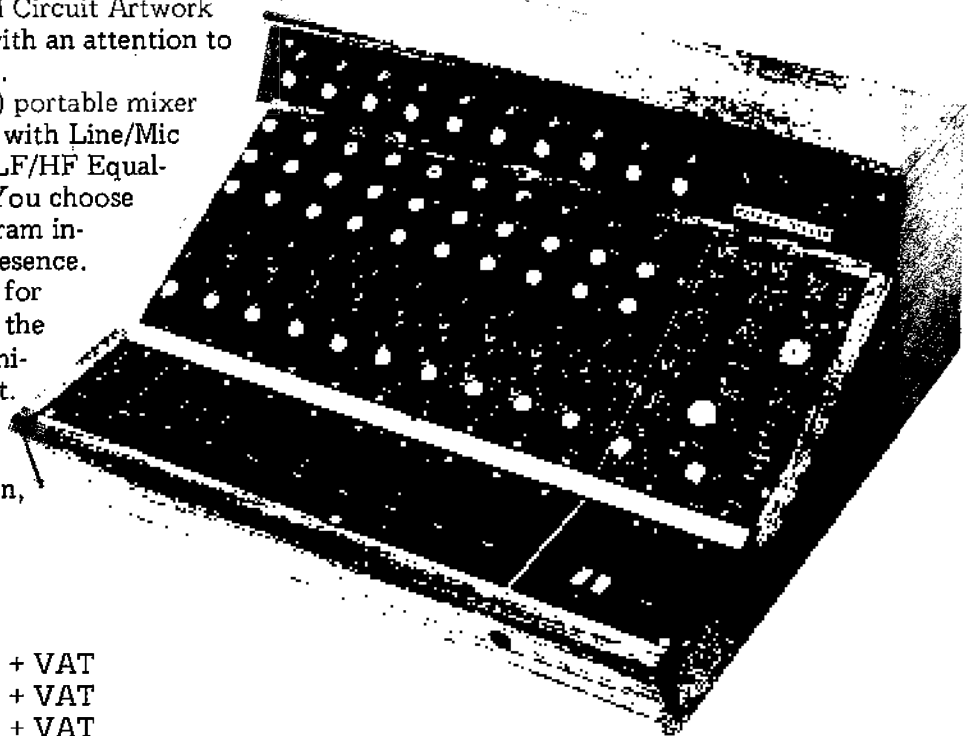
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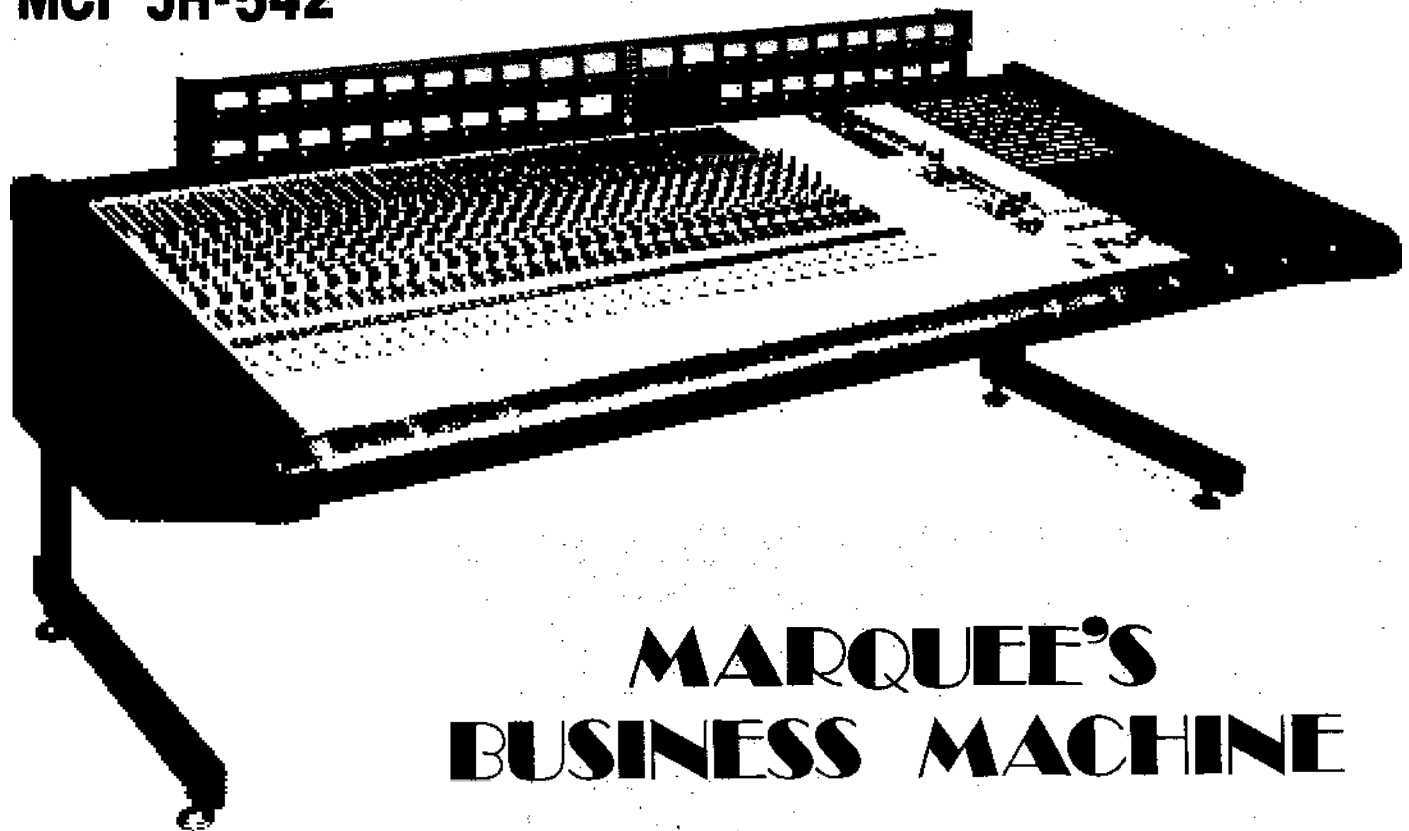
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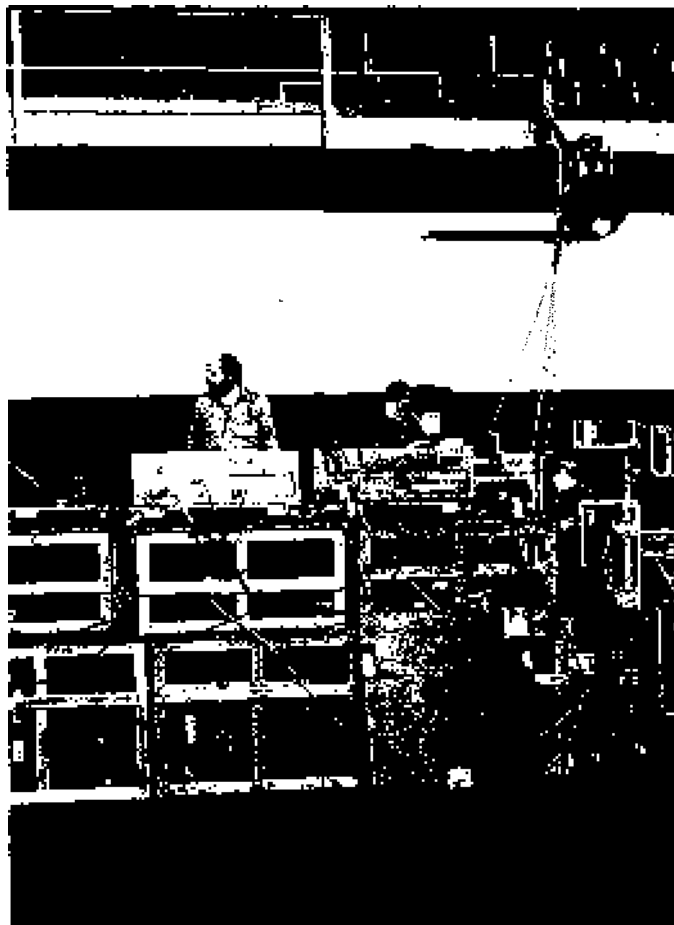
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# MIXING (stage)



At best mixing is an art, at worst it detracts from the music. Sound balance engineers, whether road or studio, are an unusual breed. Without wanting to hurt anybody's feelings, roadies cannot usually adapt successfully into balance engineers. With practice, they might do better for a band than no mixing at all, but far too often the addition of a mixing desk completely ruins a band's performance.

Mixers can be split into three groups: stage mixers, professional mixers and small mixers of professional quality which are suitable for small studio or home use.

Stage mixers are developing into a completely different breed to the other two — and about time! The problems of mixing a live gig in a dark hall are totally different to those of the studio. If you get a chance, take a look at one of the big new Peavey stage mixing desks. By modern standards (or pro desks), it looks clumsy with very large controls, and the inclusion of rotary controls rather than slide faders has been described as lunacy by some who really ought to know better. But the Peavey generation of mixers for stage use point the

way. Perhaps rotary faders won't make a big comeback, but they're certainly right when they scale the mixer up in size rather than down.

The biggest single difference between a live situation and a recording studio is that YOU ONLY GET ONE CHANCE live. If you're got a fader down at the wrong moment and the lead vocalist doesn't come back in, he looks a berk and you lose your job. This aspect cannot be stressed too heavily. In a recording studio, a boob can be re-recorded. I remember well working for some time as a studio engineer making regular mistakes on the boards and saying "Sorry blokes, bit of tape noise there, can we do it again?" and getting away with it. I also remember the day that the "big singing star" arrived and he insisted he would only do one take, and that had to be right, we'd only get one chance. I was relegated to being a tape machine operator as it was so important, but even my hands were sweating as I got all channels into synch. The balance engineer was having kittens.

It's that difficult on a live gig. If you sold out the hall and 3,000

have paid to see the band, you'll blow your job if you mess up the mix. All cues have got to be bang on and leaving up the faders to solve the problem just results in total chaos.

Stage mixers should be as forgiving as possible. It should be possible to knock a fader down by accident, and faders should be graduated far more gently for stage use than for recording. Thus if you do nudge a fader down by accident, it shouldn't cut right off. I'd like to see lit controls on stage desks, I'd also like to see extra heavy-duty foldback systems — the foldbacks as supplied by some are really a job.

No one can write an article and tell you how to mix, either for stage or the studio. It's possible to pin-point some of the problems, but you can't pass on an "ear" in a magazine.

Mixing does not begin at the desk — it begins at the mike. The watch-word of the studio engineer, separation, is a huge joke to the stage sound technician as decent separation is an impossibility (and, to a large extent undesirable). But having no separation makes shaping individual sounds very difficult. If you listen to the lead guitarist individually, you may decide that more bottom is needed, but if you listen to him with the rest of the band, he may totally fail to cut through with that slope applied. The best answer is that the sound required has to be created in front of the mike rather than behind.

For that reason, really elaborate equalisation on each channel is less valuable for stage work than for recording. What you do need is really good EQ of the final mix (and, to some extent, of the vocals on their own). Feedback is still a problem in stage work although directional speakers have lessened it in recent years. Another problem is the audience factor. A mix that sounds OK in an empty hall won't sound right when the crowd's in. The answer to this is to get it wrong a few times. Then you'll learn just how the "empty" mix has to be set up to provide the right mix when "full."

Try to get desks with mute switches for each of the channels. When the drummer's left on stage to do a solo, it's better if the rest of the mikes are muted and the drum mikes brought up. The problem with faders is returning them to position afterwards, and if you can mute channels on a button it's handy to also have a master 'mute cancel' which allows

all mutes to be cancelled from one button. It's also vital that mute buttons should have internal indicator lights.

Position in the hall is also vital for stage mixing. It's almost unbelievable the degree to which sound can vary between the stalls and the balcony, and a mix that might sound right in the stalls could sound terrible upstairs. At least try to hear the mix from somewhere else and reach a compromise.

Another major problem is pig-headed guitarists. It always seems to be guitarists who muck about with their own levels, but a lead player who still insists on doubling his volume for a solo will make you totally redundant. Mixing requires a different philosophy from the band itself. Although internal balance is still required, the band's dynamic range should be lessened and some of the work done on the mixer. Getting a band to understand this can cause a few problems.

A common fault with bands that are new to mixing is over-amplification. If the venues are small or medium-sized, the output of the backline has to be strictly controlled. If it blasts away as it could if there were no PA mixing, you'll end up with the audience hearing two mixes. One, the natural mix from the backline amps, two, the master mix from the PA. That mess can sound horrible. Try and get a band to turn down by at least 50 per cent. They will immediately say they can't hear themselves, which is where monitors come in.

Once you're controlling backline output, you need to provide good monitors. This offers the band a chance to hear the mix themselves and appreciate exactly why they're setting up their gear differently. Mixing for monitors is a completely separate subject (and many bands insist on a different mix in the monitors).

The single biggest attribute for a balance engineer is concentration. Over very long periods he (or she) has to be able to listen with a fresh ear and hear things other people would not. Don't take on the job of mixing lightly, unless you know you can hold concentration easily for several hours at a time. A good engineer is ruthless. He doesn't want to know about problems with guitar strings, the truck or anything else. He is totally insulated in the glare of the VU meters and if he lets his attention go beyond his ears (and to a lesser extent, his eyes), he won't make it.

## (studio)

Musicians recording at home have totally different needs to balance engineers mixing a live gig. The problems of balancing in a live situation have been discussed elsewhere, but it's a good idea to look at the needs of those working at home with limited equipment.

Very few musicians at home actually mix multi-channel "live" information. Most of the time the task is tracking-on (overdubbing), where the only requirement is to get the maximum level without distortion onto tape, the remainder is reduction, i.e. mixing several pre-recorded tracks together onto another track (or tracks if stereo).

The first task is comparatively easy. Sometimes the mixer is required to shape sound more than to control levels going onto tape. If level only is required, it can be a good idea to dispense with a mixer altogether when just recording one instrument onto one track. The problem with home recording is usually background noise (hiss) and avoiding bringing a mixer into the chain unnecessarily can only be a good thing.

Background noise is always the main problem. Because most musicians recording at home are overdubbing all the time, many generations of recording are built up. With each one, the level drops a little and the hiss builds up. If you have a noisy mixer, this really contributes to the level.

Mixers used for home recording need a greater degree of equalisation than mixers for stage use. Try to get a mixer that at least offers 10dB cut and boost on bass, middle and treble frequencies and, if you've the option of something a little more elaborate, try and increase EQ on the middle section. There are no hard and fast rules about EQ balance for home recording, it has to be adapted to suit every "studio."

With some stereo tape machines, the VU meters aren't particularly reliable. The only real way to find out what level you can get onto tape is to try it and see, and experimentation will soon give you a clear idea how far you can push the needles.

Whether you need a stereo or a mono mixer for home use depends on what you want the demos for. If you're a songwriter and you're submitting songs to publishers etc. it doesn't really matter, but if you're an artist intent on getting a recording deal you'll most likely have to offer a stereo tape just to show your

mastery of the medium.

When you're doing a reduction, do try to hear the mixes you make on different monitors. We've covered the subject of monitoring in a previous article, and if you can, try to listen to a mix on headphones as well as speakers before committing yourself. Headphones are the only "controlled" listening environment available to the home engineer.

One of the main problems that occurs is knowing how an instrument will sound when mixed. For example you've decided to record a track which features acoustic guitars, electric guitar, bass and vocals and you've got two stereo machines and a small mixer. The first instrument to lay is usually the acoustic. When you're recording that track, you have to decide on an acoustic sound when it goes down onto tape. So many home engineers make the acoustic too bassy because they feel it doesn't sound "full" enough, but on the mix you need 'edge' on an acoustic to cut through (unless it's soloing on chords).

With experience, you get to know that a sound that's a bit off on original recording may be exactly the sound required for the final mix. The classic case is drums. The hours that have been wasted in studios to get a good drum sound would break your heart. Usually the producer or engineer is trying to do the drum sound on its own and is trying to lose the rattles and ring that you hear when you listen to a kit on its own.

The kit will sound totally different when mixed in. A drum kit is meant to sound sharp (with the odd rattle), and getting sounds together on their own can be very misleading.

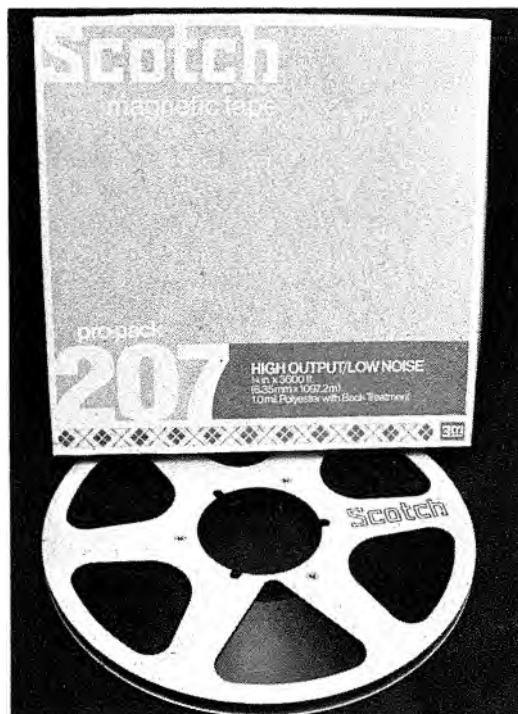
Reduction is something easily learned. But even endless experience won't give you an "ear" if you don't have one. Thankfully most musicians have one by sheer definition.

Mixing at home is about the best way to learn. You can make endless attempts and it won't cost anything. The only tip that I would pass on is to ensure that any patching between mixer and machines is made as simple as possible. If you have to continually twist wires together, you'll exhaust your patience long before you've got into a mix. It's worth spending a day or two building switching systems (at very little cost) if it takes away sweat when you're actually mixing.

# HOME RECORDING

## Special Offer

### IM makes Scotch Professional Tape available to musicians



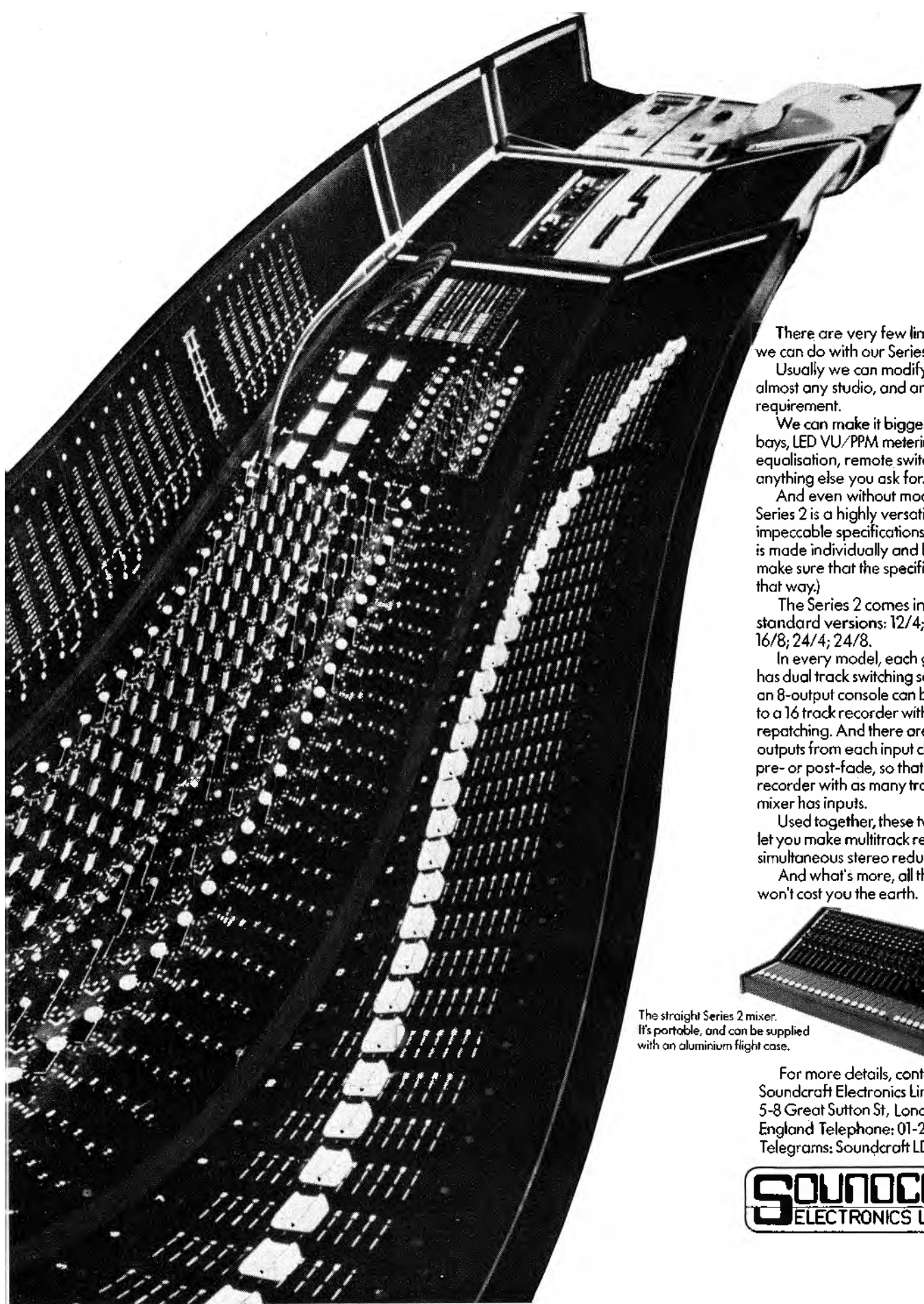
As a special offer to I.M. Readers, the 3M Company are making available 7" spools of their famous Scotch 207 Professional Recording tape. This tape is not available in this form to domestic consumers, but because of the very large number of IM readers involved with home and semi-professional recording, we have arranged to make this tape available at a special low price for a limited period of three months.

Scotch 207 has the highest possible technical specification offering the widest dynamic range with the lowest background noise. This tape is used throughout the recording and broadcast industry where quality is essential, but it has never before been available to non-professional users on the general market!

Take your opportunity to get one or more reels while this offer exists. Being able to record on decent tape makes a real difference to almost all recordings. Many musicians spend a great deal of money on mixers, tape decks and mikes but when it comes to tape — that's nonsense thinking, you can never record better than the tape allows.

Send for your supply of SCOTCH PROFESSIONAL 207 TAPE now! We're offering it at the really low price of £4.50p per 7" reel (this price includes postage, packing and handling) and please make all cheques and P.O.'s payable to Cover Publications Ltd., Cover House, 7a Bayham Street, London N.W.1., U.K. There is an order form on page 161 and you can ask our advertisers to send their catalogues and brochures at the same time — just send your requests to us, we'll pass them on.

# Some of our customers' orders drive us completely round the bend.



There are very few limits to what we can do with our Series 2 mixer.

Usually we can modify it to suit almost any studio, and any customer's requirement.

We can make it bigger, build in patch bays, LED VU/PPM metering, sweepable equalisation, remote switching, or anything else you ask for.

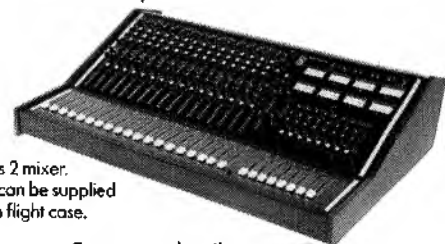
And even without modifications, the Series 2 is a highly versatile mixer with impeccable specifications. (Each model is made individually and by hand to make sure that the specifications stay that way.)

The Series 2 comes in six standard versions: 12/4; 12/8; 16/4; 16/8; 24/4; 24/8.

In every model, each group output has dual track switching so, for example, an 8-output console can be hooked up to a 16 track recorder without any repatching. And there are direct line outputs from each input channel, either pre- or post-fade, so that you can use a recorder with as many tracks as the mixer has inputs.

Used together, these two features let you make multitrack recordings with simultaneous stereo reduction.

And what's more, all this versatility won't cost you the earth.



The straight Series 2 mixer. It's portable, and can be supplied with an aluminium flight case.

For more details, contact:  
Soundcraft Electronics Limited,  
5-8 Great Sutton St, London EC1V 0BX.  
England Telephone: 01-251 3631.  
Telegrams: Soundcraft LDN ECI.

**SOUNDCRAFT**  
ELECTRONICS LIMITED

# MIXERS What's Available

## Allen & Heath Ltd.,

Pembroke House, Campsbourne Rd., Hornsey, London N.8. Tel: 01-340 3291.

Most important to IM readers in the A & H range is the Pop-Mixer. This is a 16-channel PA mixer of particularly attractive design and the overload-proof inputs feature a new type of mike amp with electronic balancing. Monitoring is provided on each channel and individual monitoring is available via two built in VU's. A power headphone amp is included and a carrying handle act as a prop to tip the desk up slightly, for easier control. Price is £645.5 (ex. VAT).

## Amek Systems & Controls Ltd.,

2nd Floor, Islington Mill, James St., Salford, Lancashire, M3 5HW, UK. Tel: 061-834 6747.

The partnership of Nick Franks and Graham Langly has resulted in a generation of mixing desks that are particularly versatile. Two main series of mixers are produced in a nineteenth century mill in Salford just outside Manchester, and these are currently being used in both live and recording situations.

The X-Series of desks is a semi-modular range. These desks combine the best performance specification allowing quality recording work, but are also designed for the professional band on the road. The desks run up to a full 24-track version with outs ranging between 2, 4 and 8, and eight-track monitoring is optional. Right now Amek is knocking out a particularly nice little 16 x 8 number for around £1,800 (plus VAT) and this desk has a vast range of options.

Zooming up the range to the M-Series, plans have been laid for the production of a fully computerised generation of control consoles. This range is, of course, fully modular and a 24 x 16, (with full multi-track facilities) would set you back about £14,150 (plus VAT). A 16 x 16 is around £10,000. These desks have full parametric equalisation and Amek's ready to take on a 32 x 32 any time you are passing with your cheque book. Users of Amek include Castle Sound Studios in Edinburgh, the Wembley Conference Centre and several other manufacturers are using Amek components.

## Audix Ltd.,

Station Road, Wenden, Saffron Walden, Essex. UK. Tel: 0799 40888.

Audix are one of Britain's oldest established mixer manufacturers and they specialise in making control consoles for broadcast, recording, PA and

marine applications. The PA side of the business came first for the company and they have more experience in this type of mixer than most UK companies.

In the PA range, the MXT 100 desk is a basic unit, although customers can proscribe almost any number of channels. Usually the desks offer a single or double output and the largest Audix have built is a 30 in 2 out. If you're ready for an Audix, the price of a 12 in 2 out is around £150.

In the more sophisticated broadcast range, the company have produced 40 in 16 out desks and they're waiting for an I.M. reader to offer them their first 24 track order. The price of a 10-channel console is around £2,000. Audix manufacture all components themselves.

## Bear Amplification Ltd.,

11 Station Road, Llanishen, Cardiff, Tel: 0222-753911.

Bear Amplification distribute the Novanex range of equipment, which includes mixers like the X41R — a four-channel unit with volume tone and reverb controls — basically designed for the more cabaret-orientated performer. Towards the top end of the Novanex range is the M62, which is a 6 into 2 mixer with facilities for Record Out, Headphones and a while lot more. Sliders are now fitted as standard to this range, which also includes 8 into 2, 12 into 2 and 16 into 2 versions.

## Canary Mixers,

17 West Hill, Wandsworth, London SW18, UK. Tel: 01-870 7722.

Canary have just produced a really low price, but pro spec. mixer designed for newer bands. It's a 10 into 2 and it retails at £255 plus tax, the price including a case. For this price a band gets three band EQ on each channel, master VU's, three band EQ on the output, pre-fade listen buttons on each channel and a sub mix socket which allows a band to just tack on another 10 channel mixer when they need it — "When they get a drummer!" say's Canary's Bob Birthwright.

Top of the Canary range is still the 18 into 2 desk, although a Mark II version has just been produced. Price of this is around £854 (plus tax) and there are 15 and 12 channel versions also available. The company have just produced a stereo 200 watt rack-mounted power amp (into 4 ohms) and this sells at £225 (plus tax).

## Chilton Mixers,

Chilton Works, Garden Rd., Richmond, Surrey. Tel: 01-876 7957.

The two basic ranges of Chilton mixers are designed to be

as flexible as possible. When a customer decides on a Chilton mixer, the choice is his whether it should be fitted with hi impedance mic module, low-impedance sophisticated modules, gram modules or anything else — there's also a lot of variations at the output stage available.

The M series of mixers offers basic models with channels ranging from 10 into 2 to 12 into 4 (£410 and £675 respectively ex. V.A.T.) and many of these mixers are currently in use by the BBC.

The QMI-Series (Quasi-modular) goes from a 12 into 4 to a 22 into 8 (between £5,000 and £12,000). This is a range of mixers designed for recording applications and it has been very successful in winning export orders from Italy, Canada and America

## FBT, Elettronica S.N.C.,

62019 Recanati, Italy. Tel: 071-978480.

The Italian FBT company claim that their Pro 124 is the first mixer with built-in solid-state echo. In addition to that, it's certainly a very pretty mixer. It has 12 channels with the usual attenuation, line/mic controls and three band EQ, full echo on all channels and a four output board capable of proving control for up to 10,000 watts. A built-in 10 watt amp is provided for headphone monitoring, four VU meters provide visual monitoring and an overall master if fitted.

## Malcolm Hill Associates.,

4 Maidstone Rd, Marden, Tonbridge, Kent. Tel: 062 785 545.

Malcolm Hill's PA and recording mixing desks have become very well-known in the UK in the last couple of years. The desks are noted for their reliability and reasonable pricing and today there are four basic ranges available. The A series is a basic module with jack connectors (the channels are up to you), the B series is more sophisticated with XLR connectors, the C series is the recording range with the large amount of EQ controls and the D series is the ultra-sophisticated PA range which is designed to control large PA rigs. The D series module includes hi/lo pass filters, three band EQ on the mid band alone, two post-fade sends and four output channels. Hill also make a range of non-modular mixers designed to offer portable mixing at reasonable cost.

## Kustom, distributed in the UK by DB Musical Wholesale,

233 Melton Rd., Leicester. UK. Tel: 0533 63830.

The American Kustom range

has been available for a few years in the UK and it has gained a reputation for sturdiness and reliability. There are two main parts to the mixer range, the Energisers which are mixer/amps and the pure mixers.

In the Energisers, there's the 2PA which is a four-channel 60 watt unit at £372.06p (all prices on Kustom include VAT), the 3PA which is six channel on 130 watts plus graphic EQ at £587.46, and the 6PA which is a six channel 200 watt unit. The 200 watts are divided into two amps, one delivering 125 watts for the bins and one delivering 75 watts for the horn section. Price on this is £881.19p.

Pure mixers start with the 8SRN eight channel mixer which include full monitoring for £1,050.72p., the 12 SRN stereo mixer for £1,719.32p and the 20SRN series which is top of the professional line. This range includes 12, 16, 20 and 24 channel mixers all going into 2 or 4 and the price of these is (respectively), £4,262.82p, £5,002.77p, £5,741.43p and £6,486.81p. A new range of mixer amps built into flight cases is also promised.

## Macinnes Laboratories Ltd.,

Macinnes House, Carlton Park Industrial Estate, Saxmundham, Suffolk IP17 2NL. Tel: 0728 2262.

Macinnes have launched a new professional mixer — and there's reason to believe they know exactly what they're doing. Macinnes distribute much professional equipment including the legendary Amcron (Crown) amps, and in launching this 16-channel mixer, they're obviously producing something that will team up with their existing lines.

The mixer is built into an aluminium flight case and it features some sophisticated facilities. The noise figure is quoted as being better than -125dB referred to input and the frequency response is 20-18,000Hz plus or minus 2dB. EQ is provided over the whole frequency spectrum. Price is to be announced.

## Marshall, distributed by Rose-Morris & Co. Ltd.,

52 Gordon House Rd., London, UK. Tel: 01-267-5151.

Just about the most famous British name in amplification, Marshall produce two basic ranges of mixers. There's a cheap, stage range of mixers with the six channel Mini-mixer selling for £77 and the more sophisticated eight channel mixer selling for £234. The modular range is used such people as Deep Purple and Elton John and are usually built to



# MIXERS What's Available

order. A 12 channel version is available off the shelf for £1,207.50.

## MCI (Professional Studio Equipment) Ltd.,

MCI House, 54-56 Stanhope St., London NW1 3EX. Tel: 01-388 7867.

MCI make the ultimate in studio desks offering 24 outs as a standard course of events. Computer mixing and all latest logic circuits are included, and many of the world's top studios are switching over to MCI. The equipment is made in Fort Lauderdale, Florida and in the UK an MCI marketing company has been set up by Dag Felner and Bill Dyer. From the London base, the team market and service MCI throughout Europe.

## Midas Mixers,

54-56 Stanhope Street, London NW1 3EX. Tel: 01-388-7060.

Midas are a most unusual mixer company. They've a concept far wider than turning out a mixer for a fast buck, they really offer the professional musician a complete service.

Midas' headquarters constitute a professional audio centre. With a drive-in courtyard in the shadows of London's Euston tower, the company offers manufacturing, hire, rehearsal facilities, complete PA's with their friends Martin Audio, who share part of the premises and heavy recording information from another sharing group of friends, MCI. MCI are the US company that make mixers, tape machines etc., and in the space of a few square yards the touring band can arrange almost anything.

Within the Midas set-up things are also unusual. Despite the external appearance of functioning smoothly as a capitalist enterprise, Midas are a socialist commune with all workers being self-employed, and much of the wealth of the company being distributed among its parts. Mentors of the operation are Jeff Byers and Rick Kilminster. Jeff made his first console in 1970 when he transferred from pure electronics engineering to the music field. Rick worked with him then, but it was not until three years ago that they teamed up permanently and rented a small shop in Hornsey, North London and started to make real inroads into the industry.

Today, there are 12 people working with Midas and several smaller companies kept occupied on sub-contract work. Dave Martin has set up his speaker division next door and, although there's no legal ties between the two companies, the Midas/Martin PA concept is known throughout the world.

Midas' mixers range from a two into one to a 32 x 24 x 4 quad desk as supplied to Relight Studios in Holland. The company have just completed three desks for the Pink Floyd (at around £35,000) and there's a large amount of work on the order books.

Midas are really proud of how silent their desks are. They claim that both the desks designed for recording work and for live work have a noise spec that allows mastering with the quietest material and many Midas desks turn up on recording credits unexpectedly.

Because the Midas concept is totally modular, many musicians buy a basic frame with just two or three input channels adding plug-in modules every month or so as they save up their £70. It's ultimately flexible.

On the recording range, a great deal of attention is paid to EQ systems and parameterics are included in systems that are totally comprehensive.

Midas users read like A Who's Who's of the rock business and when any company can quote users like the Beach Boys, Elvis, Pink Floyd, Elton John, Chicago, Yes, Clare Brothers, Delicate Acoustics and Sounds West you know they ain't fooling about in the mixer game.

## MM Electronics (PA:CE),

French's Mill, French's Rd., Cambridge, UK. Tel: (0223) 66559.

If it's not too immodest, we helped the 12 channel MM mixer to become popular. It's a very good mixer indeed and offers excellent value, and we like to think that we helped to draw attention to it when we reviewed it very favourably in the early part of last year. For around £250.00 (ex VAT) you get 12 into 2, four band EQ pre-fade foldback and post fade echo. Twin VU's monitor the output. A stereo headphone amp is included. The PA:CE side of the business produces modular mixers, both 12 and 18 channel, retailing well over £1,000.

## Monogram Professional Audio,

281 Balmoral Drive, Hayes, Middlesex. Tel: 01-573-1566.

Originally, designed to work with Cerwin-Vega systems, these new mixers promise to offer musicians a reasonably priced professional spec. mixer. The first unit is due to go to export about now, and Monogram's boss Don Purkiss expects to have mixers available for the UK market by February. The basic mixer is a 16 into 4 (or into two sub-groups then into 2) and all modules feature XLR connectors, lo-pass,

hi-pass, three band EQ (each with variable settings), pre and post-fade echo, PFL and routing buttons. Basic price is £1,950 approx. Better faders by Penny & Giles are optional and the unit is built into a flight case.

## Ben Page & Son Ltd.,

10-19 Wood Street, Doncaster, Yorkshire. Tel: 0302-69707

Ben Page & Son distribute Sunn equipment in the UK and this gear includes some amazing mixers like the PA-12, which is a 12-channel desk with two built-in 200 watt amps, nine-band EQ and Sunn Sensors — a system of LED's which light up certain frequencies in the case of feedback.

Also included in the range is the PA-5 mixer, which is a six-channel unit with 5-band EQ and a built-in 200 watt power amp. The PA-8 has eight channels and similar spec to the PA-6. All these mixers are finished in walnut sides and metal faces, and all are available in either stereo or mono versions.

## Pearl Mixers, Distributed by Nexus Music,

BM Music House, London WC1, UK.

The Japanese Pearl company manufacture almost everything musical and mixers are no exception. The UK is currently awaiting the introduction of the much heralded Pearl mixer range. There are two main mixers in the range, a 16-channel and an 8-channel, both into 2 and full echo and foldback facilities are included. The mixers are designed primarily for stage use and the prices have yet to be announced in the UK.

## Peavey Electronics (UK) Ltd.,

49, The Broadway, Haywards Heath, Sussex RH16 3AS.

Peavey is the name that dominates US group electronics today and the mixers form a very important part of the range. UK hire companies are now offering "Peavey only" PA rigs for hire and mixers are designed for live work.

There is a very definite philosophy behind Peavey design and the mixers have unusually large controls with plenty of space on the board. It seems like a very good idea and on some models rotary faders have been retained in the face of fashion. Models available include an eight channel (into 2), a 12 channel and the PA series, which includes built-in amps.

## RSD

58 Turner's Hill, Cheshunt, Herts. Tel: 97-33777.

RSD mixers have been around for several years and the hot news is that they're currently preparing a mixer to launch into the low-price bracket. It is a 12 into 2 with three band EQ on each channel (the middle band continuously variable) with plus or minus 16dB being available. Price on this is expected to be £280 (plus VAT).

In the upper end of the market, RSD produce a range of studio/PA mixers ranging from 12 into 2 to 42 into 32. Two formats of this series are available, PA or studio, and a sample approximate price on a 24 into 16 is £7,200. Ten band EQ is provided on each input channel and if you fancy a big desk from RSD they can supply one with standard modules within two to three months.

## Shure Electronics Ltd.,

Eccleston Road, Maidstone ME15 6AU. Tel: 0622-59881.

Shure are perhaps better known for their excellent range of microphones and PA systems, but they also do a wide range of mixers. The SR101-2E has eight inputs, each with independent attenuation. It also features controls for volume, reverb, high and low frequency EQ and has four anti-feedback switches. Their SR109 again features eight inputs but also has adjustable peak limiters with LED's. The SR110 has eight inputs and, as a monitor mixer, is designed as an accessory for the 109 or the 101.

## Soundcraft Electronics Ltd.,

5-8 Great Sutton St., London EC1V 0BX, UK. Tel: 01-251 3631.

Soundcraft are one of the better known of the "new" mixer manufacturers and they produce excellent desks for both PA and recording applications. They make a clear distinction between the Series I, for PA, and the Series II desks. The highlight of the Series I range is the 16 into 2 mixers. This sturdy console comes in a special flight case and a multi-core cable is available for effortless connections as an optional extra. Four band EQ is fitted and the price is £1,000 plus tax.

The Series II range goes up to a heavyweight 24 into 8 and five band EQ is fitted on these desks. An important optional extra is sweep EQ which allows the maximum EQ flexibility and Penny and Giles faders can be fitted if required. Price of this range varies between £1,500 and £4,000. Studios currently

recording on Soundcraft include Riverside and Gooseberry, and bands using Series I desks include Rick Wakeman, the Hollies and Status Quo.

### Triad (Trident Audio Developments Ltd)

1 Great Poulteney St., London W1. Tel: 01-734-9901.

When Cherokee took over the old MGM recording studios in Hollywood they ripped out all the old MGM consoles and installed two new "A" Series Triad desks. Many other studios have opted for, or switched to, "A" Triad desks, including Chipping Norton (UK), Trident (UK), Sweet Silence (Copenhagen), Rosenberg Studios (Copenhagen), Avico (Hamburg), and other studios in Japan and Canada.

Trident make two ranges of fully pro, heavy number studio desks, the "A Series" and the "B Series." They also make a portable system called Fleximix.

The "A" series boasts a graphic EQ system for every channel and that has gone up to 24 channels in the past. The EQ system offers 15dB cut or boost

on a choice of 16 frequencies. This series of desks is believed to be the only series to offer such facilities (it ain't cheap of course. Studio managers will have to persuade their directors to part with a figure not dissimilar to £44,000 and even if you can afford that for your studio, it will be around 20 weeks before you can take delivery.

The "B Series" offers exactly the same performance standards without the graphics of each channel and a 16 x 16 with 24-track monitoring would cost around £14,000 and take 12-16 weeks to be built.

The Fleximix system is of particular interest to the pro musician or the hire company. It's a fully modular system and, as the name implies, it's very flexible. Triad say that the technical performance of the desk is comparable to the "B" series but that after you have spent just over £2,000 for the basic 10 into 2 desk, you can then add modules almost infinitely without having to re-wire. As Ian Levine of Triad put it: "Any chap with a screwdriver can build this desk up."

### WEM

66 Offley Road, London SW9. Tel: 01-735 6568.

Top of the range of WEM mixers is the new Audiomaster Mk II, which supercedes the Mk. 1. It's a nine into one mono mixer and individual channel facilities include VU meters, level control, treble, bass, presence and gain, reverb and reverb on/off. Output section facilities include a VU output meter which can be altered to read either the sum of the nine channels or the output of the mixer in conjunction with the master volume fader.

Their Reverbmaster offers eight input mixing with echo send and return, built-in reverb, 100 watts RMS output and stage monitor foldback. The Bandmixer, again, is an eight-channel unit with echo send and return, 100 watts output power and slaving out facility. Both the Reverbmaster and Bandmixer are fully protected against open or short circuit.

### White Amplification,

3 Albion Place, Sunderland, UK. Tel: 0783 78058.

White have been making amplification for quite some time and at the moment have two types of mixer to offer the gigging musician. The basic range consists of two 8 into 2 mixers. The Deluxe version has VU meters on each channel. Also available are custom built mixers up to 16 into 2 formats and waiting period for these is about six weeks.

### Yamaha,

Mount Avenue, Bletchley, Milton Keynes MK1 1JE. Tel: 0908-71771.

Top of the Japanese-built Yamaha range of mixers is the M1000 series. These are available in various configurations including 16 into 4, 24 into 4 and 32 into 4. Basically designed for mobile studio use, prices of these start from £2,500.

Their EM 150 is a six-channel stereo mixer with graphics and retails at £399 including VAT. Fairly more sophisticated is the PM 430 mixer, which is an 8 into 2 unit with EQ not only on all channels but also on masters.

# pop ~ mixer

## 16 CHANNEL STEREO PA MIXER

### INPUT CHANNEL:

Gain control, treble middle bass, monitor 1 and 2, echo, pan, solo, slider fader.

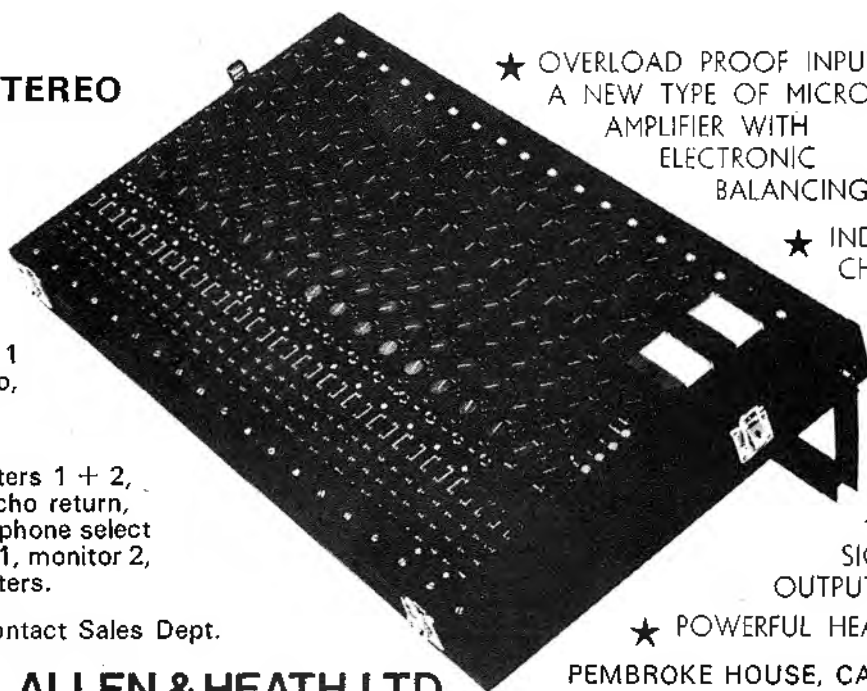
### OUTPUT CHANNEL:

Stage monitors, masters 1 + 2, echo master send, echo return, headphone gain, headphone select to talk back, monitor 1, monitor 2, solo, stereo, VU meters.

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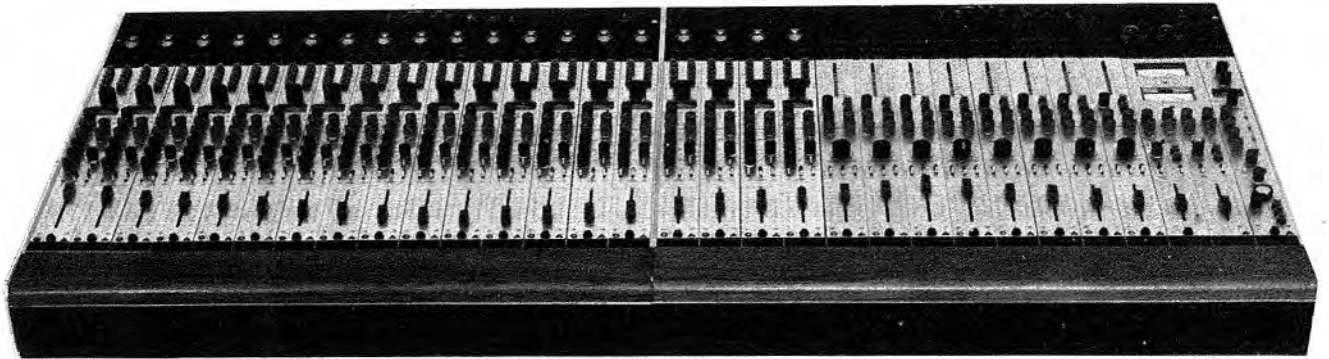
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2 ohm — 480 watt rms	

### DIMENSIONS

19 inches wide, 12 inches deep, 7 inches high.

### COOLING

250 volt boxer fan fitted at rear.

### INPUT

Switchcraft D3F on each channel with mono/stereo switch for paralleling inputs if required. (On front panel.) Wiring: Pin ① Earth ③ Live.

### OUTPUTS

Switchcraft D3M x 2 paralleled per channel. (On front panel.) Wiring: Pin ① Earth ② Live.

### FUSING

Two D.C. fuses per channel (6 amp fuses), one A.C. fuse (6 amp) all on front panel.

### MAINS INPUT

Cannon XM series LNE 32, Push button illuminated on/off switch.

### WEIGHT

45 lb.

### FINISH

Industrial matt black enamel, white and pale green silk screening.

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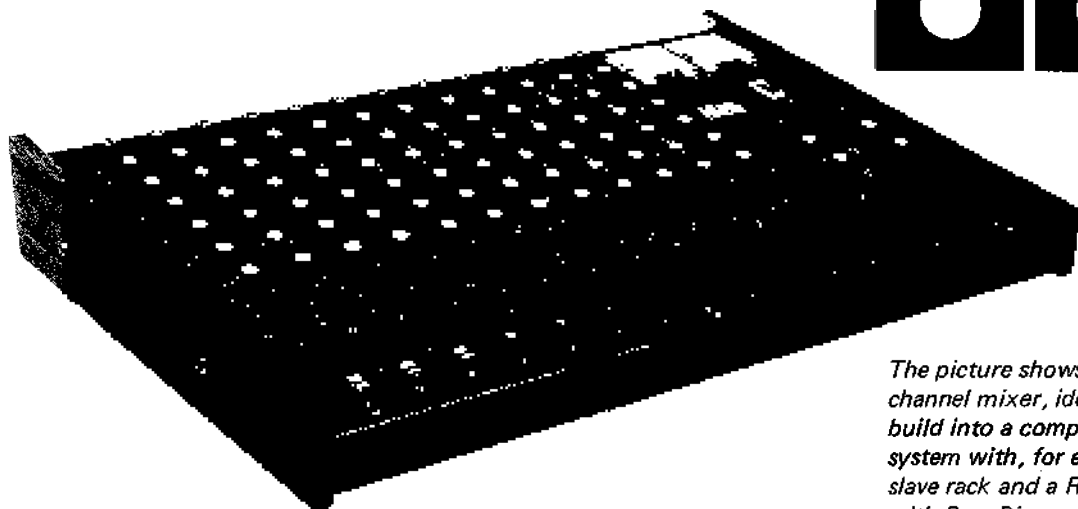
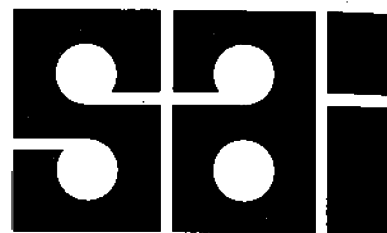
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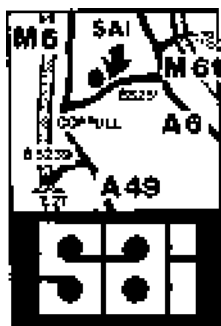
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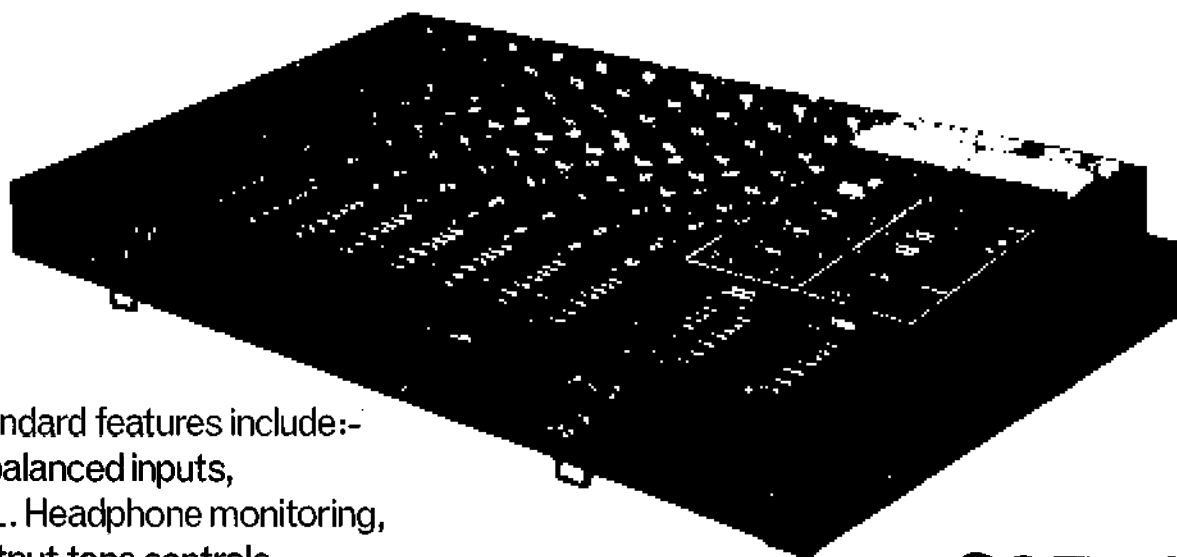
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## Shure — Model PE 50 SP — Unisphere 1 — Microphone

Shure's 'professional entertainer' microphones have been used successfully by professional musicians for many years, both for live stage work and recording. As an all-purpose musical/vocal microphone, the Unisphere 1 PE 50 SP is a high quality, dynamic, unidirectional, ball-type design, with a frequency response extending from 50—1500 Hz, and a low impedance of 150 ohms. In addition it also accepts a 25 to 200 ohms range of input impedances.

To help users operate the microphone with high impedance inputs, the manufacturer provides a special A 95 FP matching transformer unit which is supplied as part and package with the PE 50 SP.

The output level of -57db (0dB = 1mW/10 $\mu$ b) is the standard specified figure, and a specially built-in On/Off switch with a lock plate is also provided. A professional type 3 pin Cannon XLR audio connector with 6.1 metres (20ft) of C50 CN cable is supplied as standard, and in situations where longer cables are required, it's possible to extend the length by simply joining several more C50 CN cables together.

The PE 50 steel mesh screen has a special moulded foam shield giving very effective anti-wind as well as anti-pop properties which is certainly a very important point, bearing in mind the

fact that unidirectional microphones only pick up the acoustical sound pressure from the front of the microphone. In stage conditions when facing the audience, it is a useful feature, since other unwanted sounds are simply eliminated, allowing one to work successfully at both small and great distances from the microphone, at the same time preventing feedback, the number one 'enemy' in stage conditions.

The inner capsule is housed in a heavy duty, shockmounted casing, eliminating 'handling' noises, and, also preventing damage to the inner mechanisms through rough treatment.

The microphone (plus accessories) comes in a moulded cream coloured portable plastic case, which is strong enough to prevent any transportation damage.



## Shure SR 106 Series Crossover Unit

The Shure SR 106 series of electronic crossovers are comprehensive RC frequency dividing networks, specially designed to split out existing audio frequency bands, with a selectable crossover frequency of 500Hz, 800Hz and 2600Hz to suit two or three-way sound systems. This highly sophisticated unit can be easily combined with most audio consoles and possesses all the advantages of true high fidelity with the benefit of minimising T.H.D. and intermodulation distortion. This is achieved whilst increasing the middle/high frequency power and improving the total efficiency and dynamic range of the system with which it is incorporated.

This is a completely self-contained unit measuring 483mm in length, 216mm in width and 44.5mm in height and is designed for simple operation. Maintenance is practically reduced to a minimum, as it is a complete silicon solid state construction with a high level of professional reliability.

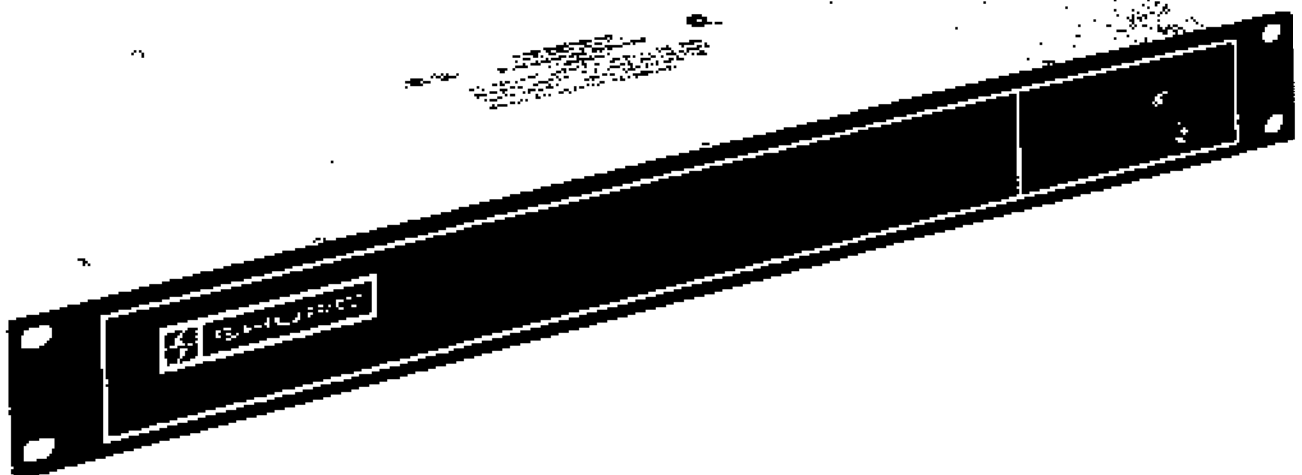
The SR 106 can be operated from mains 105-125/210-250 V.A.C; 50/60Hz with a power consumption of about 3 watts and as with most Shure products listed by C.S.A. (Canadian Standard Association) it is certified. The rear panel of the SR 106 contains line level Input/Output XLR Cannon as well as jack

sockets, a crossover frequency slide selector switch and a 3 pin mains earthed power socket with a slide type voltage selector. A power On/Off switch incorporated with an indicator lamp is fitted to the matt black front panel.

The overall system voltage gain ref. 47 Kohm output is  $0 \pm 1$ dB or with a 600 ohms termination  $-1.5 \pm 1$ dB, and an input sensitivity figure of approximately 1 volt with the same 1 volt output signal (unity gain) or 0.84v when 600 ohms output is applied.

The hum and noise figure (-96dB) and frequency range of 20-20,000Hz ( $\pm$ )2dB is very good, while the level of specific T.H.D. is much less than the manufacturer's specified 1%, in its full frequency range. A clipping level of  $\pm 18$ dBm (6.2v) into a recommended 600 ohms output load makes this particular model worthy of recommendation as it maintains the well-known Shure world standard.

Bearing in mind the fact that the basic principle of modern bi-amplified or tri-amplified PA technology requires the relevant electronic crossover networks, this new and very useful piece of equipment is what we have been waiting for, as it allows the use of separate power amplifier channels (slave systems) to increase the overall power output as well as the quality of sound, which is, of course, one of the most important facets in musical production.





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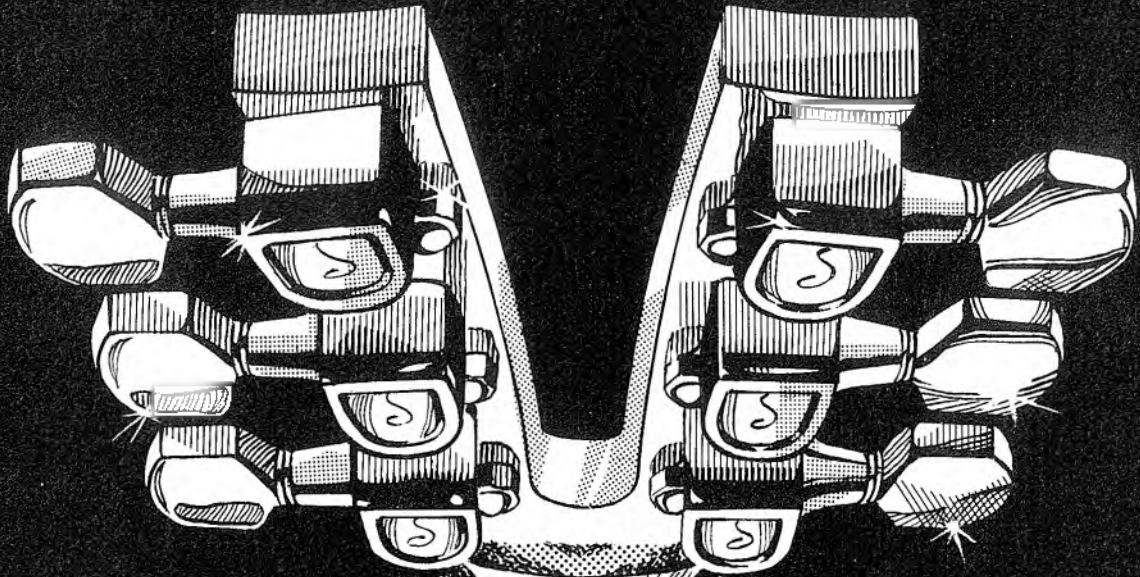
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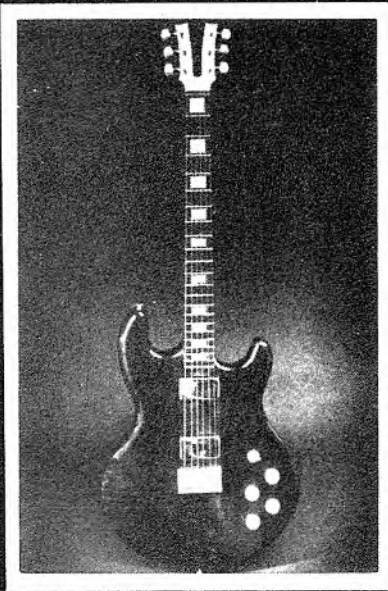
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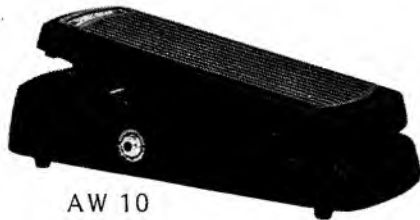
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# STATUS QUO



*It's Friday night in Glasgow. The city is alive and the bright lights of the Apollo theatre shine on the dark wet streets. Outside, hundreds wait to get in, more wait in the cobbled sidestreets for the glimpse of a limousine that means Status Quo are arriving.*

Glasgow's the toughest town in Britain. Hunger marches and the shadow of the Clyde hang over the young people and they take their music tough. Status Quo is the city's favourite band.

It's a special night at the Apollo. They're recording a live album — something long overdue for a band who owes its fame to the audiences who have thrust aside fashion and critical opinion to make the band their own despite what everyone else says.

Backstage, there's an unusual amount of tension. Quo have become used to touring, used to playing before huge audiences, but tonight they're recording and they know that they've got to please both the Apollo thousands and the millions who will eventually own a carefully made piece of vinyl that captures forever the excitement and music of that one particular evening.

In the dressing room, the band are a little quieter than usual. Often, dressing rooms are full of well-wishers and fans who just want to say hello, but tonight it's different and "fifth Quo" Bob Young makes sure that everyone except the band's immediately circle are kept away, to allow the boys the chance to relax before going on stage.

Through the maze of corridors in the old theatre comes the sound of Nutz on stage. This is a fine young band who enjoy supporting Quo and find that Quo audiences, unlike most others, are prepared to give a new band a listen and if they're good (like Nutz), enjoy them almost as much as Quo.

In the dressing room it's almost silent. They're playing familiar material tonight and when you've been working with the same people for 15 years, there's not a lot of new things to say immediately before a gig.

Out front, the balcony bounces in a frightening fashion. A steward explains it always does that, but it looks ready to give way. In the stalls there are Quo banners everywhere. T-Shirts, scarves, badges, albums, photographs, all mementoes, brought along to show the band the warmth of a Glasgow welcome.

In a large room upstairs, somewhere behind the balcony the media people sip drinks and nibble peanuts. Discovering Quo is a shock for most of them. The people from the television stations and the people from the radio all say, "I didn't realise how big the band was . . ." and so it is. Status Quo belong to the young. They were world stars before the establishment realised it.

The wait for Quo is something of a frightening experience. The support band have given their very best and retired to thunderous

*Remaining friendly is the only way to stay together for 14 years*

applause, the technical crew darts around the stage checking and re-checking — tonight especially. In a specially roped-off section of the balcony, a giant recording desk sits controlling the sound balance and, in a side street, a lonely truck sits humming with equipment, all imported to Glasgow to capture every note of the performance.

The chants rise in volume, completely drowning out the recorded music playing during the interval. The tension is like a steel rod gripping the hearts and throats of everybody watching. Just behind the curtain, in the wings, stands Colin Johnson, Quo's manager, he's been looking after the band for years, and tonight he's there making sure everything's right when they go on stage. In the end he decides the exact moment the lights go down.

In the darkness two things happen. The air is split with the sound of thousands of voices welcoming the band, and from the dimly-lit centre of the stage, climbs a lazy pall of smoke. The smoke billows gently upwards and outwards and a gigantic roar rises as dark shapes stride onto the stage. A moment's adjustment — everyone holds their breath — the first chord, and the thunder of Status Quo strikes to the soul of Glasgow as the spotlights turn night into day.

"Yeah, not bad," says Rossi in the hotel bar afterwards.

It was a three night stand in Glasgow, each night recorded — just to get the best. The word is that the recording equipment has slightly stilted the performance from the audience's point of view but that, technically, the band played better than ever before.

Glasgow Quo fans are controlled as strictly as any. The security is very heavy and the threat was enough to restrain the audience from some of the wilder excesses that Quo audiences have been known for.

One interesting point is that the album is being mixed differently for the American market and recently there has been speculation about a change of image for the band in order to gain wider acceptance in the USA.

But on a Friday night, "Glasgow belongs to Quo."



*Mike sharing's not necessarily the best answer for "live" recording*

*Almost choreography*





# DiMarzio picks up where the others leave off.



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Di Marzio, the "Pickup People" offers a complete line of guitar and bass pickups. All high output Di Marzio pickups feature a dynamic range unmatched by any other pickups on the market. Their exclusive Tailored Frequency Response achieves optimum sound from your instrument. And there's no technical expertise required to install them.

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## Super Distortion Humbucker

The SDPH combines a tailored frequency response with extremely high output, making it much more sensitive to string vibration than any standard unit on the market.

The SDPH is the exact size and hardware replacement for large Gibson humbucking pickups, and greatly improves the sustain and output capabilities of the guitar.



Features:

- 12 individually adjustable pole pieces
- Dual creme-colored coils
- Special magnet structure minimizes string damping
- High temperature shielded cable

## Dual Sound Humbucker

This deluxe version of the SDPH shown above, features both the hot sound of the SDPH plus a second sound similar to that of a Stratocaster or Firebird. This allows the guitarist a choice of two distinct tones, providing greater flexibility. The installation of a small switch provides for the selection of a "hot" or "clean" mode in humbucking.

Features:

- Same construction as SDPH
- Special wiring allows two separate sounds
- Foil wrapped three conductor cable.

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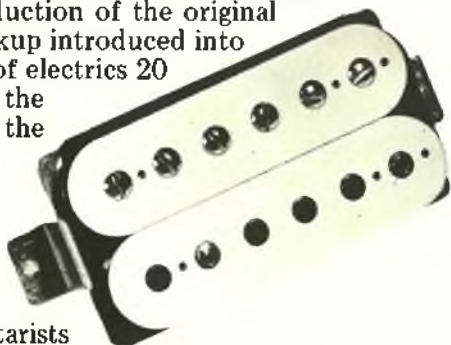
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## New! PAF

The PAF, or "Patent Applied For" pickup is an authentic reproduction of the original humbucking pickup introduced into the Gibson line of electrics 20 years ago. Until the Di Marzio PAF, the quality of sound of this original device was never approached by other pickups. The PAF is intended for guitarists who don't need the extreme increase in output of the SDPH, but want a warm, sustaining sound with moderately increased output at a reasonable price.



### Features:

- Nickel plated pole pieces
- Double creme colored bobbins

## 'Fat Strat' & 'Pre-BS' Telie

Designed for the Fender Stratocaster or Telecaster player who wants to improve his guitar's output and sustain, while retaining the guitar's original circuitry and appearance, the Fat Strat and Pre-BS Telie are exact replacements for the original pickups — and are installed in a matter of minutes. The Pre-BS Telie mounts in the bridge position of Telecasters only; the Fat Strat is recommended for the bridge position in Stratocasters, but can be installed in other positions. These exceptional pickups feature the increased low and midrange response, and they especially complement the harmonics already present in these guitars while virtually eliminating the "squeal" or feedback common to them.

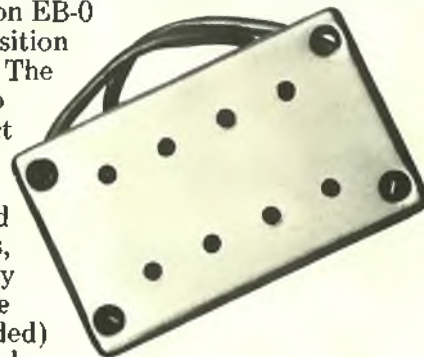


### Features:

- Improved signal-to-noise ratio
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- Improved magnet structure

## Model 1 Bass Pickup

The Model 1 is a high fidelity, exact size replacement pickup for the Gibson EB-0 (also for the bass position of the EB-1, 2 & 3). The Model 1 Bass Pickup produces two distinct sounds, similar to those made by Fender Precision and Rickenbacker basses, which are selected by installing a miniature toggle switch (included) in the guitar's control section. The pickup is hum-cancelling in both modes, and can be wired directly into the circuit without the switching ability.



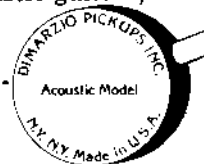
### FEATURES:

- Eight individually adjustable polepieces
- Two separate sounds
- Three conductor cables

## New!

## DiMarzio Acoustic Pickup

A new type of contact pickup for acoustic guitars, the Di Marzio Acoustic is an attractive alternative both in price and sound to other pickups. It's easily installed (non-marring adhesive) and no Pre-Amp is required. Suggested list is \$29.95.



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### DUAL SOUND HUMBucker

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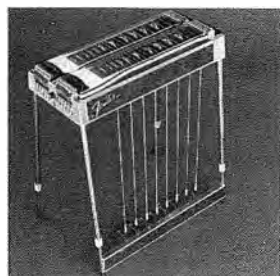
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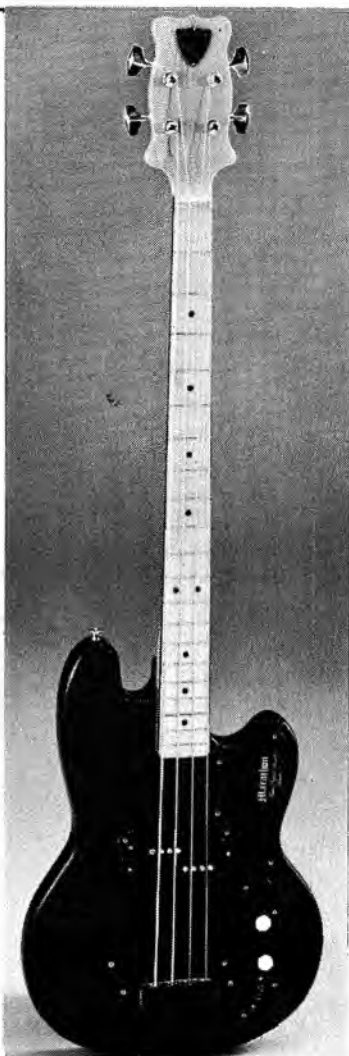
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# Dealer News Dealer News

## Chingford Organs London E4.

Ibanez guitars have been strong sellers, with the Fender and Gibson replicas going well, plus the rather tasty original designs attracting deserved attention amongst many visitors . . . In the drum department, Maxwin kits have been selling very well, and a couple of Ludwig kits have been sold to several choosy percussionists . . . Chingford have an extensive mail-order service, and the export side of this has been really healthy recently, with orders from far and wide - Germany, Finland and Sweden to name but three. The equipment in demand from Europe has been wide-ranging, but Hammond Organs have been particularly popular, along with bits and pieces: effects pedals like Colorsound amongst them . . . In the acoustic guitar field, Ovations have been popular recently at Chingford . . .

## Forth Valley Music Falkirk.

Most lines have been ticking over very well, with keyboards going particularly well . . . In this

field, Haven 61's and Roland Revo cabinets have been good sellers - Forth Valley are to be Roland main dealers soon and will therefore stock every Roland keyboard, including synthesizers, along with all the regular Roland equipment . . . The Jim McCloud Band, residents at the local Dunblane Hydro Hotel, are regular visitors for spares and general bits and pieces, with Jim Cleland, their accordionist, perhaps the most oft-seen face . . . In keyboards once again, the Console models have been going as strongly as ever, with names like Farfisa and Thomas abounding . . . The Tom Shirra Band, stars of radio and TV, were supplied with over £1,000 worth of PA equipment from Forth Valley, including a Wem Audio-master, various cabinets and assorted microphones. The band have also had various brass instruments from Forth Valley . . .

## London Drum Centre London W10.

Led Zeppelin, the Sutherland Brothers & Quiver and Van Der Graaf Generator have all become regular customers at London's Drum Centre . . . Huge shipments of Rogers and Ludwig drums have

arrived at the shop to ensure lower prices and a larger selection . . . Most major bands, either based in London or just passing through, have visited the LDC and the word is beginning to get around . . . Various expansion schemes are underway for the London Drum Centre, of which more will be revealed soon - stay tuned . . . The Steve Hillage Band, Krazy Kat and Moon are among some of the more recent visitors . . .

## REW Charing Cross Road.

A lot of smaller bands have been into REW to avail themselves of PA equipment and many lines have been selling very well . . . Bose set-ups in particular have been attracting a lot of attention and various bands have decided on a combination of two or four Bose 800 speakers along with a power amp and, usually, the Allen and Heath 16 into 2 'Pop-mixer' . . . Welsh band Black Sedan were recent visitors and were happy to leave with some Crown power amps, an MM 16 into 2 mixer and a few RCF horns to boost their present PA system . . . In the power amp field, Amcrons have been selling well, along with a 100

watt per channel model S200 made by Ice Electrics, a 19" rack mounting unit with meters . . . Alan Lancaster of Status Quo visited REW to buy a Teac Tascam 8 into 4 mixer . . . MM mixers have been among other strong sellers, with the 12 into 2 and 16 into 2 versions proving especially popular . . .

## Unisound Peckham

The very lovely Dana was the proud owner of a Wurlitzer electric piano after a visit to Unisound . . . A new 'routing-box' is being developed at Unisound, it comes after the amp and before the speakers, allowing the user to attillse speakers in series or parallel - more news to follow . . . A Gibson L6 was sold to the Pink Fairies . . . Paul Wisker of Buddy and the Dimes bought a brand new Ludwig kit. The new range of Godwin organs, affectionately referred to as the 'Rick Wakeman' organs, have been in the shop some time now and have been generating a lot of interest amongst the local musos. The Golah Brothers, all 16 years old apparently, came in for a nice, shiny, new Fender Rhodes Electric piano. . .

# Studio Diary Studio Diary

ABBEY ROAD (EMI) . . . The Pink Floyd have been lifting sections of 24-track recordings from tape, mainly from "Dark Side Of The Moon" and "Wish You Were Here," for use in the rehearsal of a new stage show . . . Wings were resident recently mixing the new live triple album, and also adding some overdubbing here and there, with engineers Phil McDonald and Mark Vigers and producer P. McCartney . . . Roy Harper has been mixing some tapes made in his home near Hereford; Roy has split production on this project between himself and John Leckle . . . The Shadows have been mixing tracks for a compilation album due for release soon . . . Michael Fury recorded a single produced by John Darnley . . . The Weltons, young winners of Opportunity Knocks, recorded a single with producer Andrew Powell . . . The Spinners completed location work with Peter Vince at Leicester's De Montfort Hall and the Winter Gardens in Bournemouth . . . Danish group Flare completed tracks for eventual release on EMI International with Peter Vince engineering . . .

ELECTRIC LADY (N.Y.) . . . Peter Frampton, the man with the smile, started on a new album with engineer Chris Kimsey . . . Al Di Meola continued work on his next solo offering with engineer David Palmer . . . A band called the Determinations were recording their first album with Roy Godfrey producing . . . Bette Midler was resident at Electric Lady for the mixing of a new album, part of which consists of live recordings, and was produced by Lou Hahn . . . Don Cherry completed the recording of a new album for Atlantic Records produced by Michael Walden . . .

RECORD PLANT (L.A.) . . . Stephen Stills has started work on some new tracks to follow-up "Illegal Stills"; engineer was Mike Bronstein . . . Van Morrison is back in the States after having recorded extensively in England - he was busy recording and overdubbing at the Record Plant with Gary Leginsky engineering . . . Dave Mason recently began work on a new album with Ron Nevison producing and engineering . . . A band called Reo Speedwagon who supported Deep Purple on a recent States tour were recording with John Stronach engineering . . . A new RCA band, Stargazer, began work recording new material produced by Ron Nevison . . . Dan Fogelberg began recording for his next project and was engineered by John Stronach . . .



Alberto's second waxing underway

ROCKFIELD . . . Alberto Y Lost Trios Paranoias have been putting together another cosmic concept album with help from producer Peter Jenner and engineer Dave Charles . . . Clover were resident for some time putting down tracks for a forthcoming album, producer was Mutt Lang and engineer was Pat Moran . . . The Flamin' Groovies glowed radiantly at a recent Rockfield session . . . Neil Innes, still finding it sweet to be an idiot, recorded tracks

with this band Fatso and was engineered by Dave Charles . . . The somewhat less than serious Supercharge were mixing with Pat Moran . . . Phil May, once Pretty, was in to record with his new band and also produced the proceedings, engineered by Ted Sharp . . . Alkatraz were at home when recording various tracks, producer was Anton Matthews . . . Paul Jones recorded "two or three singles" at a recent stint, Pat Moran engineered and producer was Mutt Lang . . . Newish band Allalpha put down a few ideas, assisted in this venture by the amazing Del Newman . . .

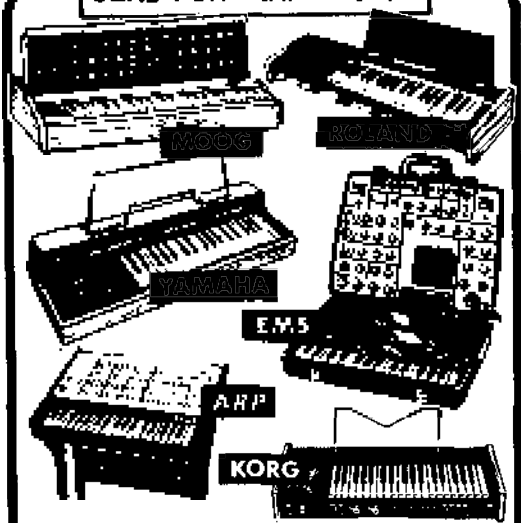
TRIDENT . . . Genesis completed the mixing of their new album "Wind And Wuthering" with David Hentschel producing and engineer Nick Bradford - there was also the possibility of work starting on the mixes for a live Genesis album . . . Brand X worked on their new record, Denis McKay was the producer, Steve Taylor the engineer . . . Gong mixed a new LP helped by Denis McKay . . . Phoenix continued on some work assisted by engineer Peter Kelsey and produced by David Hentschel . . . Michael Walden worked on some new recordings with Tom Dowd . . . Supercharge have obviously been doing the rounds this month; they were recording with Mutt Lang producing and Peter Kelsey engineering . . . Quantum Jump completed an album with producer Rupert Hine and engineer Jerry Smith . . . A new band on NEMS called the Merry Boys continued recording . . . Max Merritt and the Meteors did a bit of work with engineer Peter Kelsey . . . Linda Lewis was in for a short time recording . . . Marc Bolan put down some new material with engineer Nick Bradford . . .

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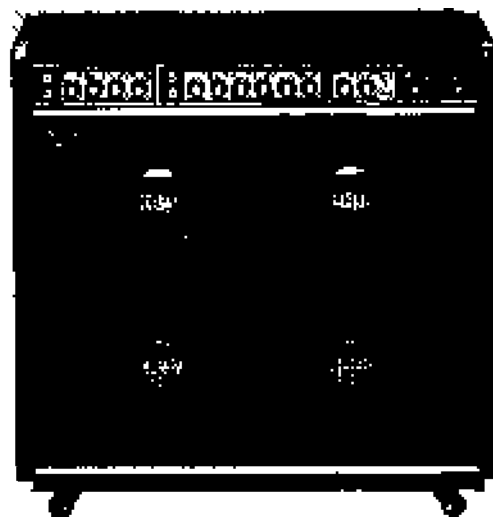
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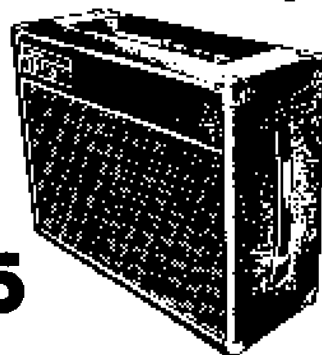
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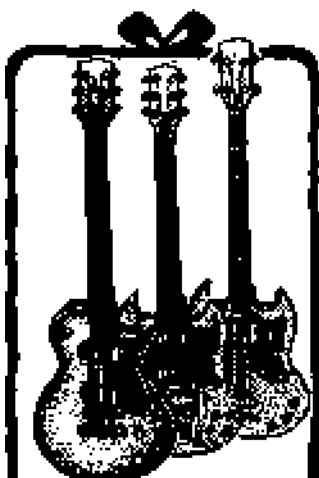


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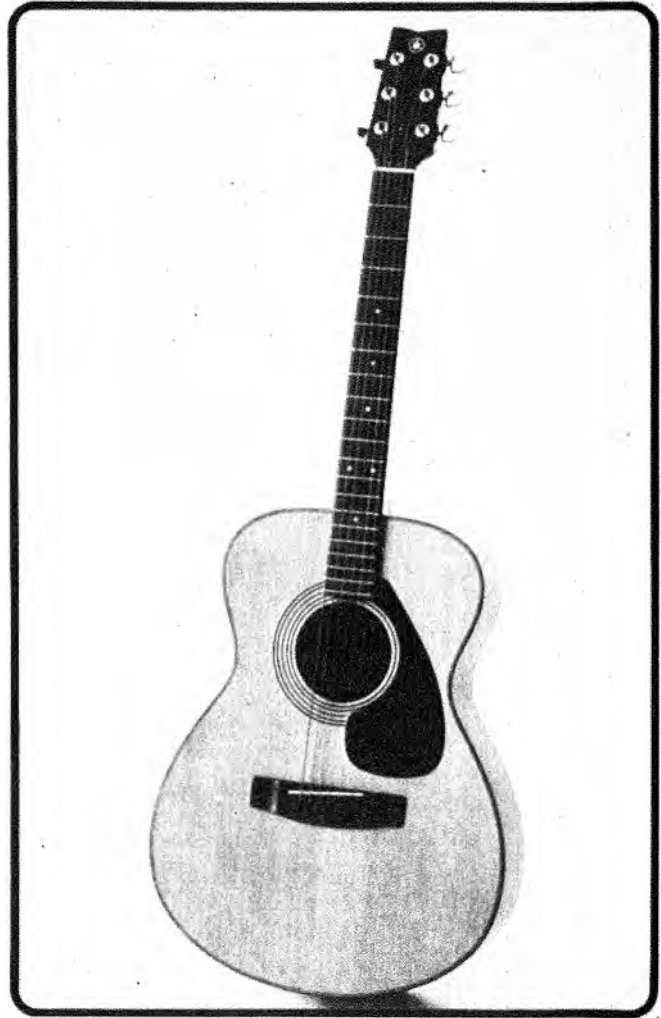
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# Dealer of the Month

## THE CARLSBRO SHOPS

Just occasionally, music shops become more than just a place to sign the HP form — they become a meeting place, a kind of working mens club for musicians. Providing coffee bars in music shops usually has the reverse effect and causes people to stay away; musicians are pretty cussed. Three shops towards the North of England enjoy such a place in the musical community — and they are all linked by a common name, Carlsbro.

Carlsbro is a name well known to musicians all over the world. The amps and electronic items made by that company have become extremely successful, but despite the fact that the two shops have the same name, there is not any restrictive loyalty to that particular brand paid by either shop. Of course you can buy Carlsbro equipment easily at any of the shops, but you can just as easily buy Fender, Wem or almost any other make you care to mention (Acoustic is particularly popular).

Carlsbro's first shop for musicians opened in the mining town of Mansfield towards the end of the last decade. The boss of Carlsbro, Stuart Mercer, had family links with the retail end of the music trade and it was a natural progression for him to meet the customers for his amplifiers over the counter.

Great oaks sometimes grow exceedingly quickly from little acorns and, today, three shops have sprung up where only the tiniest store started. Heading the Carlsbro retail enterprises is Keith Woodcock. He's been in on the operation from the beginning and, before that, was a drummer so well known in Nottinghamshire it was indecent.

As a sticks man in the early 'sixties he travelled the country getting ripped off by the moonlight promoters and so-called managers and he learnt the things he knows about playing in the school



of hard knocks. That's why he's such a pal to the musicians who are his customers — he knows what it's like!

Today Keith sits on top of the pile and, from the biggest Carlsbro Shop (in Chesterfield Road North, Mansfield), keeps a paternal eye on the other two shops, one in central Mansfield, the other in a new shopping precinct in Sheffield.

The Chesterfield Road shop is huge. The internal decor is an adaptation of the Soundhouse idea of scaffolding, and here it works particularly well. It's an ultra-modern shop, well lit and carpeted and the stock is enough to take your breath away. Stocks are huge in each of these areas; guitars, basses, drums, amps, keyboards (portable) and disco gear. The disco demo room is discreetly placed in the basement. A really important part of the operation is the second-hand market. Whilst other British dealers are complaining bitterly about lack of S/H equipment, Carlsbro has



mountains — and it's turning over all the time.

"We've been getting a lot of trade enquiries recently about used gear," says Keith, "and we're amazed how hard some people seem to find it getting it. I just don't think they're prepared to pay the musician a fair price for old gear on a trade-in. We often take in gear on part-exchange and we know we're giving a bit more than it's worth. We don't lose in the long run because we sell more new stuff that way, and we also have a really good range of good second-hand gear to offer."

It's that kind of thinking that has put the CSC on top. The amount of business done by the three shops is quite colossal. At Sheffield, the shop is fairly new — it opened in September 1974. The Manager there is Nelson King. "We've done very well in

just over two years," he told IM. "It took us about four months to get established, but after that it really went amazingly well. I think we know most of the faces in and around Sheffield and I think that, because there are now around four good shops in Sheffield, we're helping in attracting passing musicians to the town to get whatever they need. Rather than take trade from other shops in this area, I think we've brought more business into the town."

One of the more interesting aspects of the fall in the value of Sterling has been the amount of export orders reaching the Carlsbro shops.

"Export has been very important to us recently and we handle it all here in Sheffield. Some of the stuff we are sending out is re-exported and as we've also

got a large mail-order operation we've had to open up a special packing department."

The Carlsbro Sound Centres care a great deal about their customers. Because they're in a business in which they know most of their customers on a personal level, they have to offer really good service. The shops have guitar craftsmen carrying out all repair work and they also go over all new instruments

and do a decent setting up job before the guitar reaches the shop wall. Electronics enjoy a similar amount of attention and, rather than go through the hassles of dealing direct with manufacturers, the shops undertake all re-coning and similar operations in house.

There's a bit of everything to be found in a Carlsbro shop. The people there care about their customers,



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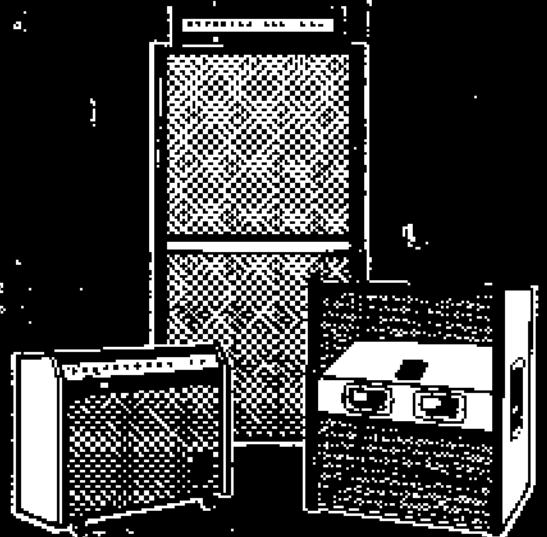
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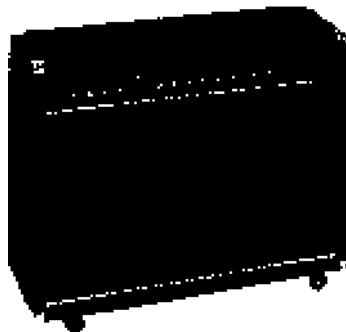
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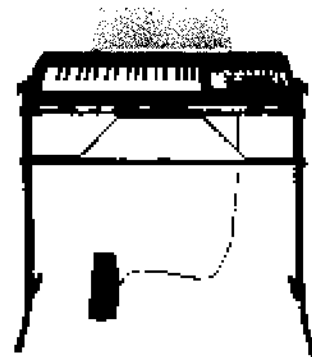
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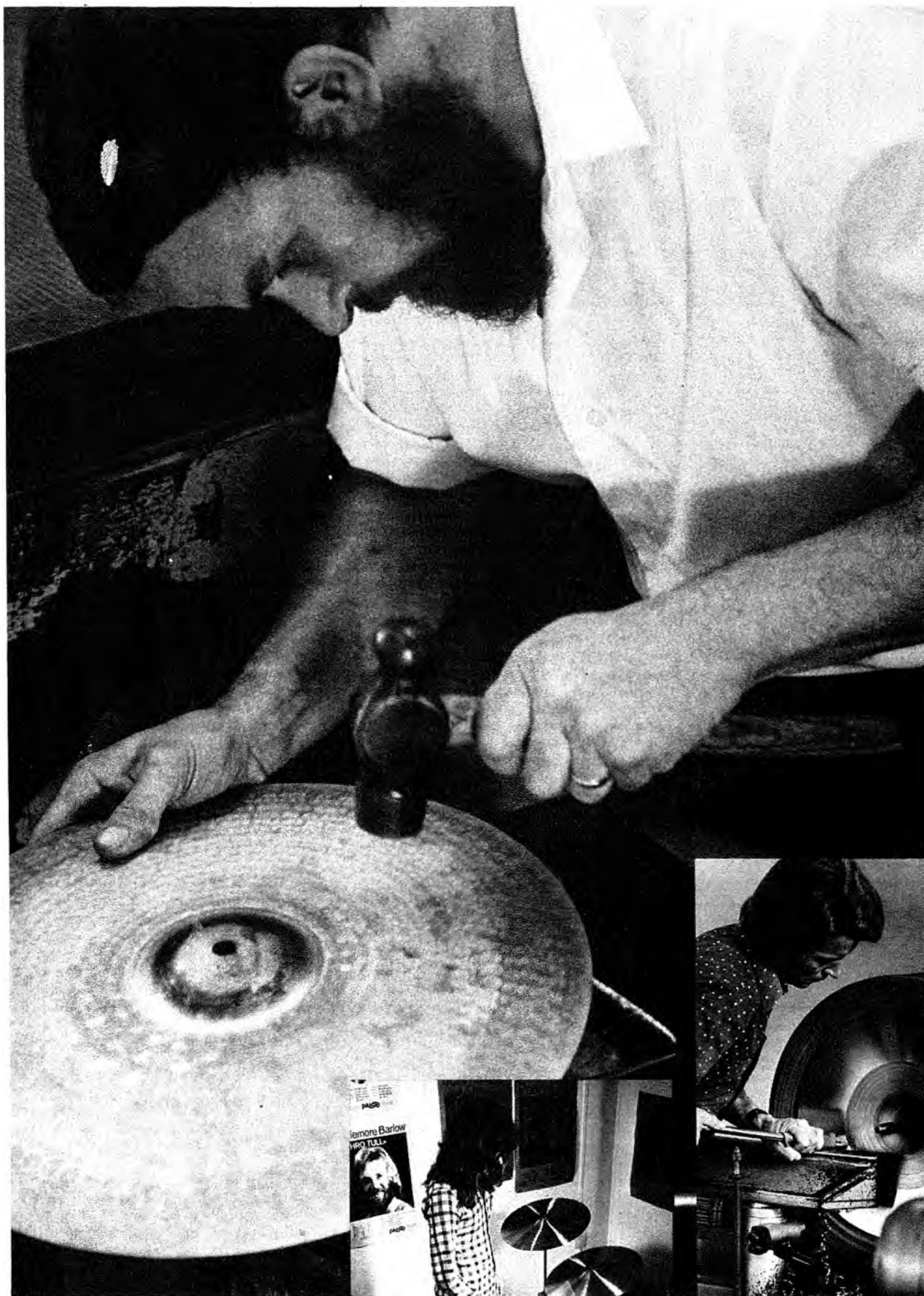
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*Paiste (pronounced pie-stee) cymbals made in Nottwil, Switzerland are so far the only serious and successful challenge to the supremacy of Zildjians from Turkey and America. Introduced to Britain in the early 'sixties, their "Custom 602" gained a lot of customers for two reasons. One, they were a little cheaper at the start, and two, they seemed to be able to supply enough cymbals to cater for the beat boom when their competition was stretched trying to cope world-wide with the demand.*

# Henrit Visits the Factory

The Paiste family started making cymbals in Russia and, when the revolution came, was forced to flee to Latvia, or to be accurate Tallinn, Estonia. Here they began to manufacture cymbals and gongs. With the advent of World War II, the family moved to Poland, and later to Rendsberg in Germany, where nowadays cymbals (for the German market) and gongs (for the world) are produced in a large factory. This German factory is looked after by Toomas Paiste – the other factory I visited is looked after by Toomas' brother Robert.

Robert Paiste's spacious factory is about an hour's drive out of Zurich so I took advantage of Phoenix's first European tour and our gig at the Volkshaus to visit them. Unfortunately for me the factory is so interesting that it needs a good few hours to look around so I had to be up horribly early to catch a plane from Frankfurt. The factory employs between thirty or forty people and the highly skilled workers labour five days a week in very stimulating and airy conditions. They work overtime when necessary but the factory seems to be so well run that it hardly ever happens. Paiste make four different brands of cymbals including Formula 602 and the heavier duty 2002 made specially for aggressive modern playing. These different models are made in batches therefore, for one whole day they'll do only 602, and another day only 2002.

The Paiste family are so successful that, notwithstanding the communist bloc countries and Iceland, their cymbals sell in volume to every other country in the world which has any kind of drummer population. Their distributors throughout the world are, in the main, C.B.S. companies and the U.S.A. takes the lion's share of the factory output but Europe comes a very close second. I also discovered from Hendrik Fryling (Paiste's Sales Manager) that Japan is fast becoming a major market for their product too.

Paiste cymbals begin life as a flat disc of metal made from a bronze alloy. These discs are supplied to Paiste from an outside Swiss metal works to their exact specifications. These discs have been pre-rolled to different thicknesses and sizes and this is the key factor in Paiste's production. All the different designations of cymbals, whatever their diameter, are planned from the word go. There's nothing haphazard about Paiste and they don't have any accidental deviations. Their cymbals are not designated once finished, but once started. The difference between, say, a ride cymbal and a crash cymbal is measured in fractions of millimetres. Incidentally, each cymbal of a specific diameter has the same cup size whatever its final application. i.e. all 18" crash, ride, thin or sizzle cymbals have exactly the same size cup.

The aforementioned flat discs are sent on a set of rollers through a computer-operated oven roughly fifteen feet long. In the case of the '602', this is the first process prior to its cup being formed on a huge press. In the 202's case, this is the second process – its centre only having been pre-heated with a blow torch, and then put on the cup forming press. The hole is put into every cymbal at this stage. The 602 then goes through the oven for its second time and is quenched in a bath of water to harden it. The 2002 goes through for its only time and it too is quenched. Paiste's Chinese cymbals are worked in the same way as the 2002 but their distinctive square shouldered cups are drawn out instead of being pressed.

After quenching, the still-flat discs with their centre cups are bathed in a weak solution of acid to remove the oxidation caused by the heat treatment process. As I said, Paiste

cymbals are made for a specific purpose from the start and, to this end, a card accompanies each batch of a dozen or so cymbals on their journey through each different process.

At the next stage, the cymbals are mechanically hammered on both sides in ever-increasing circles for the bell to form the cymbal and give it its note. The workman sits at a large vertical cam-operated hammer, the weight of stroke of which can be adjusted by the operator's foot pressure. Each different designation of cymbal is hammered in a different way so obviously no two cymbals would sound exactly the same, although all ride cymbals, for example, would have the same overall voice characteristic. Most cymbals are hammered more in the centre than on the outside – but these outside strokes, though sparse, are more forceful to form the cymbal's shape. The noise in the hammering department is indescribable and because of this, all the operators wear headphones plugged into cassette players or radios.

The very crucial shape is checked from underneath with a straight edge and a ruler to ensure that it conforms exactly to Paiste's high standards. The trueness of shape all over is finally adjusted by yet another highly skilled craftsman with an ordinary hammer and a blacksmith's anvil.

Our completely formed cymbal is now fixed onto a wooden 'former' on a large horizontal lathe where it is planished with a large hand-held tool. This not only gives it its characteristic grooves and of course polishes it – its real purpose is to 'pare' the cymbal to a uniform thickness all over and give it its sound. This thickness is checked with a micrometer and if for some reason it's not up to scratch, it's rejected or corrected. The wooden formers on the lathe in place of the chuck are the exact shape of the type of cymbal being formed and when the tool starts to skim the cymbal it also forces it against its pattern to shape it even more accurately. After both sides are skimmed the cymbal is balanced on a pointed pivot to see if its centre of gravity is right. If it doesn't tip one way or the other, it's right – if it does, it's re-machined to correct its balance. The edge is now bevelled and stamped in ink with the Paiste logo and its designation.

Finally, it goes on yet another horizontal lathe to be lightly waxed, prior to its aural testing. Each and every cymbal is then played by one of two highly skilled and trained musicians who listen to it to see if it conforms to the sound a ride, or crash or whatever cymbal should make. If it doesn't then it is either re-hammered or cut in half and scrapped. Paiste cymbals are never re-designated. A Paiste cymbal is either a specific type of cymbal one hundred per cent, or else it is one hundred per cent scrap. All the hi-hat cymbals are matched and paired off at this stage too. It's only now that the Paiste trademark and "Made In Switzerland" are punched into the metal.

I asked whether they had contemplated using "X ray" machinery to discover faults and hairline cracks due to metal fatigue, and was told they had gone into it but found it a ridiculously expensive business which would have soon reflected itself in the price of their cymbals. These days, I'm told, they have a very small percentage of cymbals returned because of cracks. A lot of this I'm sure is due to the fact that they now make the 2002 for drummers of the heavier persuasion so now they don't have to buy the less robust 602 (which is incidentally more expensive) since they have a very good and more suitable alternative. By the way, 602 cymbals are still guaranteed to a certain extent within clearly

defined rules but 2002's aren't. (These rules are: if metal fatigue or some manufacturing problem broke your cymbal then you get a new one free. If operator error or enthusiasm broke it then you don't—and believe me the people at Paiste can really tell why and how their product broke).

The company have, in what used to be their original factory, something which they call an exhibition room where visiting drummers can play any cymbal they fancy actually on a drum set. They have their whole range of cymbals and gongs in this room and also a Grestch, a Hayman and an Auto-Tune set to play while cymbal testing, just to give the drummer the whole picture as far as his sound spectrum is concerned.

Paiste take several drum sets and dozens of cymbals to the jazz festivals of Europe just in case a visiting drummer's set doesn't arrive or whatever. This is a really nice service because I can remember times at Festivals over the years when my drums didn't arrive for one reason or another and I was then forced to scratch around to get some local guy's set.

I had hoped to watch Paiste's wide range of gongs being made but, unbeknownst to me, they aren't made at the Swiss plant but at the German factory. Of course they keep a large selection at Nottwil but I was disappointed, since I hoped to see them being made. I understand the principle is roughly the same with heating and hammering a flat disc but unlike cymbals they can only be made by hand. The large bronze alloy disc is first of all heat treated and then roughly hammered to its shape. The unfinished material is then stored for a settlement period and then hammered once more to trim down the material and tune it. This storing and hammering process is then repeated ad infinitum until the gong has an acceptable sound. Finally, some of the central surface area is scraped by hand purely for cosmetic reasons. The gong is then ready for shipment. The smaller proto-gongs have a slightly different manufacturing process because their special concave or convex centres are beaten or drawn out at an early stage before heat treatment.

The second biggest Paiste gong ever made is hanging in the factory waiting for a customer with 20,000 Swiss francs to spend. (4 Swiss francs = 1 pound sterling). It looks to me over five feet in diameter and needs to be started up by striking glancing blows all around its diameter. (I presume you'd need a chair). I didn't hear it but someone I know who has, says it's awe inspiring – and deafening.

Paiste's "dark-ride" cymbals came about because of several conversations with modern drummers who were looking for a new sound. (Paiste are very hot on talking to drummers and finding out what sort of sounds and effects they really need and they always take notice. As a matter of fact the majority of people who endorse Paiste seem to belong to the 'new wave' of drummers.) The cymbals are made in exactly the same way as any others except that their deep, dark sound with brilliant high-light ride overtone is introduced at the selection/test stage when Mario the tester sits with one of the craftsmen, plays the cymbal all over and at the same time points out where to aim his hammer blows. This process can happen to each cymbal half a dozen times with a day or two in between each. It's no wonder the dark ride is so good – and so expensive.

I have purposely not talked about all the different sorts and weights of cymbals produced by Paiste, because I will be testing them all in a future article just as soon as it can be set up.

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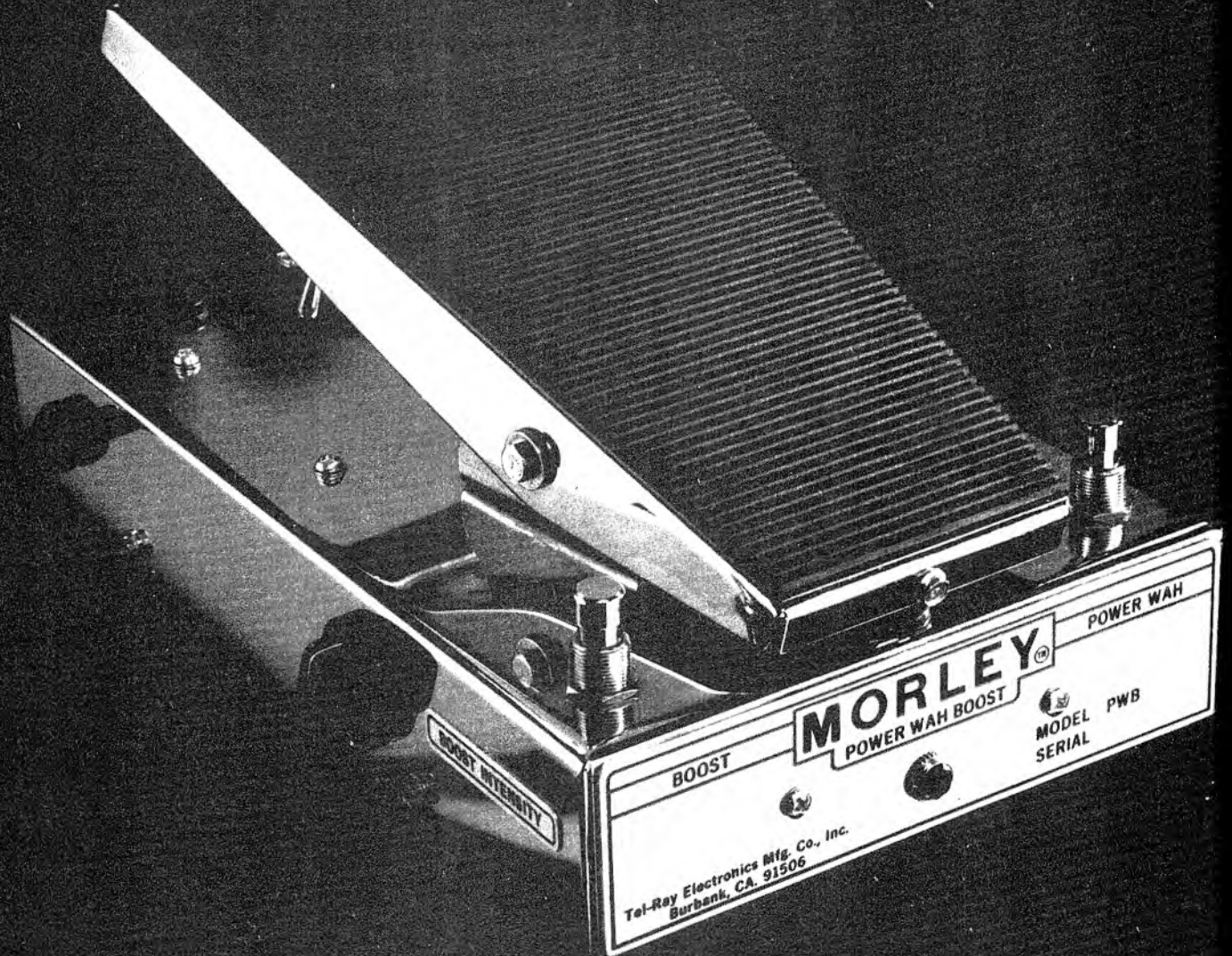


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# Music Trade News

## Music Trade News



Dennis and Stuart from Free'n'Easy

### Free'n'Easy For Hemel

WITH THE success of their Aylesbury musical instrument shop, Free'n'Easy, Dennis Fowler and Stuart Darling have opened a second branch in Hemel Hempstead, Hertfordshire. Catering mainly for the semi-pro and professional end of the market, they have an impressive stock line-up including names like Marshall, Music Man, Fender, Peavey, Gibson, Rickenbacker, Ovation and John Birch. A staggering range of percussion is also in stock — from Olympic and Beverley to Ludwig and Rogers.

Currently under construction is a soundproofed demonstration room below the shop, which will eventually develop into a recording studio. Most instruments can be rented daily, weekly or monthly from Free'n'Easy and, if the instrument is eventually purchased, the rental is subtracted.

### Erratum

LESLIE HAVE asked us to point out that the term Leslie may only be applied to the rotary tone cabinets made under that brand name. In an article some months ago on another system used for creating "rotary sound," we inadvertently described it as a Leslie Simulator. We apologise to Leslie for this — we meant it as a compliment. It ought to be pointed out that the Revo 30 is not made by Leslie or Electro Music, the manufacturers of Leslie.

### Conga Cassettes

TWO CASSETTES recorded in stereo to assist the novice and intermediate conga player in basic rhythm patterns and hand positions have been released by Gon Bops of California.

The cassettes are entitled "Basic Introduction To Playing The Conga Drums, Latin Rhythms." They form Series One of a number of educational cassettes to be made available from the company. Bongas, timbales, and the majority of percussion instruments will be covered in the series.

### New Sunn Mixers

THE SUNN Musical Equipment Company's new Sunn/Magna series 2000 mixers are soon to become available.

The mixers are designed to improve their capability in live performance applications. Exclusive phase-sync and auto-match circuitry developed by Sunn for their Automated Sound Systems are also included in the series.

Additionally, all four mixers are rack-mountable for convenience, and have eight modular channels for easy service. Models 2180 and 2380 are mono; models 2280 and 2480 are stereo, and all include separate monitor controls for each channel. A free brochure on the series can be obtained from Dept. 1101, Sunn Musical Equipment Company, Amburn Industrial Park, Tualatin, Oregon, 97062.

### Carlsbro for Canterbury Contest

CANTERBURY'S SOCODI Music Ltd. organised the 1,000 watt system for a recent rock contest in the city's Marlowe Theatre. Using only equipment supplied by Carlsbro Sound Ltd., Socodi's directors, John Walker and Dick Stilwell, and staff member Jake Jackson worked closely with the 16 bands, and the 6½ hours taken up by the heats and finals went off without a hitch.

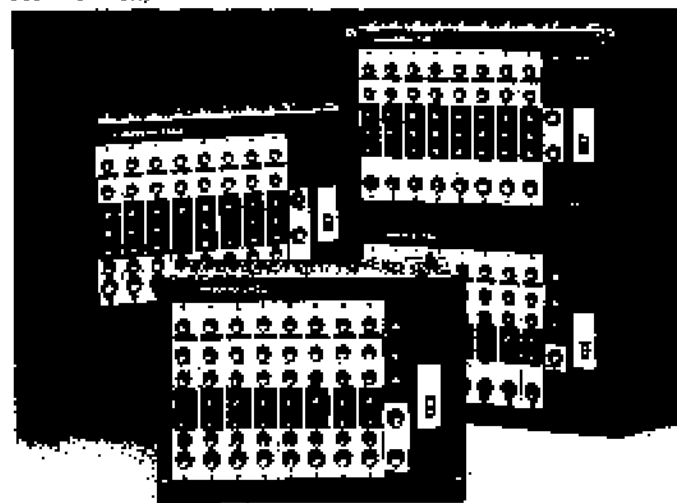
Nearly all of the £5,000 worth of equipment was sold by Socodi to groups in Easy Kent during the following week. "From our point of

view, it was a highly successful event" said John Walker. "We were asked by the theatre if we could help, and in doing so, we brought ourselves quite a bit of business. If any other companies get a similar offer, they should give it serious consideration."

The picture shows the winning group, Back Van Nasty, of Dover, with some of the equipment used in the competition. The band won an equipment voucher worth £100, and London studio recording time.



Back Van Nasty



Sunn 2000 series

### B & H Men Move

A NUMBER of changes are taking place at Boosey and Hawkes starting on January 1st. Mr. W. Martin moves from Export Director to overall Sales Director, adding the home market and overseas instrument branches to his list of responsibilities.

At the same time, the UK sales director, Mr. K. Spacey,

is appointed Managing Director of the subsidiary company, Rudall, Carte & Co. Ltd., which is moving to the Edgware perimeter but will remain autonomous.

Managing Director Norman Maloney retires on December 31st, but will continue to help Boosey & Hawkes in an advisory capacity.

## Auto-Tune Success

DRUMMER JON Hiseman recently completed his tour with CBS/Arbiter promotions manager Mark Goodwin demonstrating Arbiter Auto-tune drums. Two of the shows, at John Savage's new shop in King's Lynn and Carlsbro Sound Centre, Mansfield, included demonstrations of other Fender products by Jon's band, while Jon's drumming was also heard at the Sound Centre, Newport, the CBS/Arbiter trade show at Birmingham and Lewis Music in Jarrow.

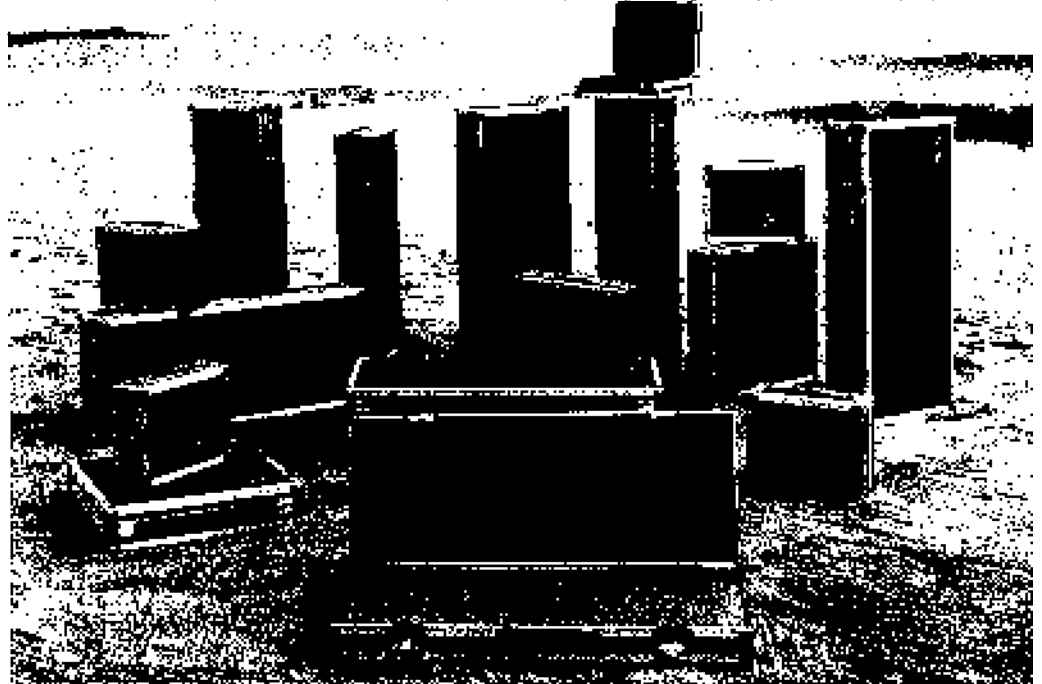
Additionally, Mark Goodwin has covered 10 Auto-tune clinics in Germany, and demonstrated to 700 dealers at a Paris trade show. Mark's playing was also filmed by two camera crews for networked TV shows, and he was invited to appear on a national radio show, "Pop Club." Sweden, Vienna and Brussels were included in the European jaunt in which Auto-tune drums were shown to at least 1,000 drummers.

Despite its newness, there are already plans for a new competitively priced single headed kit, and a range of new sizes from an 8" drum to an 18" x 16" tom-tom.

Drummers using Arbiter Auto-tune include Graeme Edge, Rod De'Ath, Adrian Tillbrook, Kenny Jones, Paul Varley, Mick Cook, Ollie Brown and Henry Spinetti.



Revox Winners



Calzone flight cases

## Revox Winners

A BRITISH group from Holmer Green Secondary School, Bucks., won the coveted Grand Prix at this year's International Amateur Tape Recording Contest at Lausanne.

The group's 2½ minute tape, "Darling," won them a magnificent Revox A700 tape recorder worth over £1300, and several other prizes including the 3M cup. The winners, Colin Humphreys, Carol Chamberlain and John Smith, received their awards at the British Amateur Tape Recording Contest prize giving on November 12th at the International Press Centre.

Wildlife recordists Bill Jackson and Richard Savage also won international honours. Mr. Savage won a Neumann condenser microphone, which, like the tape recorder, was presented by Stephen Holmes of F.W.O. Bauch Ltd.

## Ludwig Mallet Man

LEIGH HOWARD Stevens has joined the Ludwig industries educational clinic staff as a Musser Marimba clinician.

Considered one of America's foremost concert marimbists, Leigh has studied in New Zealand, and is a recent graduate from the Eastman School of Music in Rochester, New York. He has also developed a system of mallet technique which has expanded the compositional and musical possibilities for the instrument. Leigh has already premiered more than a dozen original compositions for solo marimba.

## Pascucci Re-elected Chairman of AMC

VITO PASCUCCI, president of G. Leblanc Corp., was re-elected Chairman of the American Music Conference for the year 1976-77 during the association's annual meeting in Chicago.

## New Calzone Cases

CALZONE CASE Company has manufactured a complete new line of heavy duty light-weight road and flight cases. The wide range of cases — 18 in all — should suit practically anything a musician may have to transport, and eliminates the need to stock a specific case for a corresponding instrument. One Calzone case for each type of instrument in stock will cover any model with a custom-like fit.

Guitar case C101 and bass case C102 are constructed with custom-designed extruded aluminium edging, flight hinges and handles, and ¼" seasoned plywood covered with hi-impact polystyrene which is stain and shock resistant.

Hardware is zinc and nickel plated to prevent rusting, and mounted with split or pop rivets with a washer backing for extra strength. The top lid, secured to the bottom by an oversized, multiriveted piano hinge, also fits into a watertight, matched recessed channel in the lower half.

Further information on this range can be obtained from: BKL International Distributing Ltd., 1111 Green Grove Rd., Neptune, New Jersey, 07753.

# SLEISHMAN

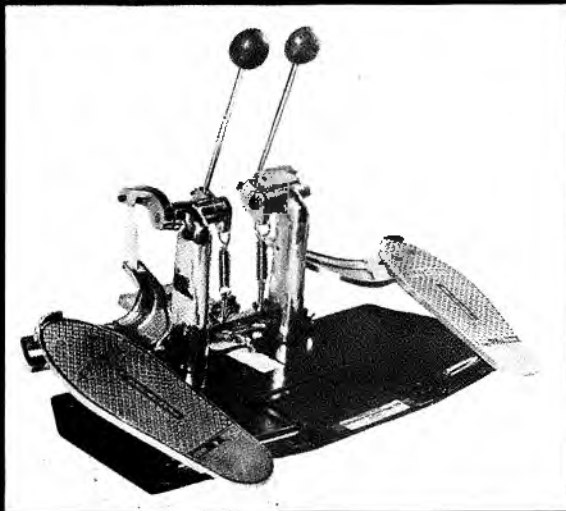
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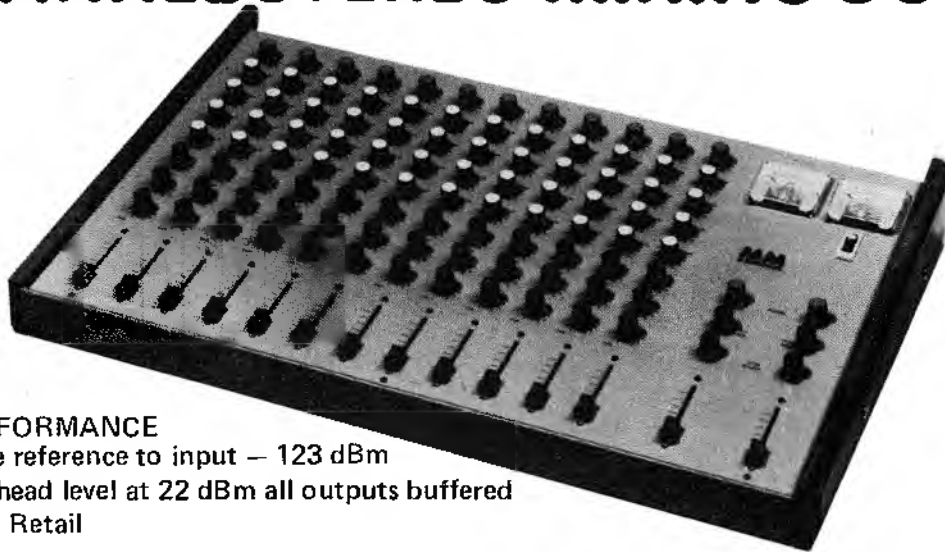
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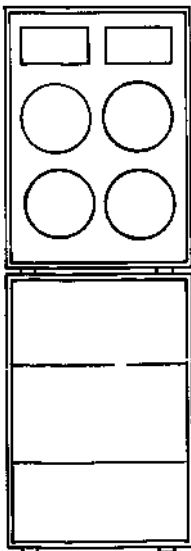
**\*\*20 into 4 to be announced shortly\*\***

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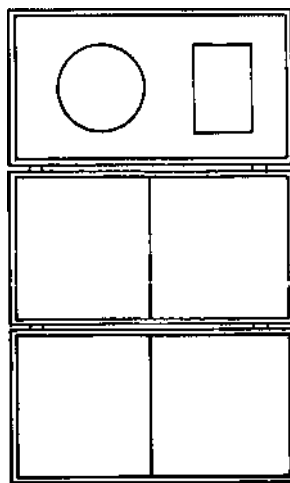
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# MM ELECTRONICS

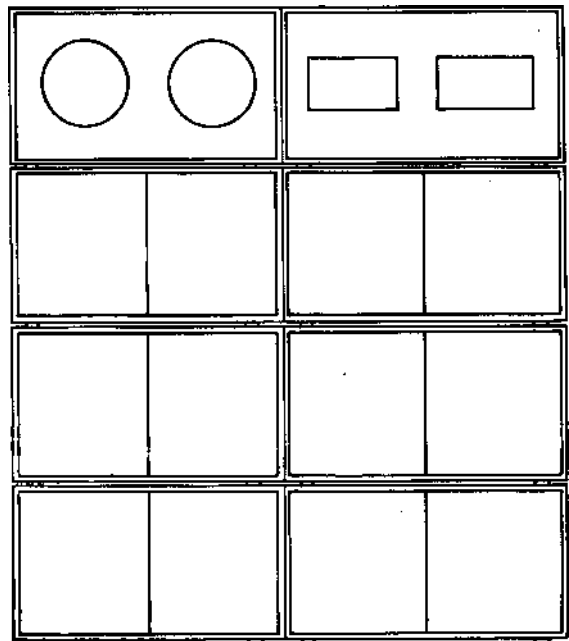
## New MM PA Stacks



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Four 830 and two 840 cabs retail for £1200 including Electronic Crossover and could use 2 or 3 MM PA360 slaves.



Twelve 830, two 850 and 860 cabs retails for £2700 including Electronic Crossover and could use 4 or 5 MM AP360 dual 250 watt slaves.

# TIPS FROM THE TOP

*Sonny Igoe, former drummer with Benny Goodman, Tommy Dorsey, the Woody Herman Herd, CBS-TV and NBC-TV, now teaches in New York, plays regularly with a New York jazz group, and plays at jazz concerts. He recorded on Capitol, MGM and Mars labels with Woody Herman and on Capitol for Benny Goodman.*

Sonny Igoe knows his rudiments, dynamics, and sight reading and can power a small group or a big band like Woody Herman's or Benny Goodman's. In fact, he has. Sonny also worked virtually all the CBS television shows in New York, and was on staff for NBC in New York, too. It's very possible, though, that Sonny is doing his best and most important work now: teaching young drummers how to read, move, and become versatile enough to really make an impact in contemporary music.

When I met Sonny again in his New York studio, the electric company had failed to deliver their kilowatts to the building and Sonny was trying to squeeze in as many pupils as possible before the natural Autumn light faded. Like most drummers, he's relaxed, articulate and has a fast wit. He also had a student working at the drums, (a chick, all right Women's Lib!) so we had to wait for a break in the action.

Not surprisingly, Sonny doesn't put down any drummers. As he says: "I've never seen a drummer I couldn't learn something from."

On the matched versus traditional grip, he feels the traditional grip gives the drummer an opportunity for more technical excellence, and that the matched or "grabbing" grip is too limiting. The matched grip is the standard for many rock groups, but Sonny's feeling is that the rock drummer is often looking for overwhelming power, and gets it sacrificing technique.

He has a straight ahead, sensible answer for the question of what kind of drum set a young drummer should buy. "Buy what you can handle. What good is five tom-toms, 12 cymbals and two bass drums if you don't play them well? The biggest mistake I see kids make is in the bass drum selection. Over half of the youngsters I see with two bass drums

have dropped one of them inside of six months, because they've found out they don't need two basses."

On soloing, Sonny says: "Soloing is showing off, so if you do it, do it right. Except for special numbers, the snare is your main instrument; the rest of the set comes off the snare. If you move from the snare to your floor tom, lead with the right hand. The last stroke on your snare should be made with the left hand, otherwise you're going to get hung up with your sticks." He adds another caution on solos. "Try to be relaxed and smooth. Tension creates problems and can slow down your solo work, and it'll show."

Sonny was hesitant to name his favourite drummers. "No matter who I name, I'm sure to leave someone out. But . . . Buddy Rich still does it all. Louis Bellson, Joe Morello, Ed Soph, Kenny Clare in England, Peter Erskine, John Von Ohlen, Steve Gadd . . . the list is almost endless. And the encouraging thing, especially for people with ears for big bands, is that the high schools are playing a lot of big band arrangements. The kids are getting exposed to good music, which is affirmative for big bands. As for the radio stations, it's lowest common denominator sounds from them. And I mean the lowest."

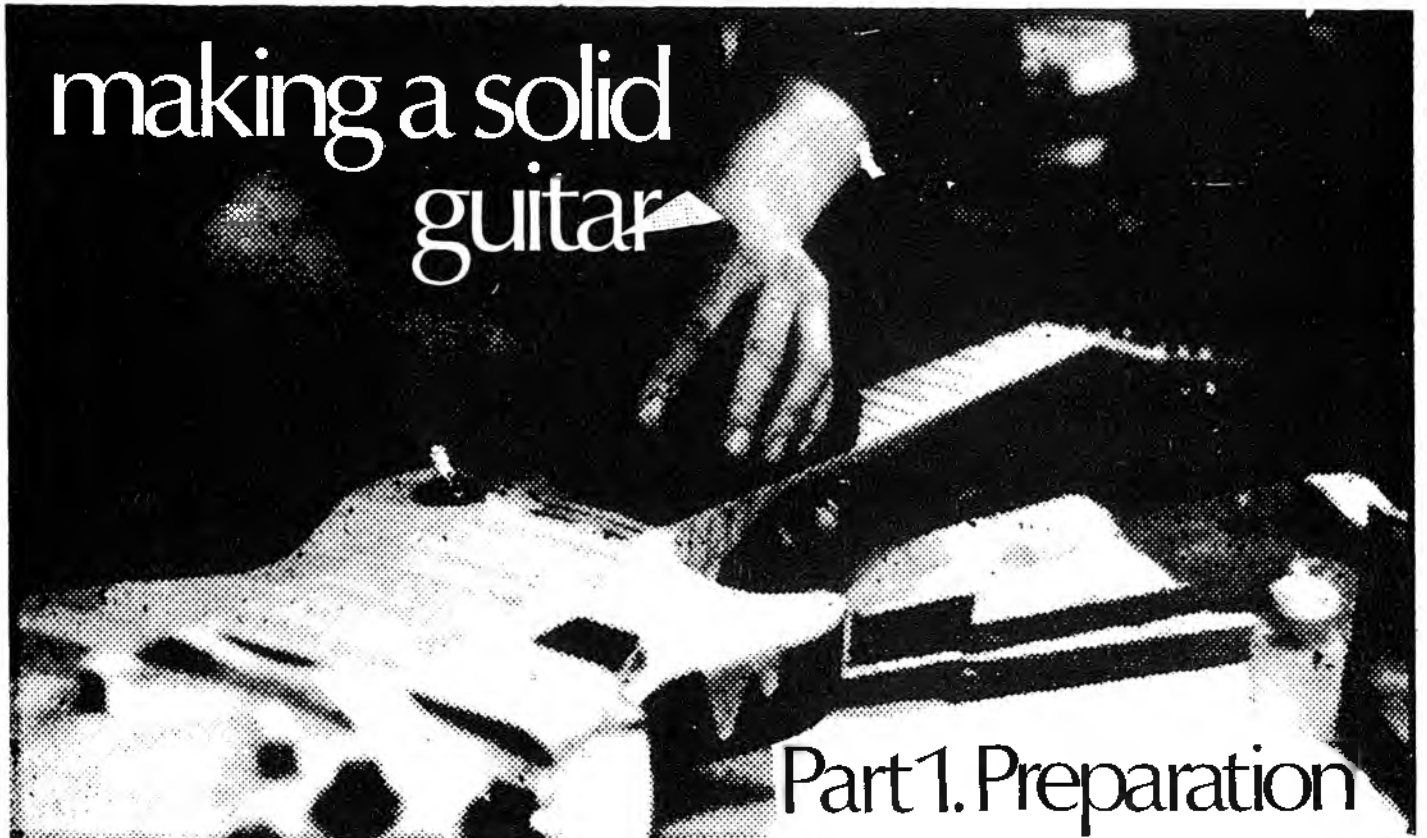
Rock fans, hold it! Don't think Sonny didn't mention Billy Cobham; he did, and thinks Cobham is phenomenal.

One last word of advice from Sonny Igoe: listen. He listens to and watches every drummer he can possibly pick up on. And if an accomplished drummer and teacher like Sonny Igoe does, it must make sense for drummers on the way up.

So, if you're a beginner, intermediate or a monster of tomorrow who's getting into bad habits, see Sonny. He's in the New York 'phone book. Who knows, the electricity may be on by now!



# making a solid guitar



## Part 1. Preparation

This is the first of a series of articles intended to help you make your own electric guitar. I cannot possibly cover every detail, because you will all have different levels of ability and experience, and what is useful to some, will be boring or incomprehensible to others. I am aiming this series at about the level of musicians with a little experience in fancy wood working, who have read and understood my previous articles on improving guitars. Nevertheless, anyone who can measure accurately and saw straight should be able to make a playable instrument. The main requirement is sufficient patience that you neither rush, nor fight with the job, and rest when you are tired. There is obviously a risk of damaging your hands with sharp tools, and this is a more serious risk for a musician, but most accidents occur from tiredness, combined with poor lighting, uncomfortable working conditions, and work which is not securely anchored to the bench.

All of these are under your control. If you have had a hard day, by all means draw plans, or use sandpaper, but keep away from power tools and sharp-edged tools. Work in a well-lit room. At the minimum, this can be one light hanging from the ceiling, and an adjustable desk lamp on the bench. (There are some which have a screw clamp on the base) Camera shops may sell you battered photographic lights, which can usually be fitted with ordinary bulbs. If you are going to work in the attic or the garden shed, heat it for an hour or so before you start work. You will probably have to make do with whatever work bench you can buy or borrow, but if it is not the old, heavy type, screw it to a solid wall with a few brackets and find a chair or

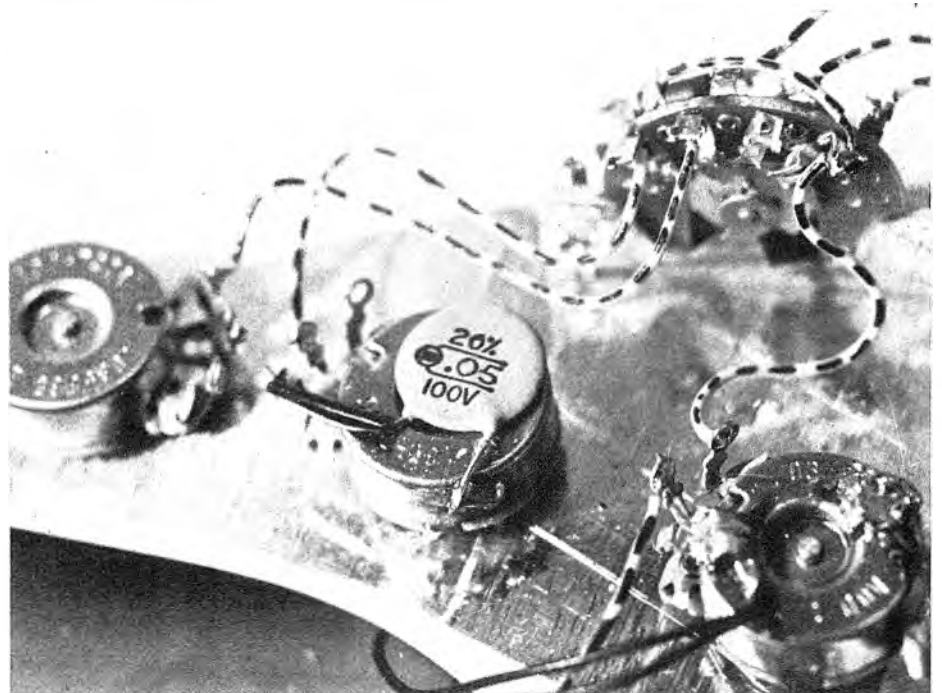
stool which puts you at a comfortable height when working. I like the bench about four inches below my elbow. You can sometimes buy battered (but repairable) benches from Local Education Authority stores. Heavy, children's benches are usually the cheapest, because they are difficult to carry, and too low for adults. Borrow some transport and, stand the bench on four bricks!

One of the secrets of making a project run smoothly is good preparation, so this month's article is mainly about tools and materials you will need. The only book I know of on electric guitar making is 'The Electric Guitar' by Brosnac (published by Panjandrum Press). This has many pictures of fine guitars, and explains some basic constructional techniques. I suggest you buy a copy, and read it before next

month.

### Wood

Many species which are widely used for furniture, are not really suitable for guitar-making. I am making arrangements with one or two shops in London to supply suitable wood, direct or by post, but you must accept that no supplier will take responsibility for the stability of his timber. There are, however, certain constructional techniques which minimise the chances of warping, and I will show you these later. Unless you are skilled, patient, and determined to produce the perfect guitar first time, don't worry too much about obtaining the very best wood for a first instrument. By the time you have finished it, you will probably wish to make a better one (and understand how to!)



## Tools

Some sort of bench with a woodworkers vise. (A 'Workmate' will provide both bench and vise). A good 1/2" or 5/8" chisel such as those made by Stanley, or Swedish chisels made by Bacho Berg. A *Tenon Saw*. Old fashioned, high quality, not plastic covered. Some good makes are Disston, Roberts and Lee, Spear and Jackson. Even an old saw in reasonable condition is worth professional re-sharpening. It will improve some brand new saws. Locate your local 'Saw Doctor' and be civil to him — he is probably over worked (and irreplaceable). A *Coping Saw* and plenty of blades, or access to a small bandsaw and, a *sharp* coarse-tooth blade for it. (If you have to *force* a bandsaw to cut, it will probably bite you!)

*Plane* Forget the ones with replaceable blades. If you have a good Smoothing Plane, get an adjustable Block Plane for the little jobs. If you are starting from scratch, my choice would be a Record No. 03, and the longest Narrow Jack Plane you can handle. Some shops may (correctly) call this a Shooting Plane. It is used for preparing long straight joints, and flattening old warped benches but, surprisingly, is almost useless for planing guitar necks straight. With care and a good straight edge, you *can* manage with-

out it.

*Straight Edge*. You don't need engineers' accuracy. Get a Maun 'crafts quality' straight edge, and spend your money on a steel Metre rule. There are some good combination 'straight rules' from Japan but they may need the sharp edges taking off. *Any Accurate Carpenters Square*. These are the main tools, you will find you need other bits and pieces as the job progresses.

The plans for this instrument will soon be available, and allow for virtually any body shape, to taste. If you intend to make a guitar like a Maltese Cross, or a heart with an arrow through it, or a 'drunken Starfish,' think for a minute, that it may not be as comfortable to hold as a more conventional shape.

Please don't saw up antique furniture; if its pretty wood is only veneer, it will be no use to you, and if it is solid Mahogany or Walnut, save it for your third or fourth instrument. Better still, leave it intact if it is any good and, either look after it, or sell it to someone who will, and *buy* wood for guitars.

Finally, a little bit about the theory of electric guitars. You may think that an electric guitar is just a conveniently shaped lump of wood, to support strings, frets and pick-ups. Many musicians and

perhaps even a few makers would more or less support this opinion. To save a lot of unnecessary words, I will say simply that *I don't agree with it*. Let us start from another direction.

A guitar pick-up is an 'electromagnetic transducer.' The mechanical vibrations of a steel string affect the magnetic field surrounding the pick-up coils, and produce a vibrating electrical signal, which is sent to the amplifier. So you must think in terms of mechanical energy being fed into the instrument, and electrical energy coming out. You supply the mechanical energy by plucking the strings and it is stored in the strings while they are vibrating. The strings will continue vibrating until this energy has been dissipated in various directions. (Very little is actually used up by the pick-up). As the amount of energy you can push into a thin steel string is rather limited, and most electric guitarists like an instrument which sustains its notes for a long time, one needs to think in terms of reducing the amount of vibrating energy which is allowed to 'leak away' in unwanted directions. I will say more about this next month. Also next month: A "pocket" guitar amp which uses only 10 components, loudspeaker and a battery.

# NEXT MONTH Making a Solid Guitar Part 2. A 'pocket' guitar amp. How to make your guitar sustain well. Neck design

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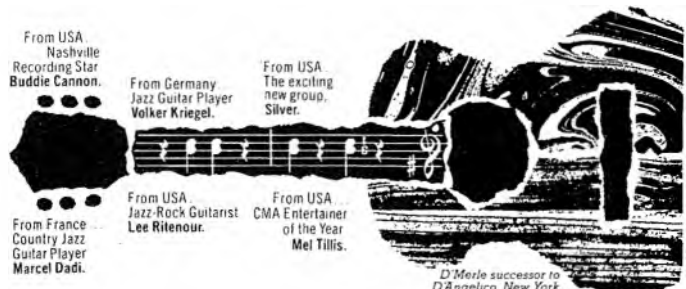
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# Solid Guitar Survey

## Baldwin

Gretsch guitars are distributed in the United Kingdom by Baldwin, and there is a range of six solid guitars. There are four types of the 'Roc' series, firstly the Country Roc 7620 guitar, which is a Chet Atkins type guitar and, as the name would imply, is particularly suitable for country music, along with a wide range of other applications.

The 7601 Broadcaster features two pick-ups and a dual cutaway design, with individual volume controls and enclosed gear machine heads. Others in the Roc series include the 7613 Roc Jet with Super-Tron pick-ups, laminated maple neck and chrome-plated hardware, the 7612 with neo-classical inlays, a red satin top and a single cutaway, and the 7610 with nickel silver frets, an adjustable bridge with individual saddle string adjustments and a Gretsch G tailpiece. There is also a solid bass guitar in the Gretsch series, the 7605 which features a single pick-up and is a fine bass guitar.

## Barnes & Mullins

The Shergold range of guitars are distributed by Barnes & Mullins, and offer six main types of guitar, the Masquerader and Meteor guitars, the Marathon bass guitar, along with the Modulator series of six and twelve-string guitars and bass.

The Masquerader has two pick-ups of the normal humbucking type which the user can break down into single coils if desired, to enable various tone changes to be effected by way of a lever switch. There are also various phase switching combinations available. It boasts a hard, rock-maple neck, volume and tone control, Schaller machines, a six-saddle bridge allowing adjustment of harmonics and individual height adjustment. The body of the Masquerader is made from selected hardwood.

The Meteor is available in a two pick-up deluxe model with even cutaways, the neck has no edge purfling so string-bending maniacs would do well to check it out

The Marathon bass guitar has a long (34") scale neck and Schaller bass machines. There is a hard, rock maple neck and fingerboard with a selected hardwood body. The single pick-up controls enable the two coils to be split into stereo, either two strings through one channel and two through the other to allow panning effects, or two strings through the bass channel on an amp and two through the treble channel. The overall output of the bass is controlled by a selector switch on the guitar.

The Modulator range consists of a six-string, a twelve-string and a bass guitar. The basic outline of each guitar in the range is a hard, rock-maple neck, purfling on the edge of the fingerboard, heavy gauge fret wire, Schaller machine heads, a selected hardwood body, humbucking pick-ups, with all the controls governed by modules which slip in and out of the guitar body. Module One is the basic volume, tone and selector switch, Module Two has phase shifting controls in addition, Module Three has a volume and tone switch for each pick-up plus a rhythm/solo selector, Module Four supplies stereo controls and Module Five is the 'recording' module and enables the musician to choose any combination of humbucking or single coil characteristics from the guitar's pick-ups.

## Burns

The Burns Flyte guitar and bass are still proving to be strong sellers, the guitars featuring the

unique 'delta' design and fine 'Mach One Humbuster' pick-ups. There is a new design due from Burns, however, that should prove to be of interest to all guitarists interested in the development of the instrument they play, the LJ 24. The guitar will be shown at the Frankfurt Fair in February, and features a 24-fret Canadian rock maple fingerboard and neck, Schaller machine heads and is "a very conventional solid guitar shape." It has new pick-ups designed to give the same high level of volume as the Flyte guitars' Humbuster pick-ups, but at the same time delivering an increasing level of treble. It has a newly designed low bridge which has enabled the neck angle to be lowered, ending up practically flush to the body. Burns anticipate a retail price of around £155, and the LJ 24 will initially be available in a red finish.

## John Birch Guitars

One of the better known luthiers in the country, John Birch makes a wide range of basic shape guitars, although any shape that the customer requires can be built. Of the more conventional shapes, there are the J1 and J2 rounded horn guitars, Rickenbacker, Firebird and Les Paul shapes, twin-neck Rickenbacker types and, in fact, any design under the sun available.

The electrics of John Birch guitars also offer a wide range to prospective customers. There are eight humbucker pick-up and six double-multiflux varieties available, a stereo/out of phase/mono switch, master volume and treble and bass cut on each tone control. Fretboards are available in the normal maple, rosewood or ebony types, and a range of colours are available, including Greenburst, Blueburst, Cherryburst, Walnutburst and white into black-burst. Enquiries about your personal requirements should be addressed to John Birch Guitars, 106, New Road, Rubery, Birmingham.

## CBS/Arbiter

CBS/Arbiter's main line of solids are Fender, which hardly need any introduction to musicians anywhere. Perhaps the two best known guitars in the range are the Stratocaster and the Telecaster, the Strat featuring three Fender pick-ups, six independent bridge sections, is available with or without a tremelo arm, and comes in a wide variety of finishes with options on maple or rosewood fingerboard. The Telecaster standard boasts two pick-ups and three individually adjustable bridge sections. With the recent introduction of Fender humbucking pick-ups, the Telecaster is also available in Custom and Deluxe models.

The Fender range of basses are equally well-known, and include the Jazz Bass, available in left-hand or maple neck variations, the Telecaster Bass with maple neck, the Precision Bass which is available in narrow neck, fretless, left-hand or maple neck versions and, at the lower end, the Mustang and Musicmaster basses.

## CMI

Clearstone Musical Instruments of Birmingham have a wide selection of guitars available under the CMI name, and to describe every model would be a mammoth task. However, amongst the more popular models there are, for example, several Les Paul type guitars: the LS58D is a very good fixed-neck '58 copy, with single pole pick-ups, and a flat back and top which comes in a tobacco brown finish. The LS26DS is a standard cherry sunburst version,

the LP200GMC is a gold-top version, and the LS custom is a deluxe fixed neck version and the LP200GCN is, although a Les Paul shape, a natural body maple fingerboard and neck version, with black inlays and gold fittings.

A couple of the Telecaster-type guitars in the CMI range are the TF66, a deluxe maple-neck version, and the T1 custom, featuring a one piece maple neck and an ash body.

Other guitars in the CMI range of solid electrics include the MM20 (a Melody Maker replica), the TV226 (a TV replica), the RK24 replica of the Ricky stereo bass, the Strat replica (SG36DW) featuring a maple neck and fingerboard, the LS230 (a replica of the Gibson L6S) and a Flying V replica, the FV50.

Also included in the CMI series are the SG2S SG replica with bolt-on neck, an elaborate version of the L6S with a maple neck and natural body, termed the LS600, a fixed neck version of a 335 called the ES Custom (1944TW) and a 6-string and bass version (1954TW).

Among the bass guitars manufactured by Clearstone are the JB200N and the JB custom, the PB14 which is an inexpensive Precision like guitar, and the CMI version of the EB3 bass, the SG10B.

## J.T. Coppock

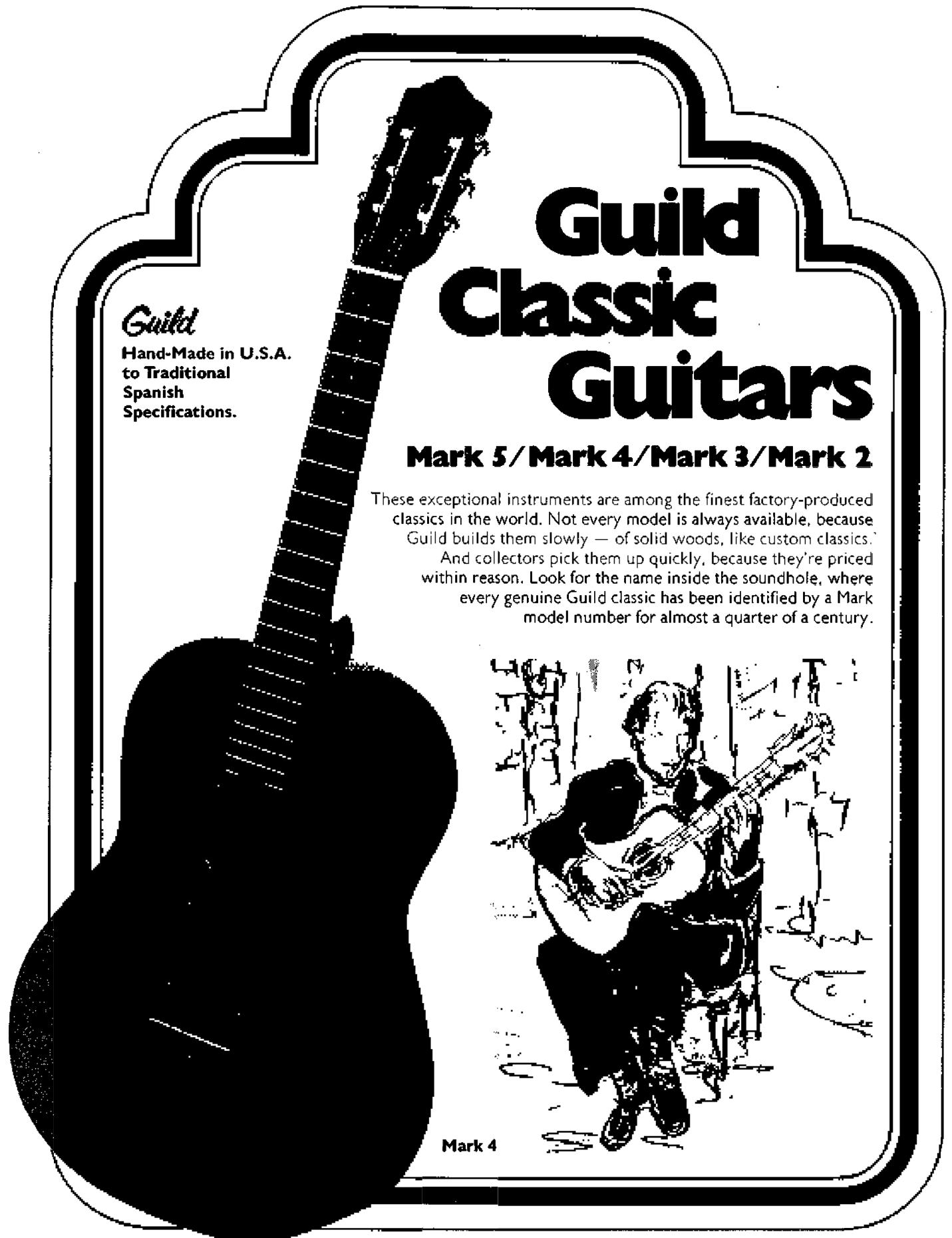
Coppocks distribute the electric models in the Cimar range, a cheaper collection of guitars retailing from £75 to £160 and featuring replicas of Les Pauls, Jazz Bases and Strats. The range will be added to next year, although four of the more recent additions include a Rickenbacker Stereo Bass replica, a Mustang replica, a Marauder replica and a Grabber bass replica. The well-known Antoria range of electric guitars are distributed by Coppocks too.

Amongst recent additions to the range, the two Gemini twin-necks are bound to attract attention. One model is the 6 and 12 string version which has three pick-ups on the six-string section and two pick-ups on the 12-string section. On the six-string and bass twin-neck, the six-string section has three pick-ups and the bass two. Both come in a sunburst finish. Also relatively new is the Antoria Venturer, model 2459, the same shape as the Gibson Explorer and something of a specialist guitar.

## Fletcher Coppock & Newman

The two most popular guitars in the well known Columbus range are the Les Paul replicas — model N85 is in black and model N85S is a sunburst model. Both guitars have twin high-response pick-ups, a micro-set bridge, a domed body and the neck and head are bound in ivory. The SG replica model N54 is also a very popular instrument, and it features a double cutaway mahogany body, a rosewood fingerboard, fully adjustable neck, twin pick-ups and separate tone and volume controls.

The Strat replica is model N82, and boasts three pick-ups, a tremelo arm and a golden sunburst finish. There are also two bass models in the range of Columbus solid electric guitars. The N66 is a twin pick-up model with heavy duty machine heads, and the N77 is a Jazz-bass type guitar, with shaded sunburst finish, twin pick-ups, a steel-reinforced adjustable, natural finish neck and a rosewood fingerboard. The N77 is the most popular bass in the Columbus range.



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# Solid Guitar Survey

## Guild

Guild Guitars (UK) Ltd are now a separate company operating from Hove in East Sussex, and they offer a fine range of solid six-string and bass guitars. There are eight main models in the six-string range, starting with the new S300 which features a new body shape, twin humbucking pick-ups, Schaller machines and a phase switch. Next in line is the S100S Standard, which has most of the features of the 300 and is available in Sunburst, Cherry-red, Black, Walnut, Natural or White. The S100SC is similar to the S100, but features a hand-carved top.

The next two models in Guild's six-string range are the S50 and S90, differing in the fact that the 90 has twin humbucking pick-ups, whilst the 50 has a single humbucker. The M80CS is a new model with a double cutaway, twin humbucking pick-ups and a  $\frac{3}{4}$  body size, whilst the M75GS boasts gold hardware, an ebony fingerboard, and twin humbucking pick-ups. The range closes with the M75CS which has chrome hardware, an ebony fingerboard and twin humbuck

There are four solid basses, kicking off with the B302, a long-scale instrument with a new body shape, twin pick-ups, wide frets, a curved fingerboard, Schaller machines and a new-style bridge. The B301 is similar to the 302, but has a single pick-up. The other two basses are the JSB2, which features double humbucking pick-ups, wide frets, a curved fingerboard and Schaller machines. The JSB2C is similar, but has a hand-carved top. All twin pick-up basses are available wired for stereo at an extra £20, and fretless fingerboards are available for no additional outlay.



Guild S100S

## Hohner

A new range of solid electric guitars in the T.F. Moridaira range will be available from Hohner in February — more details will be given at that time.

## Hornby Skewes

There are two ranges of solid electrics distributed in the UK by Hornby Skewes — Zenta and Kasuga. The Kasuga range consists of eleven solid guitars, ranging in price from £160 to £295 (retail with cases). The range opens with the LG380B which is a Les Paul type electric in a black finish. The LG770V is also a Les Paul type and features pearl inlays in the fingerboard. Other Les Paul type solids are the LG480S, a sunburst finish six-string and the LG2000V, a natural blond finish guitar with a hand-carved top.

The range continues with the SG360, a cherry red SG replica and the SG1800V, an SG type with a hand-carved decorative front. The SE480S is a sunburst finish Strat type six-string, and the SE600N is a blond finish Strat replica, whilst the EB750S is a version of the Rickenbacker bass, a stereo blond model. Another Kasuga bass, and the last in the range, is the JB500, a sunburst Jazz Bass type.

The Zenta range has eight models, and ranges in retail price from £34 to £59. The range starts with the EG501, a single pick-up six-string electric with a black and red finish. The EG502 is similar to the 501, but features two pick-ups and a tremolo arm. The bass version is the EB511. Next in the Zenta range is the HEG5006, an SG replica which comes in a dark walnut finish and boasts two pick-ups. The bass version of this is the HEB5004. Last three Zentas are the HET5001, a twin pick-up, f-hole Telecaster type guitar, the HES5000 which is a three pick-up Strat replica and the HEP5002 which is a sunburst Precision-type bass guitar.

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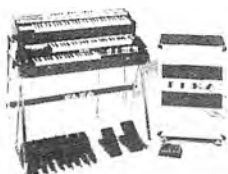
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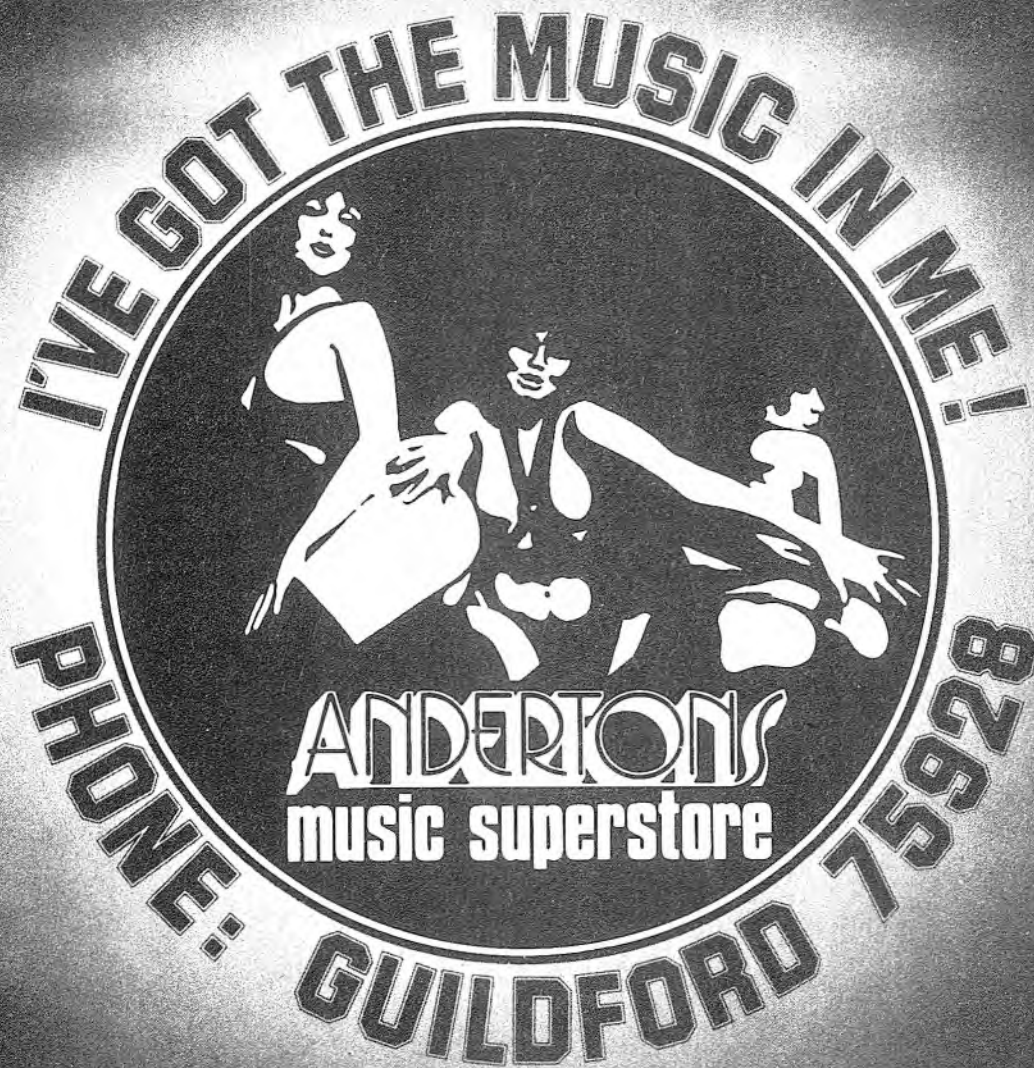
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# Solid Guitar Survey



*Gibson Grabber*

## Music Man

The new Music Man range which started with two models, the Stingray 1 Guitar and the Stingray 1 Bass, has been generating plenty of interest among musicians, even before their general release in the U.K. The Stingray 1 Bass guitar has been praised as one of the better basses around, and one of its main features is the fact that the tone controls centre around a battery-powered pre-amp. This gives a reasonably low impedance output, allowing the player to use very long leads without the normal problems experienced. The actual design is a "well-known" bass-guitar shape, and features a maple neck and a single plastic-cased humbucking type pick-up.

The Stingray 1 guitar is similar to the bass in that it utilises a pre-amp within the body, but has two pick-ups of the previously mentioned plastic-cased humbucking type. The shape is not unlike a Strat, and has a bridge which features stainless steel string bearers for each string, along with a pick-up selector switch.

## Norlin

Norlin (previously Selmer) distribute Gibson guitars in the UK, and the older types of Gibsons, like the SG and Les Paul need no introduction. However there are a breed of relatively newer guitars from Gibson which musos would do well to check out.

The L5-S is a scaled down version of the long standing Gibson L5. It has a carved curly maple body, adjustable gold-plated Tune-O-Matic bridge and tail-piece, contrasting with a silver-plated centre piece. There are two Gibson humbucking pick-ups on the L5-S, along with individual volume and tone controls and a toggle switch.

The L6-S is available in two main versions, the Custom and the Deluxe. The Custom has a maple body with single cutaway, an adjustable chrome-plated Tune-O-Matic bridge, two Gibson humbucking pick-ups, master volume control, mid-range and treble roll-off controls, six-position transfer switch, laminated maple neck, and is available in natural, tobacco brown, sunburst or black. The L6-S Deluxe is a very similar instrument, but differs in a few points, one of which being the fact that the strings go through the body.

The S-1 is one of the 'V' head guitars, and features three new design high frequency output pick-ups, 4-position pick-up and phase switch, a unique 'bypass' switch, is constructed from solid Alder, and has a wide travel bridge with stop bar tailpiece, a deep florentine cutaway and a laminated maple neck.

In the bass guitar field, the EB3 is well-known, although the newer Ripper and Grabber basses are probably still not as well known as they deserve to be. The Ripper has a double cutaway body, twin humbucking pick-ups, volume, tone and mid-range controls and a 4-way pick-up selector switch. The Grabber comes in two main models, the Grabber which features a single sliding pick-up and the Grabber 3 which has three new-design pick-ups wired in humbucking configuration.



*Music Man Stingray guitar*

## Pearl

Pearl are already well-known for their drums, amps, mixers, mikes, flutes and keyboards, but now they introduce their own range of guitars. There are 15 models in the solid electric category and the range kicks off with five ash-bodied solids, the G110, 111, 120, 121 and 130. The G110 has a one-piece maple neck, three wide-range high-fidelity pick-ups and a natural sunburst finish, whilst the G111, although broadly similar, features a maple neck and a rosewood fingerboard. The G121 also has a maple neck and rosewood fingerboard; the G120 and G130 both feature maple one-piece necks and natural blond finish.

There are five other six-string guitars in the new Pearl range; the G211 and G221 have maple and mahogany bodies, Rotomatic machines and come in a cherry sunburst finish, the G231 has a body constructed from a single piece of Nato-wood, two deluxe humbucking pick-ups and a 24.7" scale, and the S111 and the F111 both have two pro humbucking pick-ups with sunburst finishes. The other five electrics are all bass guitars, all with a 33.9" scale. Four of these, the B110, the B111 and B120 and B121, all have ash bodies, chrome deluxe machine heads and come in a natural sunburst finish whilst the top bass in the range is the B211, featuring a birch body, a maple neck with rosewood fingerboard, twin pick-ups, chrome die-cast machines and a choice of finishes.

## Rosetti

Of prime importance among the guitars that Rosetti distribute are the new and rather amazing Kramer guitars, manufactured in the U.S. and featuring an aluminium 'T-section' neck. This compares very favourably to an all-aluminium neck, having wood inlays in the neck, thus providing all the 'feel' of a conventional wooden neck, coupled with all the sustain qualities of the aluminium. There are four models whose retail prices range from £395 to £549. The 350 guitar and 350 bass are both single pick-up models, whilst the 450 guitar and the 450 bass boast twin pick-ups. The pick-ups themselves have never been on the market before and are specially wound with humbucking characteristics, and have the distinct advantage of being rear-adjustable. The fretboards of all Kramer models are made from ebonol, a material which is virtually crack-proof and warp-proof, whilst the bodies are made from selected hardwoods including Afrormosoa, Swetenia, Shedua and Bubinga. The guitars display a really perfect balance, and one very strong indication of their excellence is the fact that Stanley Clarke is now using Kramer basses.

Also distributed by Rosetti are the Epiphone range of guitars, consisting of three six-strings and one bass. The EA255, the Casino, has two humbucking pick-ups, natural finish, a three-piece slim, adjustable neck and a rosewood fingerboard.

The E290 is a solid available in either natural or sunburst finish, and has a maple body, a multiple, adjustable bridge and a solid maple adjustable neck.

The EH276 has twin pick-ups, a mahogany body and chrome plated machines, while the bass of the range, the ET285, features a long scale (34.5"), a high-gloss sunburst finish, a double cutaway body, twin pick-ups with adjustable pole-pieces along with a hand rest and a foam rubber mute.



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# Solid Guitar Survey

## Rose-Morris

There are four main lines of solid electric guitar distributed in the UK by Rose-Morris: Ovation, Travis Bean, Shaftesbury and Avon.

There are two main solid electric lines in the Ovation range, the Breadwinner and the Deacon, both of which have detachable mahogany necks, ebony fingerboards, twin twelve-pole pick-ups, in/out phase switch and 24 frets.

Travis Bean, the well-known, all aluminium necked guitars, are available at the moment in three lines: the Artist, the Standard and the Bass. The Artist is made from Hawaiian kowah wood, has a rosewood fingerboard, mother of pearl position inlays, 22 frets, twin 12-pole humbucking pick-ups, a three-position pick-up selector, and two volume and tone controls. It comes in two neck widths, 'wide' is 1 3/4" wide at the nut, whilst 'narrow' is 1 1/2". The Travis Bean Standard is very similar to the Artist, but has a flat top as opposed to the Artist's carved top. The Bass is also a twin pick-up model with the same controls, and is a long-scale (20 fret) bass.

Shaftesbury is Rose-Morris' own range of replica guitars, and the range opens with the

3414, a gold-top Les Paul type with two humbucking pick-ups and a gold polyester finish. The 3413 is an SG replica with twin pick-ups and a three-way selector switch, while the 3415 is a long-scale bass, a replica of the Gibson EBO type, with two pick-ups and a bridge damper. The 3419 is the Shaftesbury version of the Rickenbacker Bass, and has an adjustable bridge cover and facilities to switch between mono or stereo output options.

Avon guitars are Rose-Morris' cheaper range of replicas, of which the 3403 is a black Les Paul type with twin pick-ups and chrome machines. The 3404 is an SG replica boasting a cherry finish. The 3405 is an EBO Bass type with short scale and single pick-up, whilst the Avon range closes with the 3407, a jazz bass with detachable neck and rosewood fingerboard.

## Strings & Things

The renowned Rickenbacker range of guitars are distributed in the UK by Strings & Things, and there are six main models which guitarists and bassists would do well to investigate.

The six-string range kicks off with the 330, a semi-acoustic model with twin pick-ups, and

is augmented by the 480, a guitar which features the well-known Ricky 'bass-shaped' body, and also features two pick-ups. In the twelve-string electric field, Rickenbacker have probably one of the best known models of this type, the 360/12, the one made famous by the Byrds.

There is a twin-necked Rickenbacker, the 360/2/12, featuring 12-string and six-string necks, and also two bass guitars. These are the 4000 Bass, a mono wired guitar, and the 4001, which is wired for stereo output.

## Summerfield

The very well respected Ibanez range of original design electric guitars form the top end of the Summerfield range. The two main lines in the 'originals' field are the Artist and the Professional models, and these include largely original designs, although some owe their shape to the Les Paul design. An example of the originals is the 2625B bass, a long scale guitar with a small double cutaway body.

In the replica field, Summerfield distribute CSL guitars, although there are also quite a few Ibanez replicas too. In fact, most of the replica guitars are now being issued with the Ibanez name — Summerfield are gradually phasing out the CSL name. Examples of guitars in this area are the 2451 (a Johnny Smith-type jazz guitar), the 2387 (a Flying V shaped instrument), and the 2404 six-and-bass and 2402 six-and-twelve twin-necks. There is also a wide range of Les Paul types — the 2651 cherry wine Standard, the 2337DX TV type, the 2335 single pole pick-ups, and the 2351 Deluxe.

Sumbro is the brand name of Summerfield's cheaper range of replica guitars, mainly versions of Strat-type six-strings, along with an SG-type model and a Jazz bass.

## Yamaha

The name Yamaha is quickly becoming synonymous with top-class solid guitars, and the two most recent additions to the range, the 1500 and 2000 models, certainly bear this out.

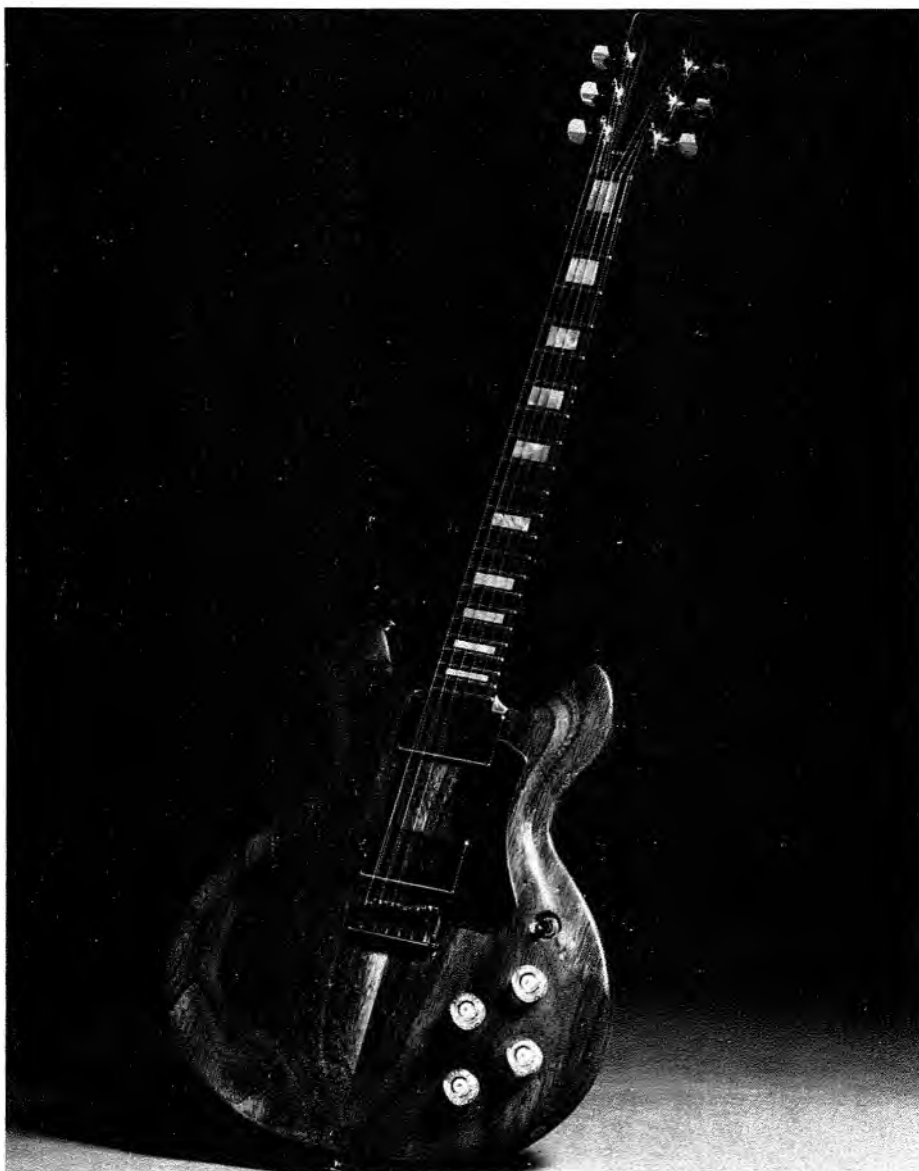
These two models differ in the shape of the heel of the neck, and they sound and feel a little different to each other, but generally they share most features, including an adjustable all-metal bridge mounted on a brass plate sunk into the body which gives maximum sustain, a double cutaway shaped body, an ebony fretboard and a contoured back. The whole guitar is built around a three-piece mahogany/maple/mahogany section which runs the whole length of the instrument.

Below these two newer models comes the 175, an "English instrument," a beautifully made guitar with a mahogany body and neck, ebony fingerboard, gold hardware and purfling edge. Next in the range is the model 90, similar to the 175, but with chrome hardware and a rosewood fingerboard.

The 30 is probably one of the more accessible guitars in the range, with a detachable neck, a slightly 'matt' finish, two humbucking pick-ups, and is built to the same high standards as all the guitars in Yamaha's solid range.

In bass guitars, the SB35 boasts a medium long-scale maple neck with rosewood fingerboard, and is a very comfortable bass weighing just under 8lbs.

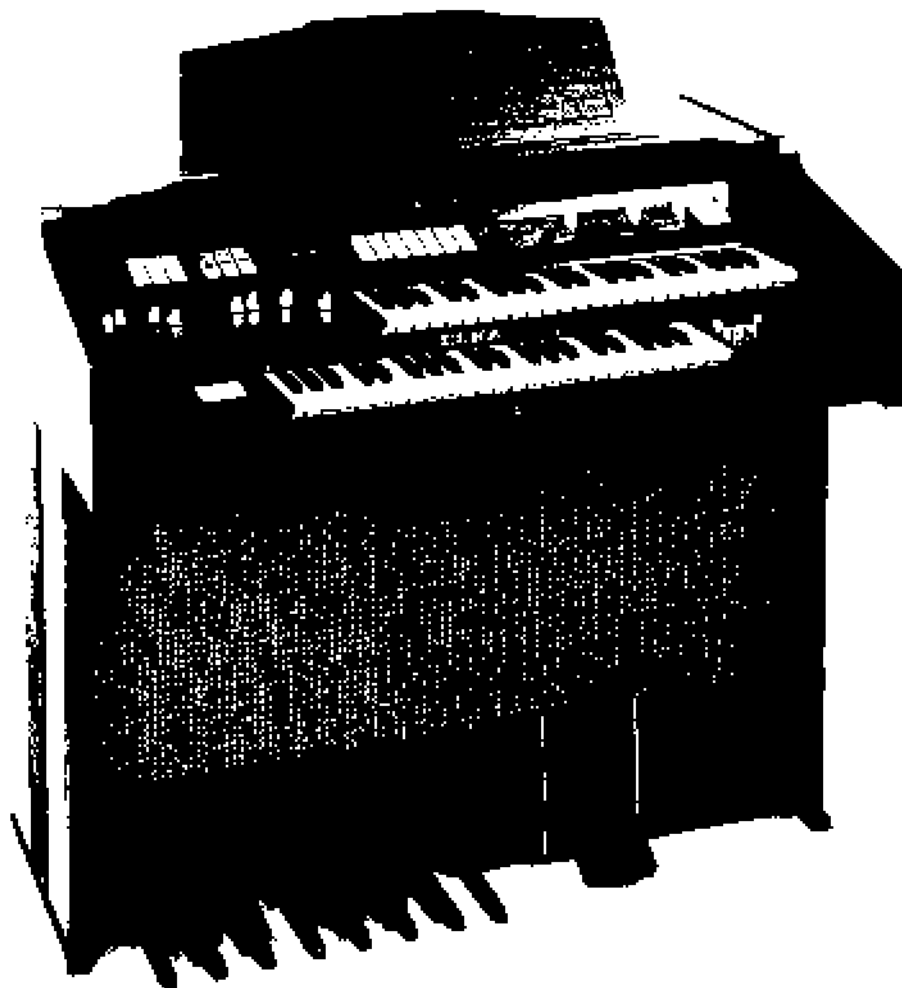
The 55 and 75 are long-scale basses, and have been building up quite a reputation amongst bass players as very fine, general application bass guitars.



Travis Bean Artist

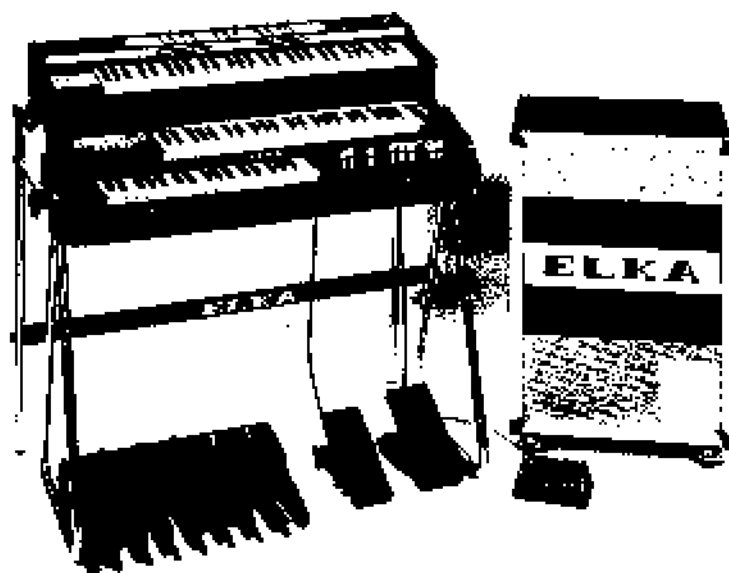
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# MARKET REPORT



## ELKA-ORLA

Italy's coastal town of Castelfidardo is the centre of keyboard (and electronic) instrument making in Italy. Many famous brand names are produced in factories in the area and one of the biggest is the Elka Orla group. As a company, they produce perhaps the widest range of keyboard based instruments ranging from accordions to giant double manual console organs. Musicians playing in organ groups in the 'sixties will remember the fabulous old Elka Capri, but today the range of portable keyboards is much wider.

UK base for Orla is in Halstead, Essex and the operation is overseen by Nando Farbi and Dec McLaughlin. Dealers for Elka (which is the name under which most instruments in our market are sold) are spread out over the whole UK, and our Market Report reveals just how easy it is to get hold of these instruments.



*x indicates products in stock*

	How long selling Elka Orla	Capri	Fun	PRODUCTS IN STOCK			Average monthly sales
				Rhapsody 610	Rhapsody 490	X-55 Organ	
Bob Anderson Music, 179 London Road, Camberley, Surrey	3 Years	X	X	-	X	X	4-5
Blanks, 273/279/281 Kilburn High Road, London NW6	4 Years	X	X	X	X	X	Varies
Chingford Organs, 242 Chingford Mount, E4	2½ Years	X	X	X	X	X	5-6
Freedmans, 631 High Rd., Leytonstone, E11	3 Years	-	X	X	X	X	Varies
Hammonds, 161 High St., Watford	5 Years	-	X	X	X	X	One in 3 mths. now
Hessy's Music Centre, 62 Stanley St., Liverpool L1 6AY	10 Years	X	X	X	X	X	15
John Holmes, 21 Farringdon Rd., Swindon	5 Years	X	X	X	-	X	6-8
Keyboard House, 41a Church St., St. Martins Centre, Caversham, Reading	5 months	X	X	X	X	X	8
Lewisham Organs, 324/8 Lewisham High St., SE13	2 Years	X	X	X	X	-	Can't say
Macari, 102 Charing Cross Rd., WC2	3-4 Years	-	X	X	X	-	2
McCormacks, 33 Bath St. Glasgow	2 Years	No/can order	X	X	No/can order	X	2
Nicklins, 45 High St., Barnstaple	3 Years	-	X	-	X	-	1
Ross & Gloucester Soundhouse, 17 Gloucester Rd., Ross-on-Wye	2 Years	-	-	X	-	X	4
Sharon Music, 422 Bromley Rd., Bromley	Since beginning	X	X	X	X	-	Varies
Sound Venture, 110 Myddleton Rd., Wood Green, N22 4NQ	2½ Years	-	-	X	X	X	Can't say
Len Stiles, 262/6 Lewisham High St., SE13	3-4 Years	X	X	X	X	X	12
Top Gear, 5 Denmark Street, WC2	6 months	-	-	X	-	-	1
Unisound, 213 Kilburn High Rd., NW6	2 Years	- to order	X	X	X	X	1
Westside, 17 Vicarage St., Yeovil	6 Years	-	-	-	X	-	Varies
Jack White Organs, 92 Fore Hamlet, Ipswich	3-4 Years	X	-	-	X	X	6

Best Instrument	Least preferred instrument	Do you do own repairs?	Elka Orla's service	Bands supplied with Elka Orla	Do you offer discount
Difficult to say	Difficult to say	Yes	Very good	Scavenger, Kingsmen	No
X-55	"The Cheapest"	Yes	Very good	—	Yes
Rhapsody	Capri	Yes	Don't use them	—	Yes
Notturmo	—	Yes	Not used them	—	Yes
Rhapsody 610 or X55	—	Yes	Not used	Semi-pro	It depends
X55	None in particular	Yes	Very good	Yes	Yes
Piano	No preference	Yes	Quite adequate	—	For cash
X55	None in particular	Yes	First class for parts	Semi-pro	Not normally
X-55	Tiffany 3	Yes	Could be improved	—	For cash
Rhapsody	None really	minor repairs	Very good	Jethro Tull	Yes
Rhapsody	Piano	Yes	Not used	Sneaky Pete	Yes
X-55	Capri	Yes	Usually very good	Norman Cummings	For cash
X-55	Chicago	Yes	Pretty good	Brandy Mac, Trilogy	For cash
X-55	"They all make profit"	Yes	Good	—	If circumstances right
X-55	Versatility of some home organs could be improved	Yes	Among the best	—	Business by single negotiation
Capri most popular	All good	Yes	Very good	—	Yes
Rhapsody	—	Not had need to	Very good	Mostly for recording	10% for cash
Elka Piano	—	Yes	Not had to use	Celebration	Yes, for cash
X-55	—	Yes	Very good	—	No
X-55	Tiffany	Yes	Pretty good	Local bands	Yes



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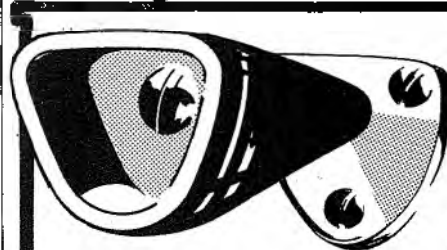
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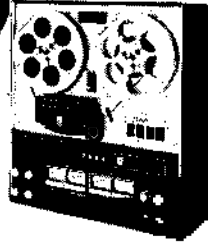


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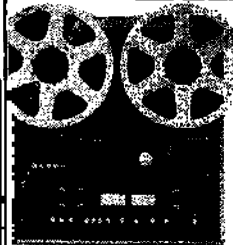
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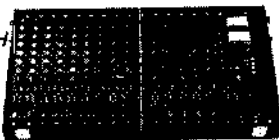
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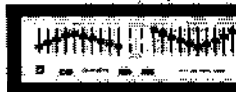
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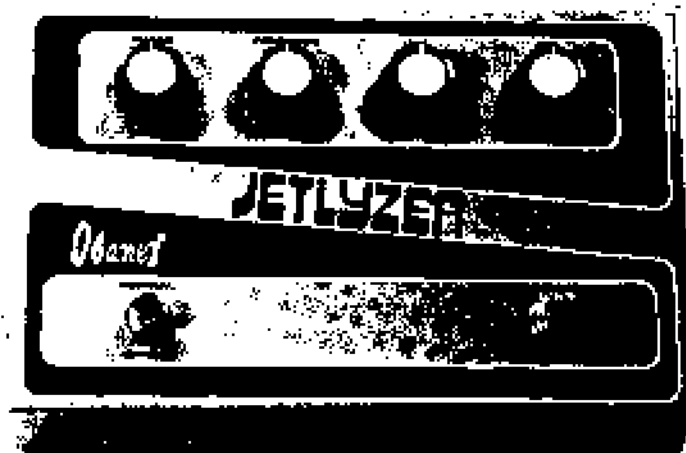
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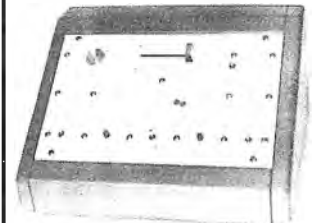
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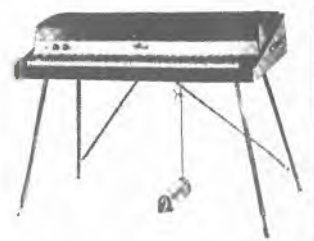


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