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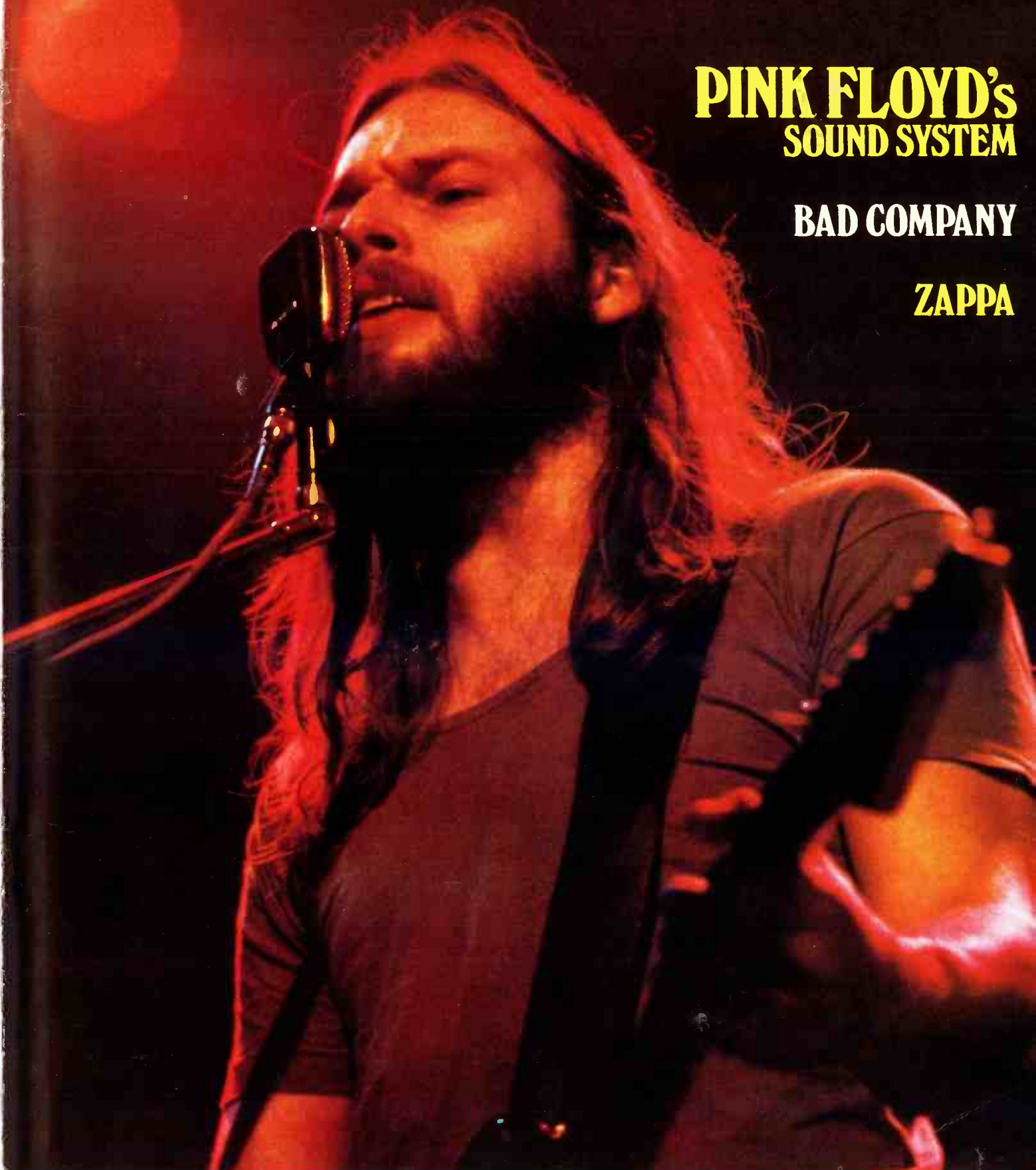
MAR. 1977 35p

INSTRUMENTAL
#Songwriting & Recording

PINK FLOYD'S
SOUND SYSTEM

BAD COMPANY

ZAPPA



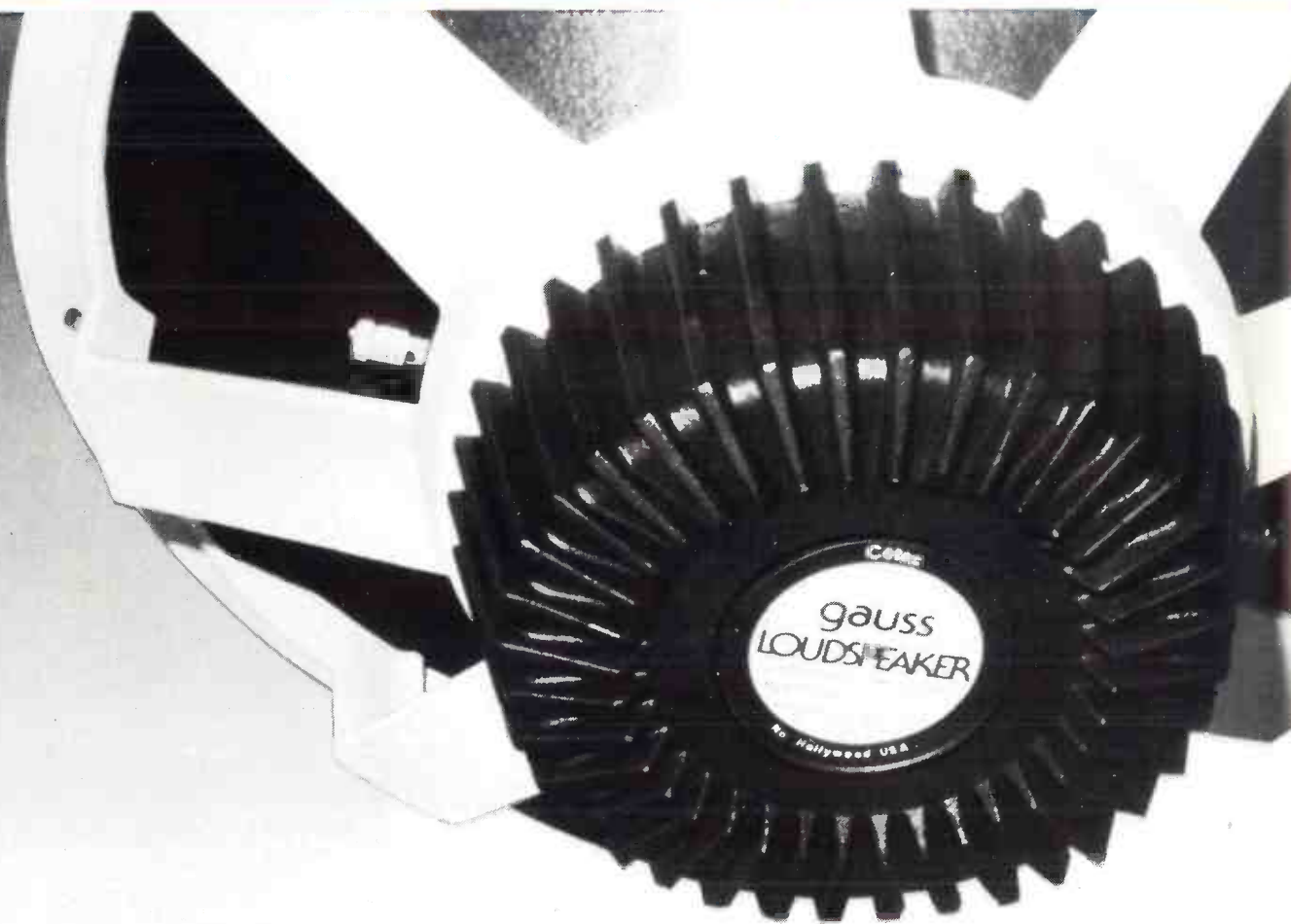
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Editorial

This early part of the year appears to have been reserved almost exclusively for the Big Ones. Stage extravaganzas abound with Genesis, Rundgren, Jethro, Zappa and Floyd — to name but a few — all mounting bigger and more expensive theatrics to accompany their live music performances. And the music itself is requiring bigger and better hardware. This month Beat has trodden two separate paths to the centre of this boiling bubble. One led to Frank Zappa himself in the States, where he explains in depth and detail his early influences, his music, technique, ambitions and fears. Our other path led to Olympia to watch the Pink Floyd rehearsing prior to their present tour, and to take the office magnifying glass to the awesome battery of electronic equipment which now forms the nucleus of the band's electrifying stage show.

However, leaving the Superstars to their business for a moment, we will be on our way to Frankfurt to find out exactly what the instrument manufacturing trends look like being for the coming year. Once we've had a good look round all the stands, we'll be publishing a full report in the next issue.

This month sees another Beat competition — for a Hohner K1 electric piano, so get to page 13 (after reading the Zappa files) and then fill in the coupon. And if you don't win? . . . ah well, that's life!

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FRANK ZAPPA

In a special report from the States, Charles Stevenson talks to the original Mother about his development and techniques as a guitar player . . .



Frank Zappa is the composer/producer/leader of the Mothers of Invention, a band of musicians which changes personnel on virtually every album and has as its only constant the intriguing and fantastic persona of the 36-year old guitarist. Most people look past Zappa's talents as a guitar player to his more visible output as a composer. Yet the Baltimore-born player possesses a bizarre style utilizing speed and rhythm which makes his playing every bit as startling as his writing. On Zoot Allures (released in December) he has actually written material as vehicles for his guitar work which seems to possess an edge and invulnerability lacking in his earlier playing. Here then is the unexpurgated story of Frank Zappa.

I know that you play other instruments besides the guitar (drums, piano, organ); did you start your musical journey on the guitar?

I started playing guitar when I was 18 but I started on drums when I was 12 because I liked that. I didn't hear any guitar players until I was about 15 or so because in those days the saxophone was the instrument that was happening on record. When you heard a guitar player it was always a treat so I went out collecting R&B guitar records. The solos were never long enough, they only gave them one chorus and I figured the only way I was gonna get to hear enough of what I wanted to hear was get a guitar and play it myself. So I got one for a buck-fifty in an auction . . . an arch-top, f-hole, cracked base unknown brand guitar because the whole finish had been sanded off of it. It looked like it had been sandblasted. The strings were about, oh, a good inch off the finger board (laughs) and I didn't know any chords but I started playing lines

right away. And then started figuring out chords after that and finally got the Mickey Baker book and learned a bunch of chords off that.

Who were some of those early guitar players you were listening to?

Umm, I used to like Johnny 'Guitar' Watson, Clarence 'Gatemouth' Brown, Guitar Slim, Matt Murphy.

Were there bands actually playing in your town that you could go and see live?

Yeah, sure, in San Diego when I was in high school down there they had plenty of rhythm and blues bands. Most of them played instrumentals, only a few of them had singers.

Were your parents musical at all?

My father played guitar when he was in college. He had an old guitar sitting around the house but it didn't feel as good to me as the one for a buck-fifty. He played around the house about once every three years; he'd pick it up and go wank-wank-wank but that was about it.

How long did you play drums?

I started when I was about 12 and I still play a little bit now. I had a few lessons. I went to a summer school one time when I was in Monterey and they had like basic training for kids who were going to be in the drum and bugle corps when school went back in. And I remember the teacher's name was Keith McKillip and he was the rudimental drummer of the area in Pacific Grove. And they had all these little kids about 11 and 12 years old lined up in this room. You didn't have drums you had these boards, not pads, but a plank laid across some chairs and everybody stood in front of this plank and went rattlety-tat on the plank.

And I didn't actually have a drum until I was about 14 or 15 and all my practising had been done on the top of this bureau in my bedroom which happened to be a nice piece of furniture at one time. But some perverted Italian had got it and painted it green all over and the top of it was all scabbed off from where I was beating it with the sticks. So finally my mother got me a drum and allowed me to practice out in the garage. I had just one snare drum. And then I entered my rock and roll career at 15 when I talked them into getting me a complete set which was a kick drum, a rancid little Zyn hi-hat, one snare, one floor tom, and one Zyn ride cymbal, about a 15 inch ride cymbal. The whole set cost fifty bucks.

And I was playing my first professional gig at a place called the



"I entered my rock and roll career with a rancid little Zyn hi-hat."

Uptown Hall in San Diego which was in the Hillcrest District at 40th and Mead. I remember it well, going to my first gig, I got over there, set my drums up, and noticed I had forgotten my *only* pair of sticks (much laughter). And I lived way on the other side of town. I was really hurtin' for an instrument in those days. For band rehearsals that we had had before we got that gig used to be over at this guy Stuart's house. His father was a preacher and he didn't have any room or interest in having a drum set in the house but they allowed me to beat on a pair of pots that I held between my legs. And I'm sittin' there trying to play shuffles on these two pots between my legs.

When did you buy your first electric guitar?

I didn't get my first electric guitar until I was 21 when I rented a Telecaster from this music store and had that for a while. And then I bought a Jazzmaster and had that for about a year-and-a-half. I used to play like lounge jobs, you know? Sit on a stool, strum four chords in a bar . . . anniversary waltz, happy birthday, one twist number per night, don't turn up. All that kind of crap. Nobody else in the band really knew what the chord changes were to these dumb songs, they were all trying to figure out what was going on. Places like Tommy Sandy's Club Sahara in San Bernardino, and some other clubs around West Covina. Really boring, miserable places. I worked

with a group called Joe Perrino and the Mellow Tones (laughs) and then I got a chance to write some music for a movie and actually earned some money doing that. So with the money that I got from that film job I bought a Gibson ES-5 Switchmaster which I used for about five years. I recorded the first three albums with that guitar and also with the money I bought a recording studio from this other guy.

What movie was that?

It was called *Run Home Slow*; it was a western starring Mercedes McCambridge and was written by a high school English teacher. It's been on TV a few times. I've done music for four films; the first one was called *The World's Greatest Sinner* starring Timothy Cary about a guy who thinks he's God and then later has his doubts. Then there was *Run Home Slow* and then a short film called *Burnt Weeny Sandwich* and *200 Motels*.

Were you involved in any serious music before the Mothers of Invention?

I had a three-piece power trio called the Muthers and that Les Papp on drums and Paul Woods on bass and we were working at a place in Ontario, California, called The Saints & Sinners. It was like mostly Mexican labourers, a go go bar, lots of beer, and a few waitresses who would jump up on the table . . . that type of thing. And I was playing a lot there.

What other equipment besides the Switchmaster did you use on Freak Out! (Verve Records V 5005-2)?

Just a Fender Deluxe, that's all. After that I got a Les Paul gold top and used that for a couple of albums. And eventually I got an SG.

You're using an SG now?

No, I'm using a variety of things now; I've branched out quite a bit in the last couple of years. I've got a couple of Strats wired up funny ways. Both of the Strats have pre-amps built into them and one of them has a special tone control switch which lets you put each of the pickups out of phase and that kind of stuff. And then the other Strat has a Barcus Berry located in the neck which gives it a really interesting sound because I do a lot of stuff with my left hand and it helps the notes speak a lot faster. It's like the whole guitar is alive, you can touch it anyplace and hear where you touch the guitar because the Barcus Berry hears all of it.

What do you mean when you say your left hand has a lot of movement?

If I pick one note with my right hand I'm playing five with my left. I

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don't pick everything that I play and consequently the action's down pretty close on most of the guitars. I also do some stuff where I use the pick on the fingerboard, press down and hit the string with the pick at the same time. It gets kind of a Bulgarian bagpipe sound. An example of that kind of thing is the end of the solo on 'Inca Roads', (from *One Size Fits All* on Warner Bros. Records 0698) and also on 'Po-Jama People', the end of the solo is done that way (also on *One Size Fits All*).

You seem to use a wah-wah quite a bit?

I use a wah-wah; I have a Mu-tron and the 9D Oberheim VCF (voltage control filter). I got an example of that on this new album (*Zoot Allures*). I'm starting to use some echo-plex now which I've generally avoided in the past.

You use the wah-wah a lot in its bass position where it acts as a fuzz boost.

Yeah, I use it for a tone control and very seldom do I just step on it on the beat. Like on the old Clapton records where he goes wacka-wacka-wacka just to tap your foot on it; usually what I do is shape the notes for phrasing with it and the motion of the pedal itself is very slight. I usually try and find one centre notch in the thing that's going to emphasize certain harmonics and ride it right in that area. Because if you put it all the way to the top it's too squeaky and if you put it all the way to the back it's too blurred.

Had you heard Clapton or Hendrix use the wah-wah before?

As a matter of fact I think I was one of the first people to use the wah-wah pedal. I'd never even heard Jimi Hendrix at the time I bought mine; I didn't even know who he was. I had used wah-wah on the clavinet, guitar, and saxophone when we were doing *We're Only In It For The Money* in '67 (Verve Records V6 5045X) and that was before I met Hendrix. He came over and sat in with us at the Garrick Theatre that night and was using all the stuff that we had on stage. Seems like everytime I went to Manny's there'd be some new gizmo there that we'd be trying out so we were always into the hardware of the rock and roll industry.

Clapton appears on the Money album.

I met him someplace in New York, I can't remember where, maybe at

one of our concerts. And he played with the Mothers once at the Shrine in Los Angeles and came over to my house but I haven't been on speaking terms with him for some time now. And he was just in New York one day hanging out and I invited him over to the studio to do that rap that's on *We're Only In It For The Money*. People think he's playing on it but he's not, the only thing he's doin' on there is talking.

Did you ever sit down with him and have him show you anything?

No, he wasn't that kind of musician as far as I could tell he wasn't the jamming type. When I used to live in a log cabin I had some amps set up in the basement and he came over one day and played during one of our rehearsals. But he didn't like the amp; we were using Acoustics then and he didn't like it. And remember when he came on stage at the Shrine? Nobody knew who he was; he came out and played the set and nobody paid any attention to him at all until he walked off and I told the audience that was Eric Clapton.

Getting back to your guitars, are you still using the SG pictured on the cover of the live Roxy album (Warner Bros. 0998)?

No, I have another SG that I'm using. No, that one that's on the *Roxy* cover has since been thoroughly injured by an airline company . . . oh, they beat the shit out of it. Cracked the neck and the most recent time it came back from Europe the binding was off the fretboard. I had



"One of my Strats is the one Hendrix burned at the Miami Festival . . ."

the neck repaired but it's never been the same; it flexes so much that it's hard to keep in tune so I hardly use it anymore. But one time we were working down in Phoenix and this guy came up to the dressing room after the show and said that he had this guitar he built and wanted to sell. And he had copied a Gibson (SG) himself except he had added one more fret so it goes up to an E_B and it had an ebony finger board and it's got some inlay on it and some real nice woodwork on it. He said he wanted to sell it for \$500 and I thought it was a real nice guitar so I bought it. And I had Rex Bogue do some stuff to it, add a pre-amp and snazz it up, and that's the one that I'm using now. And it has humbucking pickups on it.

One of my Strats is the one Hendrix burned at the Miami Pop Festival; it was given to me by this guy who used to be his roadie. And I had it hanging on the wall in my basement for years and years and last year I gave it to Rex and said put this sucker back together 'cuz it waz all tore up . . . the neck was cracked off of it, the body was all fried and the pickups were all blistered and bubbled. And that's the one that's got the Barcus Berry in the neck. A lot of people thought I had his guitar from Monterey but it was from Miami; the one from Monterey was white and this one is sunburst.

You don't really use the vibrato arm on the Stratocaster or SG much.

Well I used to use it on the SG a little bit but I took it off because it was too hard to keep the instrument in tune and especially the one with the soft neck. But I use it quite a bit now on one of the Strats; I don't even have a vibrato arm on that Hendrix one. You can hear it on the new album. I'm also playing quite a bit of keyboards, and bass, and synthesizer.

What is an octave bass on the Hot Rats album (Bizarre Records RS 6356)?

It's a bass that's been speeded up an octave to put it up into guitar range. Speeding it up not only changes the rate that you play the notes but it changes the envelope of the notes and gives it a punchier attack. And you know how a bass will ring for a long time? It gives you a different kind of sustain, the sustain comes out an octave higher.

What kind of picks and strings do you use?

I use Fender Heavies and I use a different set of strings for each guitar; I have about 22 guitars. To give you an idea I use either an .008 or .009 on top (E), an .011 or .012 on



the B, a .016 or .017 on the G, a .024 or .026 on the D, anywhere from a .032 to a .038 on the A, and anywhere from a .046 to a .052 on the E. So it's medium on the bottom and they're mainly all Ernie Ball.

Are you using Marshall amplifiers now?

I have a Vox cabinet with four JBL's in it (12") and another Marshall cabinet with JBL's. I use a 100 watt Marshall and an Acoustic 270 but I'm going to re-do all that stuff because we're just getting ready for another tour and I'm changing my guitar setup around for a different thing.

Can you be more specific?

I'd rather make it a surprise but I'm trying to optimize the sound, trying to get more of the kind of sound I like on stage out into the audience and you can't always do that just by putting the mike in front of the amp.

Are there certain positions you use on the 270 (equalizer) in conjunction with the guitars to achieve certain sounds?

It depends on what kind of a hall I'm playing in. I'm real fussy about

equalization and sometimes there's a compromise between the kind of sound I want to get on stage and what the mixer needs to hear out in the audience and I'll change things around like that. But I've used the 100 watt Marshall with the volume about double the inputs into the bass channel (with a connecting cord) and the treble is on about 4 and the bass is on about 3; mid will be anywhere from 6 to 8; and the presence will be anywhere from 6 to 10. This is the average, the bass could be as high as 10 or as low as 0 depending on how much bottom you need.

And on the 270 the volume will be on 4; the treble will be all the way up; the bright switch will be on; the mid-range will be on about 75%; the bass will be at about 80%; the graphic equalizer is all the way up at 80 cycles, about 80% at 160, all the way up at 320, just about flat at 640, and maybe a little bit of boost at 1250.

Is this the same equipment you use in the studio?

In the studio most of the stuff is played through a Pignose. I've done all kinds of things with a Pignose;

I've taken it and put it in a live chamber and taken a RE-20 and stuck it right in front of the Pignose and that'll get you one kind of sound. It's actually the sound of an amp but you can hear that it's in a room and the room is resonant so it's a realistic sound.

On this new album (*Zoot Allures*) about the only thing I used the Vox bottom and the Marshall top for is to get feedback on a song called 'Filthy Habits'. And there's another song called 'The Torture Never Stops' where it's just Pignose.

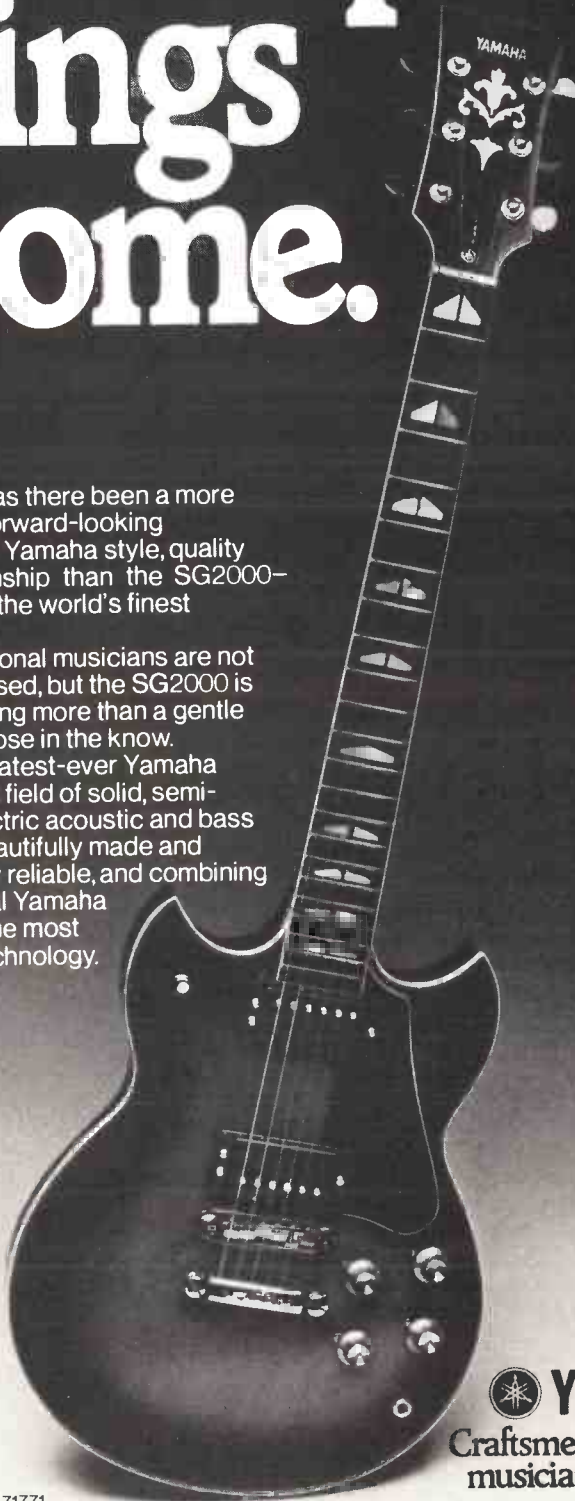
Another thing I'll do with the Pignose is just put it out in the middle of a dead studio and put two mikes on it and mike it stereo . . . it gets a good sound. Put one mike behind the other so there's a slight spread to it. I've also put the Pignose in an echo chamber and miked it up but not too close because the echo chamber is real resonant and since the amplifier isn't real loud in there if you put the mike a foot away from the amplifier you're going to get a sound that really approaches what you hear in a hockey rink. Except for the low end; a big amp is going to


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put out more low end. But it's that same kind of spread fuzz is what you get. And anybody who's working in a studio and wants to try it just tell the engineer to disconnect the speaker cables that are out in the echo chamber and put a plug (phone jack) on the end of the echo send and plug the echo send into your Pignose. And you can sit in the control room, plug your guitar directly into the board, send it to the echo chamber on the echo send, and hear yourself coming back and it sounds like you're in a hockey rink. And you can even make it feed back by long distance.

I've been using a Pignose for about the last 3 or 4 years. I think I started using it the most on *Apostrophe* (Warner Bros. Records DS 2175) but there is some on *Over-Nite Sensation* (Warner Bros. MS 2149).

You don't play any slide guitar?

No, but I do have a fretless guitar and I'm pretty good on that. At one time Acoustic manufactured a fretless guitar; they made a prototype and tried to interest people in it but nobody wanted it. So the prototype ended up at Guitar Center (in Hollywood) and I walked in there one day and asked them if they had anything new and they said, 'Have we got one for you'. And they brought this thing out and it was really neat and I bought it for \$75. The only restriction was they had to take a chisel and some black paint and scratch off the word *Acoustic* at the top of the guitar because Acoustic didn't want anybody to know that they had made such a grievous error as to make a fretless guitar. I've put a Barcus-Berry in that, send the magnetic to the left and the Barcus-Berry to the right and the thing that sounds like a slide on 'The Torture Never Stops' is actually a fretless. It's also on 'San Ber'dino' and 'Can't Afford No Shoes' (from *One Size Fits All* on Warner Bros. Records DS 2216).

It's different than a regular guitar; you don't push the strings to bend 'em. You move them back and forth like violin-type vibrato which is a funny movement to get used to. But you can play barre chords on it, it's fun.

What scales do you work from?

My solos are speech-influenced, rhythmically they're speech-influenced. And harmonically they're either Pentatonic, or poly-scale oriented. Or there's another mode, the Mixolydian mode that I use a lot.

You don't really play a lot of blues in your solos?

I can, I have started off that way, but I'm more interested in melodic things. I think the biggest challenge when you go to play a solo is trying to invent a melody on the spot. And I think also that a guitar player can only be as good as the band that's accompanying him. If the people who are backing you up are sensitive to what you're playing you'll sound great and if they're just note-mashers then you'll always sound mundane.

Those are the qualities that you look for in a backing musician?

I've always had good rhythm section players but I wouldn't say that they've always been too enthusiastic about what I was playing. Or understood it too well or really got into it. Because if a person's from the jazz world they're gonna play worlds of gnat notes, playing clouds of Pentatonic gnat notes that really don't amount to shit. Or if they're from the blues world they want somebody who gets on three notes and goes squirm-squirm-squirm. It's hard to explain to guys who are just coming into the band the rhythmic concept that I have about playing. Because it's based on ideas of metrical balance; long sustained events versus groupettos that are happening with a lot of notes on one beat. Like a lot of sextuplets, septuplets, and things like that. A lot of times I'll play 13 notes over a half note and try and space it evenly so it flows. This is sort of against the grain of rock and roll which likes to have everything in exactly duple or triple and straight up and down. So that you can constantly tap your foot to it but I prefer to have the rhythm section be aware of where the basic pulse of the time is and create a foundation that won't move so that I can flow over the top of it. It's hard to do, it's hard to get people to do that. And it's also hard to get them to leave some space for where those fast notes occur. Rhythm sections always have a tendency if they hear somebody else playing fast notes they want to play fast notes too and then you can't hear any fast notes anymore.

I've always had good rhythmic rapport with Aynsley Dunbar, I thought he was really good drum-wise and Terry Bozic, the drummer that's in the group now is excellent. He has a tendency to frenzy out a little bit but I'll just figure that's because he's from San Francisco.

What about playing with Jack Bruce on 'Apostrophe'?

Well that was just a jam thing that happened because he was a friend of



"A guitar player can only be as good as the band that's accompanying him . . ."

Jim Gordon's. I found it very difficult to play with him; he's too busy. He doesn't really want to play the bass in terms of root functions. I think he has other things on his r but that's the way jam sessions go.

On that solo in 'Apostrophe' I'm using an SG with a Barcus-Berry the bridge and that's being sent to one of the channels and then the other side is coming out of a Pignose and there's an attack differential between how fast the Barcus-Berry speaks and how fast the Pignose speaks. So you've got a sharp attack on one side and then the rest of the note following it on the other. An on 'Stink-Foot' (also on *Apostrophe* there's an interesting sound where I'm using an acoustic guitar with magnetic pickup on it and a Barcus-Berry on the bridge, the Barcus-Berry is going to one channel and the magnetic pickup is going to a Mu-tron and the other channel so you have a sharp attack and an enveloped attack. It gives a lot of space.

You don't play a lot of acoustic guitar.

No, but I like it. But since most of my life is oriented toward the road rather than the studio there's not much opportunity to play sensitively on your acoustic guitar except in a hotel room. The rest of what we do is high volume type stuff. I have a real nice Martin, I don't know what the model number is, but it has a classical width neck that joins right at

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the 12th fret at the body in a jumbo shell. I also have an Ovation (not yet used on record) and a bazooka with a Barcus on it. I've recorded some stuff with that but it hasn't been released yet; I have some duets that I did with Jean-Luc Ponty (violin) that turned out real nice. I also have a Gibson acoustic with a pickup right next to the fingerboard; I don't know what the model number is. It's a round hole, I like that guitar, it's got a real good neck on it. I just lucked out because I don't think all the necks are good on Gibsons. In fact they're usually a little too pudgy for my hand, I like to get 'em shaved down.

Do you play any banjo or mandolin?

No. I like the sound of them but I have enough trouble just playing guitar.

Since you've used Fender and Gibson guitars you really don't have a preference of one over the other?

Well, I use them for things that they're good for. The Strat has a drier sound, it has more of an acute, exact sound and I use the Gibson for more of a sweatshop type of sound.

Are there guitar players that you listen to?

There's a few that I've heard recently that I think are real good. I like Brian May out of Queen, I think he's real excellent and I always did like Wes Montgomery until they started smothering him with violins. I think his best album is one on Fantasy that just has him and his brothers playing 'Lover Man' and 'Monterey Blues'. And I like the Johnny 'Guitar' Watson records from the early 50's, they're really good. I especially like Guitar Slim, his solo on a record called 'The Story Of My Life'. One of the best of the early distorted guitar solos; it really sounds like he's mad at somebody.

What about somebody like Jeff Kirk?

I like Jeff, yeah. I've listened to *Wired* (Epic Records PE 33849) and there's a couple of solos on there that I like. And I like some stuff on *Rough And Ready* (Epic Records KE 30973).

How about John McLaughlin?

Well, a person would be a moron not to appreciate his technique. The guy has certainly found out how to operate a guitar as if it were a machine gun. But I'm not always enthusiastic about the lines I hear or the ways in which they're used. But I don't think you can fault him for the

amount of time and effort that it must have taken to play an instrument that fast. I think anybody who can play an instrument that fast is just wonderful. And I'm sure that 90% of teenage America would agree with that since the whole trend in the business has been faster is better.

You've always tended to be a fast guitar player.

Well I'm not really a fast guitar player because I'm not picking everything I play. I only play fast when I think it's appropriate to the line that I'm doing.

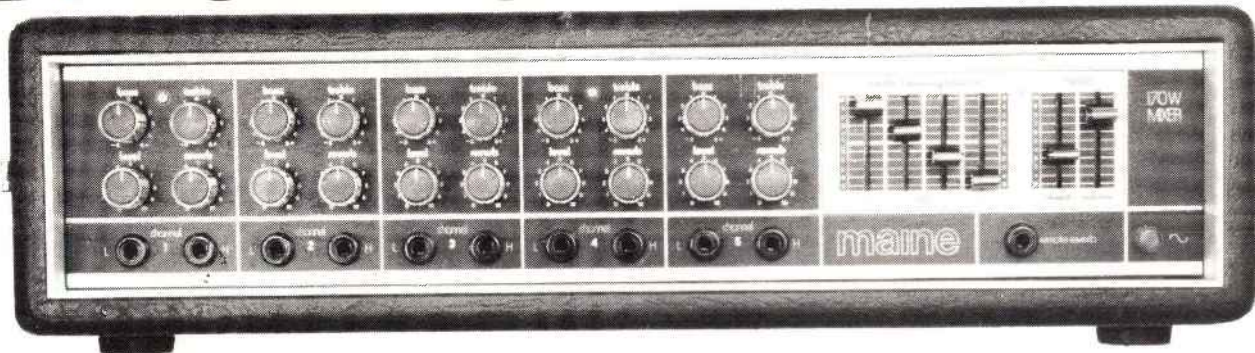
How do you see yourself in the role of a guitar player as being different than say the role McLaughlin or Beck plays?

Well I think that's a matter of advertising more than anything else. Once I get out on a stage and turn my guitar on it's a special thing to me, I love doin' it. But I approach more as a composer who happens to be able to operate an instrument called a guitar rather than 'Frank Zappa Rock and Roll Guitar Hero'.

How does your playing differ say in your current band (4-piece) as opposed to the larger orchestrated groups you've worked with?

It differs quite a bit because with a larger group you have to play less because there's a lot of people waiting in line to play solos. And

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that's one of the reasons why I've got a smaller group now because I happen to like to play solos and I happen to think I'm in a specialised category from the stuff that I play and I don't think that there's any reason why I should have to wait in line (laughter). Because I have some stuff to say and I'm gonna get out there and do it.

Have there been songs in the past that you've written specifically as guitar vehicles?

Not really, no. There's a few now that I've designed that way. I figure that since I've been playing for about 20 years or so (Zappa is 36) I might as well start doing that.

Is there a reason why you don't work with other guitar players?

Well, I have (he worked with Roy Estrada on the first album as well as with Lowell George but not in a multi-lead situation). But double leads just never seemed appropriate to what I was doin'. Sneaky Pete was in the band for a while but he couldn't stay, he had too many other appointments.

Are there any devices for guitar which you've developed?

There's one thing Bob Easton constructed for me called the Electro Wagnerian Emancipator. That's a very attractive little device that combines a frequency follower with a device that puts out harmony notes to what you're playing. You can have your choice of any 12 chromatic notes in 4 lines following you lines; you can't play chords with it but linerally it'll follow you whether you bend or whatever. It's main drawback is the tone that comes out of it is somewhat like a Farfisa organ.

Do you feel more comfortable playing in a live situation as opposed to the studio?

Yeah, I mean I have had a few laughs in the studio but the problem is that in a studio I'm my own producer and I've got so many other electronic things to worry about that it distracts me from just getting in there and playing the instrument.

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FRANK ZAPPA

Whereas you go out on the road and once the house lights go down and the red light comes on it's a different story. I usually play my best stuff out on the road.

Are your solos on record first-takes or are they conceived beforehand?

It depends on what the song is; very rarely are they first-take things. But they aren't things where I'd sit down and work out the whole solo in advance before I played it, I can't do that, I can't remember it. Usually what I do if I get something going, I'll lay down 20 bars or something like that and step on the recorder and stop the tape and back up and punch in and take up from where I left off.

And try to make the event that's going on the record make musical sense and fit in with what's going on because a record is a fixed object, it doesn't change. It's not the song anymore, it's an object; if you're playing a song on the road it can change every night, it can be something, it comes alive each time you play it and it has its own existence, but once you've committed it to a record it never changes. And so if you're going to leave your guitar

solos on it you're stuck with that for the life of the record. So I'm fairly fussy about it but I'm sure I let a few go out on record that I could probably do better now. But I hope that's the way it's always gonna be.

Have you ever thought of having another producer to allow you more time with the guitar?

If I thought I could find somebody who would produce things the way I want to hear them. But the details that I worry about when I go into a studio are how the board is laid out, what EQ is going to be on the stuff you're listening to in the headphones, to what kind of echo you're going to be using, what kind of this and what kind of that, how long you should be taking to do such-and-such a thing because at a \$150 an hour you don't want to be wasting your time while you're in there. It's hard once you've got all that stuff set to just walk in and play and forget about it. I'll spend anywhere from 3 to 9 hours just getting the sound on the rest of the band right before I'll record.

On this new album it's different because I did a lot of tracks just starting with a Rhythm Ace and built all the stuff up from there. What I usually do is I'll play the guitar from the control room while the band is playing or else I'll have the band lay

down a track and then I'll put mine on later.

Are there songs where you've laid down more than just a rhythm and lead track?

Yeah, 'Po-Jama People', and there's a couple on the new album that have anywhere from 3 to 5 guitar parts. 'Filthy Habits' has five guitar parts on it; on 'We're Only In It For The Money' I did a few; 'Uncle Meat' (Bizarre Records 2MS 2024) has some.

You've been playing now for two decades; where and what else do you want to go and do with the guitar?

The hardest thing for me to do is play straight up and down, absolutely the hardest thing to do. Stuff that everybody else does naturally just seems as impossible as shit to me. I can sit around and play 5's and 7's all day long with no sweat. But the minute I got to go do-do-do-do-do-do-do it feels weird, it's like wearing tight shoes. So I'm gonna keep practicin' . . .

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Saratoga, California, USA

Dear Dharma Sound,
I have been using your Sweeper and Phaser on gigs and recordings recently. Thank You for the Great sounds they make.

Yours,
Pete Willsher

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BEAT'S MARCH COMPETITION

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This month Beat is giving away a Hohner electric K1 portable piano, which retails at £312. Its keyboard spans a full five octaves, and can be split into treble and bass sections if desired. The facilities include a volume slider and such sound effects as harpsichord, steel guitar and acoustic piano. It is light, portable, and easy to tune. The K1 comes complete with its own carrying bag. It could be yours simply by listing in order of preference **THE MOST IMPORTANT FEATURES OF A WORKING MUSICIAN'S KEYBOARD INSTRUMENT**. Listed below are ten of these features. Your job is to choose the **SIX** most important. When you have decided on the correct order, use the appropriate letters of the alphabet to fill your answers in on the coupon, then cut it out and send it to Beat as soon as possible. Remember: do not write out the answers — use the letters we have given them.

- (A) Sound
- (B) Appearance
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- (E) Number of special effects
- (F) Price
- (G) Action
- (H) Built-in speaker
- (I) Number of manuals
- (J) Ease of tuning

HOW TO ENTER

1. Once you have picked out the six features from the list alongside which you think are the most important for the keyboard instrument of a working musician, place them in order of preference on the coupon (e.g. 1 — A).
2. Give the titles of the features or items you liked most in this issue of Beat.
3. Insert your name and address in **BLOCK CAPITALS** in the appropriate space.
4. Cut out and post the coupon off to us at **BEAT INSTRUMENTAL, 23 RIDGMOUNT STREET, WC1**, to arrive not later than April 1st, 1977.
5. The result will be announced in the May issue of Beat Instrumental. No staff of Campillos Ltd. or their families or relatives are eligible to enter this competition. The judge's decision is final and binding and no correspondence can be entered into concerning this competition.

Insert the six keyboard features you have chosen in their order of preference in the spaces below.

1 2 3 4 5 6

Your favourite articles in this month's Beat

1 4
2 5
3 6

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Your favourite musical instrument shop

YOUR LETTERS

Vibration

Dear Sirs,

I am having problems with my effects pedals and wonder if you would be so kind as to help me out. I have recently purchased a 'Shin-ei' Companion FY-2 fuzz box and a Wah Wah pedal manufactured by Sola-Sound.

When the fuzz box is switched on I get a prominent deeply pitched buzzing through the amplifier. This occurred when the fuzz box was in close proximity and when I moved it away from the amplifier. I also tried swapping the leads around but the buzzing persisted.

Also, when connecting the Wah Wah in series with the fuzz box I get a reduction of quality and volume in the wah-fuzz effect.

Could you comment on the quality and reliability of these pedals as I do not want to ruin my equipment, especially as a friend has told me that a fuzz box distorts the sound and places a lot of unnecessary vibration on the speaker and this eventually ruins the quality of the sound produced by the amp — is this true? The amp I use is a Custom Sound Tracker 30w combination amp with a Grant 'Les Paul' guitar.

Thanks for an obliging and very informative magazine,

Neil Bott,
Royston,
Nr. Barnsley.

It sound as if you have two separate problems here, Neil. One is a fault in your fuzz box, which should be taken back to a shop for repair. The other is that it doesn't match with your Wah Wah. People assume that any

fuzz box will match any Wah Wah but this isn't necessarily so due to fluctuating specifications as regards output voltage. Really, you should get the Shin-ei checked by a dealer and then part exchange it for another model which does match the Sola-Sound, assuming, of course, that our diagnosis is correct.

As regards this business about fuzz units damaging speakers, we're getting thoroughly sick and tired of these old wives tales so here, yet again, are the facts as we understand them.

Given that you have a good quality speaker in a cabinet and one which has a rating sufficiently high enough to handle comfortably the peak output of the amp, the use of a fuzz box or overdriver will not damage it. If, however, you are using a cheap amp where the speaker is already overdriven, and if your

fuzz box causes the amp to deliver substantially more wattage than it might otherwise have done then prolonged use might damage the speaker. In your case you need not worry about this and neither need anyone who has bought an amp made by a responsible manufacturer.

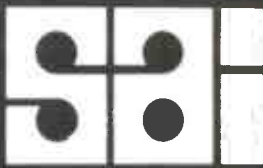
Songbook

Dear Editor,

Thank you for having interviewed Mick Ralphs in the October issue of *Beat*.

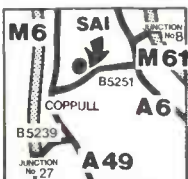
Bad Company has been my favourite group since I bought their album 'Bad Company'. Now I've got the other two albums 'Straight Shooter' and 'Run with the Pack'. What I would like to know is whether it can be possible for me to obtain a copy of the sheet music to the

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Jack Bruce/Pete Brown
double interview
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AND QUERIES

above albums. I've been to all the music shops I know but couldn't get a single copy.

Yours sincerely,
Sibanyoni M. Timothy,
Transvaal,
South Africa.

Bad Co.'s music is published by Island music who, unbelievable though it seems, say that they haven't yet published any Bad Co. Songbooks, although they are supposed to be working on them at the moment. When they are published, Island claim, these will be made available abroad, as well as in the U.K.

Dobro

Dear Sir,

I intend building a wooden body Dobro-style guitar. The problem is this: where can I obtain a metal resonator from?

Secondly, is there a book with any details concerning the construction of such a guitar?

Many thanks,
Yours faithfully,
Paul Whiteside,
Sturry,
Kent.

The wholesalers of Dobro guitars in Britain are Coppock of Leeds, and they gave us the names of two retailers in Kent who should be able to order a resonator for you: try White's of Tonbridge or Sicodi of Canterbury. The cost should be around £18.

Most of the books on guitar building tend to be about making classical instruments, i.e. nylon string. Roger Bucknell of Fylde (who hand-build acoustics) tells us that "Make Your Own Spanish Guitar" by Clifford Essex and "Classical Guitar Construction" by Irving

Sloine are reasonable basic guides. For steel strings, however, have a look at "Complete Guitar Repair" by a Japanese gentleman with unlikely name of Hideo Kamimoto.

Info please

Dear Sir,

We are a band from America ("Train") and I was wondering if you could help me by giving some information: what are the names and addresses of the A & R men at the following companies: Vertigo, Polydor, A&M, Arista/Bell, Charisma, Reprise, Decca and RCA. I would appreciate any help you could give me.

Thank You,
Mike Skinner,
Wavertree,
Liverpool.

Vertigo records are distributed by Phonogram at Stanhope House, Stanhope Place, London W2 — A & R man is Chris Peers. At Polydor you want Jim Cook, 17 Stratford Place, London W1. A&M have Mike Noble at 136-140 New Kings Road, London SW6 and Arista are at 49 Upper Brook Street, London W1; Andrew Bailey is the A & R man. Charisma: Mike Everett, 37 Soho Square, London W1. Reprise are distributed by WEA: Peter Swettenham, 69 New Oxford Street, London WC1. Decca: Hugh Mendl, 18 Great Marlborough Street, London W1. RCA: Alan Sizer, 50 Curzon Street, London W1. A complete list of A & R men was printed in last December's issue.

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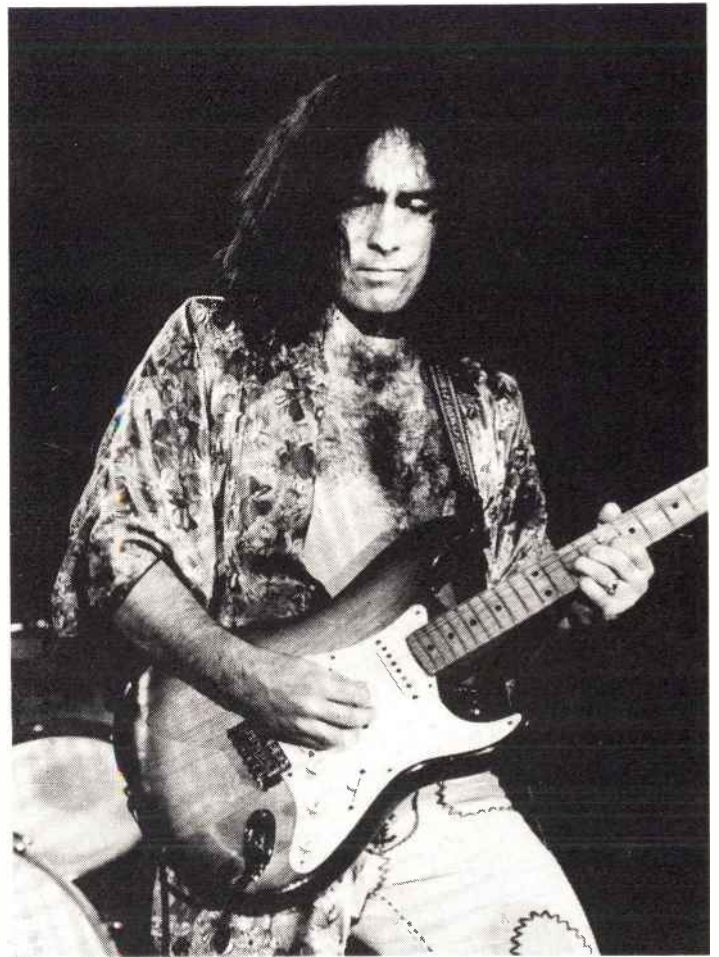
The MICROMOOG
a world of sound
in a nutshell

BAD CO—

Chris Trengove runs with the pack (well, Mick and Paul) to find out what Britain's prodigal sons are up to now . . .

When *The Showmen* sang that classic teen anthem 'Rock 'n' Roll Will Stand' all those years ago, they had no way of knowing that the sixties and seventies would bring weird (and often not so wonderful) variations of the form that they would now have difficulty in recognizing as having anything to do with rock'n'roll. At one end of the scale, we have multi-multi-track studio extravaganzas that would have had Eddie Cochran scratching his head in bewilderment, and astronomically-budgeted wimperama involving the likes of the London Symphony Orchestra, as many choral societies as can be squeezed into the studio, and the massed bands of any regiment that can find time between deb dances. On the other hand, we now have the legions of punk, whose prowess sometimes makes the average fifties' garage band sound like *Weather Report*.

Nevertheless, there have been, and still are, bands that stay close to the spirit of rock'n'roll, without in any way fossilizing the form, or taking the part of revivalists crying in the wilderness. The *Stones* and *Quo* come to mind immediately, and I won't try to list the dozens of others who are doing sterling work. When a new band comes along who have that spirit, and who are original and immediately distinctive as well, it's not that surprising that thousands of people give a whoop of joy, smash their piggy banks open, and rush out and buy their records by the sackload. Back in '74, when punk still meant *The Seeds* and *Shadows* of



Knight, that's more or less what happened on the occasion of the release of 'Bad Co.', the first album by *Bad Company*.

The band's success was immediate and colossal. 'Bad Co.' reached the number one album spot in the States, was equally successful here, and went on to achieve platinum status. *Bad Company*, nine months after being formed, were a headlining act in America on only their second tour. Since then, their progress has been the stuff of which struggling rock bands' dreams are made. Their second and third albums, 'Straightshooter' and 'Run With The Pack', achieved platinum status in the U.S., charted high here and sold massively around the rest of the world, and their singles have enjoyed similar success. Their tours are consistently sell-outs, whether they're in the States or other parts of the world with a big rock market, like Japan. They've broken attendance records at massive venues like the Coliseum in Jacksonville, Florida, and the Municipal Auditorium in Mobile, Alabama, to say nothing of selling out Madison Square Garden within a day.

Within the space of two and a half

years, *Bad Company* has become a superstar rock act. However, music fans in this country are not as aware of the band as they might be, simply because *Bad Company*, like many others before them and no doubt many others to come, have been forced into a position whereby they can't do that much live work here. All the usual reasons apply — taxes, lack of suitable venues, overwhelming commitments in bigger markets, and so on. In fact, the last time they played here was when they headlined the somewhat ill-fated Great British Music Festival in January '76.

However, this situation is about to be remedied, as I found out when I went along to see Paul Rodgers and Mick Ralphs at their management's London headquarters. Amongst many other things, I discovered that British dates are on the cards for the mid-summer. Paul and Mick are a genial pair, more than willing to talk about their current and future activities. The interview took place under conditions of super-relaxation. At various points members of *Led Zeppelin* (who share the same management) wandered in and exchanged greetings, John Paul

Jones having a few animated words with Mick on the subject of cars, a topic dear to both of their hearts. After lagers had been provided all round by the amiable Clive, the band's personal manager, I flicked on the tape and got cracking. (Paul was absently fingering the 'office guitar' throughout the interview, occasionally illustrating a point by singing a few well-chosen words. I am hanging onto my cassette as a possible valuable bootleg item in the future!)

B.I.: Bad Company has been out of the country a lot in the last year or so, and some British fans may have slightly lost touch with what you've been doing. Just for the record, what have you been up to of late?

Paul Rodgers: Well, quite a lot actually, although it may not have seemed much to people here, as we've hardly done any press stuff lately. In the early part of last year, after we'd done the Olympia gig, we finished off the mixing of the 'Run With The Pack' album in Malibu in California, and then we went straight off on a world tour which took us up to the autumn, when we went to France to cut the new album. That was at the Chateau Herouville near Paris. It's been a pretty hectic year really.

B.I.: Now the new album ('Burnin' Sky, on Island), is out, what are the band's immediate plans?

Paul Rodgers: We're starting a European tour on April 1st, and then we blast on to the States for a four month tour, so all that will keep us busy for a while.

Mick Ralphs: Yeah, and we hope to be doing dates in England in the summer — we'll break off in the middle of the U.S. tour to do them. A lot of people in Britain are probably wondering why we haven't toured here lately. It's just

been a question of time — we've had a hectic schedule of recording and travelling, and every time we've had the chance to play here all the venues have been booked. But we all want to do dates in the U.K. because we think a lot of our British fans, and we definitely want them to have a chance to see the band live.

B.I.: 'Burning' Sky' is your fourth album. Do you think it represents another step forward for the band?

Mick Ralphs: Well, every time we do an album I say the same thing (laughs) . . . it's a key album, a crucial album and so on. Seriously, this album to me is as big a step as the first one, in that we've tried a whole lot of different things, things that we've not done before. Not so much instrumental-wise, I don't mean we've brought in the London Symphony Orchestra of anything like that (more laughter), just that we've done different types of songs, and varied our line-up a bit. Like on one track Paul plays guitar, pretty well I might add, and on another I play organ, which I've not done before. At the stage when we recorded 'Burnin' Sky', we were a bit concerned about becoming static, you know, just doing albums, one after the other boom-boom-boom, and we wanted it to stand out from the other three as something different again. If you don't move on you get too 'established' . . . the 'boring old fart syndrome', as the punks call it?

Paul Rodgers: This album's a lot more relaxed, and therefore a lot more powerful. Although we seem like a new band to a lot of people, we have been together for about three years, and we've now got to the stage when we're really confident when we go into record. Because we're more confident, it means the music is looser and more



"'Wot song's this, Paul?'"

relaxed, and therefore more together and tighter, if that makes any sense. We've tried a couple of different things on this album, for example, with one song, called 'Master of Ceremonies', we went on after we'd finished the track, into a kind of jam thing. We couldn't actually mix it, because we'd just recorded in on eight-track, straight onto stereo. But it came out so great that we decided to use it as it stood.

Mick Ralphs: The lyrics for it came straight off the top of Paul's head, and they turned out really well too. That was the whole thing with this album — spontaneity. We'd just come off a long tour, and in a way the last thing we felt like doing was recording an album, and we'd only got two songs ready. As it turned out, because we were writing as we went along, creating the whole thing on the spot as it were, a lot of good things came out of it. There's a feeling of spontaneity and immediacy. All the things we experienced over the course of the tour, all the ideas that came up on the road went charging into the album.

B.I.: I know that as a band you don't go in for studio trickery much, but did you use any particular production techniques on this album?

Paul Rodgers: Well, you said it right first time. We don't like things to get too complicated, whether it's production, or arrangements or whatever. It's not that we're not capable of doing complicated things, we keep things fairly simple by choice. In a way, the more you play, the less it means. Going



"'Dunno — let's go down on one knee and see wot 'appens.'"

back to your question, we tend to use more or less the usual techniques to achieve a variety of sounds, but there was one thing we tried which turned out to be really effective. It was a special piano sound, which we got by playing the part, double-tracking it and then Vari-speeding it. It came out really nicely. But generally speaking we don't go in for that type of thing too much. It's the same with extra session guys — we tend to like to keep things to ourselves, although on this album Mel Collins plays some nice flute on a number called 'Morning Sun'. He was on the first album too.

B.I.: Do you see yourselves as primarily a live or a recording band?

Paul Rodgers: We're a live band. We always play live, even if we're in the studio we pretend we're playing live. There's always an audience in your head really.

Mick Ralphs: Yeah, otherwise you feel you're blasting your guts out just to sing to a brick wall. You've got to project yourself into the idea of it being live if you're going to get any depth of feeling out of it. For example, the vast majority of the vocals that Paul does are recorded while we're doing the instrumental tracks, as if we are performing on stage. Usually they're the ones we end up using —

**"Even in the
studio we pretend
we're playing live . . ."**

they have the most empathy with the track, because everything's done at the same time. That's why our albums are fairly simple and basic, because we're trying to show what we can do together, as a band, rather than artificially piecing everything together, bit by bit.

B.I.: Both of you write for the band, separately and together. Is there any particular method in the way you go about writing?

Paul Rodgers: Actually, it's becoming more and more spontaneous. As Mick said before, this album was an on-the-spot kind of thing, and it worked out really well for us.

Mick Ralphs: The engineer played a key part in the process, because he was sitting and listening while we were writing and rehearsing the songs, helping us to get into them rather than

just saying "well, we're ready" to record," or whatever.

Paul Rodgers: We went in with the attitude that this was an experiment, we didn't know whether it would work out or not. As it happened, it was a major step forward, because there was so much energy it was really exciting.

Mick Ralphs: Every day someone would come up with an idea, so we'd all plunge in, and at the end of the day we'd have a track down. From getting up with nothing to going to bed with a track down is a nice feeling. The method is obviously good for us, because we ended up writing more than we'd ever done for any other album, twenty-two songs in fact, out of which we used eleven. Usually when we do an album there's about four left over.

B.I.: Finally, to change the subject completely, earlier on Mick jokingly mentioned the punk-rockers and their dismissal of the 'boring old fart' syndrome. What do you think about the new wave of bands coming up?

Paul Rodgers: Well, I say good luck to them, or rather to any of them that can play good music. When you come down to it, it's the music that counts, and really it remains to be seen which of them is going to come up with the goods. If and when they do, that's fine with me.



"Thanks a lot for the interview."

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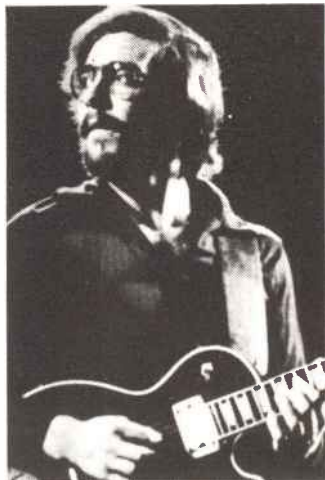
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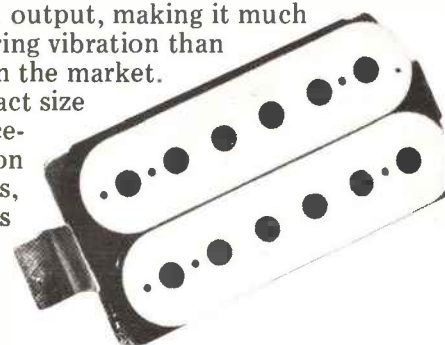
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 338 Brunswick St., Fitzroy, Victoria 3065 Australia

In Japan
 James C.
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New! PAF

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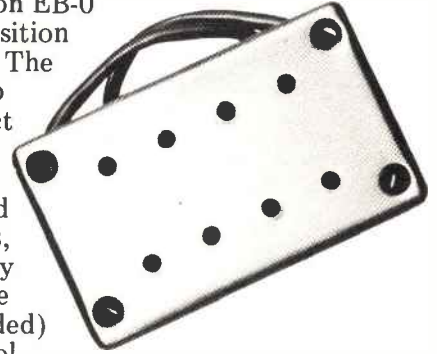


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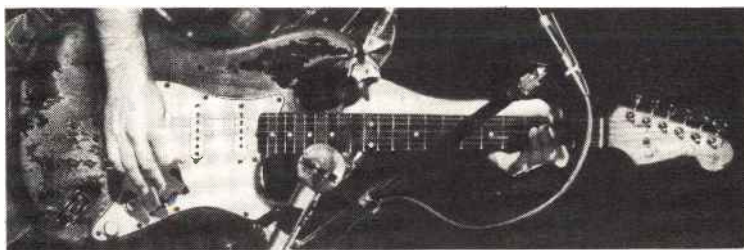
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RORY



GALLAGHER

"Donald 'oo?" The old man at the stage door of the Hammersmith Odeon eyed me suspiciously.

"Gallagher", I replied.

He turned and scuttled into the recesses of the building. Seconds later a muffled voice was shouting: "Anyone 'ere called Donald?" A number of confused voices wafted back; a few doors slammed. After a while, the breathless Donald appeared, shepherded by the uniformed ancient. I was allowed through.

Donald is Rory's brother, and also his manager. The occasion tonight was a Sight and Sound

Peter Douglas sneaks behind the cameras and tape machines as 'Sight and Sound' is recorded . . .

broadcast in which (you will recall) a concert is not only filmed and recorded by BBC Television, but by BBC Radio as well, who send it over the airwaves in stereo — for the benefit of those with stereo receivers.

The mix is taken from a 16-track recorder which, during the gig, is stationed in one of the

many BBC sound trucks parked at the back of the theatre. The man responsible for the radio stereo sound is Chris Lycett, a young man who sits calmly and cheerfully in a small truck whilst haggard-looking men climb all over him, trying desperately to locate "that noise". When they started climbing over me I decided it was time to leave.

Donald and I went back into the theatre to have a look at the set-up there. There are two stacks of PA per side — one just above stage level, and another about 20 feet above, on a platform supported by scaffolding. As for cameras, there are two peering down from the Circle above us, two in the pit right in front of the stage, and one roving unit at the back of the stage. This one is kept well out of the way, however, in order not to obstruct the audience's view. The whole emphasis is on making the show as much like an ordinary concert as possible, and in the same way, Rory's band are not going in for props such as separation screens, although some bands are beginning to use these in live recording.

"The thing is," said Donald, "if we started putting them up tonight they'd be very *obvious*. The priority tonight is the people who've come to see the show. We're forced into putting the radio and TV second because, even though it's probably more important in the long run, you can't cheat the people who've paid to see the show. They don't want to have their sight-lines blocked. You just have to

work around it. We've already done balances and we're very happy with what we've been getting in the sound trucks, because we do use small amplification on stage anyway, and with the stage here in the Odeon, the sound is inclined to go up into the ceiling and get lost. In fact, if we were to use any kind of barrier, we'd fly an overhead partition, so it would reflect the sound straight down, because it isn't helping the monitors any that the sound is going straight up."

There were special circumstances for this particular edition of Sight and Sound. The shows are normally filmed at the Hippodrome in Golders Green. But "it seems that within the BBC they were using this whole Sight and Sound venture as an opportunity to have a strike, or get a rise or something like that. We had it scheduled for tomorrow, and they've had to cancel the Golders Green gig, so the only alternative way of doing the programme was to have their Outside Broadcast unit do it. Typically as it goes, they resolved the situation this morning!"

I had been at the previous evening's concert, which had received the sort of rapturous response Rory must surely have got used to by now (although by his own reaction to the applause, you wouldn't think so). There had been problems with buzzes, however, and the monitors had been playing up. "Well, last night it was recorded for Capital Radio, so there again we had a 16-track mobile in, and





there seemed to be interference because of the splitting of the microphones, which in fact sapped some of the volume from the monitors. It seems that the VUs were showing full volume, and the road crew were getting full level, but that wasn't a true indication of what Rory was hearing."

Another problem with the monitors had been the noise emanating from Rod De'Ath's drum kit, which was now positioned at one side of the stage. Explain, please, Donald: "Before, the set-up was that the drums were directly behind Rory. Rod is a loud drummer — he's got great strength — and he's got those Paiste cymbals, which are extremely loud, and so's that Autotune kit; they were pouring over into the vocal mic, and any time Rory'd move away from the mic he'd just get a cymbal crash right through ... Rod just got that drum kit recently — and the cymbals —

so it's the sheer volume. Rory then couldn't hear the vocals because of the pressure on his ears, so he was asking for more guitar and more vocals on the monitors — and then the drummer couldn't hear the keyboard, and the keyboard player couldn't hear Rory that well! And Rory couldn't hear the keyboard, because he was on the opposite side of the stage. So it was like an equation — changing the formula a little so that it worked out. It's worked out well now, and I think we'll keep it. You get great separation now with the drums being off on their own. It's more of a recording studio set-up than anything else."

The band have been using Stramp gear for some time, leaving aside Rory's amps and Lou Martin's Leslies. Later I asked Rory about his amplification as we stood in his dressing room. "I ditched the AC30 about two years ago. It

was very good, but with keyboards you need something stronger. What I've got now is a Fender Bassman and a Fender Concert linked together." His instruments consist of his old Strat, the black Telecaster, a Martin acoustic, a mandolin and a National Steel guitar. For those who don't know, National Steel guitars are *not* the sit-down type used by C & W players, but roughly conventional guitar-shaped instruments made from a single sheet of steel. They are extremely rare, and thus highly sought-after. The sound they produce is, as one might expect, jangley and metallic. Rory's is a National Aeolian model, made between 1932 and 1935. It cost him just £100.

I had noticed the previous evening that his acoustic instruments were not only being "aimed" at a microphone, but also had contact mic's stuck to the body. What was the ad-

vantage of this dual miking? "Well, with an ordinary mic you get a sense of dynamics. The bug is very one-dimensional, very compressed-sounding. So what happens is that you get it all in one tone and lose out on that rounded feeling — which is what acoustic instruments are supposed to sound like."

The overall sound of the gig had not been entirely to his satisfaction — partly because of the monitor trouble. "I was getting all tweeter and no bottom. And another thing — we've moved the drum kit back to the left hand side of the stage now, which is how we had it before. It was just a sort of mad gamble last night to try having it on the right. I couldn't see the audience either. That makes things a bit difficult — I like to see a few heads sticking up, at least."

In the room at the same time was Jeff Griffin, the BBC Radio

continued on page 24

RORY GALLAGHER— Captured in Sight and Sound



producer, and I casually left the tape-recorder running whilst Jeff attempted to pin Rory down to a firm sequence of songs. It wasn't that easy. The idea was to get the balance right whilst the band played three or four numbers, and then begin the recording. Rory was naturally anxious to do as many of the newer songs as possible — chiefly off the "Calling Card" album.

"The best thing", Donald suggested, "is to take your cue after the third number, do two fast ones, run through the acoustics, and get the changeover as smooth as possible."

Jeff: Shall we work on that basis? You would play three numbers which we're not taking, right? Do you know what they are?

Rory: The first one will be Moonchild; say, Tattooed Lady second, then Slow Blues or Calling Card. After that then you can come in and start off with something like Do You Read Me, or something like that. Secret Agent. . . .

Jeff: Are these fairly likely? You see, the more titles we do pin you down to, the more chance Tom (Corcoran — TV director) stands, because they've been through some of them and got the words and music cues written out. Obviously he likes to be able to cut from one camera to another. . . . he doesn't try and make it all flashy, but the cuts are

smoother if he knows *where* he's cutting them and to what instrument, and obviously he'll shoot wild on the ones he doesn't know, or he'll do overlays or fade in and out. But it's nice to have some which actually *look* right.

Donald: Unless I sit in the TV truck and just stick around.

Jeff: Yes. I'm sure he won't mind that. The only thing is, it has to be so quick. I'm sure you know that. You have to get in really on music cues, and in fact Tom is doing his own vision mixing out there.

Donald: Well before I was cueing him a couple of minutes beforehand.

Jeff: Oh, when you did the Whistle Test thing?

Donald: Yes. But I know what Tom means, because, for instance, last time we'd just taken on a new light man, and I had to cue that.

As the discussion went on, Rory continued to be uncertain about what to play, or in what order. His set takes the form of

three sections: the first is a series of quick-paced electric songs, followed by about twenty minutes of acoustics, ending with Going To My Home Town, which puts the crowd back in a raucous mood, ready for the final section of fast electrics. But the actual tunes chosen would depend entirely on the pace of the show, on the degree of hysteria in the audience. In the end, the band played Do You Read Me, Secret Agent, Calling Card, Slow Blues; on acoustic, Out On The Western Plain, Barley & Grape Rag/Pistol Snapper Blues, Too Much Alcohol, Goin' To My Home Town; the show ended (very conveniently for the BBC men) during the applause which followed Souped-Up Ford. Thus all Jeff Griffin's fears that they would either a) have to fade out in the middle of the acoustics, or b) run out of material too quickly, proved groundless. If there were any hitches, the viewers didn't see them, and that's what counts.

"I like to see a few heads sticking up at least . . ."

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GORDON GILTRAP

From Guitarist to Visionary

Gordon Giltrap has been picking away at his acoustic guitars for a good many years now without achieving a great deal of material success but, as a couple of spins of his latest album 'Visionary' will prove, he has gone a long way to establishing himself as a unique artist with a unique approach to his art. 'Visionary' is a collection of acoustic guitar pieces inspired — according to Giltrap — by the poems and

illustrations of William Blake. These guitar themes have been carefully and cleverly placed in the nucleus of a much grander overall concept using orchestral wrappings, and the talents of a number of musicians contributing trumpet, sax, keyboards, drums and assorted percussion. Despite the general feel of richness that runs throughout the work I first put it to Gordon that 'Visionary' is essentially very simple — did he agree?



"I'd like to take that as a compliment, if I may, because all the best things are, hopefully, simple. I've got this thing about strong melodies. I used to be into the technical side very much — and hopefully I've acquired more technique over the years but you just can't beat a good tune, and I try to aim for that in the way that I write. But if I had a guitar with me now I'd be able to play one of the most simple things on the album and you'd see that it is quite complicated really.

"When Visionary was in its original form — well, let's call it its 'demo form' — it started out as a fourteen minute piece — I took it to a journalist friend of mine who told me it really was much simpler than the stuff I had been into before — because I am primarily a guitar player and I'm known for that. I made two albums for Trans Atlantic and they were very complex things, very much exploring what the guitar could do and people who have followed by career are now in a position to see the transformation from being a complex, erratic guitar player to something much more elementary."

The form that Gordon has chosen as the platform for his extraordinary guitar work can be closely related to the original concept of a classical concerto where one solo instrument (usually a piano) put over the main themes and ideas while being supported by an orchestra. It has been generally assumed that those classical composers who revelled in the concerto also actually *wrote* the string sections, whereas now albums consistently credit individuals with 'arrangements'. Who, in fact, did write the orchestral sections on 'Visionary'?

"On the album, arrangements are credited to Rod Edwards and Roger Hand — and that is true, but most of the basic melodies I got together myself. But, let me tell you the way I work, and that should basically answer your question. In getting 'Visionary' together I used a taperecorder — like a lot of musicians do — using a lot of overdubs and a lot of the string lines came out of the guitar lines. On the new album on which I'm working at the moment, however, I'm trying to work a lot closer with Roger and Rod from the initial stages.

Pressure

"Visionary, although it took a long time to get together from the initial ideas to the finished product — about 2 years, — it came together very quickly in the end — as we were recording it in fact. I was writing stuff as I was recording it — the last track on side 1, Revelation, was written in an evening, for example — it's amazing what you can do under pressure."

At this point I feared we might digress into a long discussion on the vices and virtues of being compelled to work in conditions which are not necessarily of our own choosing — something which, contrary to public opinion, prevails as strongly in the so-called artistic environment of the music world as it does on a factory floor, so I swung off on a tangent toward the inspiration for the album itself — William Blake.

Blake is best remembered — in fact, to his detriment as an artist — for 'Tiger, tiger

burning bright,' and for the 'lyrics' to Jerusalem, but he was in reality an exceptional 'visionary', a deeply religious man, a poet of considerable genius and an illustrator of particular inspiration. Holding naturalistic art in high contempt, however, did not stop him from appreciating genius in those who executed it. It is said he described a Constable sketch as 'not a drawing but inspiration.' Constable, with all the foresight of a blind opposition front bencher, replied 'I had meant it to be a drawing.' Given then, that Blake was one of the genuine geni of recent centuries, what connection is there between his work and Giltrap's?

"Originally I wanted the album to be a William Blake presentation — a picture of him on a double gatefold cover, and illustrations inside. Most people I have spoken to have said they can see the connection between that piece of music and Blake's interpretation . . . but I don't want to get into a big thing about the Blake angle. I would say that two-thirds of the album were directly inspired by Blake — the rest was, of course, already written. Lucifer's Cage, for example, which is the aggressive, heavy Satanic thing was the perfect theme for the Day of Judgement. But, really, if you can't see the connection, you've got to be into Blake, you've got to know what he was trying to do.

"But on the other hand, hopefully, it's a piece of music that should stand up on its own — it's there to be listened to and enjoyed. You don't *have* to have the illustrations and poems to enjoy the music, but if you happen to be into Blake and are interested in seeing where I got the inspiration from — then fine."

At this point Stephanie, Electric Records' inimitable promotions lady arrived clutching armfuls of beef and ham sandwiches (despite our request for tongue and chicken) so it seemed a good opportunity to change tack before we became involved in an inconsequential discussion on eighteenth century writers. 'Visionary' has been compared by some critics with Mike Oldfield's Tubular Bells — at least in overall

feel and approach. Did Gordon accept this comparison? Most certainly, he did not.

"I respect Mike Oldfield — we used to gig together. I knew him when he was fourteen when he was singing with his sister Sally — and he was a good guitar player even then, and, as I say I respect him very much and I think I would like to meet up with him again some time as what I've heard of Ommadawn shows it to be a very fine album.

"But as regards Tubular Bells: I think the first three minutes are fine but after that it's rubbish and I'm sure Mike Oldfield — if he was here now — would say the same. And although my music is going to be put into the same bracket as that (which is fine because I like to sell records: if I could sell 8 or 10 million albums worldwide I'd be laughing) but in no way is Tubular Bells great music. I'm trying to write, and I know it sounds arrogant and you can say 'Gordon Giltrap's an arrogant pig' — but I'm trying to write great music. I'm trying to write music that's worth something, that's going to be around in a few years time. . . .

Bells

But coming back to Tubular Bells, it *has* opened up a great many doors. It's a great point of reference. If I ever make it in a big, big way, I would owe quite a lot to Mike Oldfield because he was able to make that concept idea popularly acceptable. Of course an important musical difference is that I am a guitarist, where Mike is interested in a great many other instruments." . . . which of course gave me a breathing space to ask about his own guitars, prompted by a photograph on the office wall depicting Gordon playing a superb looking double neck John Bailey acoustic electric.

He has two Ovations. "I used to hate them actually; I used to hate the idea of using them because you just can't compare them to my other guitars and they just don't mature and mellow like a really good wooden guitar. But I tried them out and they are incredible through a P.A. system — the sheer volume that's obtainable. The

double neck though is a work of art; the pick ups aren't too good and it doesn't sound too amazing through an amp, but acoustically it's a knock out." He also owns three Fyldes, two six strings and a 12 string Jumbo which are unfortunately misspelled 'Flyde' on the album credits, and a six string John Bailey, also made for him. With a background of folk clubs and pubs he's not interested in electric guitars which he finds incompatible with his extraordinary style of picking.

Finger

Gordon uses only a plectrum and his little finger — which should be suitably astonishing for anyone with any experience of his undeniable instrumental talent. John Renbourne, an old friend of his, only discovered his technique a few weeks ago and remarked — 'It makes your playing even more ridiculous!' How does he manage?

"Well, it just developed and I don't think about it any more — I just do it. I started out many, many years ago as a plectrum lead guitar player, then switched to acoustic and gradually the little finger just crept in. When I try to analyse it it becomes very difficult. I did try to teach my style to somebody once but I found I couldn't get it all together at all. It's just a natural thing which I do without thinking." Not thinking can be a problem as we realised we'd both just about missed our next appointments.

In retrospect it may appear Gordon and I found little to agree on which is contrary to the actual tone of the conversation as it developed. It is true to say that our opinions differed in some areas but in many others ('off the record remarks') we found a usable affinity. There is no doubt however, that Gordon is an extremely talented composer and guitarist, striving to reach a level of attainment and achievement — some would say perfection — which is sadly lacking in other aspects of the music spectrum. For that, if nothing else, I wish him luck.

By Tom Stock

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ECHOES



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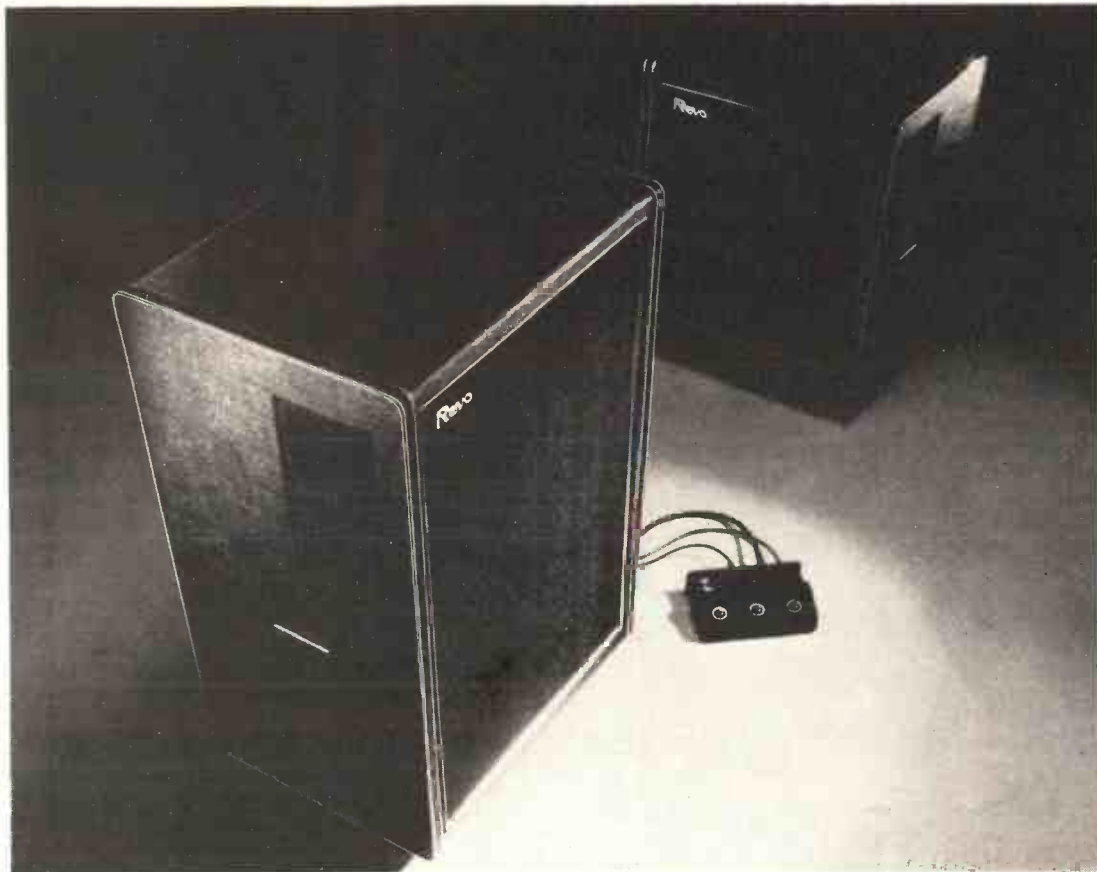
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INSTRUMENT REVIEW 1

HAGSTROM JAZZ BASS

Whilst Hagstrom might be an unfamiliar name to many younger Beat readers, it's one that older musicians will know and almost certainly respect from the mid sixties when Hagstrom were imported by Selmer. Like many fine European makers (Hofner is another) Hagstrom must have felt the pinch of Japanese imports. The Japs could make cheap copies of Fenders and Gibsons (with a callous disregard of the original designers) and get them into Britain far cheaper than the European makers who were, by and large, designing their own shapes. Faced with the choice of a guitar that looked like an American name brand or one with a funny name and unfamiliar shape, the kids chose the copies (and many live to regret the choice because some of the early ones weren't anywhere near as good as they are today).

Consequently, Hagstrom disappeared from the British market. Sales, however, were good in their native Sweden and the instruments were continually popular on the Continent. Now Fletcher, Coppock and Newman have had the sense to import these instruments into Britain and they deserve to make a fortune for so doing.

The guitar under review, then, is the Hagstrom Jazz bass. Perhaps having learned their lesson, the designers have followed uncle Leo's classic shape and made improvements as and where they see fit. The result is a solid and good sounding bass.

Apparently made of mahogany, the Jazz bass has two pickups (double pole) two volume and a tone control. Both pickups (which are quite disgustingly powerful by the way!) are hidden beneath massive expanses of chromed steel. As with Fenders, these get on my nerves. The one covering the bass pickup

doesn't leave enough space to get your hand in behind (if you use a pick) and the cover over the bridge stops you getting a real treble clunk. Personally, I'd have both off (certainly the bass one) but it's up to you. Possibly they offer some protection to the pickups but if they inhibit the playing of the instrument they deserve removing.

A thumb rest is provided and I could have done with this half an inch higher as it prevented me *really* pulling the E string when doing my world famous Stanley Clarke bits (known and hated the office over).

Neck wise, this Hagstrom is superb. Although it's actually quite wide, the thickness has been reduced to such a point that the instrument becomes *really* playable. It's a fast neck but I didn't like the flat wound strings that came with it, still, nothing a set of Rotosounds wouldn't cure!

From the technical design angle, the Hagstrom Jazz bass is a bit of a weirdo. In the neck is a truss rail instead of a truss rod. The idea of this is that it enables a twist in the neck to be straightened as opposed to a standard truss rod which just enables bows or warps to be handled. Not having found the slightest evidence of neck deviation in this instrument I haven't been able to test this principle. What I can say, however, is that I have owned a guitar with a Hagstrom neck for over ten years during which it has required absolutely no correction whatsoever. This manufacturer, in my opinion, makes excellent necks.

On our particular sample there was, however, a fault (I think) in the electronics. Using the treble pickup a distortion and cut-out occurred which I have put down to either a broken wire or broken winding in the pickup coils. I have no reason to suppose that this is standard in Hagstrom or that they are prone to this sort of

failure but it might be worth their while checking a few samples.

Tone is, of course, a very difficult thing to talk about in a review. You can't actually describe the sound a guitar makes in words but let me say that the Hagstrom Jazz bass does a pretty good impersonation of a Fender but actually seems to have several more voices in its repertoire. It is capable of a good fine, hard clunk and a round deep bass. Had I been prepared to spend a few quid I'd have had the strings off it and slapped on a set of round wounds (although, as a rule I prefer flat wounds). The resulting sound should be monstrous as the Hagstrom has that sort of piano like tone (if you know what I mean) that roundwound strings accentuate.

In the finish department I was most impressed. The guitar *looked* like it was made out of real wood (certain American instruments these days look like they're made out of plastic) and things like binding, varnishing and other operations looked like they'd been tackled by a good craftsman. If I have any reservations they're ones of taste. On the bridge cover is a Hagstrom crest that, although well made, is plastic and will possibly get chipped and broken over the years. It cheapens the instrument as does the very nasty 'Hagstrom' plate on the head. These, are of course, just questions of taste (or lack of it) but I would have preferred something more tasteful on the head and nothing at all on the bridge plate.

Machine heads were good and solid and like the rest of the guitar will last for many years.

On balance, I like the Hagstrom bass very much indeed. At first the fault in the pickup annoyed me but I got over that and I grew very fond of the instrument indeed. The neat contouring of the body threw the neck a bit too far away from me for my taste when playing sitting down but I got used to that as well. The sound was good, the feel excellent (especially the neck). Power from the pickups was, as I've mentioned, exceptional and I got the impression that the manufacturers are really trying.

If people are brave enough to buy expensive guitars that



they've not heard of before and that they've not seen around, then Hagstrom should do very well over here. Rumour has it that Abba use them and, more importantly, I'm sure that I've seen Joe Walsh toting a Hagstrom six string recently... 'nuff said, perhaps!

There is, however, a bit of an obstacle in this guitar's way. According to the importers it's price has been set at an R.R.P. (inc. VAT) of £325. In that bracket it faces stiff competition. If you've got the bread it's certainly worth putting on your short list and it certainly is better made than some current American guitars. If only the price had been a little lower I'd have said that it could have been a hundred per cent winner. Nevertheless, a fine bass guitar. Tested G.R.C. Using Vox AC 50 and 2 x 15 cab. Vox Custom 250 and four Afflyn Audio 2 x 12 Celestion cabs.

APOLOGY

In our review of the Dharma Sound Sweeper pedal in the February issue we inadvertently described it as being "a pretty expensive piece of hardware". Obviously, it is the opposite of this description, and we apologise to Dharma Sound for the embarrassment and to any of you who were misled by that statement.

Also, in the Studio Spotlight on CBS Studios in the February issue of Beat, we continually referred to Studio 3. In fact, it was Studio 2 that has been the subject of the development programme, and we apologise to CBS for the printing error.

INSTRUMENT REVIEW 2

HOHNER K1 PIANO

Having played almost every kind of keyboard instrument known to man, I am always a little apprehensive about instruments that I have come into contact with. I have owned a Hohner Pianet for many years, so I was interested to see what Hohner have done recently and was heartened to find a very playable and well made instrument placed before me. The point by point test reflects the sort of investigation that the player wants to know about and does not touch on "how thick is the solder?" (although a high quality of workmanship was apparent throughout).

Piano Setting

A nice and realistic piano sound with a light touch response. The sound was well balanced throughout the length of the 61 note keyboard. I was pleased to see a sustain pedal which works well and seems of solid construction.

Harpichord/Steel guitar setting

The Harpichord needs a dash of piano slider to sound like a harpichord but after some experimenting the sound can be achieved and then mixed to taste. A steel guitar sound can be found with the help of the vibrato with the delay switch in operation but I would describe the sound as more like a Zither (as in the Third Man Theme), which sounds very attractive when utilising the Bass control.

Additional Bass Setting

(operating from bottom F up to B approx. 1 1/2 octaves).

This is operated from a recess in the front of the instrument and after a little practice, the push button on/off switch is found to be very accessible. The slider volume balance operates either through the main output or a separate bass output which can go to another amp or another channel. The sound is

very pleasing although I would like to see the range extended up to C instead of B. It would be nice to have separate bass sustain but that is perhaps personal taste.

Vibrato

Apart from use with the steel guitar effect, I found this to be probably the least attractive feature of the instrument.

General Use

In a short time of playing the K1, I found it to be very versatile and would be acceptable as an instrument in it's own right, or as a second keyboard offering manual bass (as opposed to pedal bass), and providing a range of extra sounds.

For portability the piano comes complete with a carrying bag (as do the supporting legs) and is relatively well protected, although nothing really replaces a hard case! (a lid to protect the keys and prevent dust might be a good idea?). The basic construction is sturdy with well

protected tuning facilities (each note of the keyboard is "banked" — i.e. twelve screws one for each chromatic note covering the whole keyboard). These are easily accessible at the rear of the instrument.

Service

The Hohner engineers say that it shouldn't need servicing but should anything go wrong, any electronics engineer would be able to fix it, taking into account the normal snares of repair. As it didn't go wrong I can say no more!

Personal conclusions

This Piano is a good and useable instrument at a reasonable price and should give many years of excellent use. Do try it for yourself, as musical instruments are personal items after all, and I *personally* like this one.

Tested with Hohner Orgaphon 130 Amplifier and OTS130 Speaker cabinet.

Roger Coulam L.G.S.M.





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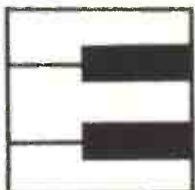


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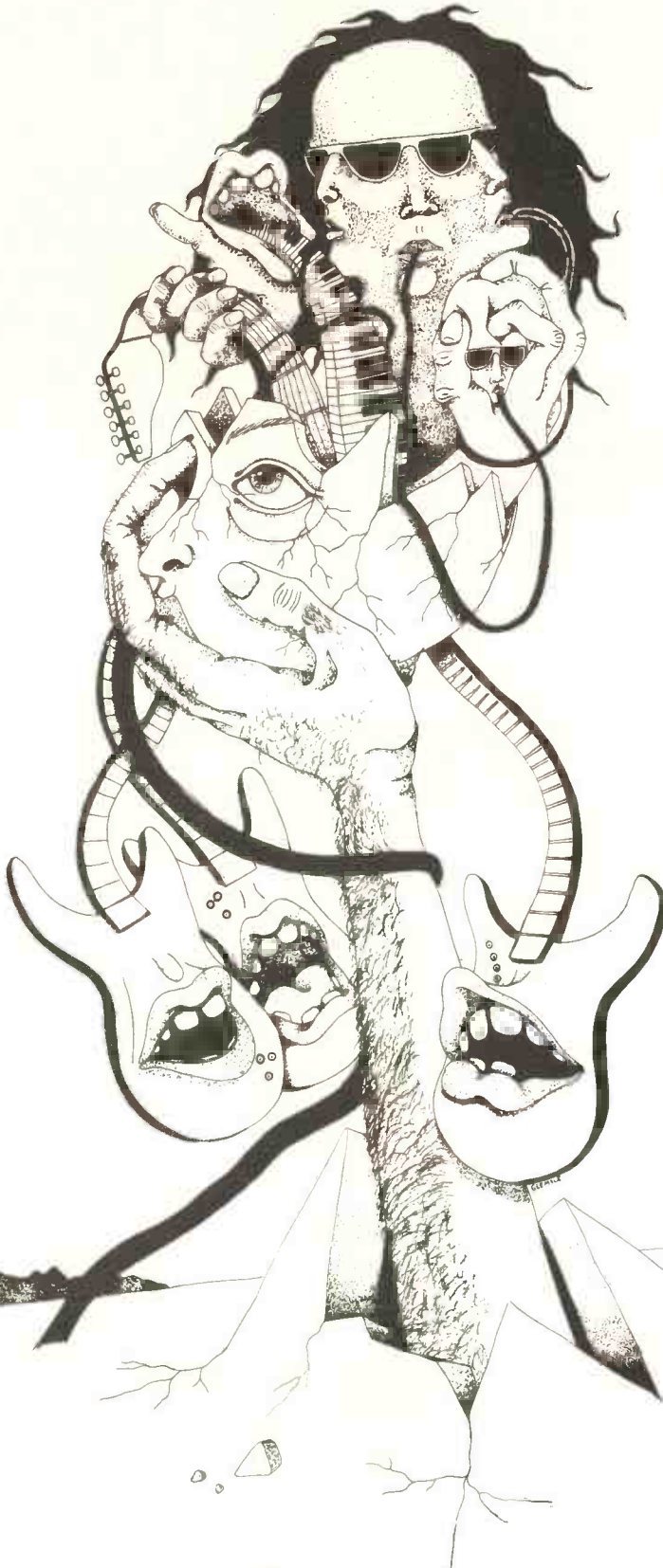
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INSTRUMENT REVIEW 3

ROLAND RS202 STRING MACHINE

I'd forgotten it is possible to fall in love in only four days — not that I can remember exactly what it was like but it's a fair guess it bore some resemblance to unpacking this little black item and ripping the plug off the electric carving knife to sit cross legged on the floor with a set of Woolies screw drivers cursing the advent of the continental wiring system. That first rush of anticipation is quickly followed by the headlong ecstasy of consumption: power on, plug in, and start driving away! Well that's how I felt about the RS202 String Machine that Brodr. Jorgensen managed to intercept for Beat somewhere en route between the Roland factory and an expectant customer. I trust by the time that customer reads this review he'll feel as satisfied with his purchase as I am with its performance.

String machines are strange animals. They don't pretend to sound as 'realistic' as either the genuine orchestra or a mellotron but they have distinct advantages over both. They're portable, don't require weekly wages, can't suffer from mechanical breakdown or seven second spurts of enthusiasm — and they're cheaper than both. And the Roland, at only £513.19 represents excellent value for money.

A brief description then: The RS202 has a 61 note keyboard with three voices — horns, and strings 1 and 2 — the latter being one octave higher than the former.

The bass (F) clef and the treble (G) clef each have their own independent controls — one each for the three voices, one for soft attack, and one for soft volume which operates within each clef. Additionally there are controls for sustain for each clef tone (a sliding scale between high and low) for strings and horn, and vibrato and delay, and ensemble for the keyboard as a whole. Additionally there is a on off switch, pilot light and sliding volume scale.

Also on the main control panel is a tune facility in the shape of a knob which rotates about 270 degrees altering the pitch over-all by about a semitone — a useful and sensible addition. At the rear are three female jack sockets — one high and one low, and a third —

a Gate output for connecting to the ADSR of a synthesizer.

Pretty well equipped by any machine's standards, and at this price and quality, virtually unique. The whole machine is finished in black PVC with a black anodised control panel — looking very smart. Also included is the top which converts the whole issue into a long, heavyish suitcase!

I do have a couple of criticisms of the controls and their functions as I feel that with only a little more circuitry and a little more cost the 202 could have been made considerably more versatile. The soft volume just seems to rock too easily — it's a little uncertain which mode you're in — which could be a bit of a problem when filling in some backing in a loud live situation.

I would also have liked to see the ensemble control doubled up to make separation of the bass and treble clefs possible as it stands they are linked together by this control. The same criticism can be applied to the vibrato — this too, controls both ends of the keyboards at once.

So what's it like to play? The keyboard action is superb — a little on the heavy side for an

electronic keyboard, but firm and really pleasant to use — it makes you feel as if you have a substantial instrument at your fingertips — which is certainly true. Because of the way Roland have split the keyboard at the F below middle C there is a definite split in the sound. The bass clef is very bassy indeed — in fact some amps had trouble in reproducing the bottom three semitones when the horn section was introduced — a fault not of the Roland's making.

If I were to criticize this arrangement it would be on the grounds that not a lot of numbers are written in F — I would have preferred it to have gone on down to E — at least you could give a substantial string arrangement to most blues sequences in the original key — still, I can hardly imagine this machine getting a lot of blues work!

The Ensemble switch — off, one or two — should really have a third position — between off and on, as the difference is greater than between two and three — almost annoyingly so at first but it's very easy to get used to.

The String II is by far the most pleasing voice on the whole

machine, reaching up to a clean, crisp, pure treble that I've not come across on instruments costing twice as much, or more. A real winner of a voice — not that the others aren't good — simply that this is outstanding. With every control on flat out the overall picture is one of great depth and richness, suitable for virtually every application you could think of — assuming of course you're into needing this sort of backing, and it's certainly my contention that many a small outfit with a thin overall sound could do a lot worse than investing in one of these for the hard-up keyboard player. The Roland provides the facility at a very reasonable cost.

Undoubtedly the keyboard section of present day music has benefited from electronic advances more than any other — it's difficult to believe that not so long ago the only weapons in the armoury were either a piano or an organ. Now the potential Rick Wakeman is faced with an awesome choice of artillery — from clavinetts through mellotrons and synthesizers to string machines and electronic pianos; where does he begin to look? Obviously it depends greatly on the type of music you're into, but this string machine can also double up as an organ — albeit a very simple one — and can even sound like an electric piano when set up with the horn section only with the sustain on full — there's quite an interesting sound in there, — so it is more versatile than one would at first imagine.

So what more can I say? I enjoyed having the use of the instrument immensely — I'm sorry it had to go back so quickly. Perhaps some time in the future I'll get a chance to give it further consideration for a longer period of time.

The RS202 really does deserve its place up there rubbing shoulders — or is it horns? — with the best of them and I wouldn't be surprised if a few of the top table guests are finding a coolish breeze blowing around their string sections. It could just be the Roland taking breath!

Roland RS202 string machine. Tested TVS with Pearl and Carlsbro amps, assorted foot pedals (sweeper, envelope and phaser) Sony tape recorder — when working — and a whole bucket full of enjoyment.



INSTRUMENT REVIEW 4

HH VS MUSICIAN COMBO 212

HH's widely publicized VS series first time appeared around March of last year, and so Beat thought it was about time to take another look and see how well the range has stood up during the year or so that it has been on the market. The big difference between the new HH gear and previous transistorized amplification was, so they told us, that an almost infinite range of tonal possibilities was offered, viz: "The VS Musician can be set to sound like a 5 watt practice amp, a 100 watt valve amp on full steam, a clean, tingly transistor amp or any other amp you may favour." In other words, anything you wanted it to be, behold! it would become. This is a very big claim, and one worth investigating.

So how are these unique sound characteristics produced? Well, first by the use of a control marked "voice". This can be set in any of three positions — light, neutral and heavy. It is designed to set the basic tone type that you want to use. The other feature is the Valve Sound switch. This switches the "patented harmonic generator" on or off. Off for ordinary transistor sound; on for the valve effect. Quite simple, isn't it?

The model we reviewed had the optional reverb facility. This is controlled from two on/off buttons — one per channel, and from the Master Reverb control, which varies the depth.

The front panel controls, then, from left to right, run as follows: Channel Two — volume, bass, treble, and underneath — input one, two, reverb on/off; Channel One — gain, bass, middle, treble, presence, voice, valve sound; under these are input one, effects in, reverb on/off, foot-switch socket; on the extreme right are master reverb and master volume, beneath which is the mains on/off switch. And while we're at it, the back panel has four jack sockets on the far right for echo send, echo return, D.I. output and slave output. There is an output for an additional speaker and a mains input "Euroconnector".

All this information is clearly laid out in the User's Handbook which, however, does not tell us what the speakers are. A quick 'phone call established that they are HH speakers. Fine. The amp is rated at 100 watts rms into 4



ohms.

Obviously the first things to try were the features unique to the VS Musician, and I must confess to have been not over-impressed with the "Voice". To begin with, the volume was considerably greater from "light" to "mid" and from "mid" to "heavy". Because of this it became necessary to up the gain when switching back. And I did wonder just what advantage there could be in having such a control at all. The stated intention is to provide the player with a wider spectrum of tone than ever before, but in practice ordinary tone controls will always give you as much in the way of variation as you are ever likely to want — especially as, on the VS Musician, you already have four equalization controls for channel one.

What I was really interested in was the "Valve Sound". Many manufacturers of the new transistor amps currently around have leapt on this bandwagon, having failed in the first place to convince musicians that valves were obsolete and unnecessary in amplifying electric guitars (I even know of a church organist who claimed to prefer his old valve amplifier to a newer solid state one he was given). Real valve amps sound "clean" at

low volume, and the clipping effect that produces that nice warm distortion only begins if you wind up the gain in relation to the master volume, or when the amp heats up after a few hours of punishing use. Play a chord and you will hear distortion initially, but as the chord dies away it will cease to clip, and a cleaner sound will emerge. With the HH "valve sound", the distortion is artificially produced and therefore remains constant for the duration of the note or chord. I would have preferred a variable VS, on which you could dial in the amount of distortion you required. The sound itself is actually fairly close to that of a heated-up valve amp, as I found by comparing it with a Hiwatt. And it is certainly an advance on most built-in distortion effects which as often as not succeed only in fuzzing up the sound, and making it rasp quite unconvincingly. The VS is a cleaner distortion, in which you can clearly make out the notes, and the sustain is also good. This would be particularly useful during recording or else playing in small venues, since sustain can be achieved at low volume by simple manipulation of the middle and gain controls.

The next stage was to wind

everything up to see how much noise it made. With nothing plugged into it, the amp made a loud hiss when all the controls were on full; this was worse when the VS was switched on, but really surprising was the discovery that there was both treble and bass *feedback* when no instrument was connected to the inputs. The ear-splitting whistle had me diving for the gain to whisk it back to a less painful level. I discovered that most of the hiss was caused by a combination of the presence and reverb. One further gripe: the cut-out after switching the amp off was very late — the hiss took about ten seconds to disappear.

Otherwise I found the overall sound of the amp quite acceptable; the amp is certainly loud enough for most purposes, and considerable tonal variation is possible. The reverb was really excellent — the best built-in reverb I have come across, with a lot of depth and clarity. The construction of the cabinet seemed fairly rugged, the front being covered by a thickish plastic grille, and the back is well sealed and protected. Another advantage is the lightness of the combo, making it easy to cart around.

Recommended retail price: £242.73 inc. VAT. Tested P.D.

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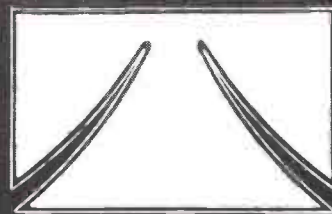
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DAVE GREENSLADE'S "BREATH OF FRESH AIR"

It was back in the rainy season in November that I found myself north-bound to the railway terminus of rock — the Roundhouse — to catch a one-off gig by Dave Greenslade and friends putting across material from his then new album 'Cactus Choir'. Staggering across many an extinguished body prostrate in the aisles in fruitless search for a comfortable platform bench I stumbled into the slipstream of Big Jim Sullivan hurrying for the sanity of the back-stage area — and smartly nipped in behind him.

Greenslade was good — damn good — so I resolved to get a few words with him. Still, you know how it is, resolutions tend to blow away with the advent of the Christmas spirit etc. only to rear their heads in the New Year — but now, at last, we got around to talking. 'Cactus Choir' — in my opinion an exceptionally fine album — is Dave's first solo project following on an illustrious career with Coliseum and Greenslade, so I asked if he views the future as a clean break.

"No, not at all. I've learned, I think. All my

musical education has come through being with credible musicians during the last 12 years, and my education continues by being with people — not necessarily in a permanent outfit — but simply the people I work with — for example, the producers and directors who know what they're doing on TV programmes and the people who join me for recording and practice. I learn from all these people, and obviously I'm still learning. So I mean it's just a continuing process of musical education. Perhaps it's more stimulating in a way now, because for

three years with a static sort of line up you do get to know people rather well, whereas now if I'm in a different environment every day — like the television thing — I'm learning a lot faster all the time. With that static family of people, however nice it may be, you do tend to slow down your own progress."

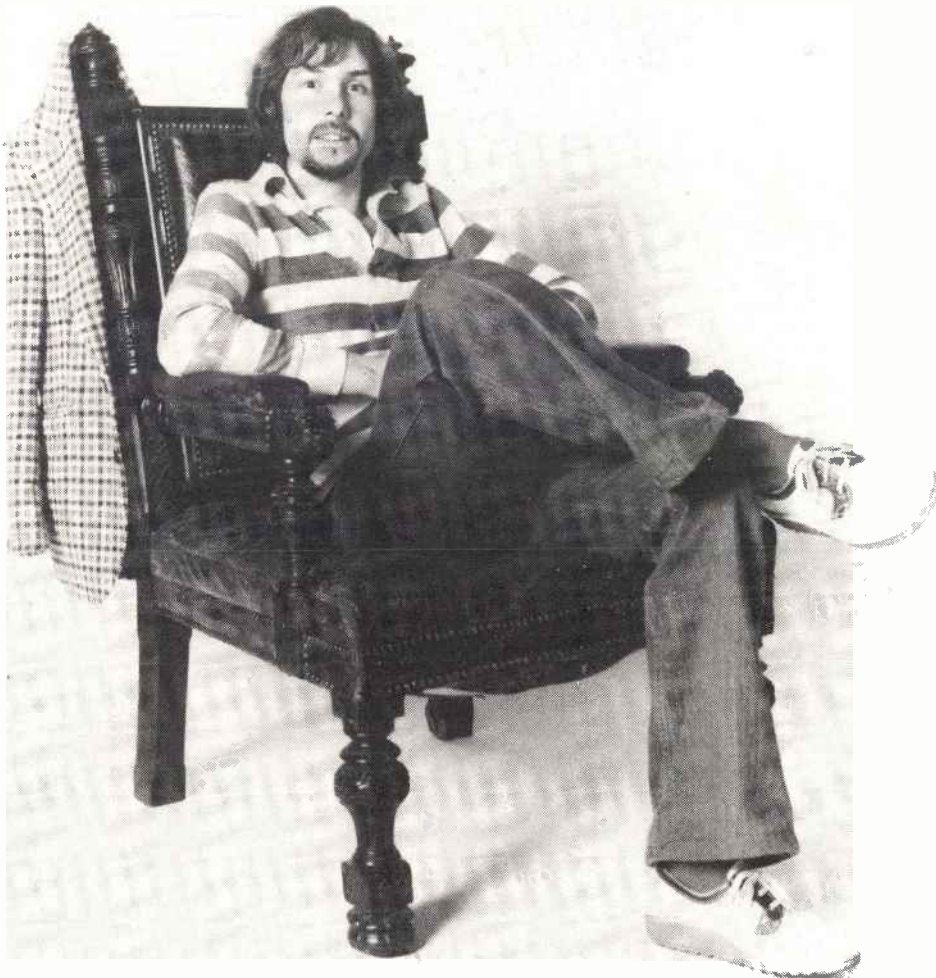
So-called 'Solo projects' often turn out to be group efforts nowadays, so I asked if this album had been a solo concept in reality.

"Yes — in as much as I had total control over the compositions which I've never had before. Having the permanent democratic band which I've been used to we then had to have permanent democratic discussions: some of them were very pleasant and some were very constructive — but that process wasn't gone through at all with 'Cactus Choir'. I became a selfish man with nobody else around, and I wrote as one person without any restrictions whatsoever.

I did have a sense of freedom about the project. I mean, I'm not putting down what we did in the past, because we had a splendid thing going for us and everybody thought it was a gas and I learnt an awful lot working with people like Jon (Hiseman) and Dick (Heckstall Smith). But this is something new and that's why I've been talking about it. It was a breath of fresh air, in a way — that sort of freedom." Dave is one of the few keyboard players in an age of guitar heroes to have established a name for himself as an ivory man at home on all the different forms of ivory layouts there are. Ironically then, the last track on the album is graced with the full sounds of a real, genuine orchestra. Why?

Homage

"Well, I felt I couldn't do the piece justice using string machines so I thought 'why not use the real thing?' It's nice to own up, if you like, right at the very end, that you can't do everything with



these machines. It's really paying homage to the real instruments in a way. This was just one little pointer, you know — "look chaps, we can't do it all by ourselves, not all the time." And that's how an orchestra really sounds as opposed to the synthesized one." Dave's last band — 'Greenslade' — took the unusual step of featuring two keyboard players (Dave Lawson) — again, at a time when the guitar still held pride of place in the rock idiom. Does he not like guitars?

"Basically I don't really like the guitar. I really like keyboards and therefore I feel I should use them. But the guitar is a beautiful instrument in the right hands — and I do emphasise in the right hands. Magnificent. Mick Abrahams (who plays on 'Cactus Choir') is a tremendous player, for instance. But I've got nothing against the guitar, except that I think it's very hard to find the sort of player that I really enjoy to play with. I feel they get carried away. But I don't consciously avoid writing for the guitar." So how does he write?

"On the piano. I've a electric piano at home and I write more or less everything on that first — to use it as a backing track if you like, with the tunes going round in my head. Then I develop the tunes with synthesizers on top. I've got an Arp Explorer which is the ideal synth for those people who don't know anything about programming — like me. It's got some sort of programmers on the left hand side somewhere — I think I've seen them — and on the right you've got the pre-set tabs which are for people like me — as I say." He paused for silent chuckling before continuing, "But to be serious for a moment — I'm not really into large synthesizers because I get impatient. Obviously, it's a very delicate process finding the right sounds on those things and I just get pissed off with it. I want to sit there and play it — you know? I'm more interested in the playing than I



am in the technical wizardry. They're like a telephone exchange — you can get a long way with them but it's not really my style. In fact, I still believe the grand piano is the best instrument in the world — but that's totally subjective."

Amongst the people Dave gathered together for the album is a young drummer who's fast making a name for himself — Simon Phillips. How did they meet?

"I was recommended to him by my producer who used him a lot on sessions — and I'd heard his name being bandied about by various people as being, well, unbelievable. Well, he's magnificent, and very fast at picking things up. No rehearsals, just straight in with the demo tape — and he's only about 19 — it's quite frightening really!"

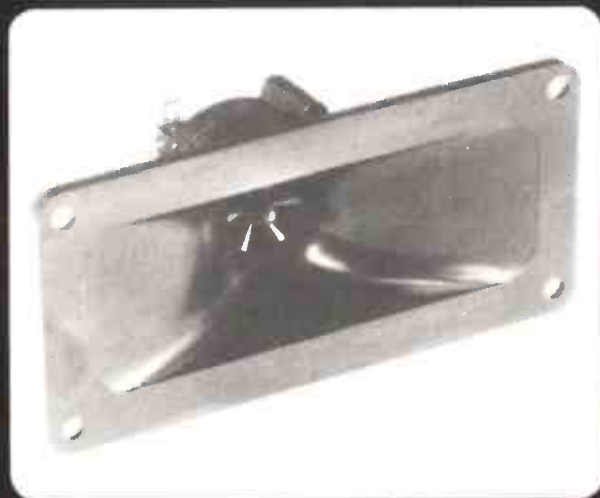
So, I found time had run on all too quickly, and Dave had to be off to Bristol to work on a load of TV music which following the success of the BBC Gangster series he's finding a satisfying challenge. Unfortunately, 'Cactus Choir' has made no inroads on the charts, being caught in the prickly area that determines good musicianship still counts for little when it comes to prising green slips from grimy hands — but if you get a chance to see Greenslade live, grab it. And if you can't, pour a few pounds into a needy musician's pocket for me, won't you. It's worth it.

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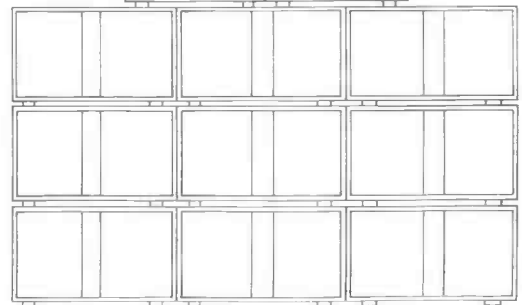
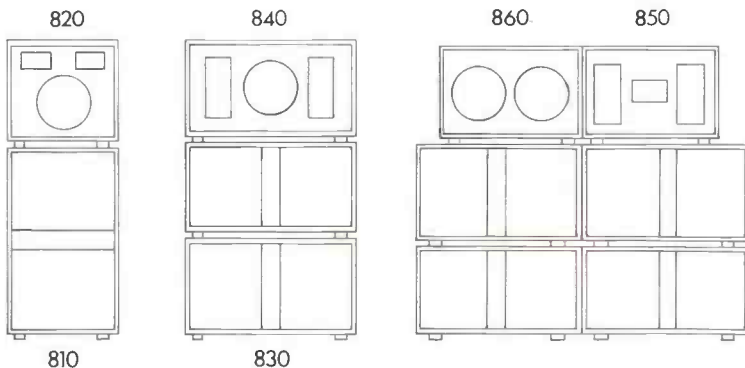
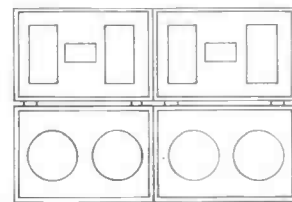
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album reviews



GENTLE GIANT LIVE — PLAYING THE FOOL CHRYSALIS CTY1133

What other band can you think of who have put out ten albums? Chicago, perhaps, and there are probably others. But how can Gentle Giant have put out ten and *still* be an unknown quantity? The answer lies in that old chestnut — the one about making it big in the States. If it's there they have received their just reward and acclaim, why bother with a country infected, as we are, with a bad case of Radio One?

On to the music. Between them the band play 29 different instruments. That does not take into account their voices, however, which act very often (on "Boys in the Band" or "Proclamation", for example) as a five-part instrument. As for describing what sort of music it is, well, people have tried before now. I would call it futurist medieval. Free use is made of recorders (alto, descant and tenor), cello, violin and percussion instruments such as the tambour; a medieval quality is also produced by the minor-key drama of tracks like "Proclamation", which really does give the impression of a 14th century herald noising abroad the King's pronouncements. The futuristic facet appears via Kerry Minnear's synthesizer and Gary Green's guitar, which race around one another on a chromatic scale, more often than not setting up a rhythmic counterpoint. This is especially effective on "Just The Same", which opens side one of this double set.

Another impressive device is the use of the vocal line to offset the complex rhythms established by the other in-

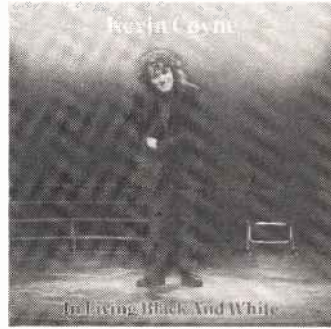
struments: Derek Shulman achieves the rare feat of — again — making his voice an extra instrument rather than simply singing over the top of a chord sequence. His handling of difficult rhythm and 12-note scale singing is truly amazing. A good example of this is "Experience" on side three. Gentle Giant are also not afraid to make use of silences in their music — something that few rock musicians have dared to try. In the same way there are extended quiet passages, during which the audience maintains an awed and respectful hush. "The Runaway", from (I think) the "In a Glass House" album, begins with the sound of glass being smashed at random, gradually taking form until it develops into a rhythm which the band take up as the basis for the tune.

High points on the album will only begin to emerge after many listenings, but for me "Free Hand" on side four, and "Just the Same" best demonstrate the fully integrated Gentle Giant sound. Their sense of humour too comes out best in live performance — a song entitled "Breakdown in Brussels" turns out to be Ray Shulman playing a violin version of "Sweet Georgia Brown". And for all their cleverness, how many other bands would have the nerve to use a giant neon sign, flashing PRETENTIOUS behind them on stage, as they have in the past? But then, to bring it full circle, how many other bands have put out ten albums and remained unrecognized in their own country? Answers on a postcard, please. P.D.

KEVIN COYNE IN LIVING BLACK AND WHITE VIRGIN VD 2505

It takes a lot of listening to get onto Kevin Coyne's waveband; this superb live double should at last stir a lot of people into making the effort. Coyne has always been a man alone, reflected by a fragmented musical career, and Virgin's part in revitalising him should not go unmentioned. As so often in the past, they have been prepared to back more unorthodox ar-

tists; Mike Oldfield's enormous success has been insufficient reward for their faith. Anyway,



the man with the real struggle has been Coyne himself, fighting a losing battle against a British public unwilling to succumb to his direct and vital approach. For Coyne, music is the medium through which he can communicate the realities of his mind; in *In Living Black and White* finally pulls together all the previous threads and lays them down with conviction.

The intensity of the songs is further communicated by the lengthy dialogues between them, and by the obvious involvement of the band. You've got to be into it to play such material, and Zoot Money, Andy Summers, Steve Thompson and Peter Woolf obviously are. Zoot Money's fine electric piano playing is particularly appropriate for Coyne's songs, blending in whether just as background chords for the more manic chanting or as the driving force behind the full blooded ballads of frustration and experience. Coyne leads the music through several mood changes without ever losing the feeling of oneness that pervades *Black and White*.

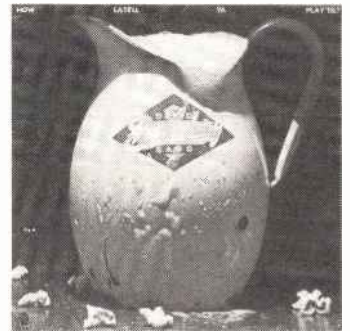
When the album has at last finished it has not been a performance of a lot of songs, but the cohesive result of one man's all-out attempt at communication on a real level. The album should be treated as nothing else, and fully deserves the total attention normally reserved for traditional classics. C.S.

DAVID BROMBERG BAND HOW LATE'LL YA PLAY 'TIL?

FANTASY FTSP 53
For those who are not already familiar with the works of Mr Bromberg, this double collection should serve as an admirable introduction. Sides one and two were recorded in the studio, sides three and four live at the Great American Music Hall, San Francisco. It's no use trying to find a category for the music, since Bromberg and his

band zip through cowboy tunes ("Whoopee Ti Yi Yo"), Country ("Summer Wages"), bluegrass ("Get Up and Go", "Bluebird"), New Orleans ("Dying Crapshooter's Blues"), rag tunes ("Dallas Rag/Maple Leaf Rag"), idiotic synthetic funk ("Danger Man II") . . . oh yes, and blues. Side Four consists entirely of blues — "Sweet Home Chicago", "Come On In My Kitchen", etc., concluding with Dr John's "Such a Night", treated in a laid-back New Orleans style.

So all in all you have to treat this man as an encyclopaedia of American musical styles. What he has, though, that an encyclopaedia doesn't have too much of is humour. This is showcased on the 16-minute "Bullfrog Blues" that takes up most of Side three. The only other musician I know of who takes that long over "Bullfrog Blues" is good ol' Rory Gallagher, and, enjoyable though his version is, I'm afraid it ain't a patch on David's. "I tell ya, it's hard," he sings, or rather speaks, "when the woman you're in love with loves your best friend . . . And it's harder still," he continues, "when she moves in with him . . . But it's extra special hard," he concludes, amid the guffaws of the audience, "when your best friend is your room-mate."



His ability to manipulate the audience places him in the all-round-entertainer bracket. Most performers are content to manipulate in one direction, e.g. to make them laugh or perhaps to make them get up and boogie. David, however, can switch from one mood to another and still keep them in the palm of his hand. On "Such a Night" they stay respectfully quiet during most of what is, in any case, a melodic little tune, and when the musicians gradually fade out leaving Phil Kearns whistling on his own, they start clapping in time without being asked. OK, big deal, you might say. But audience participation of *many* kinds is evident throughout the second two sides. Bromberg and his band play with more fire and

urgency here than on the studio tracks, David himself cutting loose with some extremely raucous lead guitar.

High spots on sides one and two are the rags, played with an easy delicacy on solo acoustic guitar, and the cowboy tunes, especially "Whoopee Ti Yi Yo", which is played straight — no hint of tongue-in-cheek, since this would be too easy. I also liked "Kaatskill Serenade", a sad song about Rip Van Winkle waking up after 20 years and finding that all his friends are dead. The fast country pickin' of banjo and guitar with an overlay of scratchy fiddle appears on many tracks, and these are raced through with characteristic polish and panache.

P.D.

JOHN LODGE NATURAL AVENUE DECCA TXS 120

It's difficult reviewing an album at the same time as it's happily spinning around at the required revs and getting blasted out the old wooden boxes in the corner. It's even more difficult trying to persuade my wife to turn it off for a moment. John Lodge has put together one hell of an album so successfully that I'd rather it was difficult to review than not listen to it at all.

For those of you who didn't read my interview with John last month, 'Natural Avenue' was first conceived in February of last year, shortly after the end of the Blue Jays tour with Justin Hayward. John told me last month that he had dreamed of this project for some time, and it's a pleasure indeed to report that this is a dream come true.



The Moodies were a songwriting unit, but with this album it becomes easier to pinpoint some of the characteristic 'Moodies' sounds much more accurately. It also makes possible a closer examination of the Blue Jays. But I'm sure John wouldn't find this retrospective approach to his new work of any relevance and I'm inclined to agree. 'Natural Avenue' will, as its writer in-

tended it to do, have to face examination on its own merits as well as those of its ancestors. Using that criteria, it succeeds astonishingly well. So well, in fact, that its few imperfections are irritatingly prevalent.

However, more of that later. Natural Avenue is the perfect vehicle for an examination of the Moodies in greater detail as it isolates one of its writing members. The remaining sound, therefore, belongs to John Lodge, and it's his own particular version of the Moodies' composite feel that dominates this album. In that, one can pick out three immediately apparent separate factors: a) the lyrical factor that dealt mainly with identifiable love situations; b) the use of orchestra as opposed to synthesized strings; c) the occasional sparseness of harmonies.

The majority of the songs on Natural Avenue are about love, in one form or another, and although the melodies seem to be screaming out for harmonies, John uses them very sparingly. That it annoys me is probably an indication of my sub-conscious indoctrination with the fuller Moodies' sound which I involuntarily associate with all of the different 'solo' projects that have followed their going into 'retirement'.

John got together with some seemingly unlikely partners to get this album together including Chris Spedding, Kenny Jones (ex-Faces drummer), Steve Simpson (ex-Joe Cocker and presently working with Andy Fairweather Lowe,) and Mick Weaver, ex-Head Hands and Feet and now Mealticket keyboards man. String arrangements are by Brian Rodgers who did the same job for the Beatles on 'Let It Be', and there are some superb sax passages from Jim Jewel. The sum of this motley collection is an album which is streets ahead of anything produced so far by any of the Moodies themselves or bands which climbed aboard the wagon of their success.

As I remarked earlier, it's the few imperfections that stand out a mile, but only because the majority is so faultless. The album opens with 'Intro to Children of Rock 'n' Roll' and is followed by the title track 'Natural Avenue' which is strangely the odd-man-out. Built on an old rock 'n' roll rhythm it suffers from a weak melody coupled with slightly off-key Yes-type vocals. But from there on it's a gem. Rather than detail all my criticisms I'll just mention a couple of the things that I feel could have

been looked at before the final mix. During 'Piece of My Heart' there is definitely a bum note in Spedding's otherwise immaculately melodic guitar work, the acoustic guitars occasionally suffer from what appears to be imperfect miking, and crime of crimes, couldn't Justin have sung a harmony on the chorus of 'Say You Love Me?' — now a single.

There are other points, but they're of little consequence when compared with the overall feel. It's a looser album than Blue Jays, not quite so pristinely clean, and it's certainly rockier, if you see what I mean. Many of the songs will remind you of the Moody Blues, but then that's not surprising. What I find a little frightening, though, is the thought that if all five of the original band have progressed as far as John Lodge has from the last point of reference, any work that may one day come from a reformed Moody Blues is going to be so staggering it hardly bears considering now. What does bear considering now is Natural Avenue. It simply seems a damn good way to go. Buy it! T.V.S.

LITTLE RICHARD/JIMI HENDRIX FRIENDS FROM THE BEGINNING EMBER EMB 3434

The front cover does pull a bit of a fast one; both men were younger (and very different) than the pics imply. Secondly, Friends in the Beginning rather than 'from' would have been a bit nearer the mark. Once that is understood, though, the album becomes a very interesting collector's piece covering several corners. To begin with, Hendrix fans after every little bit of output, then the much smaller band of similar Little Richard fans, and then musical students who are intrigued by such an unlikely musical union.



All the tracks are sufficiently well known to indicate the mood of the record, and the era accurately suggests the simplistic and tinny sound of each instrument. It is, of course, stereo

enhanced but this has never been a particularly impressive helping hand to not so golden oldies. Richard, then, is found as he nearly always was, either just short of or just past his best, hollering away like a madman but only succeeding on the traditionally outrageous numbers (Whole Lotta Shakin, Lawdy Miss Clawdy etc.) Hendrix proves to be the more interesting half of the duo. He is discovered in a role that people began to forget after his rise to stardom as the flower power messiah, as an anonymous and unobtrusive session guitarist, playing just what Ike Turner and all of them were playing at the time. His guitar takes its turn with honking sax, stomping piano and early-Shadows' drums, and would not suggest any distinction but for his name.

My ears strained, duty-bound to unearth an embryonic Purple Haze, but as long as he was with Little Richard the wild man called (or rather screeched) the tune, and Jimi's revolution would have to wait. Anyway, read the sleeve if your eyes can suffer the print, and see how they didn't get on etc. Then, if you can afford the cash to gratify an easily satiated curiosity, buy it.

C.S.

GARY WRIGHT THE LIGHT OF SMILES WARNER BROS K56278

If 'The Light of Smiles' had been Gary Wright's first solo album all the critics would have brushed the cobwebs from their eyebrows and stifled the yawn that is their trademark. Unfortunately for ex-Spooky Tooth keyboard man Gary it turns out he set himself such a standard with 'Dream Weaver' that he cooked his own goose. 'Dream Weaver' which went gold in the States and gave birth to two top 5 singles was a promising album, not quite together but showing there was room for improvement that could have turned Gary into as big a star in this country as he is across the Atlantic. But 'The Light of Smiles' just doesn't light the touch paper at all. In fact my copy just managed a faint glow in the darkness, flickering like a dying candle.

It's still a pleasant album. Gary's voice is immaculate, and he delivers the lyrics with an almost too perfect diction and deliberance that have you groping for the washing up bowl. The melodies, however, as nowhere near as powerful or original as Dream Weaver, and the backing harmonies in places sound like a bunch of stoned

album reviews

heavyweight gospel singers celebrating the 65th year of a Southern States' parson's incumbency. And if that's a badly constructed description you ought to listen to the particular track that inspired it — 'Silent Fury'.

But it's not all like that. Two tracks in particular stand out from the morass of mediocrity — 'Water Sign' on which Gary gives the best vocal performance on the record, and the title track 'Light of Smiles.' The remainder of the cuts lie in between these two at one end and the aforementioned 'Silent Fury' at the other. The exception to this is the extraordinary 'I am the sky, mother' (repeat three times for the entire lyrics by Wright's spiritual guide Paramahansa Yogananda) which is sung badly and treated even worse by Justin Wright who we must assume to be Gary's young son. I've not heard as dated an interpretation of a song since Hole in My Shoe — which started that kind of interpretation!

Justin Wright



Perhaps it's Wright's now obvious pre-occupation with self-realisation and cosmic consciousness that has gone some of the way to stemming his musical abilities. If his teacher is preaching simplicity, Gary seems to have found himself caught between writing simple songs but still being unable to treat them in a basic manner — hence grooves and grooves of weird and unrelated spatial introductions, followed by over-grand productions which tend to swamp the songs themselves.

But maybe the most disappointing aspect of the album is his reluctance to use the new

Oberheim synthesizer to its full potential. The one thing that really annoyed me about his earlier album was the repetitive Moog lead sound. Unfortunately he tends to use the Oberheim apparently on only one or two different settings and the difference is minimal. This repetitiveness also highlights the fact that he's not a wizard keyboard man — at least, not as a lead player. There are moments throughout the album that I found myself longing for a gutsy guitar to break the synthesized monotony and grab the song by the throat and shake it around.

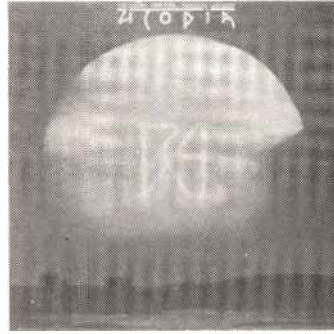
Well, it must sound like I hate the album. I don't. I just find it disappointing that he should reject all the latent potential so obviously present in Dream Weaver and produce a mediocre album with no apparent musical progression. Had the songs been as good in themselves that wouldn't have mattered so much, but they're not. As Wright said to Beat in January: 'I know I'll never make another Dream Weaver.' Well, Gary, you're going to need one to break over here.

TVS

UTOPIA RA BEARSVILLE K55514

"Inspiration showers green and growing gardens of love/Voices rise to the song/One in all, all is one. . . ." If this sounds naggingly familiar, you may well have been listening to Steve Hillage's "L" recently; but although Steve is fond of talking and singing about energy, he hasn't quite as much of it as Todd Rundgren when it comes to injecting a manic, cartwheeling, crazy and yet controlled force into music. Todd's career so far has been the reverse of common practice: most musicians start off in bands of which they are no more than a member, later perhaps making a solo career. He, however, has now opted for comparative anonymity in favour of Utopia's collective identity — and astonishingly powerful it is too. The concept was first unveiled to the British Nation at last year's Knebworth, when an out-of-phase sound system plus the

antics of two acrobatic pilots combined to make the event even more strange and ethereal than it was meant to be.



Utopia's set at Knebworth began with what is also the first track on this album, and from which I took those opening lines. A trumpet voluntary, played on the synthesizer, heralds "Communion with the Sun", a sort of invocation to Ra; the parallel with Hillage becomes quickly apparent, since his "Lunar Musick Suite" had also begun with an invocation. The guitar sound too is very like Steve's — fast, heavily echoed, phased and bubbly — the fully synthesized guitar. "Magic Dragon Theatre", which follows, has a walking rhythm and a vocal line that is harmonized all the way through by bass-player Kasim Sulton and Todd. The gibberings in the middle prove oddly disquieting, and are meant to, for this is a song that must surely have been inspired by Hesse's Steppenwolf, whose experiences in the novel's Magic Theatre are more than mere drama. Embarrassing though it is to say so, this is surely an LSD song for the dreary, jaded '70s. I wonder if the BBC will ban it. (I wonder also whether they would consider giving airspace to such good music anyway. Ho hum.)

Two more songs on this side — "Jealousy" and "Sunburst Finish" — are pinned down with a heavy-metal bass line; there is more spacey lead guitar, and more of that chorus of backing voices — quiet, tinny and distorted, not unlike Queen, if you can imagine Queen singing with passion, which I can't. The lyrics on "Sunburst Finish" are particularly good, and it is a shame you can't make them out, thanks to the low mix. (Those who wish to appreciate the lyrics need look no further than the inner sleeve, however.) "Eternal Love" is the only track on side one which Rundgren had no part in writing, and though the words are rather wet, the vocal harmonizing is truly wondrous, reminiscent

both of Queen and of the Beach Boys circa 1973, with reverse tapes and heavy phasing. It indicates the great musical strength of Utopia's "other members" — as indeed does the whole of "Ra" which, though produced by Rundgren, is a truly collaborative album.

"Hirosh - imaa!!!" they scream on the first track of side two, "Na - a - a - gasakiii!" This was another of the memorable features of their set at Knebworth, a solemn but anguished, angry piece: "Don't you ever forget, don't you ever fuckin' forget." The rest of the side is taken up with the 18-minute "Singring and the Glass Guitar" subtitled "An Electrified Fairy Tale". The real triumph of the album, the story of this piece is simple without being twee, and the music is structured without seeming contrived. The story is narrated by a reedy-sounding pseudo-Scotsman (no kidding) and the form of the tale is such that each of Utopia gets to solo, representing in turn each of the four classical elements — earth, air, fire and water. Drummer John Wilcox is particularly outstanding in this section. The piece ends with a triumphant march of unity — a good way to finish off a remarkably unified album. Todd's production has a different sound to any of his previous efforts; "Ra" is less topky, less straightforward — more profound, you might say, in every sense of the word.

P.D.

JETHRO TULL SONGS FROM THE WOOD CHRYSALIS CHR 1132

With its cover so reminiscent of the This Was/Benefit era, and Anderson there as the rustic woodcutter, Songs from the Wood proclaims its aspirations to rediscover the roots: roots not only in theme but also in Tull's own musical background. There have of course been several hints along the way of Anderson's lingering infatuation with the minstrel-squire image; Minstrel in the Gallery, for instance, now falls into place as an interesting precursor, both in title and (in places) in idealistic mood. Minstrel had a mixed reception, for the goods were there but everyone was still on the lookout for the big Aqualung Mark Two revival album, and that wasn't it. Too Old To Rock made some effort towards achieving a more elementary approach, rocking hard in parts but somewhat slowed up by the well worn leather boy theme.

Songs in the Wood shows that Anderson has still not

satisfactorily resolved his stance. If Too Old To Rock was a little contrived towards the one end of the scale, then Songs is definitely in a similar predicament with Anderson's re-donned guise. However, if they are songs from the wood, they are certainly songs from Anderson's wood — Hunting Girl, Velvet Green, Jack-in-the-Green (both smacking more of Lincoln green) and Pibroch (Cap in Hand).



All instrumentation is arranged to match; the most obvious casualty for my money is Martin Barre's potentially excellent electric guitar, into whose musical space comes the second piano and synthesiser of longtime band cohort David Palmer.

The single, Ring Out, Solstice Bells, is unlikely to drum up any extra support for the album, and it will no doubt be down to the current live shows for Anderson to remind us that the grimy rocker's overcoat is not in permanent mothballs. If they live up to expectations, the band may buy yet more time to recapture their peak on record.

C.S.

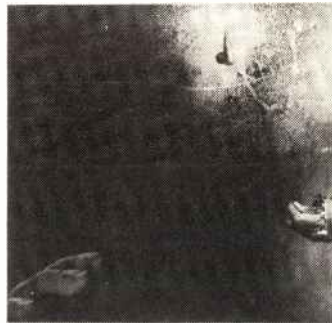
**PAUL BRETT
EARTH BIRTH
PFC 001**

Earth Birth is described as being the first 12 string guitar suite, and it's in that description that part of its failure is hidden. The fact that it's 1977 and someone can still claim a musical first of that kind might just mean the reason it's not been done before is not because it hasn't been considered — but that it has, and rejected because it wouldn't work. If that is the case, then I'm inclined to agree. Paul Brett is an accomplished guitar player, but by no yardstick can he be considered either amazing or one of the greats. The 12 string guitar in itself always works better as a rhythm instrument — no doubt a 'myth' that was in the player's mind when he first conceived an idea. But having listened to the results I would still maintain the 12 string is not suitable for this kind of approach.

Paul Brett has written a collection of acoustic guitar pieces with a classical ambience to them, added some pleasant use of the harmonics, and thrown in a hint of near rag-time picking in one track and called it a suite. I don't feel it works. The playing in places is decidedly dicky, notes only just caught in time; a second error appears to be the decision not to use one of the 12 strings most exploratory qualities — sustain.

And thirdly the 'tunes' themselves are not sufficiently memorable to create any impression of importance. An album making a claim like this one should have made me sit up straight and listen — for that must be its *raison d'être*. Nobody would have been interested in the Wright Brothers if the bloody thing hadn't got off the ground. But there you have it, I might have turned up on a windy day, leaving Paul Brett to rocket into stardom unhindered by me. Still, as an idea its great — but somehow it just doesn't work in reality.

T.V.S.



SHORT CUTS

**CHARLIE
NO SECOND CHANCE
POLYDOR SUPER 2383 422**

"No Second Chance" is well produced, competently played and attractively packaged. It is quite unbearably tedious. Back in the late sixties there were a lot of small club-type bands around who probably couldn't play their instruments as well as Charlie can — forgotten bands like Hard Meat, Little Free Rock, Junior's Eyes, and so on. What these bands had that Charlie don't have was a sense of adventure, a sense that they had a real identity separate from that of any other band, and they seemed largely indifferent to the wishes of record companies. "No Second Chance" was recorded at one of the most modern and best-equipped studios in London — 24-track, of course. Charlie have this big

record deal with loads of publicity surrounding its release, whilst real bands making real music (e.g. National Health) can't get the support of anyone but their fans. It's a mean old world, folks.

**THE BABYS
CHRYSALIS CHR 1129**

At a time when red herrings like punk rock and super-hype bands are moving in and out of the picture at high speed, it is refreshing to encounter an honest metal riff band that are trying to have a go without the bullshit and are being well supported by Chrysalis. The Babys — it is debatable whether the name will create the appropriate image — are John Waite, Walt Stocker, Mike Corby and Tony Brock (Waite handles nearly all lead vocals) and they are produced by Brian Christian and reputable Canadian Bob Ezria. Despite the band all sharing a fairly nondescript background, there is enough evidence here to suggest that one more album or two will turn out a mean outfit. Here we have a lot of stuff often found on such debut albums — plenty of echo, a bald sound to the drums and plenty of vocals: once the sound gets stripped down, if they don't tire first, and if they can dig up a few more of their own ideas, they will be going places.

**EMMYLOU HARRIS
LUXURY LINER
WARNER K56334**

Worthy, no doubt, of more extensive examination, but most would agree that Emmylou's breakthrough has already taken place, in style to boot. Having already succeeded in bringing essentially country music through to a much wider audience, Luxury Liner emphasises her stance by mixing both the slow and melodic with meatier tracks. Probably her best yet, and it's all down to whether the exposure already afforded her has given you a taste for Dobros, pedal steels, and countrified harmonicas, with lyrics in the Joni Mitchell pastures.

**LEON REDBONE
DOUBLE TIME
WARNER BS 2971**

A quick glance at the back cover and I thought it was Groucho revival time, and a quick listen to the start of the first track and I thought one of the Wurzels was sick. Seriously, once you come to terms with the mumbling and the Mickey Mouse big band backing, Mr. Redbone grows on you. Although a lot of the interest in him derives from

his permanently low profile, Double Time shows a surprising number of styles through Twenties jazz, Chris Barber style, and seminal blues. After a few more listens one finds that Mr. Redbone has expertly bridged a few musical gaps without getting immersed in any cross bearing. A release which stands out — but it may take some listening.

**BUCK CLAYTON AND
JIMMY WITHERSPOON
LIVE IN PARIS
VOGUE VJD 527**

Jazz has always deserved more attention than as a select and snobbish play area, and while Clayton and Witherspoon won't be too well known by rock fans, Live in Paris could pull in a few strings. Protracted soloing is a feature of this double set, though, and this may put off those otherwise prepared to investigate some roots in blowin' jazz.

**BIG WHA-KOO
ABCL 5208**

The surf, desert and cactus on the cover is nothing to do with anything, and the album is thoroughly nondescript. Seven little pics, so presumably seven musicians. Sometimes they sing gently, otherwise there are instrumentals with strings, and just occasionally an electric guitar cuts through. Just to warn off the fringe impulse buyers.

**MICHAEL MURPHEY
FLOWING FREE FOREVER**

Can't categorise this one at all — it's got me completely beat — if you'll pardon the phrase. It's a collection of well-structured songs that span a gap between pop on the one side and country on the other with fair sized portions of strings rubbing shoulders with gutsy guitars, mandolins (but not gutsy ones), bluesy harmonica, west coast vocals and all sorts of other apparent musical paradoxes. Overall it works — I like it, but that doesn't mean it'll be sitting on the platter more than three times a year.

**OREGON/ELVIN JONES
TOGETHER
VANGUARD VSD 79377**

This is an album which manages to avoid the current twin pitfalls of jazz — the dreary tunelessness of the "avant-garde" and the uniformity of "funk". The understatement and relaxation of the music adds to its drama, rather than detract-

album reviews

ting from it. A typical example is the percussion duet between Jones and Collin Walcott on "Driven Omens", and even on the track which follows ("Teeth"), the wild flailings of Paul McCandless's horn and Glen Moore's bass are carefully underpinned by Jones. Also noteworthy is Ralph Towner's 12-string guitar contribution to "Brujo" which, combined with Walcott's tabla, lends it a distinctly exotic air. His piano playing on side one, whilst not greatly original, provides excellent support. All credit, however, to Elvin for continuing to work with younger musicians whilst not selling out to their mainstream fads — and also for pursuing brilliantly those Indo-Jazz fusions which I for one never particularly favoured before now.

HAROLD MELVIN AND THE BLUE NOTES — REACHING FOR THE WORLD
ABC L5204

Picture the scene. Tina's been going out with Barry for six weeks now, so it must be serious. He calls round at eight o'clock in the Viva and they drive to The Waggoners, a new pub in the shopping precinct, where they meet their friends, and Tina shows Diane her new shoes. She smiles at Barry, but he doesn't seem to notice. Later they go to the disco, and Barry spends ages talking to a girl Tina doesn't know. In the end she leaves in tears and takes a taxi home. She runs up to her room and puts on Harold Melvin — listens to it in the dark. Ah well,

she thinks, wiping her eyes with the back of her hand, I'm sure that Ron fancies me. . .

FOGHAT NIGHT SHIFT
BEARSVILLE K55511

There's no doubt about it; Bearsville are an enterprising label as this little known band (here) do something to prove. In the States, where gaining popularity is not the Herculean labour it is here, their last album Fool for the City went platinum, and Night Shift quite deserves to consolidate that position. This time round Dan Hartman produces, and his previous existence as Edgar Winter's sideman suggests that his aspirations are much the same as theirs. Night Shift is good steamin' old fashioned rock — but will it break over here. Unfortunately, I doubt it.

OSCAR PETERSON VOCAL STYLING
VERVE SPECIAL 2352169

A readily forgettable round-up of tracks featuring OP's not so well known voice, and one bound to crop up sooner or later since his recent popularisation as jazz pianist number one. However, he has never taken his singing too seriously, and the album will only appeal to diehard collectors. Although the sleeve gives no assistance, I am sure his piano plays no part in the nondescript jazz, and it would be a shame if the grandiose title conned any extra purchases outside the mentioned area. No-one is blaming Polydor for putting it out; just watch out and wait for the real thing.

BANDIT
ARISTA ARTY 148

The exhaustive and well-written biog that came with this album reminds us that James Litherland was an original member of Colosseum, Cliff White in the excellent but unrecognized Home, and Jim Diamond the lead singer in Black Cat Bone, a 60's blues band. An illustrious ancestry does not necessarily produce classy bands, however. What sparks of originality the members of Bandit may once have possessed have been utterly extinguished. The songs are products of the "hard rock" sausage machine, with titles like "Dance When You Boogie" and "Rocking My Soul Out". The whole miserable business has been gone through a million times and will be gone through a million times more. Can this really be the same James Litherland who sang and played on "Walking in the Park"? The thought is almost too dreadful to contemplate.

SCROUNGER
SNAP
ANCHOR ANCL2021

By the time you read this, Scrounger may well have a single riding high in the charts. The two boys, aged 19 and 20, write songs with the object that they will appeal to the singles-buying market. If ever there was

an album that stank of record company boardrooms, this is it — "product", in the grossest sense of the word. Trite tunes, lyrics that were probably written on a crowded tube train somewhere between St. John's Wood and Oxford Circus . . . well, you know the kind of thing. The lads don't always sing in tune, mind you, but then neither does poor old Frank Sinatra, and he's still packing them in.

THE SHADOWS
20 GOLDEN GREATS
EMI EMTV3

This group scores high by my reckoning on this, their first outing on wax. They don't have a singer, but boy! with the "singing" guitar of young Hank Marvin, they could really go places. Duane Eddy is still tops in my book, though, even if he doesn't do steps like they do. The numbers here include "Apache", "Man of Mystery", "Foot Tapper" and "Wonderful Land" (come on you boffins at EMI — how about a single?). Seriously though, this really is a splendid L.P. and if you can persuade dad to come up with the 30 bob, pop round to your local record shop and get one. You never know, if it stops you listening to that terrible Lonnie Donegan, mum and dad might actually get to like the Shadows!

NEXT MONTH

Full review of the new Pink Floyd masterpiece plus Streetwalkers, Fleetwood Mac

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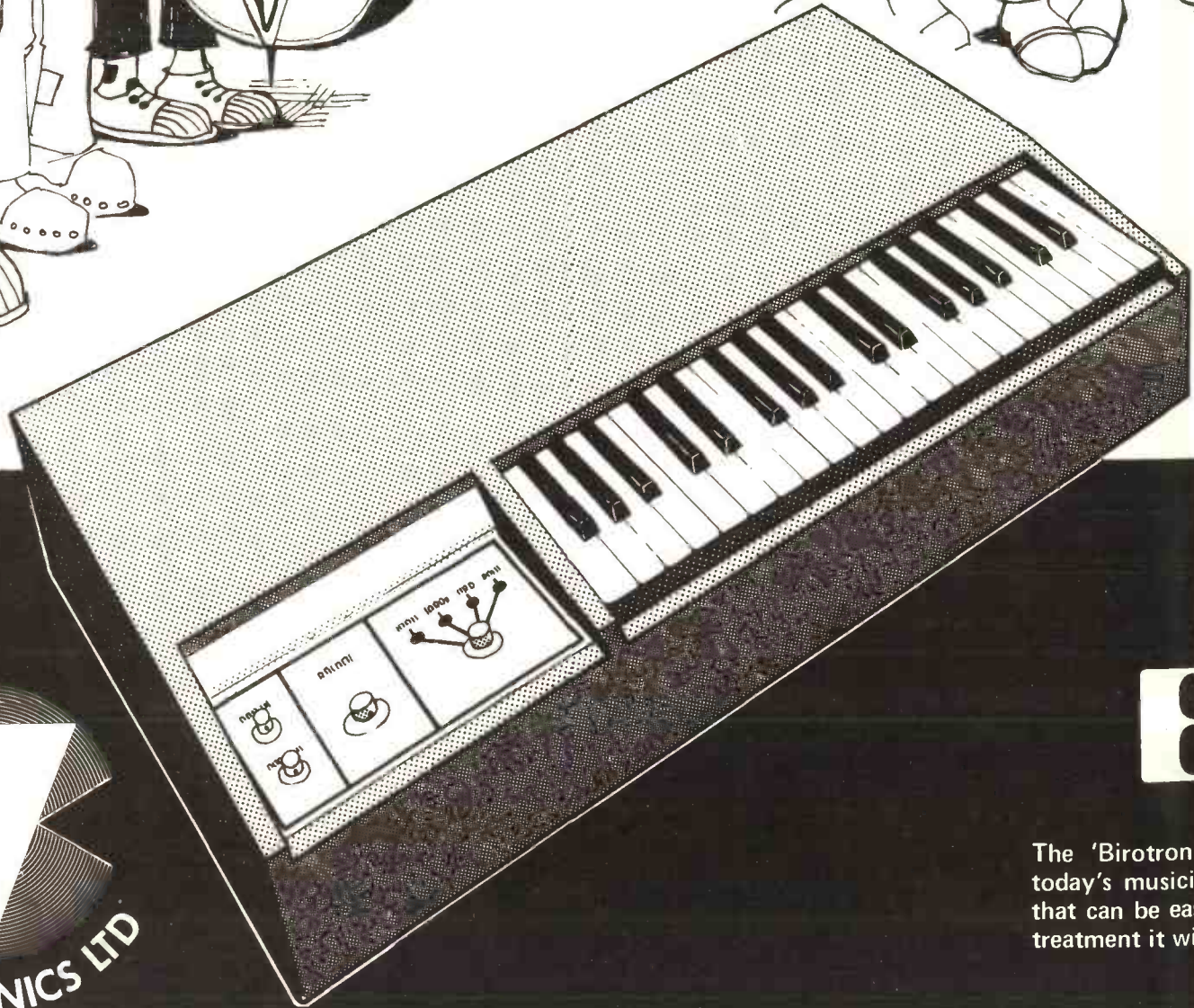
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At a concert or in a studio The Birotron enables the artist to change the sound he is using at the turn of a switch, and although two standard tape sets are available (four sounds on each), the possible combinations to be used are limited only by the imagination of the musician.

The Birotron

In the early months of 1974 a penniless young American keyboard player called David Biro, needed an instrument which reproduced accurately, a variety of sounds not easily available to the contemporary musician.

He plagued the life out of all the East Coast music stores, but was unable to find anything to suit his exacting requirements, so being both broke and devious he returned home to sleep on it.

Three months later he awoke, shouted 'Eureka' or something similar, and proceeded to build, with gaffa tape, goodwill, and his mother's savings, the first 'BIROTRON'. Although having great faith in the instrument, Dave was anxious to get the opinion of a major keyboard artist, and this opportunity presented itself when Rick Wakeman was scheduled to give a concert in David's home town.

Having been given the elbow by various short-sighted managements in the immediate past, Dave

decided to gatecrash the backstage area and set up his 'BIROTRON' where Rick could not fail to fall over it.

Although he was summarily ejected twice by diligent security guards, he finally succeeded in smuggling the instrument in. He then somehow managed to get a message through, and Rick, always interested in new ideas agreed to play the 'BIROTRON'

Rick was so knocked out with the instrument that he suggested that Dave Biro should fly to the U.K. to meet some associates who could fully investigate the possibilities of developing and marketing a commercial version of the 'BIROTRON'.

After considerable research and development the 'BIROTRON' is now available, and is quite —The best of its type in the world.

Specifications

- Small Physical Size and comparatively Light Weight, make the instrument easily portable although it is of extremely robust design.
- Varispeed Drive allows Wide Pitch Variation with no Audio Breakthrough.
- Ultra Fast Action, 3 Octave Keyboard, with Electronic Attack and Decay.
- Alternative tape set can be changed in less than 1 minute.
- 4 sounds produced by each endless loop tape set.
(Set one. Pipe organ, violins, cellos, flute.
Set two. Choir, Mixed strings, Mixed brass, Mixed woodwind.)

Complex
7

UNIT 2 ABERCROMBY
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AND EACH ONE IS
SUPPLIED IN A
PACKHORSE
FLIGHT CASE!

INSTRUMENTAL NEWS

NEW KUSTOM AMPS

An all-new line of amplifiers and PA systems from Kustom received their first airing at the recent Frankfurt Fair. The electronics and appearance of the new Kustom products have been completely re-engineered, according to Charlie Roy, general manager of Kustom's music operations, to offer what they reckon are currently the most popular features in live music amplification.

Four new bass amplifiers, including two self-contained models, range in power from 35 to 300 watts RMS. The piggyback amps are offered with a variety of 15in speaker systems, two of which use Electro-Voice's premium "SRO" speakers. Most Kustom bass amplifiers include a "voicing" circuit which produces a "funky" sound.

Seven lead amplifiers are included in the line and five are self-contained systems. Ranging in power from 35 to 300 watts, these models are available with a variety of 12 and 15in speakers. Several lead systems also utilize the voicing circuitry including a special 130-watt steel guitar amplifier which is available with a premium 15in Altec speaker.

The top-of-the-line Kustom IV bass and IV lead amplifiers are

available with optional 5-band graphic equalizers. The bass EQ boosts or cuts frequencies between 75 and 600 Hz, while the lead amp equalizer operates between 125 and 8,000Hz.

Power units and mixers offered in Kustom's new public address systems are interchangeable with six different speaker columns. Many special PA features are available, including a "briefcase" power unit; a small, un-powered, rack-mountable mixer; and a 200-watt, bi-amplified, rack-mountable power unit.

Electronic modifications in these power units and mixers have reduced background "hum" encountered in many PA systems. Four power units are available in Kustom's new PA line. Their four- and six-channel configurations can be expanded by using the un-powered, Kustom V six-channel mixer for submixing, providing control for up to 12 on-stage microphones.

Design features of Kustom's extensive line of concert reinforcement components include rack-mountable mixers and power amplifiers which enable the engineer to mix and amplify all program material and perform all adjustments from a single station.

GUILD BRING OUT SOLID BASS

Guild have just introduced the first in a new line of solids, the B-301 bass. Besides a shape never before seen in the Guild line-up, the B-301 has the wide frets and curved fingerboard that rock bassists are using. A new pick up for greater sustain and a new bridge-tailpiece that allows extensive adjustments are among the features. The B-301 has Schaller M-4 bass machines, and is equipped with a single jet-black Guild bass pick-up having new wiring and coil placement. The instrument has a white-edged black laminated guardplate. Literature is available from Guild Guitars, 225 West Grand Street, Elizabeth, New Jersey 07202.



HH SERVICE DEPT

HH have opened a new department to cater exclusively for the musician in need of immediate service. Service Manager Richard Gleaves will head a service team designed to sort out most equipment problems on the spot. Under this new system all items under guarantee will be repaired at no cost with a nominal amount

being levied for work outside the guarantee period.

HH would prefer customers to telephone before coming, as advice can often save a journey; they stress however that practical repair assistance is supplemented by an advisory service that should prove helpful to HH users.

NORLIN APPOINTMENTS

Several new appointments have taken place within the Norlin organisation to herald the start of the new year. Ray Dunk, previously Sales and Marketing Manager for Chrysalis, has now achieved the same position with Norlin's keyboard division, spearheading the 'Special Projects' section. Managing Director Ivan Steele has also announced the appointment of Ted Waddell to the new position

of Sales Development Director.

While Ray Dunk is now to handle the day to day responsibilities for sales and marketing, Ted Waddell's appointment is regarded as part of a long term growth programme. "He will help to develop specific market opportunities for the benefit of our Lowrey dealers, and with certain markets for the Musical Instrument Division of the Company", said Mr. Steele.



Ted Waddell (right) being congratulated by Ivan Steele.

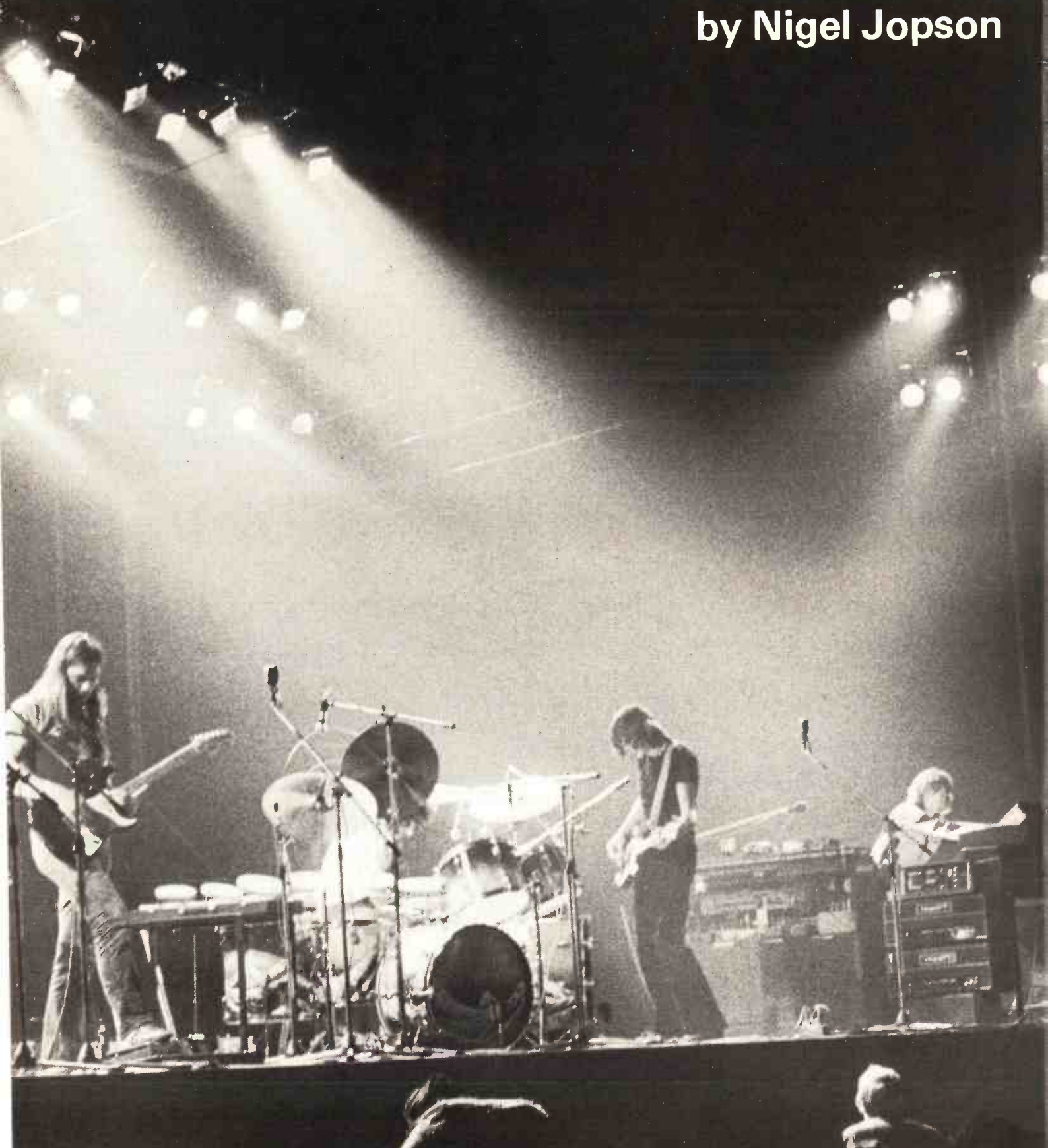
SUCCESS FOR HENRIT'S DRUMSTORE

Henrit's Drumstore, a new and highly professional percussion centre at 112-114 Wardour Street, reported near-record turnover figures just a few weeks after the initial opening. Managed by John Vernon in partnership with ex-Argent drummer Bob Henrit, the shop aims to model its sales policy along American retail

lines; "we aim to offer a very professional service, but one that is personalised at the same time", John explained. Facilities of Henrit's Drumstore include a full demonstration area and bar downstairs; kits on franchise are Gretsch and Slingerland, while all other major brands are in permanent stock.

EXCLUSIVE
Full report on the
vast Pink Floyd mixer

by Nigel Jopson



Dave Gilmour, Roger Waters, Rick Wright, Nick Mason: individually, and collectively as the Pink Floyd, these gentlemen manage to remain almost totally inaccessible socially, as far as interviews, gossip columns and general "newsworthiness" are concerned. Despite, but chiefly because of this, they remain amongst the largest of all "name bands" and, moreover, the name of their group has taken on near-mystical proportions, and has become a "name to conjure with". This is a very wordy way of saying that the group have put themselves into a position where they live or die on the sound of their music alone, and the measure of their success is that the words "The Floyd" have come to be synonymous with sounds that are very, very good indeed.

An interesting point about the Pink Floyd is that, rather than creating their music in the studio, and then attempting to re-create an album's sound live, most of the initial musical ideas are pioneered on the road, and many pieces are first played in their entirety to live audiences. This means that the group has had to evolve a very complex but tremendously flexible sound system to realize their creative ideas, rather than one designed merely to reproduce them. This means that journalists have had to rationalize their developments in music by reference to the Floyd's "ability to play the mixing board like it was a fifth instrument". Whether or not anyone can actually grasp all the potential inherent in the Pink Floyd's total array of equipment, involving literally thousands of metres of wire and millions of connections, is open to question, but this article is an attempt to describe how the people that work for the group and the people who build their equipment manage to translate the Floyd's requirements for musical development into physical reality.

Mixing consoles can be played like instruments, but the fact remains that, like any other piece of electronic equipment, you only get out what you put in: in other words, for a mixing console to do a specific task, it must have been initially designed with a similar capability in mind. This article centres around the Floyd's mixer and associated electronics, as this is the nerve centre of the whole sound system, and also happens to be the newest piece of equipment that the group have added to their sound system. Earlier mixers hadn't quite had the technological sophistication of construction to match their ambitious formats, which had consequently caused a certain amount of operational hassles — say no more!

The Pink Floyd had set up a company known as Britannia Row Leasing (Audio) Ltd., which hires out sections of the group's equipment when they're not using it themselves, and in early 1976 this company had ordered two Monitor mixing consoles from Midas Amplification, which were subsequently used extensively with various groups, including Queen, who used the Floyd P.A. for their Hyde Park gig. Britannia Row were well pleased with these and other Midas consoles, which include a 28 in 8 out main desk and a special 16 channel extension unit: accordingly, the Pink Floyd decided to approach Midas concerning the construction of a larger

mixer for their own use. Midas told me that the Floyd are now their largest single customer, exceeding even the mighty Roy Clair, who runs the large "Clair Brothers" American P.A. hire company.

The basis for the present Pink Floyd mixer was laid when Brian Humphries (the Floyd's engineer in the studio and live) told Robbie (who has general responsibility for the group's equipment) what facilities he wanted on the mixer. Robbie then went to see Geoff Byers, the design "brains" behind all the excellent Midas consoles, and together they worked out a proposed specification for the Floyd's mixer. Midas received a request for a quotation last August, and it took a month for a full specification of the console to be worked out, and for Rick Kilminster to make drawings (two of which are reproduced with this article) of the intended result. The group admired the impressive half-scale drawings (half the size of the actual console), admired the similarly impressive specifications and gave the go ahead to build the desk. Before you read about what the finished item can do for Pink Floyd, try swallowing the following facts about what it actually took to make the mixer.

Design

The design of the console occupied two mechanical designers and two printed circuit board designers for a period in excess of 2,000 man hours, considerably more time being spent on the production of the desk. Three outside sub-contractors were kept busy for two months, building the basic electronic and mechanical parts of this amazing machine, and a full six weeks were spent in testing and interwiring the parts. Geoff kindly spent a good few minutes with his desk calculator, working out a tally of all the controls on the mixer: hopefully this will give you some idea of why such items of equipment are so hard to construct, and why this particular one cost so much money — the electronics behind those front panels obviously contain even more components, and are even more complex to design and build!

For your amazement, the Floyd's mixer contains no less than: 1,182 illuminated push switches, 447 rotary controls, 240 thumbwheel switches, 484 toggle switches, 67 rotary stud switches, 32 L.E.D. (Light Efficient Diode) meter columns comprising 1,200 individual L.E.D. segments, 156 individual L.E.D. indicators for the separate channels, 54 mono Panny & Giles conductive plastic faders, 11 stereo P & G faders, and 5 Quad P & G faders — that's a total of 70 faders in all. As a final mind-boggler, the desk measures about 12 feet in length when the three separate sections are placed next to each other.

Two of the console's three sections each contain 20 input channels, 4 effects groups, and four stereo sub-groups mixing into a stereo master output. The third unit contains four quadraphonic inputs, six quadraphonic sub-groups, plus quadraphonic and stereo master output groups. We only had room to fit two of these sections on the Beat Instrumental double page, so the left hand channel input



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and central master units are shown alone, the right hand channel input section being a mirror image of the one illustrated.

Robbie explained to me that the console was designed in three sections, not only for ease of transportation, but also with considerations of flexibility and future Brit. Row hiring jobs in mind. Previously, if a group wanted to hire some of the Floyd's P.A., it was often necessary to haul the complete Quad board out, whether or not all its facilities were required. Now it will be possible to operate either of the 20 input consoles independently, the Quadro console being operational only when linked via the 36 way multicore connectors to one or both of the 20 input consoles.

With the three sections all hooked up together, the following input/output facilities are provided: 40 mic/line input channels, with access to 8 effects send/return groups, which may be routed directly, or via 8 stereo sub-groups and/or 6 quadraphonic sub-groups, to either/both stereo and quadraphonic master output groups. In the numerical terminology that seems to have become standard slang in the mixing trade, that would be 40 into 8/6 into 2/4!

Before I proceed any further, a word about those four outputs might not go amiss: as Mick, Robbie's partner, pointed out, "Quadraphonic is the general public's term, not ours." Although it's hard to think




of another word to describe it, the Floyd's sound system does not follow the pattern that, in domestic Hi-Fi systems, is generally understood by "Quadraphonic". In Hi-Fi Quad, there are speakers positioned at left front, right front, right back and left back — the rear loudspeakers being mirror-image in position to the pair which would normally be used for stereo reproduction. In Floydophonic sound, there are speakers at left front and right front (these being the main stereo P.A. components), and smaller loudspeaker arrays in central

positions at left and right hand sides, and to the rear. To use a domestic layout for live performance in large auditoriums would involve tremendous physical problems in arranging the rear stacks of equal size and power as the front ones, and would be impossible to mix as per recorded Quad because there could be a time delay of up to half a second between front and rear?


Continued on page 55

Executive Turntable

Chris Newburg joins Smack Records as Corporate Director of Industrial Relations from Market Planning at Costello/Pasta Records. **Mike Morose** has been appointed Midwest Regional Sales Manager at Zimmerman Music Inc. Chicago. Previously he was with Crazy Records as Sales Manager. **Maurice Dolbie** upped to Studio Manager. Basing St. Studio's Managing Director, **Muff Winwood**, announced today that, effective immediately, 6 year old Dolbie will be active in all Departments, especially on the Studio Floor. Dolbie, who has worked in the Basing St. area for the past five years, was unavailable for comment, however Winwood felt that this new addition to his staff would certainly keep things up to scratch. **Ray Pizza** has resigned as Vice-President of Sales and Marketing at Jukebox Discs after 10 years with the Company. **Gabby Blackwell** is promoted to National Customer Service Manager at Bubble Gum Products, Los Angeles. **Sid Schulman** of Boulevard Inc. is transferred as West Coast General Manager from similar post with Out West Records in Dallas. **Margo** has been promoted to National Promotional Director at Jukebox Discs, New York. **Dave Andy** appointed to similar post at Jukebox Discs, New York. **Staff** promoted to similar position at Jukebox Discs, New York.



Dolbie



Sid Schulman

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800S

Stereo Mixer



Frequency Response:
26 Hz - 20 KHz \pm 2 db @ + 8 dBm output

Total Harmonic Distortion:
0.1% THD 20 Hz - 10 KHz @ + 8 dBm output

Equivalent Input Noise:
-120 dBV @ 150 ohms (1mV)

Crosstalk:
-50 dB @ 1KHz

Inputs:
Low impedance unbalanced microphone 600 ohm (cannon type)
High impedance unbalanced line 50 K ohm (phone plug)

Input Attenuator:
Continuously variable from 0 dB to -40 dB operational on either mic or line inputs
Total gain of mixer @ 0 dB attenuator=66 dB

Outputs:
Left and right Main and monitor
Unbalanced 2 Kohm, 3v RMS
Balanced 600 ohms +12 dBm, short circuit protected

Outputs, effects and reverb:
Unbalanced 10 Kohms, 2v RMS

Equalization:
Infinitely variable boost and cut \pm 15 dB @ 50Hz and 5 KHz each channel, master \pm 15 dB @ 50 Hz, 800 Hz and 5 KHz

Effects:
Separate reverb and effects w/built in reverb unit Cue System:
Stereo output=2v @ 10 Kohms

The advanced features found in the 800S make it a completely professional mixer unmatched in value by anything in its price range... and that goes for all Peavey products. See the world's hottest range of Combos, Amps, Cabs, PAs, Mixers, Slave Boosters, Bins, Vocal Projectors, Horns, Tweeter Banks, Mikes, etc., etc., now at your local Powerhouse. Send me a copy of the Peavey Papers and name of my nearest Peavey Powerhouse, plus a **FREE** sew-on Peavey patch.

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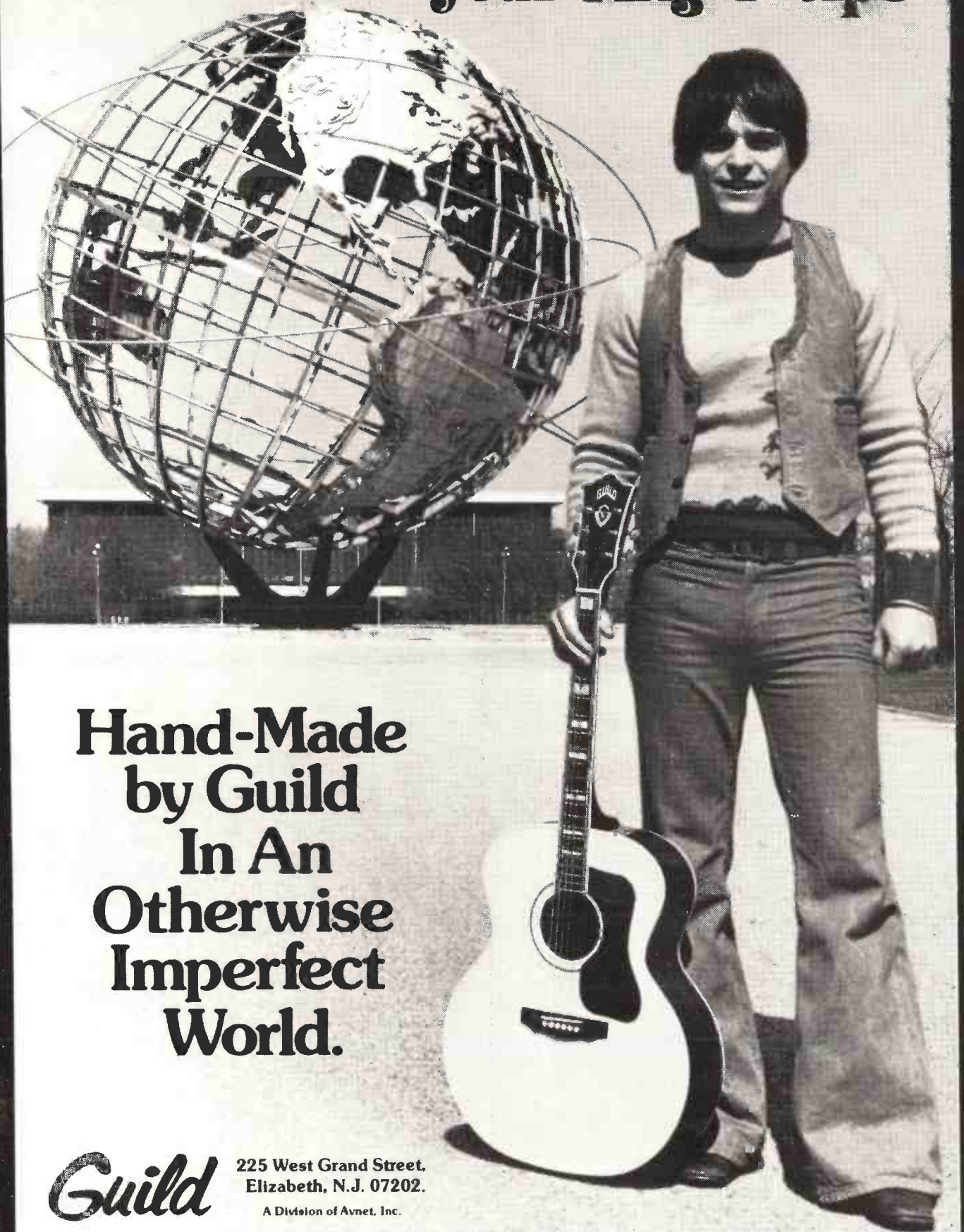
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Floydophonic sound is used mainly during quiet musical passages, for pre-recorded tapes and for special effects. When a Quad joystick (pans the sound around four places) is in the upper and forward position, the sound is fed equally to the left and right stereo P.A. stacks; when the joystick is moved over laterally to right or left, the sound goes to right or left "Quad stations"; when the joystick is in the lower and rear position, the sound goes directly to the rear "Quad station". Any movement between these positions will result in a movement of sound between the relevant speaker stacks — the origin of the Floyd's original, but rather confusing, term for a Quad joystick — the "Azimuth Coordinator"!

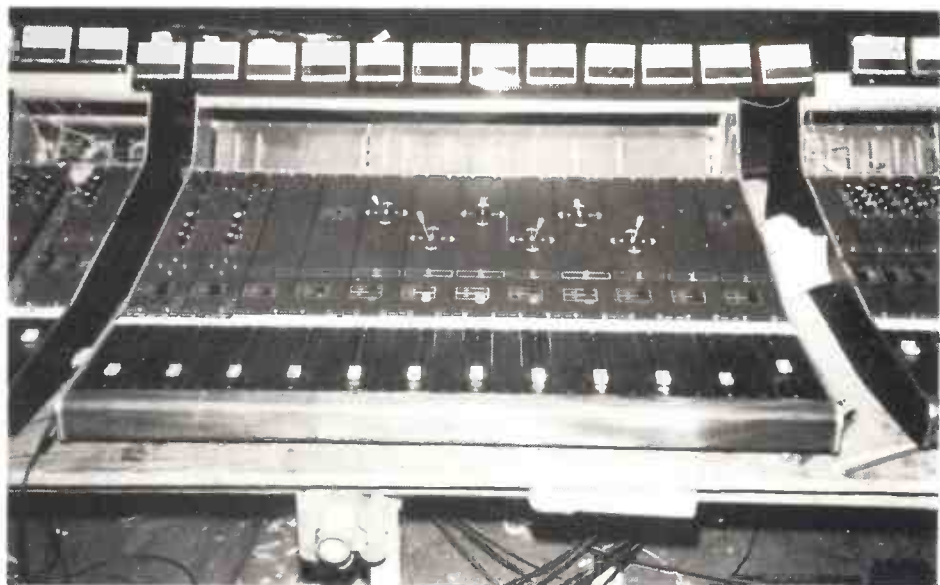
The Line drawings of the Floyd's Midas mixer are plan views; the two horizontal lines represent changes in vertical plane: the faders on the lower section are flat, and the input modules and routing modules on the two upper sections are angled in two different planes (see photographs). Leaving out the upper banks of routing push-switches for the moment, concentrate on the centre control sections of the input modules. There are 40 of these, and they contain all the controls for the input channels, with the exception of the faders and routing to stereo and quad sub-groups and main outputs. Starting at the top of the module, there's an input sensitivity rotary control, giving maximum gains of 80 dB for microphones or 50 dB for line inputs. Mic or Line ("Line being from an instrument via a Direct Inject box or from a piece of electronic equipment) selection is made by the left hand switch in the bank of three situated directly below the sensitivity control; the middle of these three provides Phantom Power (a 48 volt DC supply down to the two mic cable wires to operate a condenser microphone), and the right hand switch cuts in a resistive network to reduce the gain on that channel input by 20 dB (a coarse reduction in volume to avoid overloading the channel amplifier).

Toggle

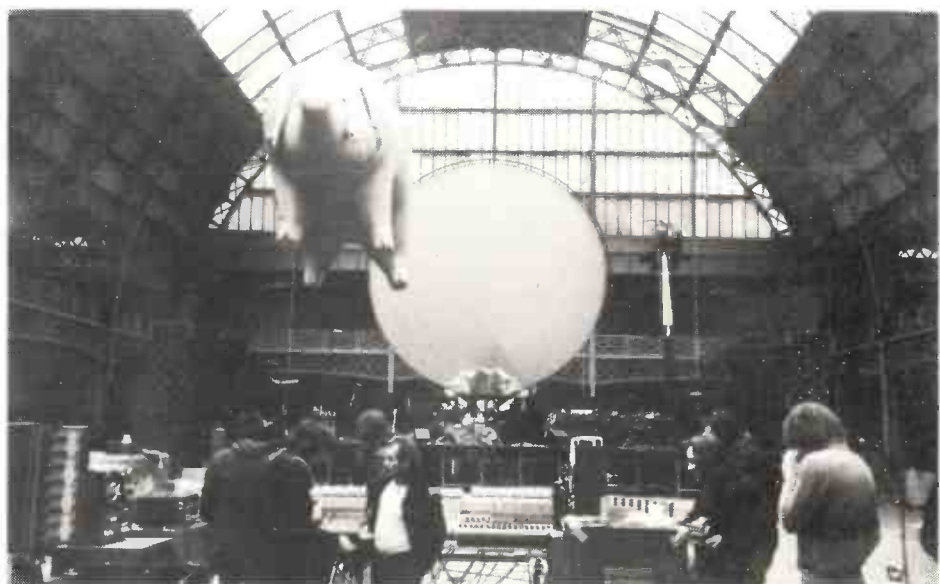
The next section on the module consists of the channel equalisation facilities: treble control offering + or - 16 dB's (boost or cut) at frequencies of 6, 10 or 15k ("k" = times 1000) Hz (cycles per second), the frequencies being selected by a miniature toggle switch; middle control offering a similar amount of lift or cut at frequencies of 500, 800Hz, 1.5, 2.5, 3.5 or 5kHz, selected by a rotary stud switch; bass control similar in operation to treble, but with selectable frequencies of 40, 80 or 160Hz. Immediately to the left and below the bass control is another miniature toggle switch; this brings into operation a High-Pass filter (attenuates low frequencies), the initiation of the 16 dB per octave attenuating slope being selectable for either 60Hz, 120Hz, or not at all. These



▲ Right hand input channel console, in position during Olympia rehearsals.



▲ Central Quadro master console; VU meters are temporary fixtures . . .



▲ Otari 8-track, flight cases, and the droopy ears belong to Pig.

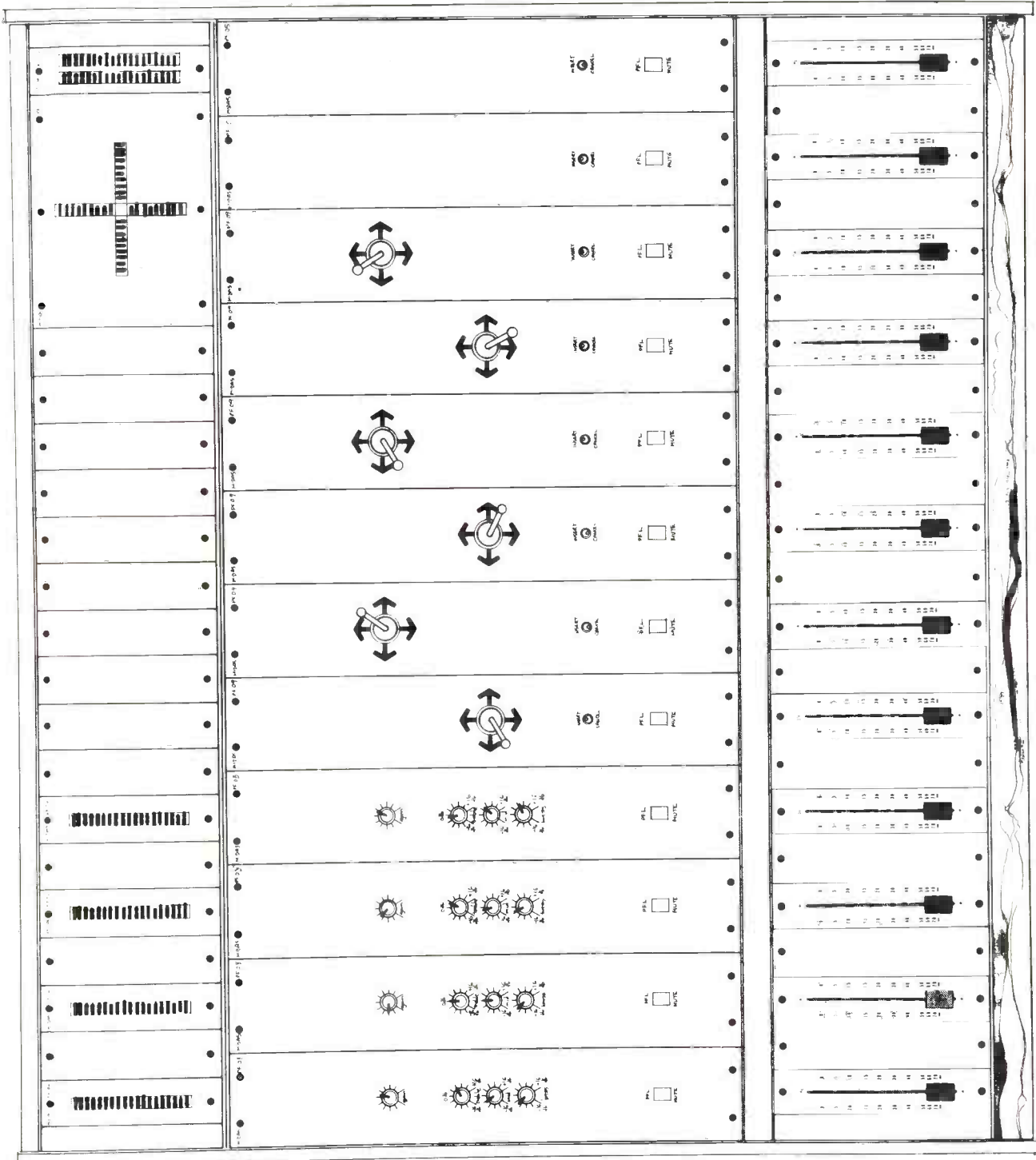


Channel and Group schedule for Pink Floyd as per rehearsals at Olympia

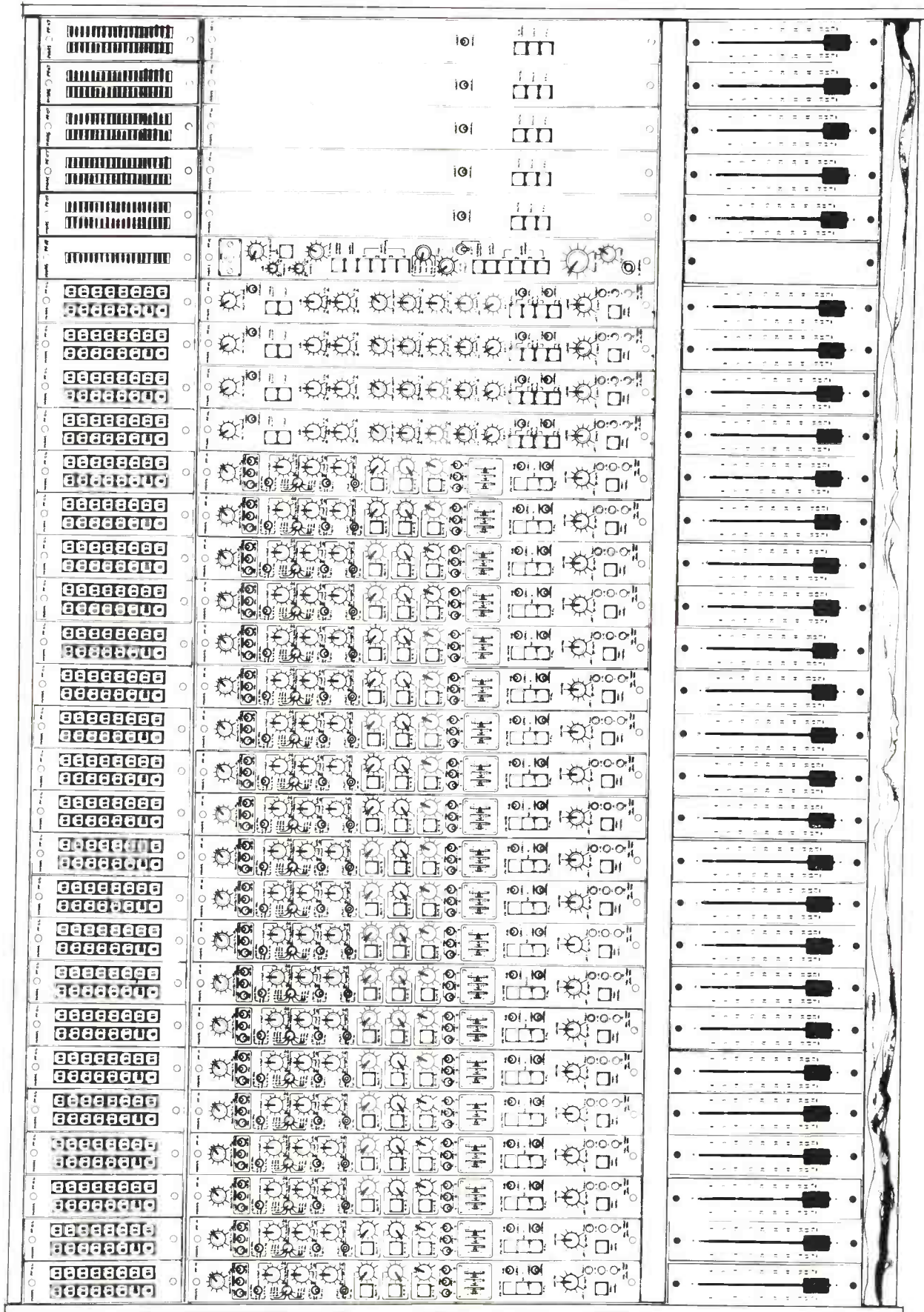
Channel: 1/Bass Drum Stage Left. 2/B. Drum Stg. R. 3/Snare. 4/Hi Hat. 5/Floor Tom. 6/Flr. Tom. 7/Front Tom. 8/Front Tom. 9/Overhead Stg. L. 10/Oh. Stg. R. 11/Spare. 12/Rhythm Roger. 13/Vox (vocal) Roger. 14/Vox Rick (at Hammond). 15/Vox Rick (at Rhodes). 16/Bass. 17/Vox Dave. 18/Sax. 19/Vox Snowy. 20/Spare.
Effects Groups: 1/Roland Space Echo. 2/Gelf Phaser. 3/Revox. 4/Spare.
Stereo Sub-Groups: 1/Drums. 2/Bass and Rhythm. 3/Sax and Vox. 4/Vox.

Channel: 21/Lead Guitar. 22/Guitar — Leslie cabinet top. 23/Guitar — Leslie bottom. 24/Keyboards Direct Inject. 25/Keys — Leslie top. 26/Keys — Leslie Bot. 27/Keys — Yamaha cabinet top. 28/Keys — Yamaha Bot. 29/Rhodes Piano — Direct Inject left. 30/Rhodes — DI right. 31/Piano DI. 32/Guitar Snowy. 33/Acoustic Guitar Snowy. 34/Acoustic Guitar Roger. 35/ and 36/Digital Delay Line returns. 37/Spare. 38/Cassette left. 39/Cassette right. 40/Spare.
Effects Groups: 5/Master Room Reverb. 6/D.D.L. 2 return. 7/D.D.L.1 return. 8/Spare.

Stereo Sub-Groups: 5/Spare. 6/Dave Guitar. 7/Keys. 8/Acoustic Guitar.



▲ Quadro console containing Quad sub-groups, Quad Aux. inputs, Quad and Stereo master outputs.



▲ Left hand channel input section; the right hand section is a mirror image
 The allocation of these channels and groups is explained above.

WELSON

These Two New Stars In The 'Welson' Galaxy Have Taken Off Like 'Meteorites'

'IMPERATIVE' two manual portable

The Imperative is a two manual portable with special effects and graphic volume controls. The upper manual has 49 keys from C to C. Seven six-position drawbars are provided for Flute, three for percussion, one for percussion decay; an on/off switch is provided for flute sustain on four drawbars, and seven push-buttons with lights modulate the flutes separately or together. Two drawbars control modulation amount and speed. The lower manual has 41 keys from C to C, with four six-position drawbars for flute sound. The String Synthesizer section is provided with a sustain control and three tabs as follows: Cellos, Violins, Upper to Lower Strings Coupler. Another three tabs control Piano, Harpsichord and Upper to Lower Special Effects coupler, a slide control being provided for Piano and Harpsichord Decay. Six slide volume controls allow graphic level setting of the various organ sections. A Stereo effect is achieved via twelve coupled push-buttons, which allow placement of any or all of the sections to the left or right channels. In addition to all these features, the following facilities are also provided: Two photo-cell expression pedals, a pitch control and a pedal board output.



◀ 'SYNTEX' synthesizer

37 Key C-C keyboard. Two Oscillators with four separate footages each, individual volume controls and tuning plus vibrato controls. One sub-audio modulating oscillator with frequency adjustment and waveform switch; can be used to modulate Osc.1, Osc.2, VCF or VCA. The envelope generator has Attack, Decay, Sustain and release controls, and the Noise Generator is provided with white/pink noise switching and level control. The VCF (Voltage Controlled Filter-Resonator) has two slide controls for cut-off frequency and resonance factor, and also Osc.3 and ADRS amount controls, with modulation monitoring via a flashing red light. The VCA (Voltage Controlled Amplifier) also has the latter three features, plus a general Volume control and an Initial Volume push switch with pilot light. There is a Portamento (Glide) switch with pilot light and speed control, and a Music Random effect is provided together with on/off switch and flashing light. 15 Preset sounds are available as follows: Flute, Trombone, Horn, Oboe, Bass Clarinet, Jaw Harp, Wha-Wha, Accordion, Strings, Xylophone, Bass Guitar, Spinet, Space, Fuzz and Musical Saw.

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MXR Phase 45 Variable speed	55.00	46.75	4.67
MXR Phase 90 Variable Speed	95.00	80.75	8.07
MXR Phase 100 Variable Field	119.95	99.95	9.99
MXR Blue Box, Synthesizer Device	88.00	74.80	7.48
MXR Distortion plus, valve simulator	48.00	39.85	3.98

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Set 6000 Medium Gauge (Nickel)	£2.45	£2.08	
Set 9000 Classic Nylon (Silvered Copper)	£1.45	£1.25	
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Ernie Ball - Earthwood Bronze Acoustic Light Gauge	£2.45	£2.08	

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AKG D190E Low impedance	36.40	30.94	3.09
AKG D190E High impedance	38.50	32.75	3.27
Shure Unidyne B - Model 515SA	27.22	23.95	2.39
Shure Unisphere B - Model 588SA	39.32	33.70	3.37
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KEYBOARD SURVEY

Only ten years ago keyboard purists sneered at the increasing popularity of a number of technical developments pertaining to the black and white ivories. These same people are now busy acquiring batteries of keyboards to surround themselves with on stage. Keyboards, more than any other individual aspect of rock music, have benefited from technical and mechanical progress, and this month's survey takes a look at the products on offer from some of the key manufacturers and retailers.

CBL Musical Instruments is a retailer operating from 163 High Steet, Staines, in Middlesex. Where they differ from the average music shop is in the large number of accordians stocked. Brand names for these include Dallape, Sisme, Excelsior, Hastervox, Fratelli, etc.

Other keyboards instruments at CBL are the Elex electronic pianos: the K2 has a harpsichord and string ensemble facility, whilst the K3 has organ, harpsichord and percussion effects. The Elex dynamic piano looks rather like a small upright model, but incorporates such features as harpsichord and Hawaiian guitar, vibrato and volume blend.

The Armon range of organs and pianos is made in Italy and can be found at CBL. All feature comprehensive effects and, in some cases, built-in rhythm.

CBS ARBITER

The Rhodes piano is a basic in the armoury of any keyboard player. The two basic models are the Stage and the Suitcase models. The Stage stands on 4 detachable legs and has a sustain pedal which operates on a similar fashion to the sustain on an acoustic piano. A stereo pre-amp is available to fit into the Stage piano for use with the two Satellite speakers which give out 100 watts rms each. The stereo effect is produced by reproducing the peak of a note through one speaker and fading it out through the other.

The Suitcase has the same keyboard as the Stage but has a separate speaker and amp enclosure with a 190 watts peak output via 4x12" Fender speakers, two of which face forward, and two towards the rear. Thus the stereo sound is bounced from front to rear. Each type is available either with 73 or 88 notes and there is also a piano bass with 32 notes, which is the bot-

tom 2½ octaves of a standard piano. Because the sound is produced mechanically by means of a hammer hitting a tine, tone and volume variations can be produced.

HAMMOND

Hammond are not the most modest of manufacturers, but then no-one would expect them to be, since their keyboards have established a standard by which all others are measured. The X-5 is a portable model with two 44-note manuals and a one-octave pedalboard. As well as a large number of drawbars, it includes percussion, pre-sets, pedal sustain, built-in Hammond reverb vibrato and speed control for the Leslie cabinet which you would probably use with it. Recommended for the X-5 are the 760, 330, 820 and 860 Leslies.

Readers may have come across the term "Auto-vari 64" in connection with Hammond, without knowing what it was; in fact, it is a sophisticated rhythm unit which "electronically expands 16 basic rhythm patterns to at least 64 continuously changing variations." The unit changes the character of each selected rhythm at pre-selected intervals, thus making the sound more like that of a real drummer.

Moving up-range we come to the Super Dolphin Premier De-Luxe. Its basic features are similar to the X-5 but there are many extras, the most interesting of which is the "polyphonic simulator". This provides the player with the ability to use realistic cello, brass, violin, accoridian and piano sounds, and also to create a synthesizer sound, this being controlled from the "synthamute" button. The Dolphin's Leslie speaker is built-in, and can be set at either of two speeds.

The Aurora and the Monarch add further effects to the armoury of the keyboard musician. An "arpeggiator", located between the two manuals of the Aurora, introduces automatic arpeggios or

chromatic runs, simply by means of sliding a finger over its surface. "Follow-the-Player" rhythms mean that snare drum and brush effects can be added to the lower keyboard, and bass drum and cymbal to the pedals.

The Rolls Royce, however, is the 2300 Series. Model 2307 has just about everything, including Touch Tempo — a recent development which automatically programmes a rhythm which you can tap out yourself.

WOODS OF BOLTON

The Welson range of Italian-made organs and other keyboards is handled exclusively in this country by Woods of Bolton. The Condor T portable organ is meant for home use or for small bands. There is a divided keyboard for playing manual bass, together with an automatic rhythm unit that features chord and bass. The keyboard spans 4 octaves. The Syntex synthesizer was covered in Beat's recent synthesizer review: it has three oscillators, pre-set buttons, a filter and a random music button. The noise generator produces both white and "pink" noise.

The President Standard has a larger keyboard than your average organ. The percussion section goes from 16' down to 13/5' and there are six drawbars, each completely variable. Other features are glissando and arpeggio, plus four sustain tabs on the upper manual. Each manual has 4 octaves-worth of keys.

A portable version of this is the Personal Duo organ.

The two Welson string machines are the Symphony Concert Stereo and the Knock Out, whilst the electric pianist is catered for by means of the rather tasty Vedette.

FARFISA

The Farfisa Coronet is a four-channel organ with 2 4-octave manuals and pedalboard. The upper manual has 9 flute registers, 9 percussion buttons, chimes register, Leslie on/off and 6 pre-sets. There are 3 flute footages, vibes, marimba and cancel. There is also a synthesis unit, the "Poli" section having five different registers and the mono having 9. An envelope filter operates wah-wah and sliding attack. There is a coupler between upper and lower manuals in the "Poli" section, between the upper manual and the pedalboard in the mono section and between both manuals in the "Poli" section. The lower manual of the Coronet has 7 registers and an "Easychord" facility.

Another keyboard from Farfisa is the Syntorchestra. It is both polyphonic and monophonic, the poly section having four pre-set tabs and the mono having 9. Other controls are for brilliance, vibrato, envelope and portamento. There is an expression pedal with 2 photoelectric cells and this simultaneously controls the ployphonic and monophonic sections even when they are separated.

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ROSE MORRIS

Rose Morris handle the GEM series of keyboards, as well as the Korg synthesizers, which are also obtainable from Hohner. The GEM Synth-Dakota incorporates a piano synthesizer panel with a fully portable two-manual organ. Eight tabs of various kinds are provided for the upper manual and four for the lower. As well as the usual reverb, vibrato and percussion, the instrument includes as standard a 2-octave pedalboard. The synthesizer section has sliders for frequency, amplitude, response and intensity, plus buttons for on/off repeat, filters, modulators and waveform shapes.

Other GEMs are the Caravan and the Jumbo 61. The Caravan has a 4-octave keyboard and tabs are for vibrato, bass, brass, reeds, flute and strings. The Jumbo 61 is a 5-octave electronic organ with its own amplifier and speaker and a somewhat larger array of facilities than the Caravan; prices for these GEM keyboards are remarkably low, the Caravan clocking in at just £160.

The Korg models handled by Rose Morris are the 700, 700S, 800 Korg Bass, the Pre-Set, and the Polyphonic.

HOHNER

The best known of the Hohner keyboards is undoubtedly their clavinet D6, which produces that harsh, deep, funky sound so favoured by such musicians as Stevie Wonder. It can be made to

sound like a harpsichord, guitar, harp, spinet, etc. The Hohner Pianet is also extremely popular with musicians in every field, with a full 15-octave keyboard. The combo pianet is the add-on version; the Keyboard Bass 2 covers 2½ octaves from the E below middle C to A. There are also 3 pianos — the K1, K2 and K4.

The Korg range of Japanese made synthesizers is distributed by Hohner. The 700S has a ring-modulator for sound effects, as well as the expected pre-set tabs for reproducing the sound both of conventional and electronic instruments. The 800 has double oscillator banks and two sets of tuning controls. Another synthesizer worth mentioning is the Pre-set, which incorporates 15 instrument voices, 9 percussion voices and 5 other sounds. Rose Morris too distribute the Korg range.

KEYNOTE

The Keynote Consort was reviewed in Beat a couple of months ago and seems to be arousing some interest amongst musicians; it is a 2-manual organ with flute footages of 16, 8, 5½, 2¾ and 2 feet on the upper manual and 8, 4, 2¾ and 2 feet on the lower. There is also a harmonic filter control which adds further to the harmonic dimensions of the drawbars on each manual. The special effects are percussion, vibrato and reverb, the percussion having a facility for variable decay.

There is an expression pedal and a pedalboard. A big advantage of the Consort is its portability. It is also reasonably priced in terms of the facilities it offers.

A new model called the Cub is now available with a built-in phase unit.

ELKA ORLA

One of the newest models from Elka is their Preludio 22/L, which has an alarmingly wide series of features. To begin with there are two manuals with 44 keys each, and voices of flute, oboe, trumpet, string, horn and cello — at various footages. There is a pedalboard covering one octave. Other features are the slider-controlled reverb, Leslie, and a 25 watts-per-channel amplifier. The rhythm unit provides a choice of 16 rhythms with memory incorporated.

The X-55 is perhaps better known, and has all the features one might expect to find on a more expensive model. The two Elka string-machines are the 610 and the 490, which we covered recently in our survey of synthesizers. Also of interest are the Capriccio 33/0LS and the Notturmo 66/0LS — the latter of which is recommended particularly for professional players. It includes a 50 watt amplifier, plus sustain, vibrato, reverb, brilliance and Leslie effects. Lastly, the Fantasy Duo P is a smaller model with two 3-octave keyboards and a total of 12 voices. There are 6 rhythms on the rhythm unit and also a one-octave pedalboard.

ALAN HAVEN

Alan is the distributor for the Crumar range of keyboards; his current seller is the Haven 61, a comprehensive 2-manual organ with 5 octaves on the upper and 4 on the lower. Four piano-type effects are featured on both manuals, along with a total of 15 flute harmonics, which are controllable by drawbars, and four footages of independent percussion, featuring the "tone wheel" transient effect. Each function of the organ has an independent volume control drawbar, and the front panel has lighting push-button controls. The 61 comes complete with an 18-note pedalboard operating on 3 footages (16', 8' and 5½'). If required, the organ may also incorporate the Nerve Centre 15 rhythm unit.

Other Crumar models are the Organizer and the Multiman, each of which provides the player with a variety of keyboard and orchestral effects.

HORNBY SKEWES

A large number of Eko organs — chordal, electronic, console and portable — are distributed by Hornby Skewes. They are also responsible for handling two add-on keyboards, the Logan String Melody and the Logan String Orchestra. The Melody has a 4-octave keyboard and provides a comprehensive range of orchestral stringed instrument effects; the Orchestra, in addition to all the facilities on the Melody, includes solo violin and oboe voices. The keyboard is divided to allow accompaniment to these with either

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bass or treble strings. Another feature is the "slalom", which creates slide effects on all voices, and this is activated by means of the slider control bar, or else by the touch-sensitive light. Separate attack and sustain controls are provided for the bass and treble sections.

The Crumar Compac electronic piano is of the standard type, but also incorporates switches which give manual walking bass on the lower 1½ octaves, piano, honkytonk and clavichord. An acoustic upright piano ("the Hornby piano") is another part of Hornby Skewes' large range of products.

MELLOTRON

Most people regard the Mellotron as an instrument, and so it is, but it's also a firm. Each key on the Mellotron activates a pre-recorded tape of a single note played on any orchestral instrument. The standard Mellotron 400 provides 3 basic sounds, namely flute, violins and cello, and any one may be selected by means of the track selector control. Additional sounds available are saxophone, choir voices, church organ, vibraphone, tympani, brass and sound effects. The musician may also supply his own recordings on ¼" tape at 15 or 7½ i.p.s. A full list of the Library of Sounds is obtainable from Mellotronics Ltd at 35, Portland Place, London W1.

BIROTRON

Soon to be in full production at the Complex 7 factory, the Birotron is a compact but very flexible tape-operated keyboard, the idea for which originated in the mind of a certain David Biro. The reader is advised to read the advertisement feature on the Birotron this month for details on the new instrument, and look forward to an in-depth review next month.

KENTUCKY

The range of Kentucky organs starts with the 'Petit 4' Fun organ, which can be played "with two fingers only", the left hand providing a choice of 12 major and 12 minor chords, whilst the right offers eight different voices. Five other models are substantially more sophisticated, however — all of them being dual keyboard types. The Challenger has 49-note keyboards, 11 solo voices

over four footages (16, 8, 4, 2½ ft), 4 accompaniment voices and 2 pedal footages; other features are variable reverb, vibrato and percussion. The Challenger is powered by a 30 watts rms amplifier through a 2-speed Rotatone rotary speaker. The Explorer model is similar, but has added percussive features and two amplification channels. The range is topped by the Adventurer, with 17 solo voices over six footages.

Two further models are the Winchester and the Chester, both with similar facilities. All the 2-manual models have a rhythm unit and a pedalboard, and are stylishly finished in natural wood. Kentucky also have a new combo amplifier — the SP36 — which gives "authentic orchestral chorus" and "realistic theatrical tremolo". The power output is a sturdy 36 watts.

EMS

Electronic Music Studios in full, the company specialises in compact synthesizer units which are sold under the SYNTHI trademark. The early-evolved Synthi A portable synthesizer is still popular with some small studios, and various other models are produced for educational use as well as for musical performance.

The Synthi 100 is a massive hybrid synthesizer with a full range of facilities. Several functional units are available as separate modules, such as the eight-octave filter bank, pitch-to-voltage converter and the sequencer, which can all be added to other systems. The Synthi Phase Frequency Shifter gives complex harmonic changes through the addition of a given frequency to a harmonic spectrum, and can be used effectively to provide phasing effects or for the repression of feedback in PA systems.

THOMAS

American-made electronic organs and synthesizers ranging in price from a few hundred quid to the top end of the market. The sleek-looking space-age T2001 and its more homely counterpart, the Californian 284 have two 44-note keyboards (F to C scale), a thorough selection of rhythms, voices and accompaniment presets, and 24 on-finger memory chords.

A keyboard memory and features

memory bring this up to the truly sophisticated end of the home entertainments category, but if you're a stickler for quadrophonic, you may be more inclined to go for the Californian 267, which has similar specifications. For those who can afford it, the Symphony Royale goes one better with two 61-note keyboards and 24 one-finger memory chords and the same basic model can be obtained complete with Moog synthesizer in the Celebrity Royale for a whisker under five and a half grand.

BALDWIN

American-made pianos and organs cover the full price range, though the less expensive models are very much more orientated towards home entertainment than class performance. The Studio II at the top end of the Baldwin scale, however, is more the serious enthusiast's choice, offering 61-note solo and accompaniment manuals and a 32-note detachable pedalboard. The manual rhythm section can be played alongside the automatic rhythm, and there is a three-channel

solid state amplification system. The variety of finish and looks with both pianos and organs is considerable, and clearly much has gone into styling.

The Baldwin Cinema II theatre organ has a lot of "olde worlde" charm about its walnut finish and includes 61-note solo and accompaniment manuals with a 32-note detachable pedalboard. Like other Baldwin models, the Cinema II incorporates the Fantom Fingers feature to enable numerous strums and chords to be played from preset. Theatrical tremolos, vibratos, reiteration and reverberation are amongst other special attractions.

BRODR JORGENSEN

B-J provide a wide range of Japanese string-machines and synthesizers made by Roland. The SH-2000 synthesizer has thirty pre-set sounds — 21 instrumental and 9 special effect sounds; other controls are for filter, slide (portamento), transpose, hold, long sustain and repeat — plus a random note switch

Continued on page 71



The new Preludio 22/L/vony Elka Orla.

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TWO D224: used overhead for cymbals and overall stereo picture of the kit.
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Continued from page 57

equalisation controls are not as comprehensive as some currently in fashion, but considering the number of input channels they offer ample facilities. As we shall see later, there is provision on the console to "patch in" more comprehensive equalisers to individual channels, to cope with really awkward sounds.

Below the tone controls on the channels there are three echo send controls, with illuminated on/off switches next to them. Below these are three miniature toggle switches, which allow the echo send from each control to be taken pre or post (before or after) the channel fader. In line underneath the three pre/post toggles are three thumbwheel 8 position switches: these allow the three channel echo sends to be assigned (linked to) any of the effects group send/return busses (four on the LH input section, four on the RH input section). Next on our journey down the module are three illuminated push-switches and two miniature toggles. The top push-switch is for channel mute (switches that channel off completely), middle one is for channel solo (applies that channel's output to the master stereo



output to the exclusion of all the others, useful whilst setting up mics); the last push-switch is marked P.F.L., which stands for Pre Fade Listen (routes the channel signal to the headphones). The top toggle switch next to the three push buttons switches the equalisation controls in or out of circuit (for before/after comparison of their effect whilst setting up), and the one immediately below it is marked Insert/Cancel. This switch allows an effect device to be inserted into that channel exclusively, via the XLR connectors at the rear of the console; the point of insertion is after the tone controls but before the channel fader (post eq, pre fade).

The next control down is the LeftRight pan control, perhaps the only knob that requires no explanation at all, and below this is an illuminated push switch that disables the panning function on that channel. The three round dots to the right of this control are L.E.D. indicators, which indicate peak signal levels on that channel of -15, 0 and +15 dB's (quiet sound, normal maximum level and overload).

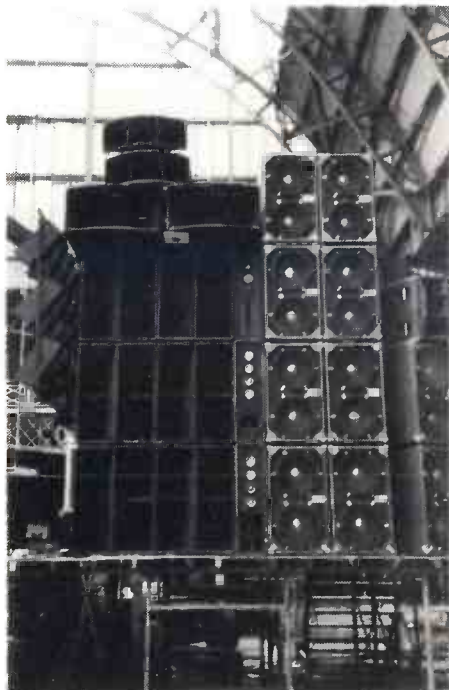
Next in line for consideration are the effects master modules, positioned in between the channel modules and the control module (the latter may be easily identified as there is no fader beneath it). The effects masters sum up the signals sent to them from the channel modules, and then send this combined signal out for treatment by an external device. Starting from the top of these modules, we have a send level control to set the output level from -40dBm to +20dBm, below this control is an insert switch operating on the send section, and below this are illuminated push-switches for solo and "check echo" (P.F.L.); beneath these are the bass and treble controls for the send signal - both fixed frequency controls, giving + or -16dB's or lift or cut at 50Hz and 15kHz respectively. Next on this module are the controls of the return from the effects device: gain, treble, middle (at

3kHz), bass and spin; "spin" returns a regulated amount of the signal, selected from either the post insert send or the pre eq return by a miniature toggle switch, just below the rotary control. "Spinning" the return from, say, a reverb unit, would give the effect of a soft *echoing* reverberation.

The four push-switches next to the spin toggle are as follows: spin mute, return mute, return solo and P.F.L. the other pan, insert etc. controls on this module perform the same function as those on the ordinary mic/line input channels.

Both Effects master modules and Input modules have routing modules, consisting of 16 illuminated push-buttons, above their control sections. Eight of these switches assign the output of that channel pan pot to the inputs of the 8 stereo sub-groups (four on one input console, four on the other); and another 6 push-buttons assign the post fader channel signal to any of the 6 quadro masters in the central console; these latter buttons can be preset, and then brought into operation by pressing the button marked "Q"; the remaining button, marked "SM", routes the channel(s) on which it is depressed directly to the stereo master output, bypassing the sub-groups.

Each input section console contains, in addition to the 20 input channels and four effects masters, four stereo sub-groups, the stereo output, and a control module. The control module has a socket for a talkback mic, tone controls and controls for internal and external tb levels; 6 illuminated push-buttons route the tb to either the stereo or quad master modules, or directly to any of the four individual quad stations. A similar arrangement routes the output of a six frequency oscillator to any of the P.A. stacks (useful for lining up crossover levels); also provided on this module are master controls for solo and headphone levels. An LED meter above this module allows any channel or effects group to be checked out, merely by pressing the relevant PFL button. The stereo sub-groups and master are also



Part of the left hand section of the stereo P.A. Cabinets to the left are Kelsey type folded horn bass units, smaller cabinets to the left are special Brit. Row mid-range units, each containing two 15" speakers, specially built for the Floyd by Gauss. The very thin enclosures between the stacks of these two cabinet types are for high frequency, and contain one Vitavox 4kHz horn and four JBL 075 tweeters.

provided with these meters. When I saw the Floyd console at Olympia these hadn't been installed, but when they are these devices should be fairly unique in giving both PPM and VU indication at the same time.

The central quadro console contains, apart from the stereo and quad masters and the quad sub-groups with joysticks, four quad auxiliary input modules. These modules each comprise four discreet channels, with master fader and ganged bass, middle and treble controls. Since Rick made the drawing of this console four individual trim pots have been added on each module, replacing the single gain control illustrated. The four auxiliary quad inputs are used up as follows: one is for a quadraphonic soundtrack in synchronisation with the 35mm films that the Floyd use, another is for pre-recorded tape tracks — the first four from the Floyd's 8 track Otari recorder, one aux. input is unused at the moment, and the final one is for Rick Wright's use onstage. Rick uses a rebuilt Allen and Heath mixer for his keyboards, and a "floating" quad joystick can be operated in conjunction with this to pan keyboards around the Floydophonic system — as on the Moog

intro to "Shine On".

One of the remarkable features of the Floyd's Midas console is the amount of facilities allowing special treatment of individual channels. To give you an idea of why these are necessary it would seem appropriate to give a run down of the Floyd's complement of "outboard" equipment. In fact, their array of what would normally be termed "accessories" is so comprehensive and sophisticated that many small studios might feel decidedly envious, witness:

16 channels of DBX noise reduction — 6 on the Otari eight track, 3 on the Master Room Reverb, 4 on the 35mm soundtrack, 1 on the Roland Space Echo — "and anything else that hisses!"

2 Lexicon Digital Delay Lines — mainly used for vocals.

2 Urei Teletronix Levelling Amplifiers LA — 3A, and

2 Urei UA1176 limiters, used on sax or vocal channels via insert points.

2 DBX RM160 compressors, one used on the bass guitar mic channel, the other on the bass guitar DI channel.

2 Rebis stereo parametric equalisers, used as four extra channels of eq for problem instruments such as acoustic

guitar/snare drum.

3 Gelf Electronic Auto Phasers, one for Roger Water's vocal channel, and two on the stereo master inserts — to phase the whole P.A.!!!!!!!

1 Master Room 'B' studio spring reverberation unit, used mainly for vocals.

1 Orban Parasound 516EC Dynamic Sibilance Controller, used exclusively to tame over "ssshhy" vocals.

1 Roland Space Echo, used on instruments.

1 Allen and Heath A.D.T. (Automatic Double Tracking) unit, used mainly on guitar.

10 Allison Research Kepex Program Expanders — very interesting — the Floyd wanted to use these on vocals but found (as the Moody Blues did before them) that they don't really work properly live! 7 Kepex are still used on the kit mics (drums provide a meaty enough signal to operate Kepex even live).

1 Otari 8 track tape recorder; 4 tracks are used for pre-recorded quad pieces, and the rest for click tracks, cues and so on, are fed to the group onstage, via the foldback.

1 Nakamichi stereo cassette recorder for playing incidental music and recording gigs.

Also in evidence were two Revox's and a TEAC 4 track, all of which seemed to be generally kicking their heels! Typical use of the console's effects send facilities with this equipment is as follows (for a vocal channel):

Channel Insert — One channel of Orban Parasound Sibilance Controller.

Aux. Send 1 — (Via Effects Group 1) Gelf Auto Phaser.

Aux. Send 2 — (Via Effects Group 6) Lexicon D.D.L.

Aux. Send 3 — (Via Effects Group 5) Master Room Reverb.

Typical of the console's live mixing facilities are the following examples:

"Wish You Were Here" — the point at which a natural sounding acoustic guitar dissolves dramatically into the same sound, but distorted as from a transistor radio. Mixing Operations required — start 8 track Otari, fade out live guitar and simultaneously fade up pre-recorded "radio" tape in quad, via aux quad input on Quadro console. "Echoes" — the point at which the dominant, repeating guitar solo suddenly goes into fuzz and increases dramatically in volume, leaping out at you from your Boots Home Lo-Fi speakers! Mixing Operations required — Dave Gilmour's guitar input channel is preselected to one of the quad sub-groups on the Quadro console, the joystick on this sub-group is placed in a central position, and the quad fader advanced to a suitably "loud" position. When Dave Gilmour's foot comes down on his fuzz box, Brian Humphries' finger presses the "Q" button on the guitar channel, bringing it into the pre-selected quad position and level setting. As Robbie said: "This time the band decided to get a mixer that would do almost anything". If you want one too it'll cost you £32,000 — but then you're not the Pink Floyd, are you? "The Floyd" are messers Gilmour, Waters, Wright and Mason.





Barriemore Barlow

I've discovered oxygen rock.

"When I was a kid I played for Aston Villa schoolboys. So I thought I was going to be the next Stan Matthews.

That was before I met Dee. I was fifteen. I fancied Dee. She fancied Ringo Starr.

There was only one thing to do. Start playing drums.

I saved up. Bought my first snare drum for twelve quid. Fell in love with music. And Aston Villa went down to the second division.

Times have changed. And so have I.

But right from the start I wanted a Ludwig kit. Because Ludwig's the best. You can hear it. Besides, the hardware's tough and reliable. And with me, it needs to be.

Drumming's a pretty physical occupation at the best of times. But with Jethro Tull, it's something else. In fact, since I've been working with them, I've discovered a new type of music. It's called "Oxygen Rock."

When we're on tour in the summer, the temperature on stage gets unbearable. I remember once it touched 120F. That's when drummers get a thing called "asphyxiation blues." And the only answer is to wear shorts. And bring your own oxygen cylinder. So I do. But I still lose a stone on tour.

And if drumming's a physical occupation for me, it's certainly that for my drums. I mean, on tour with Tull we might do four gigs in every five days. (And we're on tour most of the time.) So my drums have to stand up to a hell of a lot of transit. As well as a lot of me. So I use Ludwig.

Another good thing about my kit is that because it's vialite, it's not only good looking, but light and easy to set up. It's been set up so many times, I think it could set itself up.

I got my first Ludwig kit nearly six years ago. At the time I had an enormous, brand new kit of dubious make. And I swapped it for a small, old and battered Ludwig. It was beautiful. And I haven't used anything but Ludwig since."

Barriemore Barlow is the drummer behind the solid Tull sound. He's played with the Magic Band (Captain Beefhart). The Blades. The John Evan Band. The All Jump Kangaroo Band. And he's also helped John Miles out occasionally.

With Jethro Tull, he's just completed a new album called 'Songs from the Wood.'

And they're about to start a world wide tour which will take up most of 77.

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LUDWIG

for producing random sounds which bear no relation to the pressed key. There are three octaves. More elaborate and expensive equipment, such as System 700, is made for use in the studio, consisting of a basic keyboard with a main console to which optional blocks can be added for a total of 47 modules.

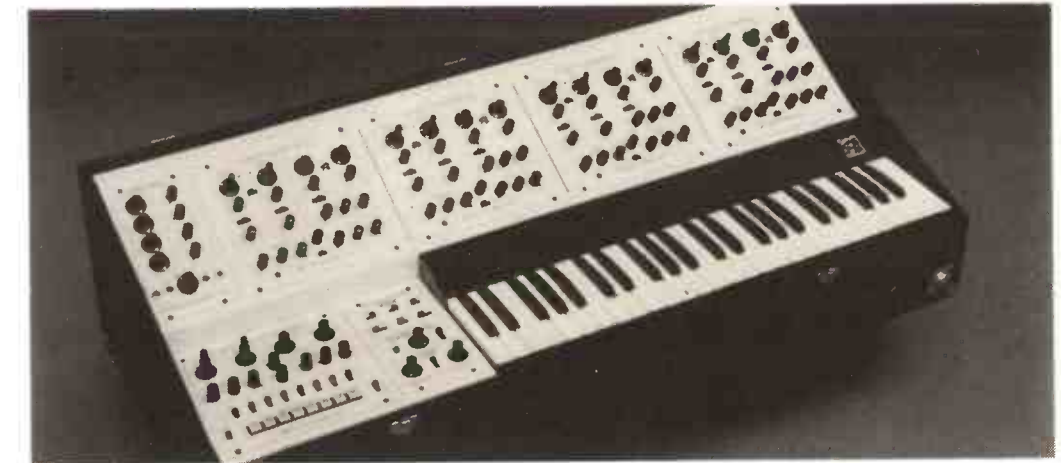
The RS-202 string machine has 61 keys spanning five octaves, and the voicing tabs provide two string selections as well as brass sound. A vibrato delay slide-control is also featured and there is a gate output for connecting up to a synthesizer unit — see this issue's review by our over-enthusiastic Ed. — Ed.

MAGNUS

Manufacturers of both push-button and electronic organs aimed mainly at the youngster developing an interest in keyboards and music generally. Although the junior models really fall into the sophisticated toy bracket, the 3051 and 3057 manual electronic models have a compact range of instrumental presets and automatic rhythms, and could appeal to the beginner who doesn't wish to part with all of his readies in one go.

NORLIN MUSIC

Norlin now controls three formerly independent companies: Lowrey organs, Moog synthesizers and Selmer keyboards. Three models of Selmer portable combo organs are available, and the 61AR with 61 keys and 14 rhythm control units is boosted by a built-in 20-Watt amplifier. Moog synthesizers have



▲ The Oberheim 4-voice polyphonic.

established a good name for themselves over the years, and the Sonic Six is an impressive member of the breed. Featuring a four-octave keyboard with its own monitoring amplifier/speaker system, the Sonic Six also has two independent tone oscillators providing sawtooth, triangular and rectangular waveforms.

Lowrey organs cover a wide scope of the market, and at the upper end of their price range, the Symphonic Holiday has much to offer. With a choice of fifteen different rhythms, the two 44-note keyboards can be set for numerous string, woodwind, percussion and organ sounds. Continuously variable slide-controls are a practical advantage in

controlling the exact length of Sustain and the exact speed of Repeat, and the four 30-Watt amplifiers ensure a good solid output of sound. One of the most exciting developments to emerge from Norlin recently is the Polymoog. This revolutionary piece of equipment is programmable like other synthesizers, but is fully polyphonic, which means that all 71 keys can be played simultaneously or in clusters as selected. Besides this, its 90 decibel signal-to-noise ratio is ideal for recording purposes.

LIVINGSTON ORGANS

Already established in the organ market with their Abbey Chapel, Chorale and Chorister organs,

Livingston are at present making plans to double the size of their Production and Electronics Divisions. This is likely to lead to a wider range of musical equipment becoming available in due course. Custom-built organs are also manufactured with three generator units, but for those working on a tighter budget, the new Trickett touch-sensitive electronic piano is a product well worth considering.

CHAPPELL

Chappell are primarily known for their wide range of pianos which, it is said, originally created a favourable impression with a then youthful Richard Strauss. The

continued on page 72

Music Man — A new experience

210-65

Model 210-65 is a two channel amplifier. Channel one has two inputs, volume, treble and bass controls. Channel two features two inputs, bright switch, volume, treble, mid-range, bass, reverb, tremolo intensity and tremolo speed controls. A deep switch, master gain control and power reduction switch operate on both channels. A dual foot switch is supplied for remote control of the reverb and tremolo functions. The amplifier also has an impedance switch for selection of either four or eight OHM loads.

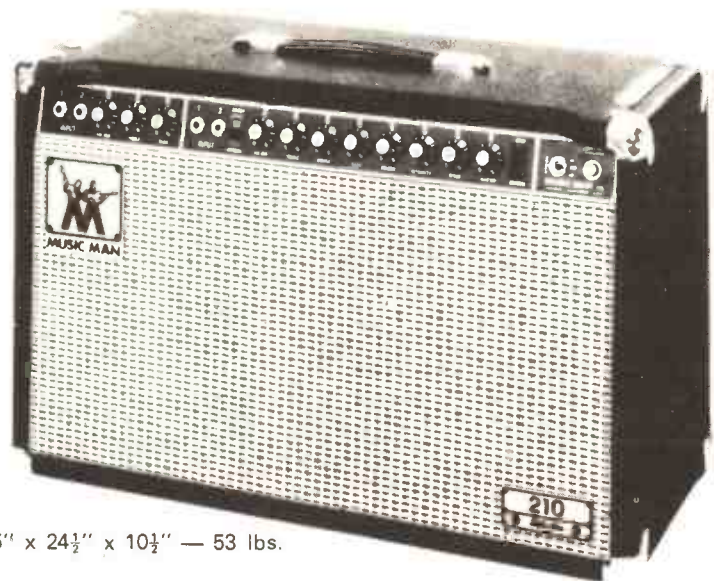
The model 210-65 employs two heavy-duty 10" speakers with 2" aluminium voice coils and 18 oz. alnico magnets. So great is the magnetic efficiency of these speakers that the 210-65 can be shown to perform with many competitive amplifiers of larger and more cumbersome size.

This outstanding performance combined with an extremely compact design has made the 210-65 one of our most popular models.



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Europa, for instance, has changed its styling from the traditional in order to produce a less bulky instrument which will be particularly suitable for the home. It is available in two styles; with a small toe or with cabriole legs. Both models are supplied with domes rather than castors. The Chappell C, and its more compact counterpart the Chaplette, also continue to enjoy great popularity in the home; the range, then, is of quality pianos, and few musicians are likely to be unaware of their presence and capabilities.

YAMAHA

Several important innovations from Yamaha have formed an integral part of their Frankfurt stand this year — amongst them a new portable grand piano. It is described as acoustic-electric, and has very short strings, making its appearance (according to a certain gentleman at Kemble) like that of a "pregnant Rhodes". It will cost around £2000 when generally available, and has already been favoured by the deft digits of Herbie Hancock. Additionally there is a new electronic piano, with the action of a grand, at about £800. A new range of polyphonic synthesizers, derived from the gargantuan GX1, will also soon hit the market, taking their place alongside the already popular SY-2 (which is, of course, monophonic).

Yamaha-watchers will already be familiar with their series of combo (i.e. with a built-in amplifier) organs. The top of the range is dominated by the YC-45D, with two 61-key manuals and an optional 13-note pedalboard. A large number of tone levers and effects ensure the continuing flexibility of this instrument, including such delights as "slide trombone, squawk, birds" and "astro". The amplifier provides 30 watts of power. Smaller models are the YC-30, YC-20 and YC-10, with proportionately smaller power outputs.

J. T. COPPOCK

The new Elgam organs from J. T. Coppock will no doubt have created a favourable impression at the Frankfurt Trade Show, and reports so far confirm that the models have reached the intended market. The first of these, the Melody, has two 37 note keyboards, and is available either with or without internal amplification. It should be noted by those keyboard players within a group that a lower range of sales tax exists on instruments without amplification.

The Melody's partner is the Symphony, and this features two 49 note keyboards. The Symphony with amplifier has a 20 watt RMS amplifier through two 8" loudspeakers; the rhythm unit has twelve rhythms and is linked to the automatic bass and chords and has a chord decay control. Future arrivals of new Elgam models include the Broadway, a prototype of which was on display at the London Trade Show, and a programmable rhythm unit called the Carousel which incorporates memory chords and arpeggios plus a two octave keyboard for programming the chords. Four footswitches control

the chords for minor, seventh and diminished.

OBERHEIM

This name will probably be unfamiliar to most readers. Oberheim are a synthesizer manufacturer in California, and Gary Wright is amongst those who play their instruments. Perhaps their most important contribution to developments in electronic music comes in the form of their Four-Voice Polyphonic synthesizer; this enables four notes to be played simultaneously, and whilst it is thus not fully polyphonic, it includes also a memory device which stores patches of the player's own choice and recalls them at the push of a button. The advantages of this should be evident to those who have discovered the limitations of pre-set voices and the burden imposed by having to transport several keyboards. This instrument is actually four complete synthesizers linked together and operated by a single keyboard. It is thus fully modular, each expander including two VCO's configured with a four-mode VCF, two envelope generators, a low frequency oscillator and a VCA. There are no less than 49 notes on the keyboard.

The other main instrument by Oberheim is the Two-Voice Polyphonic, based on the same principle, but having just two expander modules along with an eight-position two-voice Mini-sequencer with sample/hold, and 37 keys. We await further developments with interest.

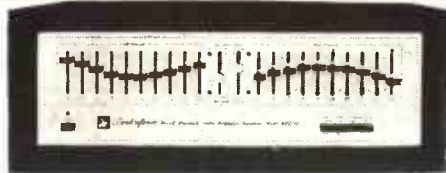
BOOSEY AND HAWKES

Responsible for the distribution of ARP synthesizers, Boosey and Hawkes also handle Diamond organs. Featured amongst the latter are a variety of instruments for different applications. We begin with the Model 70, with a 49-note manual and four voices: melodia, trumpet, violin and bass. There is vibrato on/off, and the first 17 keys are bass/treble convertible. There is an overall volume and a bass volume control. The amplifier gives out 7 watts rms, into a 4 ohm speaker. This model also comes in a more expensive version, featuring a built-in rhythm machine. There are 3 other models before we get to the 742, with its two 49-key manuals, rhythm unit and automatic accompaniment. The latter includes the two pre-set voices of piano and guitar, plus automatic bass. It comes with an optional 13-note pedalboard. Needless to say, the range in between covers a variety of styles and price brackets. A string unit and an electronic piano complete the Diamond line.

ARP synthesizers are well respected, and were covered recently in Beat's Synthesizer Survey. The most accessible to the less-than-wealthy is the AXXE, with a noise generator for thunder, lightning and storm effects, portamento, pitch bending and other basics, such as a VCF, VCO, LFO and envelope generator. The keyboard has just 37 notes, but by judicious operation of the transpose switch, its pitch may be raised or lowered 2 octaves.

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The first name in graphic equalisers. The range includes the SG2205 which is suitable for 19" rack mounting, has 600 ohms output and the facility for tape equalising at the touch of a button. The companion model, the SG2209 also features balanced input and output.

SAE



A complete range of amplifiers for professional use: Five models from 50 watts per channel to 400 watts per channel. Also available, studio quality parametric equalisers, high quality pre-amplifiers and Model 5000 impulse noise reduction unit. All units are finished in matt black, rack mountable and all amplifiers except for the smallest have power output indication.

DOKORDER



A wide range of machines for the recording enthusiast. The 4-channel recorders are ideal for multi-tracking and mini studio use, and range from the inexpensive 7140 to the professional model 1140 (illustrated). Send for full technical specification.

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TEAC 6300
TEAC 6100
TEAC 7300
TEAC 7300 2T
TEAC 7300 RX
FERROGRAPH
(ALL MODELS)
TANDBERG 3500 X
TANDBERG 9100 X
TANDBERG 10 XD
OTARI MX 5050/2/4

4 CHANNEL
TEAC 2340 SX



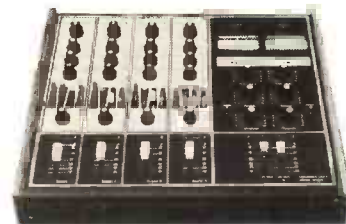
TEAC 3340 S
OTARI MX 5050 QXHD
8 CHANNEL
BRENELL STANDARD 8
BRENELL MINI 8
OTARI MX 5050 8SD
TASCAM 80-8

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YAMAHA TC 511S
YAMAHA TC 800 GL
NAKAMICHI 550
NAKAMICHI 600
NAKAMICHI 700
NAKAMICHI 1000

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100
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AMCRON DC 300A
AMCRON M 600
YAMAHA B1
YAMAHA B2
PHASE LINEAR 400
PHASE LINEAR 700B
REVOX A740

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TANNOY DEVON
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TANNOY BERKELEY
TANNOY ARDEN
YAMAHA NS 1000 JBL 136
JBL L100 JBL L65 JBL L200B
ACOUSTIC RESEARCH (FULL RANGE)

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GAUSS (ALL MODELS)
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HEADPHONES

YAMAHA HP 1 YAMAHA HP 2 REVOX RH 15
AKG K140 AKG K180 AKG K240

NOISE REDUCTION UNITS

DBX 117, DBX 119, DBX 122, DBX 124,
DBX 154, DBX 157, DBX DX8
TEAC AN 80, TEAC AN 180, TEAC AN 300

ACCESSORIES

REMOTE CONTROL UNITS, BULK ERASERS
DEMAGNETIZERS, ADT UNITS, TEAC
MIX DOWN PANELS, GAFFA TAPE,
POWER SUPPLY UNITS, DIRECT INJECTION
BOXES, XLR, CANNON, JACK PLUGS

TAPE

SCOTCH 207
MAXELL UD 58B

MICROPHONES

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D1200, D202, D224
SHURE (FULL RANGE)
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STUDIO EQUIPMENT SUPPLIERS SURVEY

Hopefully most of the companies we've chosen to examine in this survey of studio equipment suppliers will be in part familiar to most Beat readers from our monthly studio spotlights. Here we have listed a selection of the most important companies involved in the studio supply market, the backbone of the recording industry — from tape machines to mixing consoles, and digital delay lines to power amps.

ELECTRO-VOICE

Speakers and microphones from Electro-Voice are making inroads into the established reputations of the more usual in-studio equipment manufacturers. Although the mics could be accused of being expensive it's a case of you pay your money and take your choice. Made in America and distributed in this country by Gulston, the mic range includes the RE20 which has built in shock mounting and an electrical shield. Uniform frequency response from 45 to 18,000Hz and a bass roll off switch make this particular mic

particularly suitable for many aspects of studio work.

On the speaker side is the excellent Sentry III which is already used by a great many studios for monitoring. A direct descendent of the famous Sentry II it features the same high frequency components with a new low frequency section which allows a reduction of 30% in overall size while extending the low-frequency performance to 10Hz relative to the Sentry IV A. Provided with a tweeter protection device which allows maximum performance without tweeter damage, the 50 watt

specification for the Sentry III is based on filtered random noise which is fed to the speaker for a period not less than 15 hours before sale. The Sentry III has made successful pushes at establishment monitoring thinking and proves that it's not just reputation that gains a place in the studio monitoring room.

AKG

Microphones are the most well-known facet of AKG's wide-ranging contribution to sound equipment, and we have recently covered this in Beat. AKG also, however, manufacture high-quality headphones, for both the home listener and for the requirements of the studio. The K240, for example, are lightweight dynamic stereo headphones with a unique construction and 14 diaphragms, and recommended for the high quality reproduction of sound in a studio environment.

Other studio equipment supplied by the firm includes a series of reverb units, built into sturdy yet portable cabinets. They are insensitive to exterior sound or vibrations and have 2 channels. The BX15, for example, has variable delay times between 1.5 and 3.5 seconds, in steps of 0.5 sec. There is a separate bass and treble control, and reverb-intensity per channel.

AKG also manufacture a digital audio time delay unit with a maximum of four outputs from one input. The maximum delay is 400 milliseconds, and the steps are variable.

BOSE

The Bose 800 speaker has multiple drivers in an air-sealed enclosure plus an active equalizer, whilst the size of the speaker cabinet is kept small by the use of small cones in conjunction with large magnets. The 800 is the main commercial speaker produced by Bose, but recent developments in speaker designs mean that they are also well suited for use in studio monitoring. Their 901 Series III drivers utilize aluminium helical voice coils, and the brief in this range has always been to maximise efficiency. Previous speakers have often lost magnetic flux from leakage through the steel construction. 'Dead space' has been reduced by the use of a special injection-moulded thermal plastic. The high ratio of magnet to cone weight also contributes to greater efficiency.

It should also be mentioned that the Bose 1800 power amp with its rugged construction and LED indicators is a good complement to the speakers.

ALLEN & HEATH

Allen & Heath manufacture studio recording aids of various kinds but with an emphasis on sound mixers. Their modular series mixing console is a moderately priced piece of equipment which can handle up to sixteen-track recording and mix-down, and which can also be easily adapted or extended to incorporate additional systems. Up to 16 input channels are available, each with its own monitor mix and overdub func-

tion, and there is a three-range equalization unit with parametric mid-frequency. Amongst other ancillary products, the A&H automatic double tracker is worthy of mention. A two-channel analog delay unit operating on Bucket Brigade delay lines, each path is capable of up to 24 milliseconds delay, switchable in six-millisecond steps. A dual button between the paths delivers a 48-millisecond delay between input 1 and output 2, and although designed for vocal and instrumental doubling, the ADT will also be useful in creating special effects or synthesizing quad from stereo, having a noise distortion of less than 0.5%.

Allen & Heath also produce the first infinite compression ratio limiter which makes it impossible for any signal, transient or otherwise, to pass through the recording unit above the specifically set threshold level. With live performances this means a great saving in destroyed speakers through overloading, and in the studio can make life a lot easier, especially when dealing with obstinate signals like piano, synthesizer or vocals. With a frequency response (20 cycles to 20 Kc) of +0 to -3dB, the limiter threshold may be varied from -10 to +10 on the input control, and from -20 to +20 on the output level control.

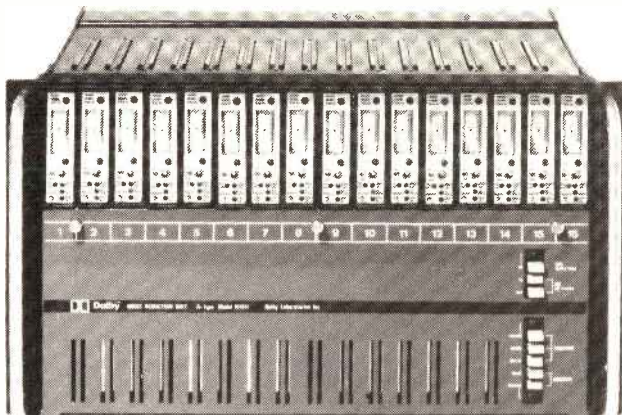
BEYER

Our microphone survey a couple of months back covered the best of the Beyer range. It should, however, be mentioned that the most suited models for the studio are the M160, M360, M500, M88 and M101.

Beyer's headphones include the DT100, with a frequency response between 30 and 20,000Hz, and this model is characterised by the particular brilliancy of the sound. The DT100V has a high-fidelity induction receiver built in, in order to obviate the need for cables. The DT480 ('Sound Juwel') has a frequency response of 20-20,000Hz and is a dynamic stereo headphone, whilst the 204 picks up quad sound signals, which are also stereo compatible. Finally, their DT48 ('long recognised as a first rate acoustical testing and measuring instrument') is perhaps the most widely used model in professional sound recording, and even scientific research.

R.E.W.

Professional Sound Equipment
R.E.W. are neither manufacturers nor professional consultants in this field, but have been included in this survey because they offer a phenomenal range of equipment to the serious studio musician at special discount prices. With everything from mixers and graphic equalizers to PA speakers readily available they are one of the very few retailers in a position to give you exactly what you're looking for over the counter. Better to go into this shop and select just what you want rather than send off, wait for two



▲ Dolby noise reduction unit.

Continued on page 76

months and then receive the microphone stand that someone else ordered last Christmas! You'll find them at: 146 Charing Cross Road, London WC2 (01-240 3064/5).

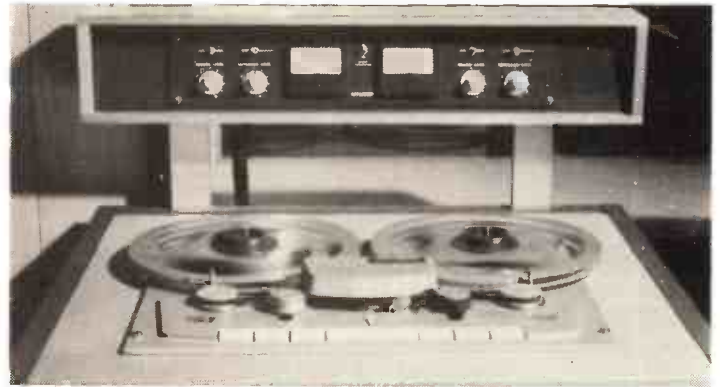
D.E.S. TECHNICAL

DES are wholesalers for Scientific Audio Electronics, Soundcraftsmen and Dokorder. Besides all the conventional luxuries of pause button, cue switch, auto shut-off and remote control, the Dokorder 1140 tape deck has a four-channel erase system of ferrite in addition to the four-channel record and playback molybdenum heads. This facilitates all the source/monitor versatility of a three-head deck plus the added convenience of 4-track bi-direction stereo. The peak-level recording indicator is incorporated to warn when incoming signals exceed the ideal recording level by +8dB, and the two four-digit tape counters, one for forward and one for reverse, serve either as ordinary indexers or, with the memory program in operation, can be set to function for aids such as infinite play-stop-rewind-repeat-play. Handles the studio standardised 10½ inch reels and offers two alternative tape running speeds: 15 ips or 7½ ips. First-rate value for money this one.

SAE covers amplifiers, pre-amplifiers and sound equalizers, and one of the more interesting additions to the range recently has been the SAE 5000 graphic sound equalizer. The 5000 goes a long way to over-

coming the recording artist's old enemy: impulse noise. Impulse noise, known professionally by such terms as "clicks" and "pops", is generated by static, vinyl kinks and accumulated dirt. Upon detection of the presence and duration of the offending impulse, the 5000 is able to isolate and delete only the damaged segment from the recording. Because the duration of this impulse is usually so minute — often far less than a thousandth of a second — it is possible to extrapolate forward a tiny segment from the music information immediately preceding the gap, thus eliminating the danger of destroying sound continuity. But there is also a system defeat button which enables the impulse noise reduction circuit to be electrically bypassed, and for those who need to know such things, the circuit can also be reversed, so that only the noise eliminated from the recording can be heard. Total harmonic distortion is less than 0.1%, intermodulation distortion less than 0.1%, and the signal to noise ratio is greater than 90dB below the rated output. Certainly a useful piece of equipment to have about the recording studio — especially when reworking old or inferior-quality tapes.

Soundcraftsmen American-made sound equalizers come at a reasonable price and offer an accurate level of performance. Of these the SG2205-600 has harmonic distortion of less than 0.1% and a signal to noise ratio better than 106dB at maximum output. With rack-mounted 19" black-anodized panel, it looks functional and



▲ Studer B-62.

unassuming, and a 600-Ohm output makes it suitable for serious studio use.

F.W.O. BAUCH

Bauch are one of the leading wholesalers of equipment specifically to the serious studio musician, handling exclusively recording hardware made by manufacturers from Neumann microphones through Lexicon delay units to ARP synthesizers. Two new products available from Bauch in the Studer range are the new portable audio mixer and studio tape recorder. The new tape model — Studer A80/RC — is an advance on the A81 series used by the German Broadcasting Corporation, and features a new tape transport control and standard LED electronic timer.

Further news from Bauch is the

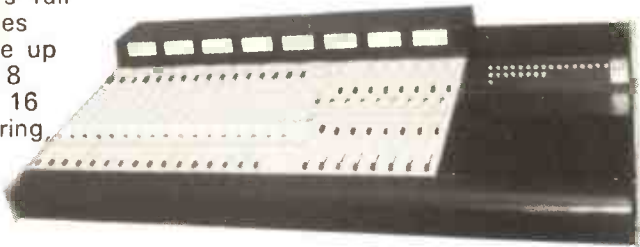
new Lexicon Varispeech II, which enables standard audio cassettes to be played at any speed from one half recorded speed to 2½ times, whilst preserving the originally recorded quality. Pitch tracking is better than 0.1% of nominal over the entire play-back range, and a further feature is the digital splicing technical which virtually eliminates the noise interference emanating from spliced sections of tape.

HAYDEN LABORATORIES

Hayden Laboratories may not immediately trigger bells in most minds, but if we were to say Sennheiser . . . ? Sennheiser microphones and headphones are pretty well standard issue in most studios we visit, and so they should be. Sennheiser really care about their equipment and the

As used by PINK FLOYD

The Allen & Heath Modular series console offers full studio facilities which include up to 24 inputs, 8 outputs and 16 track monitoring, parametric equalisation, 3 auxiliaries etc.



The Brenell 1" studio multi-channel recorder offers down stream monitoring, separate sel-sync amplifier, modular electronics and remote control facilities etc.



BRENNELL

Pembroke House, Campsbourne Road, Hornsey, London N8 01-340 3291

technical developments in their field of the industry and publish an excellent micro-revue which contains not only information on their products but explanations regarding their manufacturing philosophy.

The Studio Cardioid Microphone MD421 is one of their really outstanding items, offering a very wide frequency response with an intentional increase of sensitivity in the upper range. Models 421N and 421-U-4 incorporate a bass control which is adjustable in five steps. External magnetic stray fields are eliminated by a compensation coil.

Sennheiser also produce a range of first class headphones, many of which are chosen by some of the best engineers in the world, as well as a series of monitoring mixer units and equipment testing hardware. We recommend studios, and those of you with semi-professional interests to contact Hayden Labs at Churchfield Road, Chalfont St. Peter, Bucks. for full details of the comprehensive Sennheiser products.

ROLAND

Roland are one of those companies who tend to come up with the goods but don't shout about how good they are — which is quite refreshing. Best known probably for their amps. and superb range of synthesizers and string machines (all of which should be found in studios anyway!)

they also manufacture a number of items which could prove useful in smaller studio situations. The RE-301 Chorus Echo lies at the top of the RE series of echo chambers, and produces effects ranging from the large auditorium or cave-like echoes to long delay echoes similar to the genuine article — stand on top of the Matterhorn and let rip with a good yodel. The 301 also employs a BBD generated chorus effect to make solos sound like duets, and 6 string guitars like 12s.

Roland also make the Boss GE10 Graphic Equaliser which although primarily designed for stage use, has applications in the semi-professional studio as well. It has a very comprehensive specification and could well be worth a look if you're thinking of setting up a small recording unit.

MM ELECTRONICS

MM produce a formidable range of high quality mixing consoles designed for high performance in recording and PA applications. The original member of the family is the MP175 which is still selling like hot-cakes simply because the basic design is so effective, and the price is still right. The MP 175 features 12 input channels mixing down to 2 with facilities for echo and foldback

Continued on page 78

Brian May



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Kasuga guitars are available through all good retail musical instrument shops. The range consists of nineteen popular models. Illustrated is the black single cut-a-way model LG380B at £165 including de-luxe carrying case, together with the blonde model LG2000V at £299 also including de-luxe carrying case. Please ask for further details through your local dealer or write, with stamped addressed envelope, to:-

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sends, and represents a recommended basic for any small studio ideas.

The 16 into 8 has double routing switches enabling any input to be routed to any pair of output channels, and all MM desks have established an enviable reputation for ruggedness and reliability due to their extensive and exhausting checking and testing system which makes it virtually impossible for a duff number to pass out the production end of the factory.

HAMPSTEAD HI-FI

Hampstead Hi-Fi are one of a number of microphone manufacturers who are busy making a name for themselves in markets which have traditionally been dominated by the few so-called accepted giants of the field. Hempstead Hi-Fi manufacture a range of microphones with applications ranging from aircraft ground control, through outside broadcast, to studio and live P.A. use. The 4105 is a lightweight cardoid moving coil model with a well documented capacity for reducing that headache of all mic. work — feedback. The 4038 is used for recording musician groups in studios and is a high sensitivity bi-directional ribbon mic with low distortion.

GELF

Gelf are one of a number of companies in the business who operate

from the new Milton Keynes city, from where they produce a selection of studio mixers, cross over units, and auto phase units. Gelf desks are particularly pleasing both aesthetically and electronically, and they produce a number of mixers developed purely for monitoring. The 16/6 gives the availability of 16 inputs to any one or more of the 6 outputs thus providing 6 independent mixers.

The Electronic Crossover GX 24 is a 4 way stereo unit with floating balanced 600 ohm inputs and outputs and VU metering and level control on all outputs. Crossover frequencies are 450Hz, 1300Hz and 8600Hz. The Auto Phasing Unit GP14 has a phase shift of 2160 degrees, a variable delay between 0.03 and 3 seconds, and features phasing indicators located above the envelope section which show the control voltage acting on the filter, maximum brilliance occurring when the filter is at the end of its range.

HH

Although better known for their VS Musician range of amplifiers, HH also manufacture a number of items with studio applications. The Multi-Echo Unit is a compact and portable echo delay system, made to studio standards — which can also be used live on stage — giving a wide range of different echo, reverb and special repeat effects. Four separate replay

heads are used with a fixed delay of 80ms and buttons select which head or combination of heads are operating. Four independent repeat push buttons select the replay head to be fed with repeat signals — offering a total of 240 different synthesized sounds.

HH also manufacture the IPA series amplifiers which are used extensively in broadcasting and sound recording studios. The TPA 100D is a silicon transistor amp giving extremely low total harmonic distortion at full rated power and at low levels over the whole frequency range. DC coupled throughout the amp is rated at 170 watts rms into 7.5 ohms and features a unique dissipation limiting circuit which protects it from load mis-match and short circuit conditions. Recovery from short circuit to normal operation is virtually instantaneous with no thermal cutouts to reset or fuse replacement requirement.

FELDON AUDIO

The pride of Feldon Audio's gear is the Eventide Clock Works Harmonizer which has already found its way into many good studios. The Harmonizer employs digital circuitry and RAM (Random Access Memories) which transpose input signals by up to a full octave, either up or down. The Harmonizer is also a versatile digital delay line variable in 7.5ms steps up to 112.5ms, and a second input is an optional extra

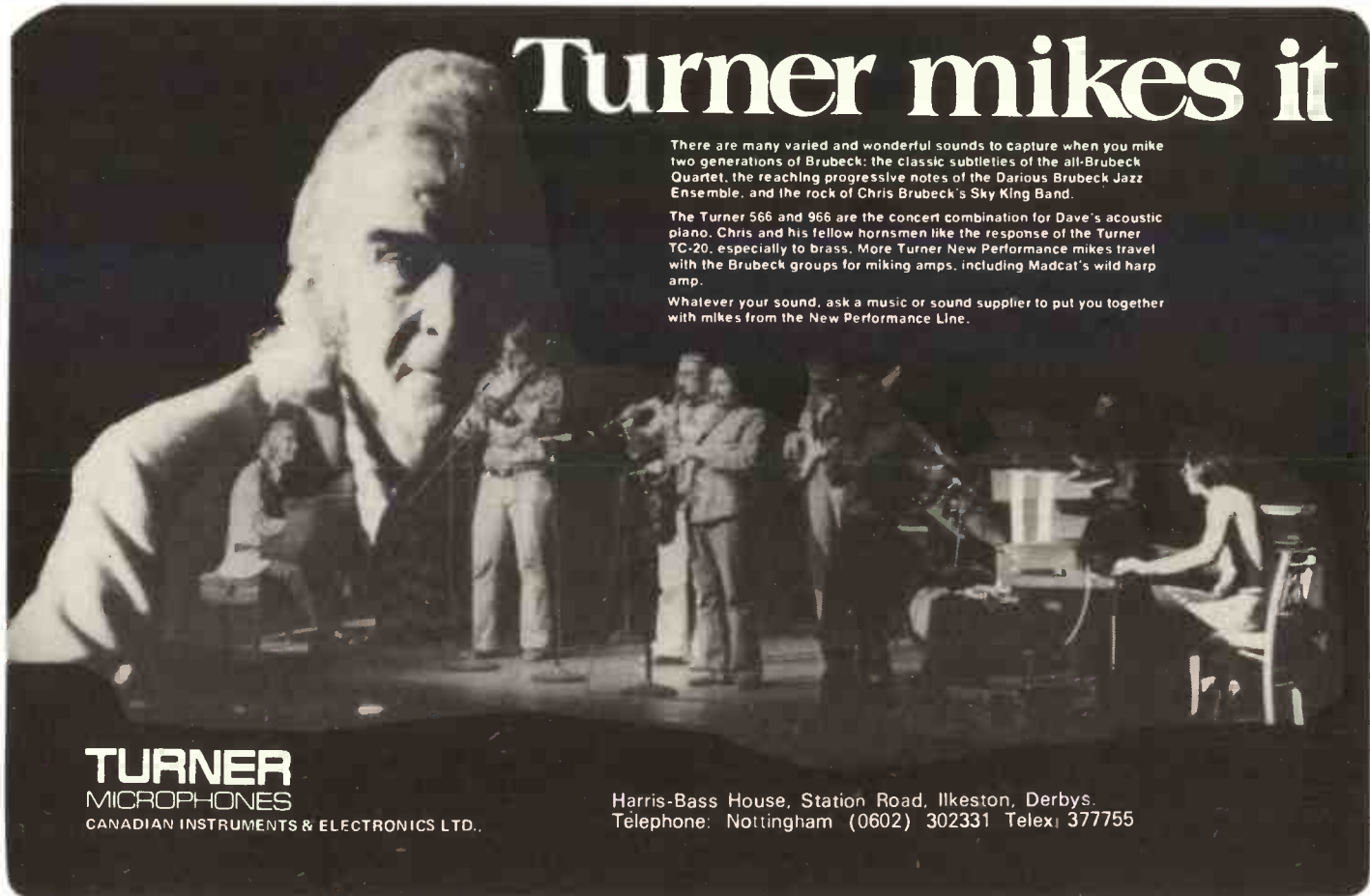
that varies up to 82.5ms.

The Harmonizer also decreases energy build-up feedback by moving successive repetitions of the same signal away from the original frequency, and can also be employed to increase and decrease tape speeds without affecting the pitch. As you may gather from this we like it, and want one!

DOLBY

Nearly eleven years have passed since the Decca Record Co. took delivery of the first live A301 units. Since then Dolby have achieved the distinction of becoming a household name from an industry about which most households know very little. Dolby noise reduction equipment is now the industry standard, with more than 25,000 professional channels in use by well over a thousand studios in more than fifty countries — to say nothing of the system built-in to home hi-fi hardware.

To go into detail about the operation of the Dolby system would take many pages of space, but in principle Dolby first examined how every stage of the recording process adds noise to the signal, and then researched into methods of reducing this noise. The Dolby system acquires information about the signal characteristics prior to recording, modifies levels in a frequency-dependent way during non-masking passages to raise them



Turner mikes it

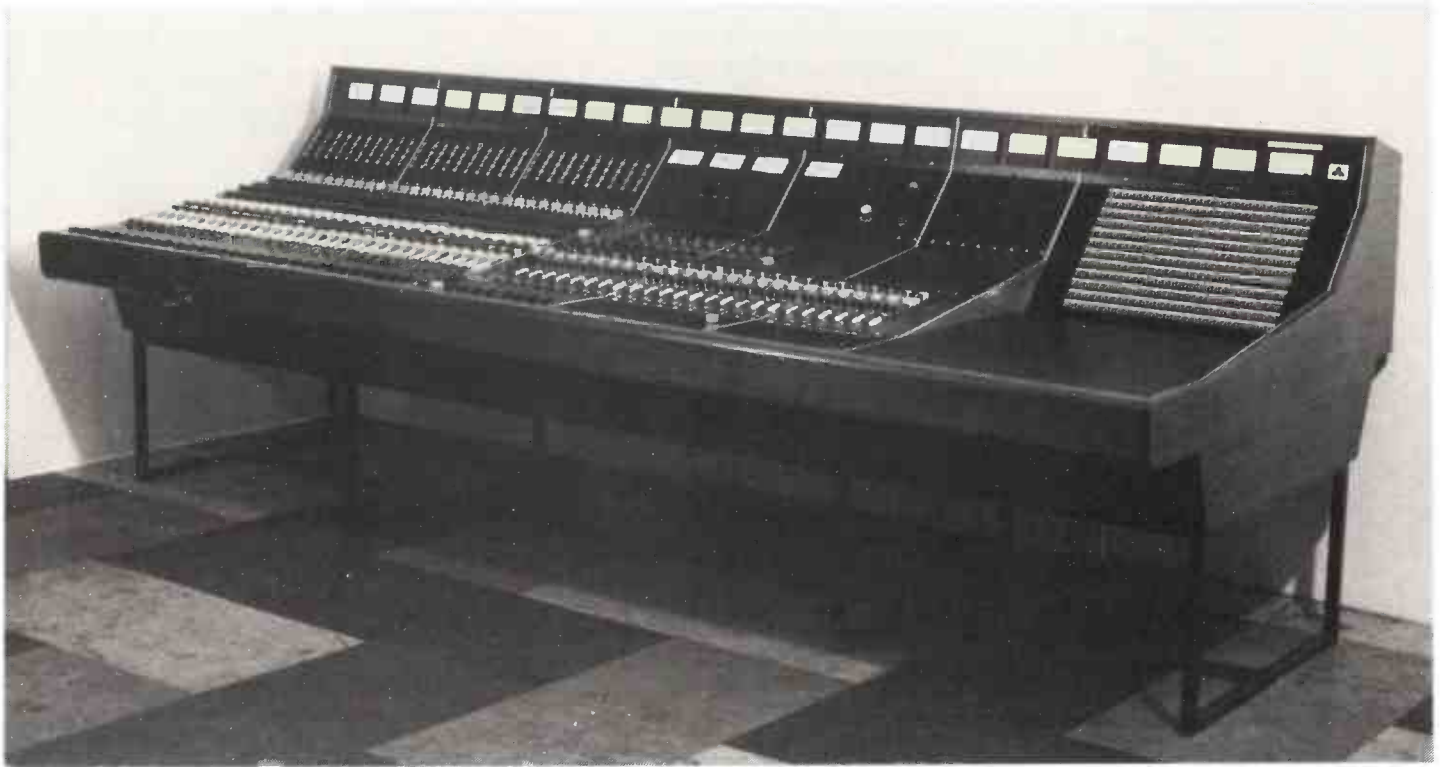
There are many varied and wonderful sounds to capture when you mike two generations of Brubeck: the classic subtleties of the all-Brubeck Quartet, the reaching progressive notes of the Darius Brubeck Jazz Ensemble, and the rock of Chris Brubeck's Sky King Band.

The Turner 566 and 966 are the concert combination for Dave's acoustic piano. Chris and his fellow hornsmen like the response of the Turner TC-20, especially to brass. More Turner New Performance mikes travel with the Brubeck groups for miking amps, including Madcat's wild harp amp.

Whatever your sound, ask a music or sound supplier to put you together with mikes from the New Performance Line.

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▲ Triad desk awaiting delivery.

above the noise, and restores original levels during playback, reducing noise at the same time.

TRAD
149b St. Alban's Road is where Trad

have opened their new showrooms. Started back in '74 Trad are the specialists in second hand equipment, offering a virtually unique service. If you've got an 8 channel mixer and are looking for a 16 — look no further. Trad will find you one, and take your 8 in part exchange. Can't be bad, eh?

Trad also handle new equipment too, so there are all sorts of possible deals you could get together. Names that Trad are particularly well-conversant with include Studer, Ampex, MCI, Revox and Teac tape machines, and Neve, Trident, Helios, MCI, API and Audio Developments mixers. Also handled by Trad are all the outboard gear — equalisers, mics, cans etc.

CALREC

Calrec Audio, operating from Hebdon Bridge in Yorkshire, are better known for their studio and broadcast mixing desks than they are for their excellent range of capacitor and dynamic microphones. The mixers are used extensively in the broadcasting field for both television and radio work, as well as being found in some of the better music recording studios.

For those who still believe broadcasting studios to be filled with pre-war hardware, Calrec's equipment would come as a surprise! Recently installed in the BBC's Glasgow department is a 44 channel desk into 8 main plus eight sub-groups — and Calrec also produce sophisticated outside broadcast facilities. Some of the lessons learned in this field have paid off in the music field — Calrec specialise in custom shapes — and in many studios today where space is limited Calrec have been doing the electronic plumbing.

SCENIC SOUNDS

Scenic Sounds distribute dbx noise reducing systems as well as being main agents for Harrison recording consoles. Harrison desks are available with formats ranging from 16 in and 16 out through to 40 in and 32 out. Additionally Scenic handle the Allison Research 'Memories Little Helper Automated Mixdown System MkII' and all input levels, group master and quad master on the console can be controlled simply by connecting the Allison programmer.

In the noise reduction field dbx are making substantial advances — and their four channel unit, the Model 154 is ideal for use with the semi-professional recording equipment produced by manufacturers such as TEAC and Dokorder. The dbx system reduces noise levels by 30db and can increase the overload margin of the recorder by 10db. Excellent equipment at a very reasonable price.

ITA

Amongst the products of this company is the ITAM 805 8-channel master recorder. The 805 uses 1/2" tape and its mechanics are based around the classic 3-motor design, controlled by relay solenoid logic. To give the deck as much stability as possible, it is encased in 1" thick material. Wow and flutter is kept to a minimum with the Servo controlled capstan, and variable capstan speed adds to its creative possibilities. The electronics are the same as those fitted to the 16- and 24-track models. Each channel has its own synthesized 100kHz bias oscillator, which allows the tape operator to drop in and out of re-

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Continued on page 80

cording. The 805 is amply suited to track bouncing.

A 10/4 mixer with three-way eq, limiters, echo, foldback, panning and monitoring is also offered by ITAM. The modular construction of this desk makes for ease of servicing.

The firm also distribute TEAC, Otem, Dokorder and Revox tape machines.

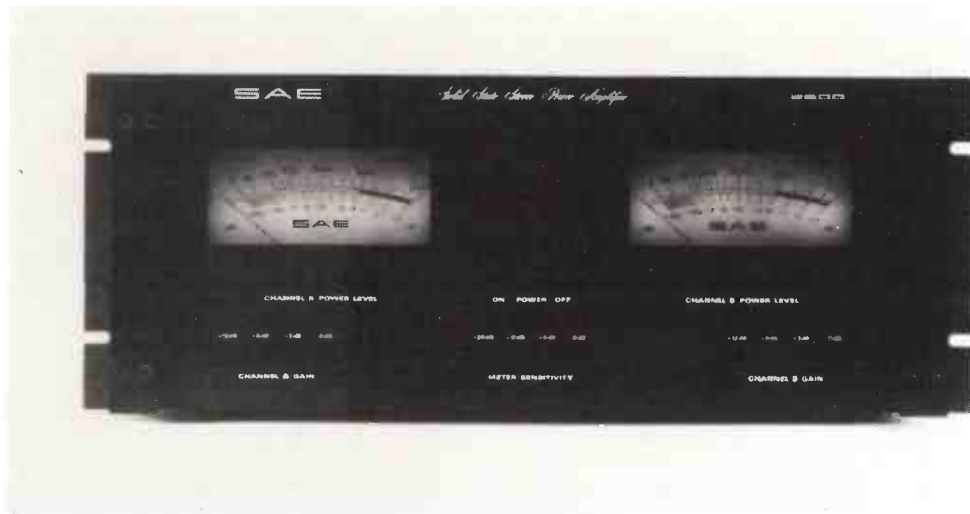
SHURE

Show us a studio without a Shure microphone somewhere on the premises and we'll show you . . . well, you must know what we mean. Shure mics. have been accepted as industry standards (an ubiquitous phrase but perfectly honest) for a long time now — both for live work and studio use. The recently introduced PE52 close-talking mic cuts out all noise originating further away than 1" from the mic ensuring total cut-out of surrounding instruments. Filters excluding wind, breath and pop are also provided.

Another recent model is the E-Qualidyne which has four body switches activating attenuation filters in areas of the audio spectrum that are susceptible to feedback. They also allow the user to change the mic characteristics from bright to mellow and can also dispense with annoying boom or sibilance. Obviously Shure have many, many other models which find studio use as well as stage use — all of which are manufactured to the same high standards.

CADAC

Recently chosen by Jethro Tull to supply them with a 32-channel transportable console with sub-grouping (see last December's Beat) Cadac are manufacturers of high quality mixers, ranging from the largest in multi-track and quad to compact and portable units designed to offer equally high standards on the road as in the studio. The "E" series of boards is basically designed for 16 in, 8 out, with monitor channels and variations ranging from 8-2-2 to 32-



▲ 2600 Super High Power Amplifier from SAE.

32-32, depending on requirements. Facilities include mic and line inputs, five band eq, stereo panning and two auxiliary groups which can be used for echo or for foldback.

The larger quad boards by Cadac are based around 'Q' modules. Their features include monitoring channels with monitor group outputs, comprehensive routing, phantom echo send, sync to foldback and monitors . . . in fact the list of facilities is virtually endless. But we should mention the Quadrapots — two independent controls which pan left to right and front to back.

MARTIN AUDIO

Dave Martin is more renowned for supplying live PA than for his work in supplying recording studios. His excellent monitors have, however, found favour with a number of studios, and amongst them is Relight Studios in Holland, which Beat found so impressive last July. Dave is also agent for the professional HH S500D stereo power amp which has a maximum output of 450 watts per channel.

MUSIC LAB

Up until now the Music Lab has supplied recording studios solely, but are now pleased to announce that they are ready to supply professional audio equipment to bands and musicians in general. They can supply from stock a full range of 4- and 8-track recorders by Brennel, Tascam, Otari, Teac, and the full range of Revox recorders. Also in stock is a full range of Tannoy and JBL monitors and chassis units. All mixers by Allen and Heath, Tascam, Alice and Lamb, and Nurse reduction units, echo units and special effects can be had, as well as a large number of microphones. Yet still the list goes on: power amps by Amcrom, Revox and Harmon Kardon, and a whole host of accessories — jack plugs, switches, etc.

Instant service and repair is offered on Revox and Teac recorders. A tape copying service on both cassette and open reel, plus a mail order operation throughout Europe completes the long and surprising list of Music Lab's concerns.

MACINNES

It's rare that one company is associated so successfully in two sides of the studio business, but

Macinnes, as manufacturers of mixing consoles themselves, and as distributors of the Amcron range of power amplifiers, deserve that distinction. We can hardly believe that there is anyone left who doesn't know of Amcron's reputation in the studio world — a simple glance at a few past issues of Beat around the Studio Spotlight pages should explain — but briefly Amcron are just about *the* studio amps.

The DC300A can be seen stacked in studios everywhere — and is so reliable and rugged that few of the major bands in the world — and by major we mean The Stones, Floyd, Jethro etc — don't use them either. They're just that kind of amp. Macinnes' involvement in studio desks is more recent, however, and they manufacture a 16/2 and a 16/4 desk for both small studio and PA work. The consoles feature two echo sends, two foldback and all the other facilities you'd expect from a high quality desk. Good stuff, this!

ROGER SQUIRE

The name of Roger Squire may be better known for excellent disco equipment (yes, Beat did say ex-

Continued on page 82

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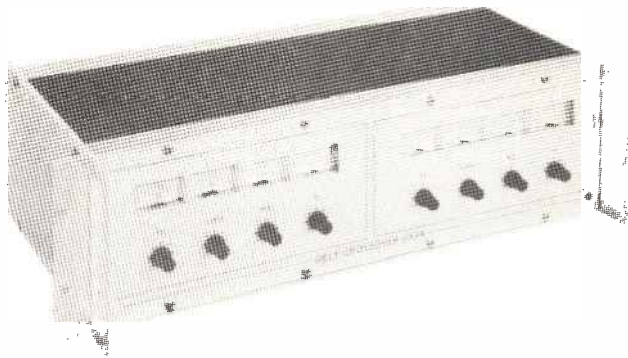
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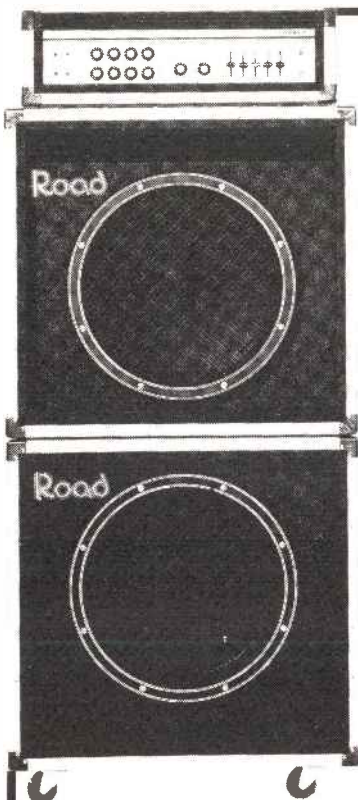
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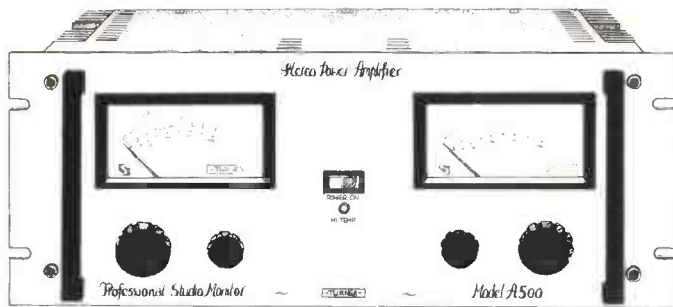
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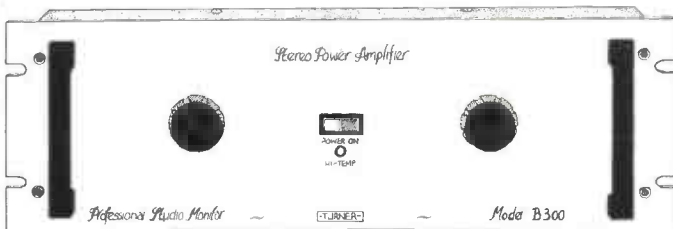
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Model B300 is the single power supply version of model A300.

Technical literature available:

A300 specifications A500 reviewed
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cellent disco equipment) but Roger also runs a Studio Division from St. John's Wood. About two years ago he started selling inexpensive mixers, studio mics., cartridge machines for spot effects and various other accessories, and in the intervening years has built up this side of the business quite extensively.

Squire markets the famous Allen & Heath Minimixer (see elsewhere in this survey), but one of the more interesting products is the new S5000 Cartridge player which provides the convenience of cartridges with virtually the same fidelity as a good semi-pro recorder. The cartridge player also features varispeed control. Squires also exclusively stocks the famous Anglepoise microphone arm.

studio/broadcast consoles are available in a choice of 6 modules of standard input, with variable main frame configurations to accommodate input/output arrangements from 4 into 2 through 12-4, 16-8, 24-16 and 32-16.

Midas consoles are as well equipped as any in the business, offering all the accepted facilities with regard to echo sends, foldback, e.g., monitoring etc. One of Midas' more famed installations in Relight Studios in Holland is a 32 in 24 track desk with channel routing via 24 independent illuminated push buttons, and eight auxiliary echo/foldback sends, parametric equalisation, 4 independent output groups for quad panning, and a pre-programmable automating system. All in all, a fierce one this desk!

VITAVOX

Vitavox are manufacturers of a wide range of horns, drivers and crossover units for an even wider range of applications — from warships' intercom systems to huge domestic speakers, and from underground tube stations to ultra-powerful PA enclosures. We know for sure that there are some studios around with custom built monitors in the control room who have used the excellent 15" AK 156 for its rich bass tones, and the S3 driver which gives exceptional sensitivity and high power.

MIDAS

If we had to pick out a star in this month's survey Midas would probably take the honours — we urge you to read Nigel Jopson's article 'Floydophonic' in which he examines the working of the new Floyd road desk supplied by Midas. Of course, this desk is for PA work, but we think you'll agree it's specification ranks amongst the best in the studio world! Midas

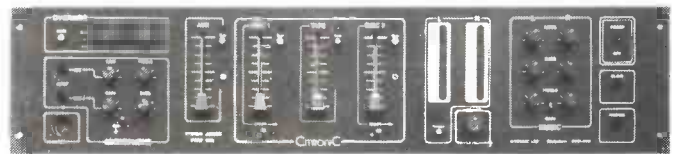
NEVE

Without doubt Rupert Neve & Co. are members of the top echelon of studio equipment suppliers, their desks being found in many of the best respected and extensively equipped control rooms all around the world. Always in the forefront of technical developments, Neve have recently installed the first automated NECAM console in Air Studios (see last month's Beat). Neve manufacture all kinds of desks with all kinds of applications including a number of small portable consoles — 10 channel jobs — which we have seen installed in a few 'home studios'.

But undoubtedly Neve's reputation has been greatly enhanced by the computer assisted mixing system which will store and recall as many mixes as the engineer requires, allowing combinations of different sections from each of 24 tracks with different mixes, without touching the master tape or losing the original memorised information. A real winner of a system about which we will no doubt hear a great deal more.

Continued on page 84

▼ Control panel of Citronic's new SMP 506 mixer which offers studio quality performance and facilities at a competitive price.



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MCI

MCI are manufacturers and suppliers of the real heavy stuff — the full 24 track studio recording machines and the big mixing desks. They have recently supplied CBS with a monster of a desk — 42 inputs and 32 output groups, already wired for computer-assistance, and featuring a unique metering bank. The bar graph metering is switchable instantly to PPM, VU or to two 21 band spectrum analysers, or can be switched to read the DC levels on the VCA and each channel has a VCA for the level control function which uses a linear four inch conductive plastic fader. Another mind blower is the EQ sections four basic adjustment areas which can produce over 140 million different combinations!

The MCI 24 track is becoming something of a thorn in the side of 'more established' makes as it appears to score quite heavily in the simplicity stakes while still offering similar facilities. And simplicity at this level doesn't mean your mother could get a minute steak together on it — it means that there are fewer mechanical complications which leads to increased reliability over long service periods.

SOUNDCRAFT ELECTRONICS

Soundcraft have been in the mixer market for some time now and are particular friends of those looking to set up a high quality studio outfit at

lower costs. Soundcraft's range of Series 2 mixers, originally conceived as a middle-budget way to 4 track studio mixing, has been improved and developed and is now a recommended way to start off on the long road to multi channel facilities. With Soundcraft, though, this is not the awesome task it may appear. The mixer is divided into a number of panel sections which can be assembled in a number of combinations with any number of input channels (in multiples of four) with either 4 or 8 output groups routable to 8 or 16 track.

If we're making it sound a little simple, listen to the spec: each channel features Panny & Giles conductive plastic fader, push button routing to pair output groups via pan control, LED overload indicator, four cue sends in pairs, pre/post switching, line input and 20db pad buttons and gain control, and push button for direct routing to left and right re-mix busses.

TURNER

Turner Electronic Industries produce a range of equipment that covers power amps., modular and non-modular mixing consoles, P.A. speaker cabinets and electronic crossovers. Their power amps can hardly need any introduction from us, enjoying, as they do, one of the highest reputations in the business, and having been supplied to such bastions of the recording world as



Lansdowne, Air, and Wessex. They range from 100 to 500 watts and obviously have uses outside the strict confines of the acoustic walls.

The fully modular mixer is available with an unlimited number of input, output and effect send

modules with the main frames being constructed for each individual board.

The non-modular range of mixers, although designed for live mixing, can be equally at home in a mobile studio — the TPS 16/2 has 16 chan-

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CETEC (GAUSS)

Gauss speakers are amongst the very best in the world, and are thus in considerable demand in studio monitoring, where high fidelity is more important than power handling. Cetec do not actually supply cabinets for their speakers, however, and this means that the purchaser is free to make whatever use of the speakers he sees fit. Gauss speakers have a unique double spider system for precision centring of the voice coil. This guarantees voice coil alignment in the gap during high power applications at all frequencies. Other features are the 18½lb magnetic assembly and 4½lb alnico magnet, all of which help its high efficiency.

ZOOT HORN

A recent addition to the Zoot Horn range is a brand new four way full frequency enclosure which has done its field work in Germany. Aimed at the general public address, disco and monitoring markets the FF1 uses four passive crossovers and includes 2x12" ATC bass drivers, 1x12" lower midrange driver, 2x5" high mid range drivers and an Electrovoice tweeter.

With a frequency response extending from 40 to 20K the speaker has a startlingly clear reproduction which could start nibbling at the more usual names in the monitoring field before too long.

CANADIAN INSTRUMENTS

Canadian Instruments and Electronics of Nottingham, appointed

sole concessionaire for the Turner Division of the Conrac Corporation produce a number of mics which have been making their presence felt in several studios up and down the country. Versions of the 750 desk mic have been adopted by many major sound companies while their entertainment mics (the TC series) is gaining wide respect in the live field. Mics for all applications and budgets are available and further info from 35 Waverly Street, Nottingham.

CANARY

Canary equipment hardly needs any introduction in a survey of this kind, their desks having been installed in many of the country's best respected professional studios for many years. Perhaps it would be more informative then to concentrate on one of the smaller desks which could have more applications in the smaller studios that are continually springing up around the country.

The Canary 10/4 is aimed primarily for home use in conjunction with a four track tape machine — which, after all, is the basic requirement of a studio — and has been designed to give maximum flexibility providing 11 inputs and 6 outputs. It provides one foldback for studio monitoring and overdubs, one echo send and two monitor sends for the balance engineer to listen to pre-fade listen, foldback echo return or the four lines mixed through another small four channel monitor pan mix. The master section has four master sliders for the inputs, master foldback outputs echo send and echo return slider.

Surprisingly the 10/4 is commonly used successfully as an on stage monitor mixer giving six individually adjustable outputs. Canary also produce a 12/2, 12/2, 15/2 and 18/2 mixers as well as 400 watt amps and crossovers.

Next month Beat looks at the floorspace on stage — and in particular the large number of effects pedals on offer from around the world. We'll also be putting the amplification industry under the microscope, and detailing the more important products available.

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KEITH CHRISTMAS—

Songwriting for the Human Zoo

For this month's songwriter interview we chose a writer who has been around for a good many years without really achieving major success in any particular market. That said, however, his is the sort of name that never fails to 'ring bells' whenever it crops up in a music conversation. Keith Christmas had established himself as a singer-songwriter long before the phrase became fashionable and with that experience in mind Beat dropped in on him to ask perhaps the two most basic questions: how and why do you write songs? We started with how?

"Great question." Keith replied, "try me with a couple of others while I think that one over." Well, Beat went straight in with the second: 'Why'?

"Writing is just like creating — it's not something that everybody has. I think it has to be genetic, so I think that you're born with it. You're born with creativity — everyone has it to a small degree, some more than others. I like to see children dance, for example. If children come from a family that listen to music a lot they tend to dance very naturally; but others have it repressed out of them. Creativity is much the same as that.

"You have your golden periods — it's not a constant thing through your life; and that leads you into 'how' do you write. You search, sometimes, for idyllic places to write in, and find that in some of the worst places you were ever in your life you wrote your best material or the worst situations you were ever in."

Just as Beat was about to repeat the first question Keith continued rhetorically: "How do you write a song! . . . Well, at first I thought it was pure inspiration, that you could do what you liked all day and then wait for it to strike. But that's not quite true, as there's another side to it as well: you have to sit down and work at it. There's got to be an element of discipline in it, as you have to sit and trigger something off in your head. You can sit and work at it all day and night and just when you think it's a waste of

time something begins to happen. But through the actual structure of the song you have to use a lot of discipline in how you're going to phrase the song — verse, chorus, verse, chorus, middle eight, verse chorus is fairly usual.

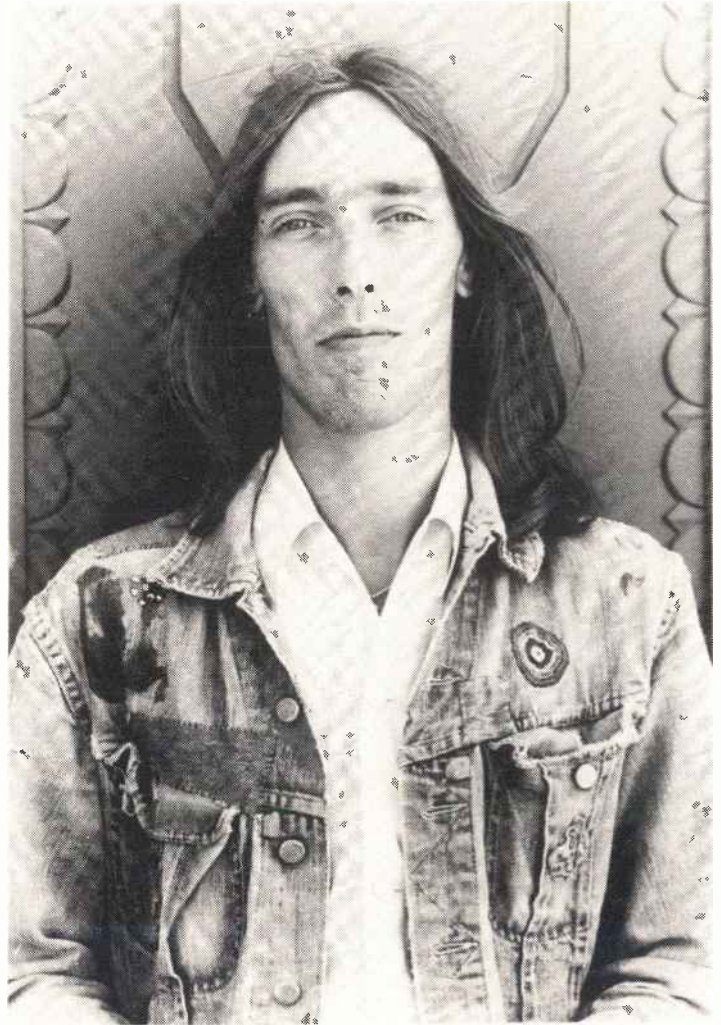
"But there are all kinds of songs — some you think of the words first and they go on paper and you find a melody to fit; some you think of the melody first, and you have it buzzing through your head for a long time before you fit words to it; some, you get a piece of a song which hangs around for anything up to a year — and that's a piece of advice for songwriters: 'don't throw away any of your bits' because the bits may appear rubbish but there could be a golden nugget in there somewhere." On this point Beat asked has he changed his own opinion of earlier material?

"I get no satisfaction from listening to early songs — it may just be because no-one does, or because I've not yet written my 'great song' — because when you're writing you're always looking for that one, great song. And a great song is one that everyone loves — it doesn't matter whether you think it's crap, it's the people out there.

"Still, I suppose you can cut down the songwriter's job into two distinct sections. There's the hard work, the polishing, recording, you know, all that side of it, and then there's the inspiration — and nothing, nothing can quantify the inspiration: there's no way you can put that into a few words.

"To me, it's that moment when I look at two lines and I know I've got a song, and when that happens I feel a complete rush of excitement like nothing I can describe, about on a par with the best orgasm, a mental hit — and that's the sort of hit I get which can keep me buzzing for a couple of days; after that it's gone, but the actual hit when you first know you've got a song, whether it's a good or a bad one, is quite extraordinary."

One of the dangers here, of course, is the ugly threat of plagiarism, because that moment when you know you've got a song can all too easily be



that moment when you don't know you've got someone else's! How wary of influences is Keith?

"You always have a decision, as a writer, when you're plagiarising something, and when you're not. Sometimes it's a very thin line. I mean, I think George Harrison was very unlucky to get done for that — especially as a lot of people have done a lot worse. You have a line in your head which you think is totally original and play it to somebody who will tell you you've cribbed it completely — that's when you're influenced by somebody else. But at that point I have to drop it, if only because I can't live with a line ostensibly written by someone

else. But you do cut things close sometimes, but as long as there are a couple of notes different I'll usually let it go through.

"Sometimes it works to go up three semi-tones, and sometimes it doesn't. Sometimes it works to go from a major to a minor on one line, and again, sometimes it doesn't, but that's what makes it a craft as well as an inspiration. You learn certain rules as you go along."

The 'going along' in fact physically meant staggering back from a public house in Shepherds Market and falling into Keith's publicity office to recline on the floor and seriously

Continued on page 89

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KEITH CHRISTMAS

wonder at the wisdom of continuing. Keith came to the rescue. Looking Beat straight in the eye he asked if we'd get back to the office and wish we had asked any further questions. "What about collaboration?" he volunteered.

"What about it?"

"Well, most of the stuff you tend to write on your own, but there come these golden times when you find you can work with someone else: and if you can work with someone else you can more than double your output, I'm sure of it. When you've found the right person they'll just sit back and let you spin your dreams for half an hour and they'll just put in that one piece you needed. But, if you look at the bands, all of them prove that the output is far in excess of the sum total of the individual units. All these solo albums from band members — they don't make it on the same scale.

But a writing collaboration is a wonderful thing — so if it's got less of you in it, it's got more of what the public want in it — then that's absolutely all that's necessary. I mean you don't

count as a writer. As an arbiter of public taste, as a writer, you do *not* count. It's not your opinion." We asked finally what aspect of his life as a performing artist was the most difficult.

"If I had to say what the hardest thing is, I'd have to say it was writing. It's the only thing in my musical career, in my whole musical spectrum, that I equate to hard work. Rehearsals probably come a close second . . . musicianship is fairly important, but not vital. The vital thing always is emotion . . . you see, you're talking about two things when you're talking about writing: you're talking about the way that a writer writes a song, and then the way the singer interprets it. So the singer who sings it has put his own amount of passion, his own amount of feeling into the lyrics and he has created something beautiful — so it's the *Singer as well as the Song*." . . . to coin a phrase.

Well, we had to move on — try and listen to Keith's most recent album, 'Stories from the Human Zoo' — it's well worth a spin and, from a songwriter's point of view, in some of the songs you can almost imagine the point at which Keith, as he puts it, experiences that 'best orgasm'.

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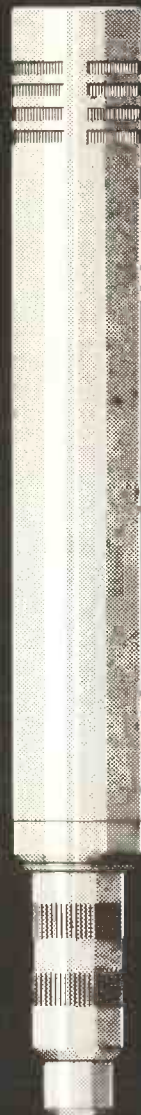
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PAUL GURVITZ'S GUITAR—

Shaping up with a Butterfly Bass

Custom built guitars in weird and wonderful shapes are nothing new. Pop bands like Mud and Sweet have been using heart shaped and star shaped ones for years. But it's rare to find a design that's attractive, tasteful and built as an instrument to be played, not just flashed around on stage. It's even rarer when the guitar is a bass, where the problem of weight is so much more acute. It was the health problems that Paul Gurvitz's Fender was causing him that forced him into drawing up plans for a new instrument.

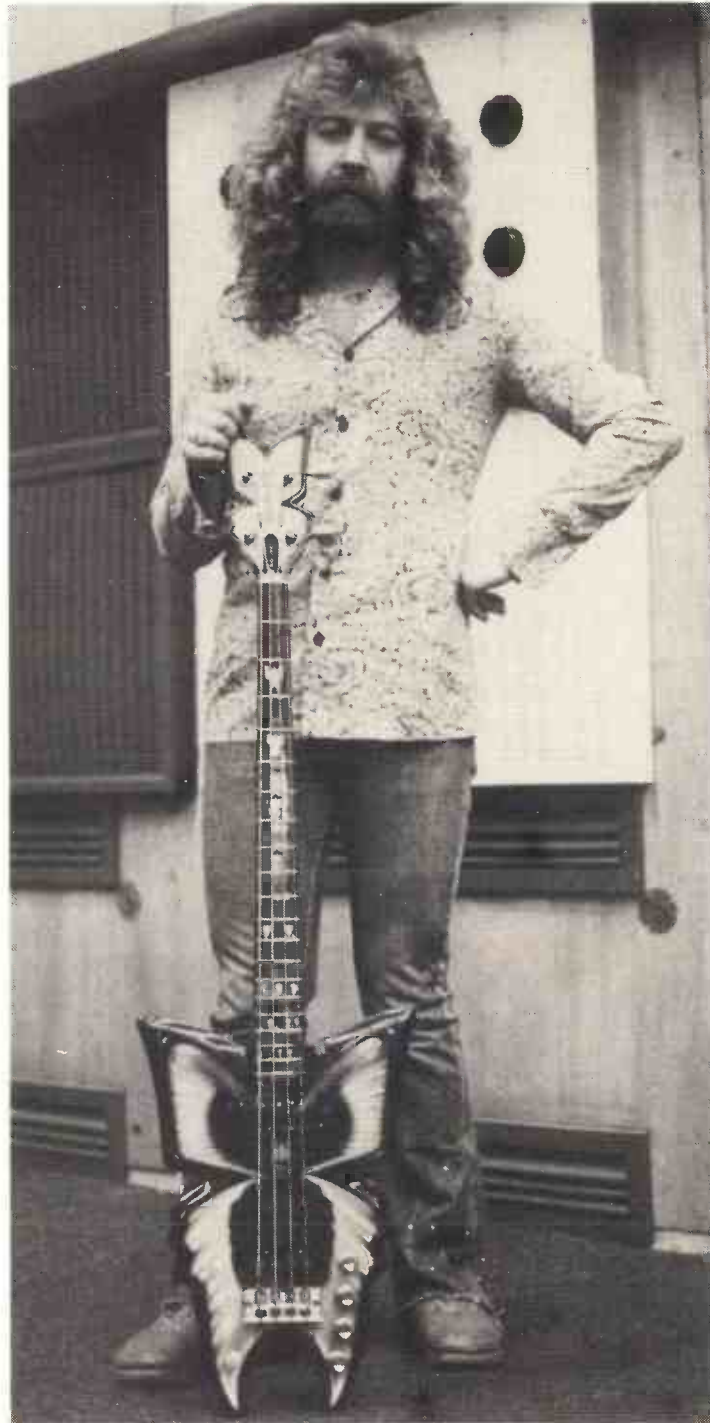
"My Fender was a maple guitar with a gold-plated metal scratch plate, and it weighed a ton. I was always getting bad necks and in the end the doctor advised me to get a lighter instrument. I wanted one that would not only sound good but look good, too. Whatever it was, I planned to copy the neck from another Fender I got in the States, which had a particularly slim neck. I need a narrow neck as I've got small fingers.

Adapt

"I didn't plan to have a guitar shaped like a butterfly. It all started with a crazy idea I got one evening when I was looking through a book of butterfly pictures at home. I mentioned it to Joe Petagno" — the artist who designed the last Baker-Gurvitz album sleeve, and many others for Paul's previous bands — "and we picked a butterfly from the book. He knew nothing about guitars or how the neck should be angled or anything, and he just drew out a cardboard rough, cut it out and held it up against me to get the right size. We found the shape we'd picked was all wrong for a guitar and we had to adapt it, making the lower pair of wings longer and narrower.

"As I'd been working with fretless basses for a while, I thought at first of having this one fretless, but I changed my mind. It was difficult to get the number of frets I wanted without a cutaway neck, but we managed to design the guitar to overcome that problem.

"It was built by a guy called Robbie Gladwell, who works for Gibson in Braintree and services all our Gibson guitars for us. I'd always been a Fender man, but



Robbie decided to incorporate features from both Gibson and Fender as an experiment. The neck is copied from the slim-necked Fender I mentioned earlier, and the bridge is from the Gibson EB3. All the knobs, etc., are Gibson. The guitar was constructed in two pieces with a rosewood neck and mahogany

body. Robbie cut it all out himself by hand, using different sizes of saws to get the basic shape.

"The next problem was over the balance. We fixed the strap holders in the normal position, I hung it round my neck and the head promptly fell towards the floor. We hung drums and roller

skated on it in an attempt to find out where the right balancing point was. In the end it was my old lady who solved the problem by suggesting that we hung the strap on the middle, which turned out to be the right place for it.

"I had to plan the position of the pick-ups very carefully. I've got a Fender jazz pick-up right under the bridge, so I can make the sound trebly and cutting if I want to. I tried ordinary guitar jack sockets at first, then changed to Canons. We arranged the wiring so that there's one lead for the Precision pick-ups with regular Fender wiring, then two separate leads for recording purposes, which go into two D.I. channels. I only need mono on stage so I've got just one switch to convert from mono to stereo.

Originally I was going to carry the butterfly idea right through by having the neck looking like the whole thing coming out of its shell — the back is painted to look like a cocoon. However, it was all taking much too long, so we hit on the idea of putting the eighteen little gold-plated butterflies down the neck instead.

"My fingers were having difficulty getting used to frets again, so we used very low profile fret wire so that I can't feel it. The strings are Rotosound. We've paid really great attention to every detail, even going so far as to have the back plate fastening with Velcro. All in all, it's taken a year to make, and we're still making minor adjustments.

"Joe used water-based paint. He covered the whole thing over in white first, so he could see what he was doing, then air-brushed in the design and lacquered it. I think the colours, the shades of green, are really subtle. I particularly like the way they are faded into the natural black of the wood at the edges, which makes the whole thing look much smaller from a distance.

"It's already my favourite for playing and I've used it on a couple of tracks on the new Baker-Gurvitz album, which will be released some time early in the spring. We've taken out a patent on the guitar design and we hope to market Butterfly guitars some time in the future, though we haven't got the marketing plans organised yet."

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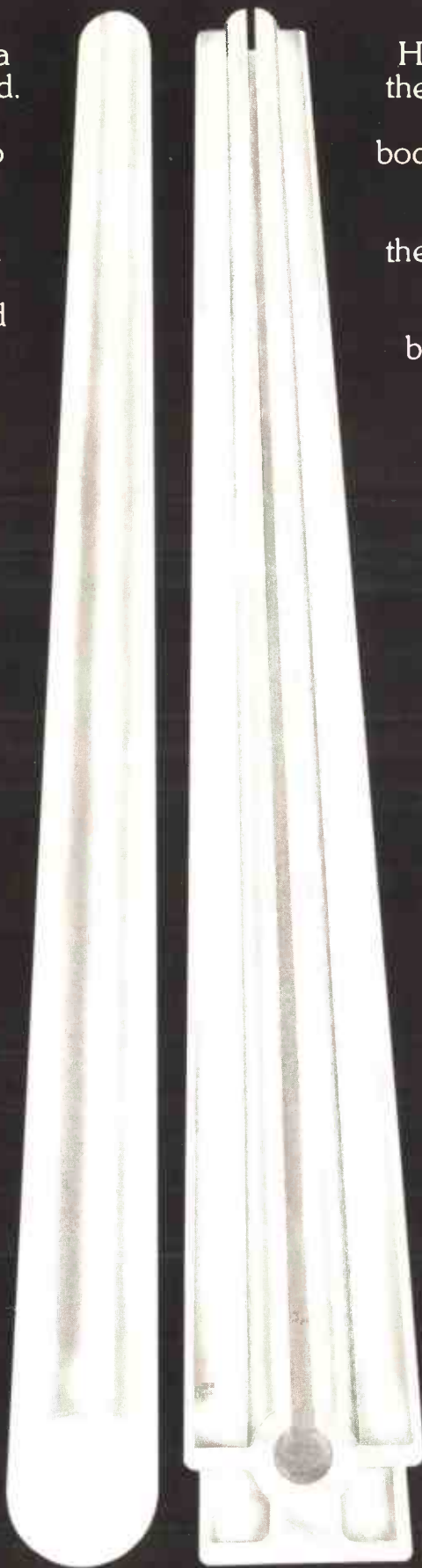
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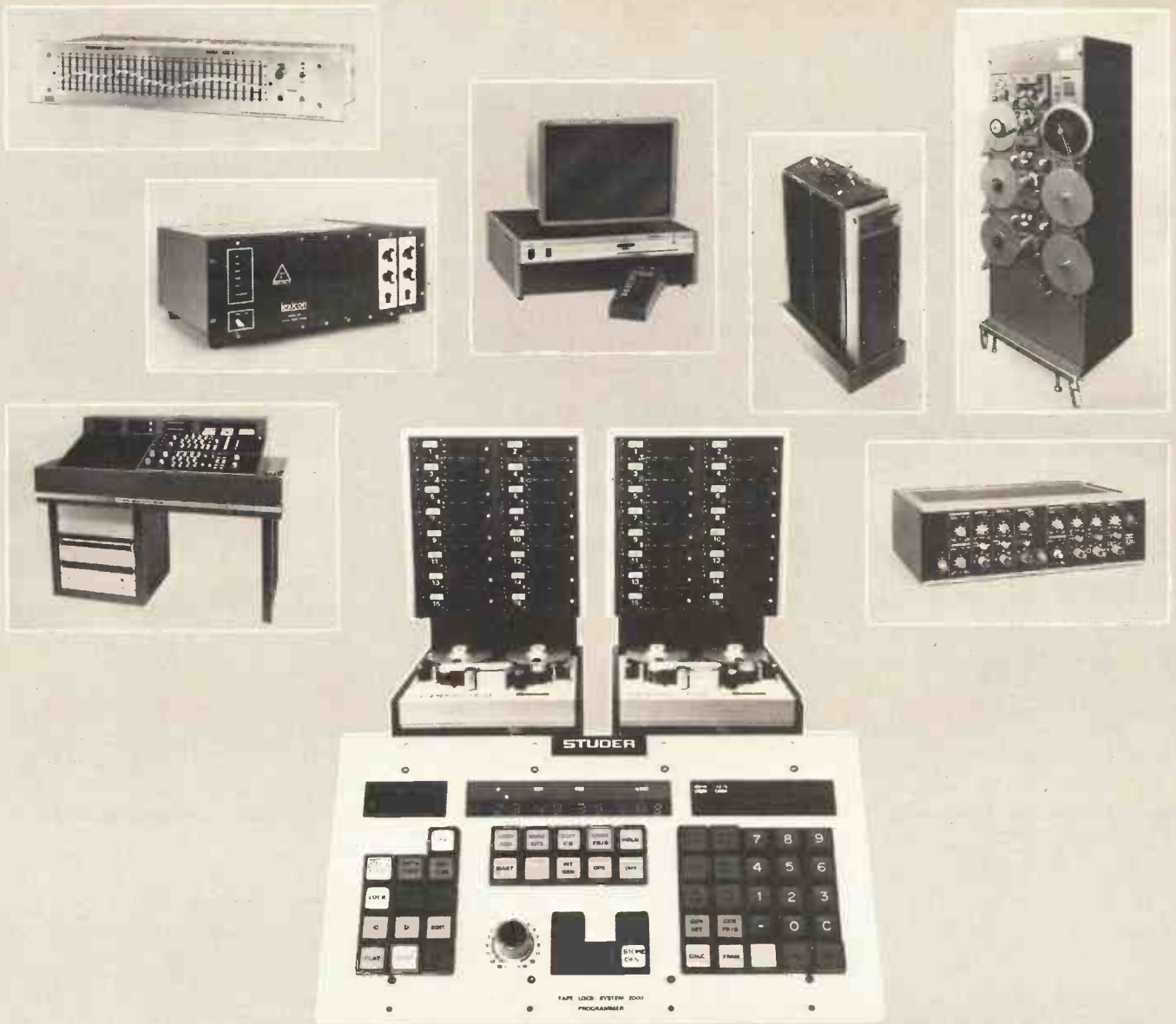
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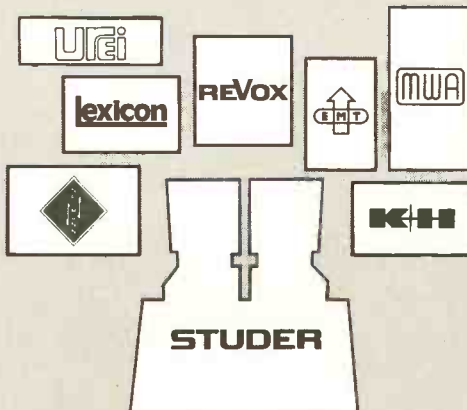
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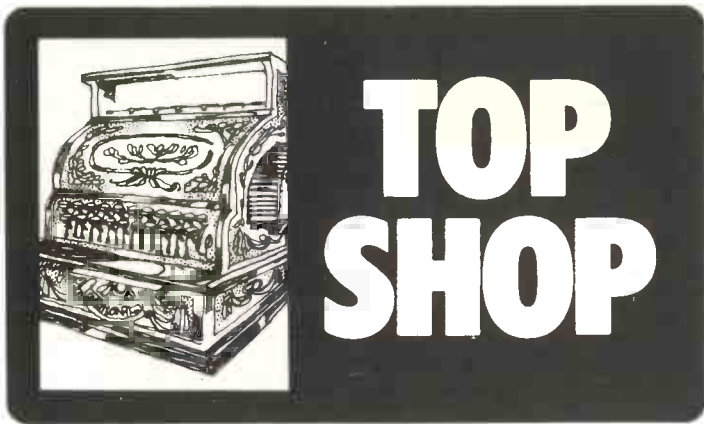
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SOUND PAD

It must have something to do with the time of year, but it seems that every time Beat dons its travelling gear to head northwards to visit a Top Shop the heavens open, the motorways flood, the rail system suf-

fers an incurable case of frozen points, and England manage to extricate themselves from a precarious position at the end of the first innings. There just might be a case for a spotlight on Bahama Strings in down-

town Nassau!

This month Beat set out for Sound Pad in Leicester's London Road, arriving to find a string of reps downing coffee and burning up the Embassy packets while waiting for Graham Pell, partner in the firm, to sort out the problems of a Gibson acoustic which had somehow found its way under the feet of a passing nymph. It's that sort of shop though — even Beat had to take its turn as Graham made personally certain the customer came first. Eventually it turned out that there were so many customers that Graham's wife Eve was detailed to take Beat up the road for lunch and an initial chat.

Sound Pad first started trading back in 1972 off the back of a successful band from the area, and two of its members are still connected with the company. Graham and his wife Eve were there at the beginning operating from a smallish shop in what is now one of the seamier parts of the city.

"There was no passing trade at all. All our business had to come via word of mouth or a little bit of advertising we were into at the time. And our facilities weren't particularly amazing." Eve told us. "But we did find that we were filling a gaping hole in the Leicester market because, despite the fact that the city was and is well

catered for by music instrument shops, there just didn't seem to be anybody interested in the band equipment scene." A quick tour around the city bore this out — there is quite a variety of shops selling brass, woodwind and pianos and organs with the odd guitar or amp stacked amongst shelves or tenor recorders and tambourines, but there didn't appear to be another specialist shop of the calibre of Sound Pad.

"The time came though in mid '75 when we simply had to move. It was impossible to get into the shop itself and we were using the living space above as stock rooms, drum rooms — everything." Sound Pad was fortunate then to pick up the lease on some premises in a prime position in London Road, one of the main arteries leading in and out of the city, and situated only a long stone's throw from the thriving and expanding University where a healthy proportion of the present business originates.

Atmosphere

Although it's not the biggest shop in the world, Graham has maximised the space available and completed a really great decoration job. The shop is divided into separate areas by brightly painted scaffolding shelving giving a busy feel — and about the custom more later — while maintaining a sense of privacy as you browse around. The atmosphere is simply superb and Beat found it very easy to understand why so many of you out there have recommended this shop for our investigation.

"When we moved we were very worried we might lose the atmosphere we had built up" Graham explained. "There was a coffee machine in the old shop and the local musicians would just drop in for the morning for a chat and to keep up with what was going on around and about — and we were aware that moving that sort of intangible feeling would be difficult. Fortunately for us the atmosphere and regulars moved with us" — although the coffee machine stayed behind!

The shop is very well stocked indeed and while we were there shipments from HH and CBS poured in through the door to be swallowed up by Graham's extremely agile and accomplished staff.

Sound Pad hold sole agencies for a whole list of formidable



The shopfront with not only the instruments but price offers too.

manufacturers — Ampeg, Amcrom, Altec, Citronic, Yamaha, Orange, Custom Sound, Pearl, Martin, Ludwig and Music Man. (Pause for breath!) In addition they are main agents for Fender, Rogers, Rhodes, Gibson, Crumar, Carlsbro, Guild, Peavey, Hiwatt, Marshall, Rickenbacker, Wem, SAI, Simm's Watts (pause for second breath), AKG, Shure, Coloursound, Hayman, Beverly, CSL, Antoria, Ibanez, Vox, Arbiter, Premier, Roland, HH and Main.

Checking

"It may seem like a hell of a lot to have taken on" Graham grins, "but it only needs a careful ordering and checking system to cope with it and we find it presents few problems in that area; additionally, it provides any potential customers with a choice they'd be hard pushed to find wandering the length of Shaftsbury Avenue, all under one roof." As can be seen from our pictures the choice of stock is indeed as large as is suggested by the list above — including a comprehensive selection of drums which, despite the absence of an acoustic room, appear to sell well and quickly.

"Most of the people we get in here know what they're going for anyway — and it's the sort of shop where you can let rip for a couple of heavy splashes without annoying anyone all that much" Ev says — and Beat agrees. While we were there we heard some pretty gruesome sounds — not, we hasten to add, due to faulty amps but more to faulty players!

Attitude

It's very easy to come across with the line 'the customer appears to come first at Sound Pad' but we can't stress the point strongly enough. As we explained in the opening paragraphs even the awe-inspiring Beat representative was requested to 'hang on' a moment while a customer's problem was attended to — an attitude which we quite honestly applaud. Around the shop are several amusing management notices repeating this philosophy plus a couple of others which really do put over the feeling of the establishment: how about 'Prices can be raised

to avoid embarrassment to the wealthy!'

Amongst this vast stock there are a couple of lines we would like to pick out for special mentions — it's refreshing to see such a comprehensive selection of Martin acoustic guitars, for example. As someone who was brought up in the provinces I know what it's like to have the nearest Martin guitar one hundred miles away at the other end of the motorway — so Sound Pad have definitely made a good move not only to snaffle the Martin agency but to actually go to the bother of stocking them in numbers. "Surprisingly they go very quickly" Graham says, "there's no doubt they really are fine guitars and having the stock we're able to give a choice and time to let the customer get the feel of them."

There's also a good stock of Roland keyboards as well as a healthy turnover of second hand equipment which at the time of our visit include a couple of ARP synths.

How about service? "We've got our own service department downstairs" (we tripped down there past a pretty comprehensive selection of disco equipment which ranged from basic decks to the full blown systems inclusive of light, projectors amps and speakers) to find the service department where they undertake many in-house repairs.

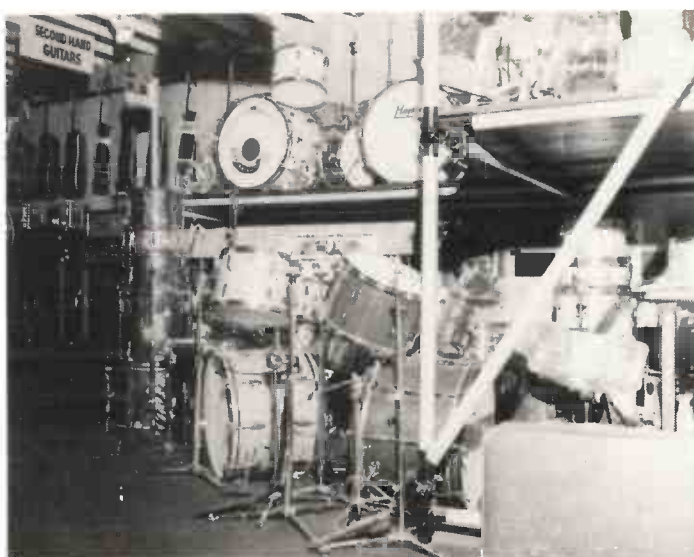
Demonstrate

Both Graham and Ev seem to have their fingers close to the button when it comes to discerning their customers' requirements, and both have a good knowledge of the sort of market that surrounds them. Their staff are knowledgeable and competent, and all, without exception, musicians able not only to sell but more than adequately demonstrate the equipment. Fenders, Gibsons, Rickenbackers seem to take up the majority of the electric space, but pride of position goes to a couple of Yamaha SG2000's of which one of the staff whispered to me "I'd swap any Gibson for that with cash any day".

So, the time had come to pack and attempt the south-bound carriageway again, but we left knowing we'd visited one of the best music shops around — in stock, atmosphere and staff. Give them a visit — you could just make a couple of friends, or maybe a guitar. Either way, it's enjoyable.



▲ A customer looks ready to become a 'proud owner'.



▲ 'Drums, drums, everywhere ...'



▲ Secondhand guitars and keyboards share space with the new.



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SOUNDOUT LABS—

A look at some up and coming disco gear, but the opportunity's also there for live bands . . .

Like it or not, discos have become an integral part of the live music scene. More often than not the resting space between two heavy sets down at the local Working men's Club is now filled by a disco in preference to the traditional stand-up comic so we thought we'd take a closer look at one of the most successful manufacturers of high-quality disco equipment — Soundout Laboratories. Another factor that influenced our choice is the fact that we've been coming across several of their speaker cabinets in a few bands' PA systems and have even spotted their slave amps powering monitors in a couple of studios. Additionally, while it can be argued that the initial spread of discos was responsible for the loss of a large number of potential live venues, many discos can now support a live performance — and the continual expansion forecast by Soundout and other manufacturers promises to provide further such venues.

So, how did Soundout start up? We visited their premises near Surbiton to talk to Dave Street, one half of the partnership. "We set off in business in early 1974 — Todd Wells (the other half) is an electronics engineer turned audio engineer, so he was able to turn his mind to the designs, and I have a long history as a salesman — it's the ideal partnership. He builds them, I sell them."

Gamble

Soundout originally inhabited some pretty cramped premises in Kingston, Surrey, from where they managed to build a successful business eventually supplying retail shops, major breweries and club interior contractors.

But Dave wasn't content. "I knew we could expand the business further — so we took the gamble of exhibiting at Frankfurt." Luckily — or predictably, the gamble paid off, resulting in substantial orders from America, Africa, Austria and West Germany.

From the beginning it was decided to build a better class of sound equipment with an electronic content geared to the rigours of club work. Other

manufacturers at the time — and many still — were incorporating standard hi-fi amplification which was never designed to operate at full power for long periods. Testing the new equipment included a marathon run by disc jockey Tony Santos at London's Gullivers Club where he ran a Soundout III continuously for 208 hours at full blast. Later, after a few adjustments, Santos repeated the experiment, this time running continuously for 720 hours without electronic or mechanical failure.

Space

Soundout exhibited again at Frankfurt in '75 and met with the same success, until early in '76 Dave and Todd found they just couldn't cope with the problems of space. Fortunately they found new, larger premises only two miles away in Surbiton — and they achieved the move without loss of production! Currently 50% of production goes aboard and it is estimated that 1977 will see a turnover increase in excess of 100%. So, they're obviously on the way — how did they achieve it?

"Well, it's down to reliability in the first instance I suppose. Although we have to buy in a lot of the components — for example the decks themselves, amp parts, speakers cabinets etc., we test them all and make certain modifications. We have four cabinet suppliers which protects us from delivery problems, and from quality hassles as well. We inspect all the decks, removing the

automatic return devices and making a couple of other adjustments to ensure reliability. All our amplifiers are supplied with overload protection circuits, and are tested to 4 times their rated output. All this is aimed at maintaining the already high standards of ruggedness and reliability."

The results of this care and attention are obvious. Soundout has found a big new market in America where it is still assumed that disco equipment contains hi-fi amps. Soundout have been able to produce 175 watt amps which are comparable with the most expensive hi-fi which are capable of producing equal noise figures when running flat out — and that's some achievement.

At Frankfurt this year Soundout exhibited their new 'Bionic Disco' for the first time. The disco is housed in a new fibreglass box incorporating two decks, and two 170 watt amps — available in white or signal red. This idea was originally aimed at a one-off production for special order, but even accomplished salesman Dave wasn't prepared for the red-hot(!) potatoes he found he had.

Identity

"Orders have been amazing. Especially from Africa where we've managed to achieve the same sort of product identity that Hoover have with vacuum cleaners, or Biro with ball points. In West Africa people actually ask for a 'Soundout' when they require disco equipment!"

Soundout produce a four

channel microphone mixer amp, the M174. It has four low impedance inputs each with a 28db overload capacity eliminating all noticeable distortion, and incorporates their successful and established 170 watt amp — later this year Soundout will be launching a new 200 watt version also including the 28db overload facility.

Cleaner

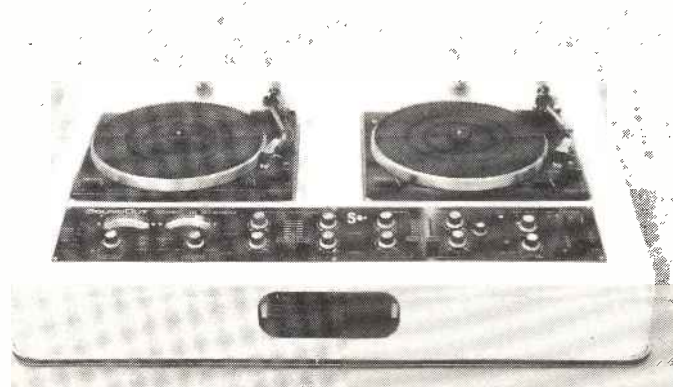
On the speaker side, Soundout have been lucky enough to be appointed the sole UK distributor for the Motorola range of Piezo Electric Tweeter speakers which has 5 super-efficient models. Piezo horns are more efficient and lighter than conventional equivalents using Solid State devices requiring no crossover networks or attenuators. Having no moving parts or coils the transient response is greatly improved, producing a noticeably cleaner sound with very low distortion.

These are now incorporated into some of the cabinets also produced by Soundout — some of which we heard while visiting the factory. To say they're good and loud is to do them a real disservice — they're really good, clean and distortion-free — and powered by 170 watts (which simply has to be an under-estimate) they could knock a few heads off at three hundred yards!

Suitable

We came away knowing why some brands have started using these speakers and amps for PA use, and although Soundout don't really aim their equipment at this market, the fact remains it's eminently suitable.

So next time a disco opens in your area — don't feel put out of work. The chances are that the disco will want live bands as well, and it could be you could persuade the man in charge to let you use his equipment. You might sound a lot better!



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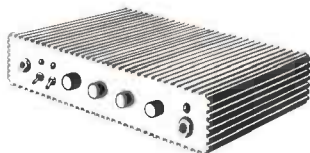
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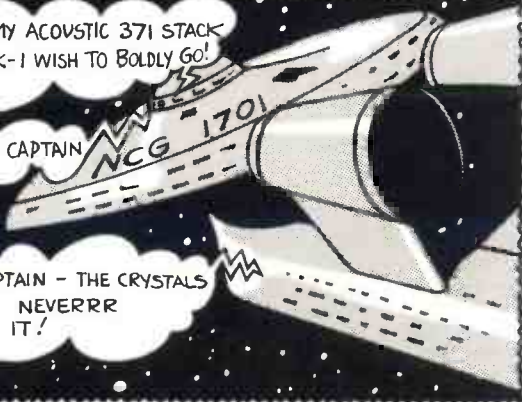


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STUDIO MUD

OK, so I know what I would do with a healthy cheque for advance publishing royalties, and I bet a few thoughts have crossed the minds of most punters with an eye on the road of fame and fortune. Couple of flash guitars, decent PA, sexy cars and low slung women. Right? Right, have a guess at the way Rob Davies and Ray Styles, lead and bass guitarists respectively with Mud, have disposed of their loot. Three hundred pairs of platform boots? Ten thousand metres of gold lamé material? A three legged racehorse? All wrong — by a mile. Rob and Ray invested money advanced by their music publishers Chappell in a small, private recording studio.

Since the days of Chinn-Chap when Mud were producing a string of manufactured hits destined for Radio One and TOTP — "what would you do if you'd been working the road for seven years and a guy comes along and promises to make you into stars?" — they have been trying to recapture some of the musical ideas they had as struggling musicians while maintaining the hit-making formula. For Rob and Ray, the band's two writers, success, in spite of many of the hassles of the earlier days has left a sweet taste. They moved from London's southern suburbs a little further south into the country into two detached houses with adjoining garages. The garages were then converted by a gang of friends and relations into a

small 8 track studio where they are able to work at whatever time of day or night they want without interruption, additional expense, and, most important, hassle.

Ray explains. "Before we moved here we had to plan our studio time — and that always meant travelling across south London to the place we regularly used, always having to make sure we were both free at the time — and whether the studio had the capacity to fit us in or not. And, of course, it got expensive. Our own studio seemed like the ideal solution — and I know that we're very lucky to be in a situation like this; it's something all working bands would give a lot to have — we can hardly believe it's happened to us even now."

The garages have been split sideways on — so the wall between them divides the control room from the studio itself. Both rooms are very small — about 13' by 9' in the control room, and 15' by 9' in the studio, but the space has been specially well used, and, after all, it has been designed basically for Rob and Ray alone.

Both the desk and the main recorder are ITAM. The desk is very simple — 10 into 2 with one echo send per channel, and the tape is a professional 8 track. There's also a Revox which Rob and Ray use to mix down to stereo, or to hold for the basic rhythm tracks. For example, they'll record drums, bass, guitar etc. onto the eight track, mix it down to two, and start the

process again, thereby greatly increasing the small desk's capacity. Admittedly this practice wouldn't be found in professional recording studios, but Rob and Ray only use their studio for demos and developing ideas, and for that function it is admirably suitable. Why did they choose ITAM?

"Well, we've come across their gear many times in our career, and we've always been impressed by their simplicity and reliability. The desk (as can be seen from the picture) is not the most comprehensively equipped or the most cosmetically appealing, but as a combination of price, reliability and simplicity to use it's really fine. You must remember, after all, neither of us is a trained engineer, and we desperately wanted a desk which we could handle ourselves. The moment we started considering more complex equipment we realised it would destroy the availability of the studio in one stroke. It would have meant needing an engineer on call 24 hours a day.

"The reason we chose the tape machine was simply that we felt that a manufacturer who tackles both the mixer and the recorder must believe that ideally his products work best together — if you can't afford the best in separate hi-fi, for example, nine times out of ten you're better off going for an integral system from one manufacturer who has designed the components to mate with one another in the first place."

Monitoring is via a pair of JBL monitor's slung from the ceiling

powered by a Crown amp. Although a little close together for perfect stereo reproduction, they sound damn impressive in such a small room.

They looked at various professional patch boards before they decided the expense wasn't really justified, so they asked one of the band's roadies to come up with a usable board, and with some help from Rob's father-in-law a neat patchboard was installed for a fraction of the possible cost.

And cost, in a home-based operation like this — is of prime importance, as Rob explains. "The way we saw it was that we could spend thousands and thousands and end up with a professional studio for which we would have little justification. So we said we must spend the money available in direct relationship with the effectiveness of the end product — and this is going to be very effective. For example, the next item is the DBX — "Now, DBX isn't as good as Dolby but for what we want, why should we pay out that amount of money when the DBX system is going to have the level of effect we require from this equipment?"

One of the most useful items available in the studio is a VSC drum box — a machine which plays 8 track tape cartridges of various drum rhythms. The tracks are separable so portions of the rhythm can be lifted out and dropped in again at will, and in time. This machine has an astonishing range of beats, and sounds incredibly accurate. An additional advantage is the saving of space for a drum kit in the studio itself, and the cost of saving for miking the kit up. Again, the studio scores heavily on points of practicality.

The instrument side of things is reasonably well catered for — Ray is a guitar fanatic and has quite a selection of acoustic and electric six strings, as well as owning one of the most beautiful guitars I have ever seen or played. Pictured on the inner sleeve of the band's latest album 'It's better than working!' it's a hand-built, 12 string classical — a real collector's piece. Rob has a selection of basses but prefers his old faithful Fender Precision, although he has a John Birch 8 string bass, and I noticed in the sitting room of his home the Guild acoustic bass Beat tested in the December issue. So that's how to spend your hard-earned money intelligently and wisely. If you guessed wrong at the beginning you can wipe the Mud off your face now!!



Ray Styles (left) and Rob Davies show off their desk.



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STUDIO PLAYBACK

BULLINAMINGVASE . . .

A cluttered bookings ledger at EMI's Abbey Road studios is nothing new, and so the flurry of activity there over the last month or so simply means business as usual. A Danish group by the name of Flair have been in, producing their own album with the help of a certain Mr Hank Marvin; a certain Mr Bruce Welch was also in, producing Stephanie de Sykes' latest offering, and no nostalgia of this sort is complete without Cliff himself, who dutifully turned up to record a gospel LP.

Roy Harper's album "Bullinamingvase" was finished at Abbey Road and his single with Peter Jenner was also laid down there. The band Gryphon completed the recording of their new album and remixed it, whilst Marmalade also remixed their forthcoming single.

Wings man Denny Laine was in recording his single, produced by Paul McCartney, and Macca has reaffirmed his faith in the EMI facilities by booking them over a period of four months for the next Wings chart-buster.

KUDDLES AND HANDEL

Craighall Studios in Edinburgh, after their extensive re-fit, have come back with a bang. Their 16-track recording facilities have been used by a number of Scottish artists, most of whom have yet to make their mark south o' the border. Elaine Simmonds, a former cabaret singer, has cut her first single for Polydor, whilst Stuart Anderson — a 16-year-old accordionist who came third in the awards of the Independent Radio Club — was in Craighall recording his second album of Scottish traditional music, mingled with his own compositions.

An all-girl pop group, composed of five nymphets aged between 17 and 20, have been laying down demo tracks in the hope that some record company

may decide to "snap them up". For those interested, the group is called Kuddles. Lastly, the Craighall mobile has been up at Dunblane Cathedral, using its 8-track facilities to record some Handel organ concertos with choir and strings.

ROMANY ROCK AT LANSDOWNE

The schedule book at Lansdowne Studios has been full of interesting names in recent months. Mike Batt cropped up (as he always seems to) working on various projects, and Johnny Pearson — he of TOTP fame — was in putting down a solo piano album with the aid of Adrian Kerridge, who engineered. The Pennyfarthing label was represented by the

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GLEN HUGHES INTO ISLAND

Glen Hughes, he of heavy metal fame, has been taking some time in Island Studios to finish off an album of his own for Purple Records with Brad Davies producing; ex-Traffickers Jim Capaldi and Steve Winwood have also been in recently — Jim to do his own album with Frank Owen engineering and Peter Sullivan producing, and Steve producing his with Phil Brown twiddling various knobs.

Fairport (the truncated version of Fairport Convention)

have laid down a new album with Howard Kilgour engineering. Nasty Pop have been in with Phil Ault, and Crawler — the sadly truncated version of Back Street Crawler — have done their album with Guy Bidmead on the controls.

Other visitors have been Phil Manzanera, Rough Diamond and Strapps. The Island Mobile was out at the Farmyard, Gerrards Cross, to record the next Camel LP (engineer: Rhett Davies) and they will be coming in later to mix it.

band Hunter (formerly known as Chopper) with Dave Baker engineering and Larry Page lending a hand. Singles man John Christie was also around, produced by Dave Clark.

A band of gypsies arrived not long ago to record an album of Hungarian traditional folk songs. The line-up was apparently two violins, viola string bass, two unidentified wood-

winds and something called a zimbolon. The producer was Peter Sander and the engineer Bob Butterworth. At the opposite end of the spectrum, Guys and Dolls came in to do some vocals, whilst Ben Cady recorded a single for MAM with Bob once more at the controls.

Finally, to bring us up to date, it should be mentioned that the S*x P*stols recorded their anarchic single at Lansdowne.



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STUDIO



SPOTLIGHT

PYE STUDIOS

One of the more interesting features of studio development over the past ten or fifteen years has been the syndrome of the rise and the fall of various operations. With the possible exception of EMI's redoubtable Abbey Road outfit, no one studio has, to my recollection, managed to be at the top throughout that timespan.

Why this should be so is often a question of studio politics and the vagaries of music business fashion; one year XYZ studios is the place to be, the next nobody will touch it with a bargepole. Needless to say XYZ Studios has stayed much the same — it's just personal opinion that makes it a good or bad place to record or perhaps, being cynical, personal bias.

Ten years ago, Pye Studios, set in ATV House, Bryanston St. near Marble Arch, was one of those studios. Everyone who didn't record at Abbey Rd. (it seemed) used Pye. But times changed and Pye became less and less known for its work in the Rock and pop field, becoming, by a strange trick of fate, the 'Middle of the Road' operation. Most of those albums your mum loves and you hate are recorded at Pye.

But, down at Bryanston St., things are about to change once again because Studio Manager Howard Barrow and his lively team are about to unleash what promises to be a monster of a Rock studio on the World.

Howard takes up the Pye story. "Pye has always had a name for middle of the road. Up until three years ago nothing was being done to the studios, but we're changing all that — you used to walk in here and it was a joke — I'd be the first to admit that."

Pye's new number two studio is the beast that will change their reputation in the Rock game. It's a staggering development along the lines of the handful of modern British studios collaborated on by Tom Hindley of the Eastlake (formerly Westlake) company.

The new studio is every inch the way a modern Rock-orientated outfit should look. Deep pile brown carpet, subdued luxurious lighting (perfect when you're lumbered with an all-night mixing session) and a host of equipment chosen with particular care.

Highspot of the new operation is the desk, a CADAC with computer assistance (automated mixing to the vulgar). The reasons for the choice of the CADAC were simple, explained Howard.

"In the days of four track and eight track it was simple, the engineer only had to play with a limited number of variables. Now he has so many controls to handle that he has had to stop listening to the music during a difficult mix. He's only thinking about the purely physical aspects of handling the operation and he hardly hears the music until playback.

"As well as that factor there was the economic one. Record companies are no longer handing out £30,000 advances and there's no reason why you should have to wait half an hour for an engineer to plug something through. With the CADAC everything is possible by the flicking of a couple of switches."

Howard and his team are, in fact, obsessed with problems. Or perhaps we should say the removing of them. The whole operation has a religious attitude of getting it technically right first time.

"Our machines are set up at half past nine in the morning every day. One of our guys will start his rounds and everything will be set properly. If you apply that sort of regular maintenance then, when you put the test tape on, you know that everything will be as near perfect as it can be got."

Technical Manager Noel Jesuadian echoes Howard's point of view.

"You can't sell a studio by just saying what equipment it's got. You have to think about the people, the atmosphere and,

very importantly, the technical back-up. If the equipment all works and the tapes that leave the studio are technically good, then people will come back."

That attitude to technical excellence is not, needless to say, carried through to every studio in the world. Some are so proud of being 'laid back' that the technical reliability and performance parameters are ignored. At over £40 per hour you can no longer afford to ignore factors like that.

In some ways Pye have a distinct advantage over many other studios in that they are a very important centre for master disc cutting — a function for which their Chief Cutting Engineer Malcolm Davis is world famous. The whole subject of mastering is far too complex to go into in a short look at a studio but suffice it to say that Malcolm has the best equipment and some would say, the best pair of ears in the business to help him.

Where the disc cutting helps the recording side is that it enables an idea of what other studios turn out to be formed. It also gives a standard of reference by which their own new operation can be judged.

Malcolm, who was largely responsible for Apple's phenomenal success, is responsible for cutting many of the best albums and singles that your hear — regardless of the label they are on, or the studio they were recorded at. Cutting is vital, as he pointed out.

"You can destroy all the good work that's been done in the cutting stage and it's our job to make sure that the cut is as good as it can be got."

Evidence of his success can be found in fact that Pye are now frequently asked not just to make masters for Britain, but for overseas outlets as well.

On the development side, we asked Howard to explain the differences between studio one (the MOR studio) and the new operation, and to what extent they have designed studio two to handle rock. How did the two approaches differ?

"Normally, with middle of the road, you'd record, say, six

songs in three hours, it's that fast. It's not that standards are lower, though, just that there is an accepted standard that is different in approach from Rock music. Recording middle of the road is like recording a big symphony orchestra, in that you record it to sound like a live situation, perhaps a cabaret where the singer is sitting in front of the orchestra.

"The Rock approach is where the two speakers are giving a sound which could only come off a piece of black plastic.

"Where the new studio differs is that we wanted to make a studio that wasn't too big. With electronic music you don't need a massive studio area. We also wanted an isolated area so that the sounds aren't all blended together.

"What we've done is make the desk so complicated that it can turn somersaults, which is what you need."

The facilities of the desk are quite phenomenal. It offers 44 channels in and 32 channels out and more facilities than one could possibly go into in a general article.

Other equipment in Studio two comprises a Studer 24 track tape machine with other twin track and four track machines.

Studio One, is quite differently equipped. It has a Neve desk offering 26 inputs and 16 plus eight out with the ubiquitous Studer tape machines and the usual run of flangers, parametric equalisers, compressors, limiters — again, just about all you would ever need.

Monitors in studio one are four Tannoy/Lockwoods driven by Amcrons. Amcrons also drive the Eastlake designed monitors in Studio Two which contain J.B.L. units.

At the time of writing Studio Two had yet to be opened. In fact, work was still going on for the final stages of construction. To say that Studio Two is impressive in terms of appearance would be an understatement of the greatest kind. If it sounds half as good as it looks and the facilities suggest that it should be, then Pye have a winner on their hands.

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P.S.L. STUDIOS, 1a Salcott Road, London SW11. 01-223 2544 & 01-998 6088

SAMMA STUDIOS, 90 Lots Road, London SW10. 01-352 4136

SEPTEMBER SOUND STUDIOS, 38 Knowl Road, Golcar, Huddersfield. Tel: 0484 58895/6

MOBILE

JET MOBILE, 8 Bell Meadow, Sutton Road, Maidstone, Kent. Maidstone 57967

ISLAND MOBILE, 8-10 Basing Street, London W11. 01-229 1229 Telex: 12421

RECORD PRODUCTIONS

IMPULSE ORGANISATION, 71 High Street East, Wallsend NE28 7RJ, Northumberland. Newcastle (0632) 624999

LOOK RECORDS LTD., 209 Denyvale Road, Wakefield, Yorks. 0924 79589

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FARMYARD REHEARSAL STUDIOS, White Line Road, Little Chalfont, Bucks. 02404 2912

MAURICE PLACQUET LTD., London Studio : 01-749 3232. Pinewood Studio : 0753 654571

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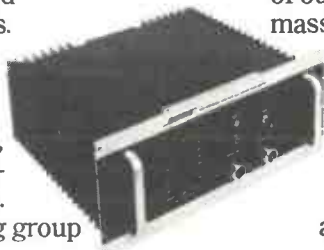
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BASS GUITARIST and drummer need guitarists and singer to form band of 1977. Rickenbacker, Orange and Premier gear, age 18-21. Personal tastes — Trapeze, UFO, Wishbone, Free. Must live in S. Yorks area. Large rehearsal room and storage available. No timewasters or pro's. Contact Steve on Barnsley 86161 ext. 370, office hours.

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WANTED: Pink Floyd material, i.e. newspaper cuttings, features, reviews, photos, etc. Also required — Floyd LP's "In Celebration of the Comet", "Wembley '74" or other rarities in good condition. If you can help in any way please contact Jon Woodward, Church Green Cottage, High St., Stock, Essex.

LYRICIST would like to work with composer, preferably living in Berkshire area. Contact Elizabeth Smith, 103, Kennedy Drive, Pangbourne, Nr. Reading, Berks.

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GUITARIST wants to join/form group, Deep Purple style if possible. Ring A. Jones, Cambridge 311859.

BEATLES LOOK OUT. I am an 18 year old amateur guitarist looking for males or females to form group. Interested? — contact me, Alan Seales, Flat 3, 11 East Dulwich Road, London SE22. What have you got to lose?

WANTED URGENTLY — pianist male or female aged between 16/20. Must be able to write music and must live in Birmingham area to team up as partner to write new style of music, songs etc. Please write to Steve Copeland, 147 Vardon Way, Kings Norton, Birmingham 38.

SONGWRITER/GUITARIST seeks same to form songwriting partnership. Must be serious writer. Write or call in, Rick, 45 Salmond Ave., Beaconside, Stafford, Staffs ST16 3QY or phone Stafford 3161 ext. 478 daytime.

ACOUSTIC GUITARIST/singer/songwriter wanted to form pro duo partnership. Enthusiasm and go necessary. Write to Andy Thomas, 1 Balcombe House, Streatham Hill, London SW2 4AP.

RHYTHM/LEAD GUITARIST (16-17) seeks working band around Southampton area. Own gear Tele copy and Vox. Into Naz, Quo, early Bowie, Budgie — all medium rockers (no pops or soul). Ph. Romsey 513566 or home add: Mart. Othen, 48 Alma Road, Romsey SO5 8ED.

FOR SALE: — Carlsbro Stingray 130w amp top + Acoustic 301 type 1 x 18" folded horn bin £180. Carlsbro 200/7 channel PA amp £120, 2 x Simms Watts H100 RCF PA cabs £240 pair all in mint nick. Phone Steve on Barnsley 86161 ex. 370 office hours.

21 YEAR OLD girl singer wants to get into band, or to be a backing vocal. Into mostly pop/rock, can read music. Must live in Cornwall. All letters answered. Miss J. Thomas, 37 Murdoch Close, Redruth, Cornwall.

LYRIC WRITER who has 4 songs waiting to be set to music, and already has one of my songs in the hands of a publisher, is looking for a composer to form a songwriting partnership. Write to L. Eliot, 84 Bankes Road, Small Heath, Birmingham B10 9PS.

YOUNG GIRL LEARNER GUITARIST seeks teacher to help her learn to play guitar. Must be good teacher but mustn't charge high prices. Must live in Fareham/Hampshire area. Ring Wickham (Hants) 832871. Ask for Merrit.

COMPOSER required to collaborate with lyricist. Margaret Bedi, 69 Burford Gardens, Palmers Green, London N13 4LR.

AMATEUR DRUMMER would like to hear from others in Leeds area interested in forming group. Ring Andy, Leeds 664376 (no time wasters).

LEAD GUITARIST into wierd and original sounds and classic 'feel' rock, seeks others interested in forming band, or who might want me to join them. Offers to Adrian, 30 Berners Rd., Felixstowe, Suffolk or phone 5269.

BASIC LYRICS with corresponding tunes; anybody interested? Inspired by Bowie, Reed, Iggy Pop music.

ANYONE AGED 16-18 who can play organ or piano and can sing, to form up a duo with female vocalist aged 15. No pros please. I can also play rhythm guitar. Write Miss Y. Harwood, 12 Woodley Ave., Accrington, Lancs. Tel. no. 381206.

HAVE YOU GOT any items on Queen — live recordings, demos, autographs, imported records, bootleg albums etc. Please state prices. I also have a few concert souvenirs for sale on T Rex, Queen (programmes etc.). Please send SAE for list — Alan Dunn, 23 Borthwick Street, Ruchazie, Glasgow, G33 3UU, Scotland.

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Whilst every effort is made to ensure that all prices listed are correct at the time of going to press, they may vary according to the sales policy of each individual retailer. We do advise you therefore to check with your local dealers before making any final decisions.

GUITARS

BALDWIN

GRETSCH	
Fk, s/burst.....	119-75
Fk, natural.....	124-96
Sunvalley, s/burst.....	163-66
Sunvalley, natural.....	174-30
Rancher.....	206-24
Deluxe.....	250-17
Supreme.....	283-41
Electro classic.....	158-35
Clipper, s/burst.....	158-35

Double Anniversary, s/burst.....	343-44
Streamliner, s/burst.....	250-71
Streamliner, cherry.....	331-56
Country Club, s/burst.....	315-34
Country Club, nat.....	331-32
Viking, s/burst.....	441-74
Viking, natural.....	457-71
White Falcon.....	613-39
White Falcon, stereo.....	693-22
Roc Jet, porsche pumpkin.....	250-17
Roc Jet, black.....	325-08
Roc Jet, red.....	250-17
Roc Jet, walnut.....	325-08
Bass, mahogany.....	250-17
Tennessee, cherry.....	347-76
Nashville, red.....	365-04
Country Gentleman, walnut.....	405-00
Deluxe Chet, red.....	471-02
Deluxe Chet, walnut.....	471-02
Super Chet, walnut.....	534-88
Super Chet, red.....	534-88

SHO BRO	
Hawaiian, 6-str.....	250-17
Hawaiian, 7-str.....	267-44
Spanish.....	250-17

SHO-BUD	
Steel guitars:	
6138.....	264-60
6139.....	434-16
6140.....	544-32
6152.....	231-12
6153.....	783-00

BOOSEY & HAWKES	
DI GIORGIO (BRAZIL)	
No 16 Signorina.....	47-40
No 2P Classico.....	56-90
No 36 Bel Som.....	87-00
No 30 Amazon.....	66-50

TAKEHARU	
GT30A small.....	64-10
GT30B small.....	64-10
GT85 full size.....	42-35
GT120 full size.....	48-20
GT180 full size.....	47-55
WT100 jumbo.....	66-45
WT100-12 jumbo.....	49-40

VITTORO	
570 small.....	14-00
575 full size.....	21-75

ANGELICA	
2651 full size.....	19-25

CBS/ARBITER (EX VAT)	
FENDER	
Electrics:	
Jazzmaster.....	348-75
Stratocaster w trem.....	300-78
Stratocaster L/H w trem.....	339-45
Stratocaster m/neck w trem.....	325-50
Stratocaster L/H m/neck w trem.....	364-25
Stratocaster.....	271-75
Stratocaster L/H.....	308-45
Stratocaster m/neck.....	294-50
Stratocaster m/neck L/H.....	333-25

Telecaster d/l.....	322-40
Telecaster d/l L/H.....	353-40
Telecaster Custom.....	263-50
Telecaster Custom L/H.....	294-50
Telecaster Custom m/neck.....	288-30
Telecaster Custom L/H m/neck.....	317-75
Telecaster Std L/H.....	240-25
Telecaster Std L/H.....	260-40
Telecaster Std m/neck.....	263-50
Telecaster Std L/H m/neck.....	285-20
Bronco.....	167-90
Musicmaster.....	130-20
Mustang.....	178-25
Mustang L/H.....	192-20
Mustang m/neck.....	201-50
Mustang L/H m/neck Semi-acoustics.....	215-45
Telecaster Thinline.....	314-65
Telecaster Thinline L/H.....	341-00
Starcaster+case.....	461-90

Basses:	
Jazz.....	302-25
Telecaster.....	257-30
Precision.....	251-10
Precision narrow neck.....	260-40
Precision fretless.....	251-10
Mustang.....	192-20
Musicmaster.....	116-25
Acoustics	
F.C. 102.....	36-43
F.C. 10.....	40-30
F.C. 20.....	50-38
F.C. 30.....	60-45
F.C. 40.....	66-65
F15.....	46-50
F25.....	51-15
F35.....	57-35
F45.....	58-90
F55 12-string.....	71-30
F65.....	72-85
F75.....	89-90
F85.....	117-80
F95.....	150-30
F80.....	91-95
F110.....	220-10

CHAPPELL	
Classical:	
C.100.....	33-00
C.101.....	39-00
C.102.....	45-00
Steel string:	
C.200.....	45-00
C.201.....	57-00

CLEARSTONE	
MELODY	
1200 12/s Folk.....	34-86
1250 12/s Folk Elec.....	43-72
500 Folk.....	30-81
525 Folk Elec.....	38-10
325 Folk.....	13-00
460 Classic.....	29-95
450.....	21-82
350.....	15-34
600.....	34-48
1300.....	39-38

MIAMI	
FT1 Elec.....	25-36
FT2 Elec.....	29-93
FT1 Bass.....	32-64
TANTARRA	
4195 Classic.....	18-28
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HG91 Steel.....	20-66
HG306 Steel.....	55-52
HG188C Steel.....	85-72
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Westbury Jumbo.....	64-79
310 Electric.....	64-79
360 Bass.....	68-20
Blue Hill 6.....	37-16

Blue Hill 12.....	62-17
SM8 Solid.....	80-13
SM9 Solid.....	90-58
Westside.....	113-81
SM19 Bass.....	97-18
355 Bass.....	75-87
149 Classic.....	27-62
C.M.I.	
CMI Custom VI.....	109-96
SMI Custom IV.....	122-76
CMI Salisbury.....	109-96
SG25.....	45-66
SG10B.....	44-52
ST300.....	67-49

HASHIMOTO	
G100.....	38-73
G130.....	44-18
G160.....	51-42
G200.....	57-79
G250.....	68-68

J. T. COPPOCK	
ANTORIA	
2355 Big Jack S.Ac. Sunburst.....	173-00
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2357 Mt. Strad Violin Bs.....	88-00
2350 Memphis Custom.....	136-00
2350 Memphis std.....	132-00
2350L Memphis std l/h.....	144-00
2351 Memphis d/l.....	136-00
2351DX Memphis d/l.....	148-00
2351 Memphis Original.....	141-00
2342V Memphis d/l.....	170-00
2341 Memphis ctm.....	154-00
2343 Memphis jun.....	159-00
2337DX Memphis jun.....	173-00
2350 Memphis white.....	144-00
2405 Custom 74.....	208-00
2451 Memphis Oldie.....	190-00
2350B Memphis bs.....	143-00
2660 Memphis Vine.....	150-00
2458 Memphis Spl.....	157-00
2351CH Memphis Cherry.....	136-00
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2656ZB Zebra bs.....	188-00
2375V Twin Gemini 6/12.....	250-00

2407 Twin Gemini.....	260-00
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2376 Dixie Fireball bs.....	156-00
2386 Memphis ctm d/l.....	154-00
2386L Left-Hand.....	175-00
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2385 Clipper Ash bs.....	171-00
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2371 Semi-Ac bs.....	141-00
2374 Semi-Ac Id.....	154-00
2395 Semi-Ac nat.....	132-00
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2409BW bs.....	167-00
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2387CU Vulcan bs.....	210-00
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698BK Gt. Western Black.....	120-00
693 Gentleman Jim d/l.....	107-00
684/12 Super Jumbo.....	104-00
684BLK Black.....	97-00
683 Super Jumbo.....	85-00
684/6L Left-Hand.....	97-00
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628 Californian jbo.....	78-00
62 Bronco fkn.....	44-00
627/12 Bronco jbo.....	71-00
627L Left-Hand.....	72-00
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3565.....	185-00
3555S.....	157-00
3557/12.....	214-00
3560/12.....	236-00
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3551 Classical.....	230-00
3570.....	202-00

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M800NSF.....	47-00

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N106 Classical.....	39-78
N169 Classical.....	43-99
N175 Classical.....	50-23
N29 Classical.....	57-18
N108 Classical.....	78-24
N76 Classical w/cs.....	127-33
N30 Folk.....	44-22
N71 Jumbo.....	54-08
N72 12str.....	57-19
N73 Jumbo.....	71-77
N107 12str.....	74-04

KIMBARA ELECTRICS	
N116 solid sun.....	135-11
N117 solid nat.....	139-11
N120 solid white.....	139-11
N121 solid nat.....	148-40
N124 Bass nat.....	150-67

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N143 Folk.....	81-03
N144 Jumbo.....	94-41
N145 Jumbo.....	117-14
N146 Jumbo.....	156-96
N147 12-string.....	115-75

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N127 Spanish.....	42-83

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N10 Folk.....	19-63
N102 Folk.....	29-17
N102 Folk.....	29-17
N100 Classical.....	28-47
N150 Classical.....	37-92
N151 Jumbo.....	40-37
N152 12 Str.....	44-40
N153 Jumbo.....	46-25

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N85 solid blk.....	68-00
N85/S solid sun.....	68-00
N54 solid mahog.....	63-07
N66 solid bass.....	65-56
N77 solid bass.....	71-07
N82 solid 3 pu.....	72-84
N122 12 str.....	55-51

KENT	
N133 Classic.....	23-10
N134 Jumbo.....	27-73
N135 Dove.....	33-29
N136 Jumbo Nato.....	30-51
N137 Hummingbird.....	30-23
N138 12-str.....	34-96

SHELSTONE	
N5010 Folk banjo.....	50-88
N5015 Folk banjo w/cs.....	92-55
N5009 Uke banjo.....	11-53
N1124 Mandolin.....	15-14
N5017 Tenor banjo.....	48-85
SATELLITE	
66/5T Solid 2 p/u.....	31-07
66/W Bass 2 p/u.....	33-33

G.M.S.	
PICATO STRINGS (sets)	
ES77 elec.....	1-88
UL77 Rock & Roll.....	2-00
77 lt. gauge, elec.....	2-00
P750 med.	

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F-30SB Aragon 15 1/2 Folk, S/burst.....	266-09
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F50BL Blonde.....	546-58
F40NT Spruce Mahog	395-50
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B50NT Acoustic bs.....	539-35
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F-212NT Mahogany 16" Folk.....	402-71
F-112NT Standard 15 1/2 Folk.....	312-82
G-312NT Rosewood 16" D/nought.....	485-43
G-212NT Mahogany 16" D/nought.....	402-71
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B50NT.....	539-35
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MK5 Rosewood.....	593-28
MK4 Padouk.....	355-99
MK3 Mahogany.....	269-67
MK2 Mahogany.....	212-16

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AT 2T Solid.....	40-80
FB 1W Bass.....	68-35
FT 2T Solid.....	33-85
JB 2 Bass.....	61-45
JB 200 Bass.....	84-15
LB 200 Bass.....	54-40
LE 200 Solid.....	90-60
LP 200 G Solid.....	81-45
LS 200 C Solid.....	61-60
LS 200 US Solid.....	61-45
ME 20 TS Solid.....	44-55
SA 200 Semi-ac.....	61-30
SE 2B Bass.....	46-00
SE 2T Solid.....	35-55
SG 2S Solid.....	53-60
SG 2S 22 Solid.....	42-10
SG 10B Bass.....	64-85
SG 220V Solid.....	60-75
SG 2000 Custom Solid.....	67-50
SP 1 Solid.....	28-95
ST 30 Solid.....	58-25
ST 300 Solid.....	73-35
TF 200N Solid.....	58-85
MORIDAIRA	
842 Classic.....	57-95
845 Classic.....	70-45
843 Classic.....	59-85
846 Classic.....	83-05
847 Jumbo.....	77-25
848 Jumbo.....	98-70
850 Western.....	121-10
855/F301 Folk.....	72-65
856/F303 Folk.....	82-10
851/W613 Western.....	000-00
852/W61030 Jumbo with pick-up.....	104-85
B704 12 str.....	127-40
B702 12 str.....	95-50
BW650 9 str.....	192-00
W621S.....	245-95
W611.....	312-30
W610.....	199-75
W620.....	179-05
G212.....	103-60
G214.....	131-15
MUSIMA	
1612N Acoustic.....	19-95
1612S Acoustic.....	19-95
730 Classic.....	25-95
731 Classic.....	27-75
732 Classic.....	32-50
736 Classic.....	63-55
737 Classic.....	78-50
738 Classic.....	96-50
500.....	12-95
MORIDAIRA BANJOS	
FB 1R 4-String.....	60-95
FB 2R 5-String.....	60-95
GB 1 6-String.....	62-85
C-7D Banjo case.....	28-35
MORIDAIRA MANDOLINS	
MD 20.....	41-50

MD 30.....	41-50
MD 100.....	49-05
CONCERTER	
SK612N.....	17-90
CK100N.....	25-85
SK 614N Concert.....	23-70
GK 200 Concert.....	32-80
WK 599SH Jbo.....	47-80
WK 599 Jbo.....	44-45
WK 588.....	31-65
FK288.....	31-05
WK0030.....	50-80
FK 299 Folk.....	42-45

HORNBY-SKEWES

PALMA ACOUSTICS	
500.....	12-95
300N.....	15-95
400F.....	17-50
580.....	18-95
C103N.....	24-75
FG105.....	27-50
900N.....	29-50
VWF5.....	31-50
VW301.....	39-00
VW301-12.....	46-50
203.7.....	57-60
KASUGA ACOUSTICS	
G100L.....	49-00
G200.....	65-00
G400.....	63-00
D200.....	70-00
T250 (12-Str).....	79-00
D350.....	99-00
TERADA ACOUSTICS	
TG306.....	54-50
TG307.....	57-00
F603.....	63-00
TG310.....	65-50
WV643.....	79-00
FW615.....	79-00
FW650.....	87-00
TG315.....	99-00
FW656.....	99-00
FW620.....	115-00
TW80.....	159-00
KASUGA ELECTRICS	
SG360.....	159-00
LG380B.....	165-00
SE480S.....	179-00
LG770V.....	239-00
SG1800V.....	255-00
EB750S.....	235-00
ZENTA ELECTRICS	
EG501.....	34-00
EG502.....	43-00
EB511.....	43-00
HEG5006.....	49-00
HDBG5004.....	53-00
HET5001.....	49-00
HE5000.....	58-00
HEP5002.....	65-00

IVOR MAIRANTS

MARTIN	
D.18.....	300-00
D.28.....	395-00
D.35.....	420-00
D.12-28.....	410-00
O16NY inc case.....	300-00
D.41 inc case.....	660-00
O021 inc case.....	420-00
D.45.....	1150-00
AROSTEGUI	
No. 2.....	24-00
No. 4.....	26-00
No. 6.....	28-00
CALABERT	
OS.....	20-00
A.....	22-50
B.....	26-00
C.....	33-00
Palosanto inc case.....	100-00
MITSUMA	
JG.101.....	21-00
JW304/12.....	40-00
JW.305/12.....	45-00
JG.102.....	28-00
JG.103.....	32-00
JG.42.....	35-00
JG.43.....	48-00
JG.45 inc case.....	100-00
JG.46 inc case.....	120-00
O3.....	80-75
JF.201.....	19-00
JF.202.....	22-50
JF.203.....	27-50
JW.303.....	30-00
SAKURA	
C114B.....	20-00
C113A.....	18-00
LS26D.....	60-00
LS26S.....	60-00
LS26.....	55-00
LS260S.....	65-00
F.339R.....	42-50
MD.25.....	39-50
C132S.....	45-00
C136S.....	74-00
TG.10.....	27-00

To avoid unnecessary repetitions, certain abbreviations are frequently used in our listings: electric-elec; custom-ctm; semi-acoustic-s/ac; organ-org; professional - pro; standard - std; acoustic - ac; folk - fk; bass - bs; string-str; de luxe-d/l; jumbo-jbo; piano-pno; left hand-l/h; scale-sc; case - cs; banjo - bjo; monitor - mt.

TG.20.....	30-00
JB.24.....	60-00
JB.24DN.....	85-00
175DC in case.....	90-00
175DG in case.....	110-00
ORFEO	
DC.101.....	25-00
DC.103.....	30-00
DC.107.....	35-00
DC.110.....	37-50
DC.112.....	42-50
TAKAMINE	
DC.125.....	88-50
C128.....	50-00
C132S.....	60-00
C136S.....	90-00
NORMAN	
B.55.....	275-00
B.50.....	205-00
B.30.....	150-00
Spec Edition.....	120-00
B.20.....	100-00
B.55-12.....	310-00
B.50-12.....	255-00
B.20-12.....	120-00

JOHN BIRCH

SCSL Elec.....	259-20
SCDL Elec.....	239-50
Twin-neck.....	379-00
Strat copy.....	248-40
'Rickenbircher' bs frm.....	259-20
SVL (Flying V).....	259-20
Custom gtrs to order	
All standard custom models:	
6 str. from £280.00+VAT	
Twin necks fr. £450.00+VAT	

KEMBLE

YAMAHA	
Classics:	
G55.....	46-50
G55.....	49-50
G65.....	55-00
G90.....	62-50
G150.....	66-00
G220.....	86-00
G280.....	108-00
GC3 Handmade.....	179-00
GC6 Handmade.....	230-00
GC10 Handmade.....	295-00
Folk:	
FG110N.....	60-00
FG75N.....	55-00
FG160 Jumbo.....	72-50
FG170.....	75-00
FG180/1 Jumbo.....	92-00
FG260 Jumbo 12 Str.....	92-00
FG280 Jumbo.....	105-00
FG300N Jumbo.....	135-00
FG360 Jumbo.....	137-50
FG580 Jumbo.....	179-00
FG295.....	108-00
FG700S Handmade.....	219-00
FG1000 Handmade.....	329-00
FG1200 Handmade.....	369-00
FG1500 Handmade.....	439-00
FG2000 Handmade.....	519-00
Folk w/pu:	
FG110E.....	76-00
FG160E Jumbo.....	97-50
Semi-Acoustic:	
SA60.....	260-00
SA90.....	327-00
Solids:	
SG30.....	109-00
SG35.....	119-00
SG40.....	121-00
SG45.....	159-00
SG85.....	239-00
SG90.....	290-00
SG175.....	465-00

SB35 Bass.....	126-50
SB155 Bass Long Scale.....	196-00
SB175 Bass Long Scale.....	217-00
Acoustic-Electric ("Jazz"):	
AE12.....	248-00
AE18.....	323-00

TED KNELLER

Vinci Strings (sets)	
Bronze wound ac. all gauges.....	1-90
Steel ac.....	1-90
12-string bronze.....	3-35
Folk silv. wound.....	2-13
Folk bronze wound.....	1-92
Elec. round wound all gauges.....	2-25
Elec. flat wound all gauges.....	2-86
Classic wound 3rd.....	2-43
Classic wound basses.....	2-30
Classic ball ends.....	2-04
Banjo strings.....	1-29

NORLIN

GIBSON	
Howard Roberts.....	845-00
Byrdland.....	1263-00
L5CES.....	1386-00
Johnny Smith DN 2 p/u, Nat.....	1453-00
Johnny Smith D, S/b.....	1453-00
Johnny Smith N, 1 p/u.....	1407-00
Johnny Smith, S/b.....	1407-00
Super 400 CES, Nat.....	1514-00
Super 44 CES, S/b.....	1316-00
Byrdland, Natural.....	1098-00
L-5C, Single Cutaway Acoustic Nat.....	1078-00
Super 400 C Outfit, Single Cutaway Acoustic, Nat.....	1215-00
ES-175D.....	613-00
ES-345 TD, Cherry.....	673-00
ES-345 TD, S/b.....	698-00
ES-345 TD, Walnut.....	673-00
ES-355 TD-SV.....	875-00
ES-335 TD, Cherry.....	529-00
ES-335 TD, S/b.....	555-00
ES-325 TD.....	446-00
Les Paul Recording White.....	612-00
Les Paul Recording Nat.....	590-00
Les Paul Triumph Bs White.....	598-00
Les Paul Triumph Bs Nat.....	572-00
Les Paul Custom, Ebony.....	622-00
Les Paul Custom, White.....	679-00
Les Paul Custom, Cherry.....	644-00
Les Paul Custom, Wine.....	622-00
Les Paul De Luxe, Gold.....	505-00
Les Paul De Luxe, Cherry.....	529-00
Les Paul Signature, Gold.....	546-00
Les Paul Signature Bs, Gold.....	529-00
Citation outfit.....	3789-00
Les Paul Signature, tobacco brown s/b.....	573-00
Les Paul Signature, tobacco brown s/b.....	555-00
Les Paul d/l tobacco brown s/b.....	529-00
Les Paul d/l wine red.....	505-00

Les Paul ctm tobacco brown s/b.....	644-00
SG Custom, White.....	613-00
SG Custom, Walnut.....	589-00
SG Std., Cherry.....	402-00
SG Custom, wine red SG Custom w Bigsby, walnut.....	589-00
SG Custom w Bigsby, white.....	597-00
SG Custom w Bigsby, wine red.....	625-00
SG Standard, s/b.....	597-00
SG Standard, white.....	429-00
S-1 nat. satin.....	429-00
SG Std., Walnut.....	337-00
SG Std., Bigsby, Cherry.....	402-00
SG Std., Bigsby, Walnut.....	412-00
SG Std. Bigsby, Sunburst.....	412-00
L6-S Custom, Black.....	439-00
L6-S Custom, Nat.....	425-00
L6-S De Luxe, Wine.....	425-00
L6-S De Luxe, Nat.....	334-00
Satin.....	302-00
Marauder, Nat. Satin.....	293-00
Marauder, Wine.....	335-00
Left-hand:	
SG Std. Bigsby, Cherry.....	399-00
Les Paul De Luxe, Gold.....	505-00
SG Std., Cherry.....	389-00
SG Spec., Cherry.....	339-00
Les Paul Custom, Cherry.....	648-00
Les Paul De Luxe, Cherry.....	529-00
Bass Range	
Ripper (L9-S), Nat.....	394-00
Ripper (L9-S), Ebony.....	394-00
Ripper Fretless, Ebony.....	394-00
Ripper Fretless, S/b.....	421-00
Grabber 3 (G-3), Nat Satin.....	328-00
Grabber 3 (G-3), Ebony.....	369-00
Grabber 3 (G-3), s/b.....	394-00
Grabber, Nat Satin.....	277-00
Grabber, Ebony.....	319-00
Grabber, Wine Red.....	319-00
EB-3, Cherry.....	394-00
EB-3, Walnut.....	394-00
EB-3, White.....	422-00
Jumbo Range	
J-200 Artist, S/b.....	668-00
J-200 Artist, Nat.....	683-00
Dove Custom, Cherry.....	600-00
Dove Custom, Nat.....	623-00
Gospel, Nat Top.....	509-00
Heritage Custom, Nat Top/Rose Back.....	529-00
Hummingbird Custom, Cherry.....	471-00
Hummingbird Custom, Nat.....	485-00
J-50, Nat Top.....	371-00
J-45, S/b.....	349-00
J-55, Nat Top.....	425-00
J160E Custom s/b.....	477-00
B-45-12N d/l 12 str.....	445-00
J-40 Nat Top.....	334-00
SAXON	
Class Range	
813.....	39-00
814.....	46-00
815.....	59-00
816.....	65-00
Folk Range	
817.....	46-00
818.....	55-50
Jumbo Range	
819.....	55-50
820.....	60-00
821.....	57-00
822 12 str.....	62-00
823.....	57-00
824.....	77-00
825.....	94-00
Solid Range	
Saxon 830 Sid.....	117-00
Saxon 831 Sid.....	98-00
BANJOS & MANDOLINS	
AA Tenor.....	3816-00
AA 5 String.....	3816-00
Tenor.....	3816-00
5 Str.....	3816-00
TB-800 Tenor D L.....	1428-00
TB-250 Tenor.....	817-00
TB-100 Tenor.....	569-00
RB-800 D L.....	1489-00
RB-250 5-String.....	813-00
RB-100 5-String.....	569-00
PB-800 D L Banjo.....	1435-00
PB-250 Plectrum Banjo.....	813-00
F-5 Artist Mandolin.....	1464-00
F-12 Artist Mandolin.....	1221-00
A-5 Mandolin.....	976-00
A-12 Mandolin.....	781-00

ORANGE

Orange custom guitar.....	To order
Case.....	To order

B. L. PAGE

1405 G Banjo.....	67-25
1406 Banjo line.....	57-85
CLASSICAL	
3076.....	44-35
3077.....	46-85
3078.....	58-95
3079.....	94-35
3080.....	128-60

SUZUKI CLASSICAL GUITARS	
3065.....	33-70
3066.....	35-95
3067 Matc Finish.....	50-50
3068.....	49-95
3069.....	57-50
3070 Handmade.....	102-00
3071 Handmade.....	175-00

STUDENT GUITARS	
3057 Dulcet.....	17-25
3058 Constanta.....	12-50
1512 Kansas.....	11-80
1513 Kansas Variant.....	11-80
3166 Texan Jumbo.....	28-50
3169 Laredo Jumbo.....	22-50

ROSETTI

EPIPHONE	
FT145 Jumbo.....	79-95
FT165 12 s.....	129-95
EC20 Classic.....	59-95
EC15.....	49-95
FT570SB.....	139-95
FT130 Folk.....	69-95
FT115 Folk.....	82-50
FT200.....	94-95
FT140.....	74-95
FT150.....	115-00
FT550 Folk.....	159-95
FT565 12 s.....	169-95
FT160.....	94-95
FT120 Folk.....	59-95

EROS	
9578 Elec.....	109-95
9585 Bass.....	109-95
9586 Bass.....	109-95
9353 Folk.....	37-50
9356 12 s Folk.....	47-50
9350 Folk.....	35-95
9351 Folk.....	44-95
9587 6 s Electric.....	99-00
9709 bass.....	79-95
9710.....	79-95

EROS MKII SOLIDS	
9711 6 s.....	69-95
9712 6 s.....	79-95
9713 Bass.....	79-95

LARAMIE GUITARS	
9717 Jumbo.....	31-95
9714 Jumbo.....	34-95
9715 2 string.....	37-95

KISO-SUZUKI	
9502 Classic.....	26-85
9503 Classic.....	29-85
9504 Classic.....	32-25
9505 Classic.....	32-85
9583 Heritage Classic.....	79-95
9651 Folk.....	49-95
9582 Folk.....	44-95
9653 12 s Folk.....	59-95
9507 Folk.....	52-95

TATRA	
9198 Classic.....	21-00
9225 Classic.....	24-95
Hi-Spot Nylon.....	14-95
Hi-Spot Steel.....	13-95

STRINGS & THINGS

RIENCKBACKER	
olids:	
430 2 p/u, nat mahog.....	247-61
450 Original 2 p/u.....	282-49
450 12 12-str model of '450.....	319-11
456 12 Convertible 6, 12 Str like 450 12.....	380-14
480 2 p u in '4000' Bass series.....	301-67
620 Deluxe Stereo 2 p u.....	395-83
320 Thin Semi-Acoustics 320 3 p u short scale.....	383-63
330 2 p u double cutaway.....	371-42
330 12 12-Str model of '330.....	488-25
647 12.....	99-50
684BK.....	100-00
369.....	67-50
370C.....	60-00
370 12.....	64-24
371.....	60-00
393.....	77-50
371BK.....	62-75
355.....	57-85
355 12.....	66-50
665BS.....	136-50
LH684 12BK.....	112-50
LH620.....	102-50
LH647.....	97-00
LH647 12.....	101-50
LH615.....	91-50
LH615 12.....	100-00
LH684BK.....	104-50
2846.....	107-00
752.....	106-00
684BK 12.....	109-00
951.....	96-50
952.....	87-50
767.....	117-50
642SID.....	160-00
2608.....	150-00
2609.....	175-00

Bass Guitars	
4000 1 p u solid.....	392-34
4001 2 p u Deluxe Stereo solid.....	448-14
4001 LH Lefthand version of model '4001.....	528-36
4005 Deluxe hollow body 2 p u.....	507-43
Rickenbacker Twin Neck	
362 12 Thin body semi-ac models 360 & 360 12 guitars.....	1142-16
4080 Solid inc. models 480 & 4001.....	976-50

HONDO	
H-150 Grand Concert Folk.....	26-36
H-155 Dought.....	28-52
H-310 Concert Classic.....	22-59
FG-5500 Student Folk.....	18-84
FG-8500 Student Dought.....	19-79

LITTLE BUDDY	
4141 Junior Pedal Steel.....	252-50
4142 Pedal Steel.....	329-92
4140 Professional Twin Neck Pedal Steel.....	768-38

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STUDENT CLASSIC	
739.....	23-50
5106.....	18-25
IBANEZ & CIMAR CLASSIC	
395.....	54-50
396.....	59-85
397.....	65-96
398.....	73-30
387.....	60-00
388.....	67-85
2856.....	82-00
2857.....	101-50

2858.....	121-50
2859.....	162-00
2860.....	200-00
MITSURU TAMURA HAND MADE CONCERT*	
P800.....	325-00
P700.....	285-00
10P1500.....	585-00
P1200.....	485-00
10P2000.....	795-00

MASURU KOHNO CONCERT*	
M.K.15.....	720-00
M.K.20.....	950-00
M.K.30.....	1200-00

IBANEZ & CIMAR WESTERN & FOLK	
615/12.....	97-50
620.....	98-00
647.....	94-50
647 12.....	99-50
684BK.....	100-00
369.....	67-50
370C.....	60-00
370 12.....	64-24
371.....	60-00
393.....	77-50
371BK.....	62-75
355.....	57-85
355 12.....	66-50
665BS.....	136-50
LH684 12BK.....	112-50
LH620.....	102-50
LH647.....	97-00
LH647 12.....	101-50
LH615.....	91-50
LH615 12.....	100-00
LH684BK.....	104-50
2846.....	107-00
752.....	106-00
684BK 12.....	109-00
951.....	96-50
952.....	87-50
767.....	117-50
642SID.....	160-00
2608.....	150-00
2609.....	175-00

R. MATSUOKA WESTERN DREADNOUGHT*	
D30.....	130-00
D40.....	200-00
D50.....	218-00
D60.....	250-00
D80.....	325-00

LEVIN	
315S.....	850-00
W36.....	220-00
W32.....	325-00
MACCAFERRI REPLICA*	
MAC.2.....	140-00
MAC.2 Special.....	150-00
MAC.3.....	165-00

T. HARUO WESTERN GUITARS	
*T50.....	235-00
*T60.....	250-00

CSL & IBANEZ ELECTRICS	
2350.....	148-75
2350DX.....	180-00
FG3605.....	145-00
2351DX.....	181-50
2351DXCS.....	185-50
2341.....	165-00
2341DX.....	210-00
2350W.....	157-75
2451.....	206-00
2452B.....	106-00

2342.....	159-25
2343.....	171-20
2337DX.....	181-50
2344.....	187-50
2402.....	262-50
2402DX.....	287-25
2404.....	258-20
2651CW.....	247-00
2351AV.....	163-50
2420CW.....	192-00
2469.....	230-00
2335.....	153-25
2464S.....	296-85
2459.....	229-15
2347 IV.....	189-00
2389B.....	233-50
2459B.....	234-50
2460.....	323-65
2461.....	349-50
2463.....	212-50
2470.....	366-75
2471AC.....	330-00
2626B.....	277-50
2630.....	256-75
LH3350.....	160-00
2663.....	280-00
2387C.....	230-00
2387B.....	235-00
2388B/S.....	183-80
2388.....	195-50
LH1388B/S.....	201-50
2453.....	214-25
2455.....	242-50
2457ST.....	247-00
2352C.....	134-50
2352DX.....	152-50
2369B/V.....	180-00
LH2352DX.....	167-50
LHF3605.....	157-50
LH2351DX.....	198-50
2348.....	239-50
2348B.....	248-50
2670.....	900-00
2680.....	225-00
2681.....	358-50
2671.....	358-50
2676.....	495-00
2617.....	275-50
2618.....	273-00
2619.....	303-50
2613.....	192-75
2616.....	263-50
2625B.....	283-50

W.M.I.	
G101 Std. Flk.....	10-95
K200 Folk.....	16-95
K320 Concert Folk.....	20-95
KD28 Jbo Western.....	33-50
KD28-12 1st Jbo.....	39-50
K.410 Concert D/Lux.....	26-50
K.442 Auditorium Folk.....	23-95
K.550 Jbo pce back.....	33-95
KDG.70 D/J Jbo.....	39-50
K.475 J.L. Seagull.....	23-95
Classic:	
KC.265 Student.....	18-75
KC.333 Concert.....	19-75
KC225 Classic.....	15-50
KDG50 D/J Classic.....	26-95
Electric:	
K1B. 130 Bs long scale.....	29-95
E.120 Single p/u.....	23-95
K2T. S.G. 2 p/u.....	27-95
Banjo:	
KB.52 Deluxe.....	39-50

WOODS

G 400 Standard.....	10-04
G 150A Classic.....	18-23
G 152 Folk.....	25-68
G 180 Classic.....	21-55
G 190 Classic.....	30-78
G 140 Jumbo.....	31-19

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Cordoba.....	53-29
Valencia.....	56-05
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FOLK GUITARS	
FT/25.....	54-10
FT/Super Luxe.....	76-95

WESTERN GUITARS	
Fantom 20.....	51-67
Fantom 30.....	62-69
Fantom 33.....	67-71
Fantom 36.....	74-03
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Fantom 112.....	72-73
Fantom 212.....	83-26
Fantom 312.....	93-79
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MANDOLINS	
524.....	285-00

523.....	275-00
526.....	300-00
521.....	235-00
522.....	240-00
513.....	98-50
516.....	61-00
511.....	50-75
512.....	58-50
514.....	58-50
1521.....	22-75
80.....	45-00
100.....	59-75
E.M.I.....	42-50

*Prices include Hard Shell case

W.M.I.	
G101 Std. Flk.....	10-95
K200 Folk.....	16-95
K320 Concert Folk.....	20-95
KD28 Jbo Western.....	33-50
KD28-12 1st Jbo.....	39-50
K.410 Concert D/Lux.....	26-50
K.442 Auditorium Folk.....	23-95
K.550 Jbo pce back.....	33-95
KDG.70 D/J Jbo.....	39-50
K.475 J.L. Seagull.....	23-95
Classic:	
KC.265 Student.....	18-75
KC.333 Concert.....	19-75
KC225 Classic.....	15-50
KDG50 D/J Classic.....	26-95
Electric:	
K1B. 130 Bs long scale.....	29-95
E.120 Single p/u.....	23-95
K2T. S.G. 2 p/u.....	27-95
Banjo:	
KB.52 Deluxe.....	39-50

WOODS	
G 400 Standard.....	10-04
G 150A Classic.....	18-23
G 152 Folk.....	25-68
G 180 Classic.....	21-55
G 190 Classic.....	30-78
G 140 Jumbo.....	31-19

WELSON CLASSIC GUITARS	
Cordoba.....	53-29
Valencia.....	56-05
Navarra.....	59-13
Granada.....	67-87
Castilla.....	75-97
Sevilla.....	97-36
Sevilla.....	97-36
Andorra.....	114-85

FOLK GUITARS	
FT/25.....	54-10
FT/Super Luxe.....	76-95

WESTERN GUITARS	
Fantom 20.....	51-67
Fantom 30.....	62-69
Fantom 33.....	67-71
Fantom 36.....	74-03
Fantom 39.....	80-93

TWELVE STRING GUITARS	
Fantom 112.....	72-73
Fantom 212.....	83-26
Fantom 312.....	93-79
J/12 N Electric.....	93-56

MANDOLINS	
524.....	285-00

SOLID BODY ELECTRIC GUITARS	
Dyno II.....	102-93
Vedette.....	115-87
Super Jazz.....	129-18
Red Flame.....	106-68
Black Pearl.....	116-06

THIN BODY ELECTRIC GUITARS	
Caravel.....	105-75
DS/2T.....	125-43
DS/Artist.....	138-56

BASS ELECTRIC GUITARS	
Special Bass.....	142-31
Black Bass.....	123-56
DS/Bass.....	121-12
Starfire Bass.....	87-56
Red Bass.....	115-87

JOSE RAMITEZ CONCERT GUITARS	
Model Studio I.....	165-24
Model	

2 x 12" 1 horn PA 240W.....	231-00
Horn Units (2).....	121-00
ACCESSORIES	
Mantis.....	150-00
Twin Deck.....	165-00
Reverb Unit.....	73-00
Fuzz Unit.....	15-00
Wah Wah Pedal.....	15-00
Wah Swell Pedal.....	16-75
Phaz Fuzz Pedal.....	21-00
Phazer.....	27-25
Super Phazer.....	39-50
Sennheiser MD-413N Mike.....	48-00
Sennheiser MD-416N Mike.....	64-00
Microphone Lead.....	9-00
Microphone Stand.....	11-50
Boom Arm.....	7-50
Amplifier Stand.....	30-00
Disc Stand.....	19-12

C.B.S. ARBITER (EX. VAT)

FENDER	
Dual Showman, 2 x D 130F JBL.....	719-00
Dual Showman, 2 x D 140F JBL.....	747-10
Dual Showman, top.....	424-70
Dual Showman, Reverb Enclosure 2 x D130F speakers.....	348-75
Quad Reverb, 4 x 12-inch speakers.....	539-00
Quad Reverb, 4 x D120F speakers.....	768-50
Super Six, 6 x 10-inch speakers.....	517-70
Vibrosonic Reverb 1 x D130F JBL.....	488-25
Twin Reverb, 2 x 12-inch speakers.....	457-25
Twin Reverb, 2 x D 120F JBL.....	586-80
Bandmaster, 2 x 12 inch.....	449-50
Bandmaster, 2 x D 120F JBL.....	564-20
Bandmaster, top.....	291-40
Bandmaster enclosure.....	198-40
Super Reverb, 4 x 10-inch.....	395-25
Super Reverb, 4 x D110F JBL.....	610-70
Pro. Reverb, 2 x 12-inch.....	367-35
Vibrolux Reverb, 2 x 10 inch.....	305,350
De Luxe Reverb, 1 x 12-inch.....	251-10
Princeton Reverb, 1 x 10-inch.....	193-75
Princeton, 1 x 10-inch.....	141-05
Champ, 1 x 8-inch.....	75-95
Bassman 100, 4 x 12-inch.....	496-00
Bassman 100, top.....	277-45
Bassman 100, enclosure.....	263-50
Bassman 50, 2 x 15-inch.....	413-85
Bassman 50, 2 x D 140F JBL.....	550-25
Musicmaster bass, 1 x 12-inch.....	122-45
PA100 PA system.....	492-90
PA100 top.....	322-40
PA100 column.....	212-35
Hi Freq. Horn.....	65-10
PA160 4 x SC3-10.....	905-20
PA160 Amp Top.....	547-15
PA160 SC3-10 colmn.....	108-50

J. T. COPPOCK

ELGEN	
Details and prices on application.	
CUSTOM SOUND (EX. VAT)	
Amplifiers:	
CS 700 BM.....	137-95
CS 700 CV.....	116-25
CS 700 DB.....	220-10
CS Truckster.....	77-50
CS 700A.....	176-70
CS 700B.....	147-25
CS 700C.....	100-75
CS 700D.....	201-50
CS 700DX.....	238-70
Mixer:	
CS 700MXR 12 ch.....	396-80
Monitoring:	
CS 7VM.....	49-60
CS 7VM5.....	58-90
Enclosures:	
CS 7212.....	74-40
CS 7212H.....	96-10
CS 7215.....	139-50
CS 7215S.....	186-00
CS 7115.....	96-10
CS 7115S.....	120-90
CS 7YDH.....	TBA
CS 7212S.....	93-00
CS 7412.....	151-96
CS 7115B.....	124-00
CS 7112DH.....	TBA
CS 7215B.....	192-20
CS 7015FH.....	114-70
CS 7015FHS.....	145-70

CERWIN VEGA

Vocal Reinforcement systems	
V.30A 150W.....	253-00
V.32B 300W.....	345-00
V.34 300W.....	365-00
VH.36 400W.....	540-00
Musical Inst. systems	
G.32 200W.....	265-00
B.36 300W.....	315-00
B.48 300W.....	415-00
B.36MF 300W.....	395-00
B.48MF 400W.....	475-00

Sound Reinforcement systems

L.48CF 500W.....	425-00
L.48CFD (L.48CF w. horn ext op).....	545-00
L.48DD 2000W.....	1255-00
H.RM.1 100W.....	325-00
HF.6 100W.....	149-00

CLEARSTONE

CM1 1037, 50W L&B.....	119-23
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1038, 100W L&B.....	138-70
1039, 2 x 5 cab., 120W, Id.....	122-21
1040, 2 x 15 cab., 120W, bass.....	118-62
1050, 2 x 12 cab., 50W, Id.....	97-50
1062, 1 x 18 cab., 100W, bass.....	98-81
1063, 4 x 12 cab., 100W, d.....	129-00
1064, 4 x 12 cab., 100W, bass.....	129-00
1047, 2 x 10 cols., 60W pr.....	110-11
1048, 4 x 10 cols., 120W, pr.....	142-26
1065, horn cabs.....	81-57
1066, 2 x 12 cols., 100W, pr.....	158-87
1067, 6 x 10 cols., 300W, pr.....	127-60
1068, 250W slave.....	191-57
1069, 8-change mixer.....	257-41

Solid State amps:	
1071 50W, L & bs.....	118-84
1072 100W L & bs.....	127-57
1073 50W PA.....	118-84
1074 100W PA.....	153-50
1075 100W Slave.....	111-36
1060, sound/light control.....	43-47
1061, lighting cabs., set 3.....	50-60
1949, fuzz sound.....	10-36
1041, minireverb mixer, 6 chan.....	66-50
1041F, footswitch.....	2-88

Celestion spkrs:	
1051, G12M, 25W.....	15-33
1052, G12H, 30W.....	18-28
1053, G15M, 50W.....	22-98
1055, G18C, 100W.....	41-23
1056, S10, 15W.....	5-49

J. T. COPPOCK

ELGEN	
Details and prices on application.	

CUSTOM SOUND (EX. VAT)

Amplifiers:	
CS 700 BM.....	137-95
CS 700 CV.....	116-25
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CS Truckster.....	77-50
CS 700A.....	176-70
CS 700B.....	147-25
CS 700C.....	100-75
CS 700D.....	201-50
CS 700DX.....	238-70
Mixer:	
CS 700MXR 12 ch.....	396-80
Monitoring:	
CS 7VM.....	49-60
CS 7VM5.....	58-90
Enclosures:	
CS 7212.....	74-40
CS 7212H.....	96-10
CS 7215.....	139-50
CS 7215S.....	186-00
CS 7115.....	96-10
CS 7115S.....	120-90
CS 7YDH.....	TBA
CS 7212S.....	93-00
CS 7412.....	151-96
CS 7115B.....	124-00
CS 7112DH.....	TBA
CS 7215B.....	192-20
CS 7015FH.....	114-70
CS 7015FHS.....	145-70

DARBURN

Reverb.....	69-00
Darbun 30.....	101-15
Twin 12/30.....	109-40
Twin 12/60.....	133-00
Session 50.....	167-90
Session 80.....	233-00
Session 100.....	237-50
RVS-100.....	239-75

DAVOLI

Mixers:	
Compact 8/100.....	295-00
Echo 6/100.....	392-00
Reverb 12/100.....	696-00
Multimodular Stereo 18.....	999-00
Studiogroup Stereo.....	770-00
Monitor:	
Spia 100W.....	218-00
Spia extension.....	160-00
Speaker cabs:	
DK90 1 x 15 + twtr.....	214-00
DK1 0 1 x 15 + tweeters.....	250-00

To avoid unnecessary repetitions, certain abbreviations are frequently used in our listings: electric - elec; custom - ctm; semi-acoustic - s/ac; organ - org; professional - pro; standard - std; acoustic - ac; folk - fk; bass - bs; string - str; de luxe - d/l; jumbo - jbo; piano - pno; left hand - l/h; scale - sc; case - cs; banjo - bjo; monitor - mt.

PA8/100.....	160-00
Rotary cabs:	
LP65.....	339-00
LP200.....	800-00
Microphones:	
K695 Dynamic card-ioid.....	48-00
K976 Dynamic card-ioid.....	62-00

D. B. WHOLESAL

KUSTOM Lead Amplifiers	
V L Self-Contained.....	175-00
II L Self-Contained.....	268-66
III L Self-Contained.....	429-83
III L Piggyback.....	620-87
IV L System.....	1149-02
IV L Stack System.....	1385-04
III L Amplifier only.....	342-67
III L Speaker Cabinet only.....	293-74
IV L Amplifier only.....	734-32
IV L Speaker Cabinet only.....	489-53
IV L Two Speaker Cabinets.....	685-35

Bass Amplifiers	
V B Self-Contained.....	155-00
IB Self-Contained.....	251-80
II B Piggyback.....	385-35
III B Piggyback.....	731-20
IV B System.....	1142-27
IV B SRO System.....	1337-28
II B Amplifier only.....	237-88
II B Speaker Cabinet only.....	174-24
III B Amplifier only.....	293-77
III B Speaker Cabinet only.....	293-74
IV B Amplifier only.....	685-37
IV B Speaker Cabinet only.....	489-53
IV B SRO Speaker.....	685-37
4 x 15 Cabinet.....	538-50

Chassis Speakers	
12" SRO Electro-voice Speaker.....	106-16
15" SRO Electro-voice Speaker.....	111-63

P.A. Equipment	
II P.A. Complete.....	506-25
II P.A. Energizer.....	372-06
II P.A. Column.....	94-00
II P.A.-P.A. Complete.....	611-32
II P.A. Energizer.....	372-06
II P.A. Column.....	127-28
III P.A. Complete.....	993-41
III P.A. Energizer.....	350-93
III P.A. Column.....	215-40
III P.A.-P.A. Complete.....	1223-54
III P.A. Energizer.....	587-46
III P.A. Column.....	323-10
VIP A. Complete.....	1662-04
VIP A. Energizer.....	881-19
FLH-15 Cabinet.....	251-53
M-15 Horn.....	166-45
VI A-P.A. Complete.....	2044-13
VI A-P.A. Energizer.....	881-49
FLH-15 SRO Cabinet.....	362-28
MT-15 Horn.....	244-79
V.P.A. 130W Amp.....	267-94
PRO 1ST SRO Cab.....	268-60

Monitors and Accessories	
31SP Monitor Spkr.....	166-86
II Monitor Speaker.....	94-00
III Monitor Speaker.....	321-04
III Monitor Amplifier.....	316-22
Snake.....	765-14
Sound Reinforcement Mixers and Slaves	
VIII SRM 8 Ch Mixer.....	1050-72
FLH-15 SRO Cabinet.....	362-28
MT-15 Hn Tweeter.....	244-79
VII SR Slave.....	372-51
XII SRM 12 Ch Mixer.....	1719-37

MF-12 12 Cabinet.....	525-37
MF-10 12 Horn.....	620-89
XII SRS Bi-Amp Slave.....	525-37
III BC 8 Ch Mixer.....	505-03
20 SRM 12 Ch Mixer.....	4261-82
20 SRM 16 Ch Mixer.....	5002-77
20 SRM 20 Ch Mixer.....	5741-43
20 SRM 24 Ch Mixer.....	6486-81
X Slave Stereo.....	370-68
XX Slave Stereo.....	741-34
Passive Crossover.....	95-53

Suggested Sound Reinforcement Groups	
Group No. 1.....	2637-37
Group No. 2.....	4030-58
Group No. 3.....	3868-61
Group No. 4.....	5588-00

Graphic Equalizer	
Graphic Equalizer.....	191-05

DISCOSOUND

AMPLIFIERS	
Discosound 70.....	91-80
Discosound 100.....	85-32

PROFESSIONAL SERIES AMPLIFIERS

T.K. Pro 200 Slave.....	150-12
T.K. Pro 200 P.A.....	182-52
T.K. Pro 250 Stereo.....	150-12
T.K. Combo 150.....	194-40

DISCOTHEQUES MONO

Discot Midas.....	145-80
Discot Magnum.....	210-60
Discot Magister.....	253-80
Discot Roadstar.....	426-60

DISCOTHEQUES STEREO

Discot Delta.....	264-60
Discot Dart.....	372-60
Discot Roadstar Ster.....	594-00

SPEAKER SYSTEMS

Venus single 12" 50W.....	52-92
Saturn 2 x 12" 100W.....	85-32
Jupiter bin-horn.....	194-40
Jupiter Super bin-horn.....	237-60

LIGHT UNITS

Autopulse Mk I.....	32-40
Autopulse Mk II.....	74-52

ACCESSORIES

Disco Stand.....	21-06
Spot Bank.....	15-66
Fuzz Light.....	21-60
Record Case.....	19-44
6 way Lite Box.....	39-96
Colour Bulbs (E.S. fitting).....	1-62
Colour Changer.....	23-76

D. J. ELECTRONICS (EX. VAT)

D.J. 100 Mk. II.....	63-00
D.J. Disco Amp.....	93-00
D.J. Disco Mixer Mk. V.....	60-00
D.J. Disco-Vox Mk. II.....	90-00
D.J. Stereo Mixer Mk. II.....	120-00
D.J. Powermaster 100.....	79-00
D.J. Powermaster 150.....	92-00
D.J. Stereo Powermaster 200.....	120-00
D.J. Stereo Powermaster 300.....	150-00
D.J. 30L Mk. III.....	54-00
D.J. Disclite Mk. II.....	60-00
D.J. 150 Amplifier.....	94-00
D.J. 150 Slave.....	89-00

ELECTROSOUND

Custom-built, prices on application	
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ELECTRO-VOICE (EX. VAT)

FC100 horn.....	72-39
1823, 110W driver.....	62-23
1829, 60W driver.....	65-41
848A CDP speaker.....	111-13
Eliminator I.....	698-50
Eliminator II.....	584-20
Sentry IV system.....	971-55
EVM12L speaker.....	123-83
EVM15B speaker.....	128-91
EVM15L speaker.....	126-39
EVM18B speaker.....	142-88
SP8B, 8 coaxial.....	57-15
12TRXB.....	117-48
T25A driver.....	76-20
T350, VHF driver.....	85-73
BHD horn.....	28-58

ELKA-ORLA

6101 Universal Amp. 50.....	239-32
6102 Universal Amp. 100.....	269-42
6103 Universal Amp. 200.....	437-38
1604 Reverb III.....	104-59

EPICENTRUM (EX. VAT)

Inst. Reflex.....	185-00
Reflex bin 2 x 12.....	245-00
Mid - hf. hns.....	375-00
Acoustic lens - hf hns 3-way bin.....	292-50
2-way bin.....	217-50
Reflex bin.....	185-00
Lower mid horn.....	240-00
Upper mid - hf hn.....	255-00
Acoustic lens.....	325-00

STA200 slave 200W...	174-00
SE4121 50W cab 4 x 12"	123-00
SE4123 100W cab 4 x 12"	135-00
SE4122 150W cab 4 x 12"	152-00
SE4129 200W cab 4 x 12"	189-00
SE4124 50W col 4 x 12"	118-00
SE4125 100W col 4 x 12"	141-00
SE4126 150W col 4 x 12"	158-00
SE2123 30W mon...	71-00
SE2124 75W mon...	90-00
SE2125 100W mon...	116-00
SE2120 100W mini bn	143-00
SE320 200W horn bn	189-00
SE2150 150W bass bn	155-00
Type B stereo mixer 16/4	1200-00
NCA108 200W solid state amp...	178-00
SA212 50W combo...	168-00
SA212R 100W combo w.verb/vibrato...	217-00
DRD001 Sound Desk	253-00

HOHNER

Schaller Solo Uni...	94-25
Orgaphon 60 Amp...	434-80
Orgaphon 130 Amp...	416-75
OTS 130 Speaker...	316-70
Orgaphon Box 80 Spk.	185-55
Dynamite	41-15
Leslie 830	887-90

HORNBY-SKEWES

MILES PLATTING	
V50	124-00
V50.S Spkr.	88-00
V.100	152-00
C.50	201-00
PA.50	144-00
PA.50.S PA spkr.	149-00
PA.100	170-00
PA.100S PA spkr.	244-00

ZENTA

Z3	26-50
CD6SD	39-50

JOHN BIRCH

Penetrator:	
15in. Crescendo	151-20
15in. Gauss	183-60
12in. Crescendo	102-60
12in. Gauss	129-60

KEMBLE

YAMAHA	
P.A. and Ensemble:	
PM200B	292-00
PS75B pr.	493-00
YPA 150B	790-00
PS100	515-00
YPA200	807-00
PS100B	599-00
YPA200B	891-00
PM300	430-00
PM400	535-00
PS400 pr.	1188-00
YPA800	1723-00
EM70A	130-00
ES90A pr.	65-00
YES700A	195-00
EM90A	149-00
YES900A	214-00

Lead stacks:	
PE200A	185-00
TS100	269-00
YTA100A	454-00
TS200	431-00
YTA200A	616-00

Bass stacks:	
BE200	151-00
BS100	359-00
YBA100	510-00

Horn speaker:	
YHS100	251-00

Combos:	
G25112	159-00
G50112	239-00
G100B212	329-00
G100115	369-00
G100410	435-00
BS0115	283-00
B100115	381-00

KINGFISHER

ACOUSTIC	
Combos:	
134 125W 4 x 10"	
2 chn. rev.	366-66
135 125W 2 x 12"	
2 chn. rev.	366-66

Bass Combos:	
136 125W 1 x 15"	
2 chn.	338-40

Amplifiers:	
150 125W 2 chn. rev.	254-23
270 375W Graphic rev.	451-41
470 170W Graphic 2 chn rev.	451-41

Bass Amplifiers:	
140 125W 2 chn.	223-16
370 375W Graphic	389-26
450 170W Graphic	353-10

Cabinets:	
106 2 x 15"	211-30
105 4 x 12"	211-30
201 Altec 2 x 15" - hn.	507-90
404 6 x 12"	281-92
405 4 x 12" - hn.	338-42

PA Mixers:	
890 16 chn - multi-core.	2822-00
880 12 chn.	1581-36

Slave amplifiers:	
300 275W mono.	310-17
400 375W pr chn. stereo.	593-22

Bass cabinets:	
106 2 x 15"	231-62
406 2 x 15"	281-92
301 Vega 1 x 18" bn.	429-37

PA Amplifiers:	
870 170W 6 chn. Graphic rev.	564-40
850 275W 8 chn. rev.	—

PA Enclosures:	
804 2 x 12", 3 x 8"	
2 x sib. prof.	183-62
807 Full range	225-42
808 2 x 15", 2hn.	
2 x sib. prof.	480-23
809 Horn enc.	253-67
810 4 x 12" Bass enc.	366-66
811 Horn enc.	338-42
812 4 x 15" Bass enc.	451-42

Keyboard mixers:	
500 4 chn.	366-66

KNÉLLER

WASHBURN	
PA 475 P.A. Amp.	139-32
GT 275 Guitar Amp.	116-64
GT 275R Guitar Amp with Reverb.	163-48
CB 275 Guitar Comb	220-32
CB 275B Bass Combo	194-40
Banjax 6 ch mixer.	149-04
P.A.M. 10 10 Ch Mixer.	168-48
150S Slave.	99-65

SPEAKERS	
W21ZPA	72-90
W12PDC	65-61
IPRO12PH.	106-92
W15MBH.	152-28
W212G.	113-40
W215B.	143-37
W18B.	197-64

ROAD	
440 Lead.	458-46
440 Bass.	458-46
220 Lead.	364-50
220 Bass.	364-50
212 Lead combo.	498-96
118 Bass combo.	498-96

Speakers	
412.	298-08
118.	298-08
215.	298-08

LANEY

Amplifiers:	
A500 Lead/Bass.	128-52
A510R Lead/Bass rvb	151-20
A540PA Public add.	
5 chn.	132-58
A570 Slave.	105-46
A100 Valve.	142-29

Combination Amps:	
K20.	54-05
K40L Lead.	129-74
K40B Bass.	129-74
K70 Twin reverb.	180-79
K120 Twin reverb JBL	297-00

Cabinets:	
C400 100W 4 x 12"	135-59
C420 120W 4 x 12"	154-01
C440 120W 2 x 15"	154-01

Columns:	
C460PA 100W 2 x 12" pair.	142-47
C470PA 200W 4 x 12" pair.	272-86

L.S.E.

Sound Units	
Jinglemaster.	TBA

STAK S.L.	
STAK I.	
STAK S.	
RAK S.L.	
RAK 5.	
RAK Cab.	
Slave Pwr Amp 100	
Disco Mixer Type 145.	
Disco Mixed Type 145/S.	
Disco Unit.	
Disco Unit w 100W Amp.	
Disco Unit Deluxe (Double T).	
Mixer 800/M.	
Mixer 800/MP.	

Lighting Units	
Discotron MKII 1-1000.	
Discotron MII 2-2000	
Strobe Super (self-contained).	
Strobe Super 6.	

MACINNES (EX. VAT)

CROWN INT/AMCRON	
IC150 Stereo Pre-Amp	285-00
D60 Power Amp.	197-00
D150A.	310-00
DC300A.	520-00
M600.	1300-00
M2000.	2600-00
VFX-2 Var Elec Crossover Unit.	245-00
OC150 Output Cent.	280-00
Walnut End for D60 Amp.	24-00
Walnut Enc for D150A or IC150 Amp.	35-00
Walnut Enc for DC300A Amp.	44-00
IC150 Acc Packs.	4-00
ES212 75W two Unit Sys.	598-00
IMA Intermod Dist Analyser.	555-00

MARLBORO

GA2 Amp.	59-95
GA3 Amp.	67-60
G20R Amp.	177-55
G40R Amp.	161-40
G60R Amp.	195-15
GB0 15 B Amp.	130-15
1500 B Amp.	115-25
P200W slave.	161-90
SM600 mixer.	154-95
LS15B cab.	104-30
LS20LH cab.	137-25
SC40 column.	128-90

MAINE

AMPLIFIERS	
Artist 100A	162-37
Standard 100S.	133-92
Booster 100B.	97-09
Musician 100W combo.	259-47
Musician Super 100W combo.	492-15

LOUDSPEAKER CABINETS	
212 2 x 12 spkrs.	97-09
412 4 x 12 spkrs.	159-03
115C bass bin.	189-00
115A bass bin.	318-06

P.A. EQUIPMENT	
PA170 mixer amp.	225-99
212PA cab.	128-89
Tripod for cab.	33-48

MATAMP (EX. VAT)

AMPLIFIERS	
120W.	145-80
120W slave.	141-75
Mk 1 PA amp.	172-50
Mk 2 PA amp.	202-50
100W slave.	142-50
X6 mixer.	142-50
Disco unit.	232-50
Microphone kit.	62-50

LOUDSPEAKERS	
MA 112.	107-25
MA 412.	131-25
MA 115 D60.	113-25
MA 115 G60.	110-25
MA 115 D100.	142-50
MA 115 G100.	139-50

MAURICE PLACQUET

AMPEG	
Ampeg V4 stack.	TBA
Ampeg V4 B System.	TBA
Ampeg B 15N portabass.	TBA
M 162.	744-50
M 1245.	872-40
M 1645.	1126-60

Echo/reverb units	
ER 300.	98-50
ER 500.	156-25
ER 800.	242-90

MM ELECTRONICS EX. (VAT)

Mixing consoles:	
MP 175 12 chn.	250-00
MP175 8 chn.	204-00
MP175 16 chn.	310-00
MP185 Super 16.	490-00
MP175 8/4.	350-00
MP175 12/4.	390-00
MP275 12 chn in flight case.	390-00
MP285 Super 16 in flight case.	630-00

Amplifiers:	
PA150 Slave.	90-00
WA600 Mixer/Amp.	187-00
AP360 100W.	180-00
19" Rack Mounting Equipment:	
EPI22 2-way elec. cross.	49-00
EPI23 3-way elec. cross.	65-00
EPI27 7-way graphic EQ.	65-00
EPI30st. bs. binfilter	46-00
EPI41 st. comp. limiter.	72-00
EPI61 sub-mixer.	93-00

MUSIC MAN

Combo Amps	
112-65.	393-76
115-65.	435-67
210-65.	431-32
212-65.	507-46
410-65.	518-36
210HD-130.	504-18
212HD-130.	592-51
410HD-130.	596-79

Heads	
65.	288-32
65REV.	348-59
HD130	360-15
HD10REV	422-60

Speaker Enclosures	
115RH65.	252-80
212RH130.	310-57
412GS.	341-59

NOLAN (EX. VAT)

Nolan 100 amp.	112-50
Nolan 50 amp.	82-50
Nolan Session Master straight 50.	138-00
As above - tremolo.	145-00
As above - reverb.	171-00
Nolan Session Master straight 100.	198-00
As above - tremolo.	205-01
As above - reverb.	231-00
Nolan 4 x 12 Celestion cab.	123-75
Nolan 2 x 12 dual cone cols. pair.	123-00
Nolan 2 x 12 plus horn cols pair.	162-00

NOVANEX

Combos	
Aut 3.	51-30
Aut 6.	63-70
Aut 10.	76-76
P 15.	100-85
P 25.	126-80
U 30.	209-40
U 50.	260-40
U 70.	302-90
U 80.	336-30
U 100W.	435-95
RG 30.	215-25
RG 50.	266-10
RG 80.	343-10
RG 100W.	441-00
B 35.	209-40
B 70.	289-90
B 100W.	417-80
FU22/WA/5100	34-00

Power generators, mixers	
L 30.	149-80
L 50.	203-80
L 75.	272-30
L 100.	336-30

L 125.	405-95
LM 30.	138-65
LM 40.	168-65
M 62.	370-80
M 82.	446-10
M 83S.	520-80
M123S.	712-20
M163S.	894-50
M 122.	569-15
M 162.	744-50
M 1245.	872-40
M 1645.	1126-60

ORANGE

CABS	
115 Bass 60W, 1 x 15" inv. horn.	159-51
114, 110 Bass, 100W, 1 x 15" inv. horn.	253-28
113 Reflex Bass, 2 x 15" 200W.	235-62
113/200 Reflex Bass, 2 x 15" 200W.	313-99
109, 4 x 12" 120W.	171-39
107, 2 x 12" Monitor, 60W.	105-51
114/4H, 1 x 15" inc. horn, 4 horns and cross.	306-08
106, 4 x 12" anti-feedback col.	171-39

HORNS

108 Horn unit, 100W	189-70
121A 2 horns.	85-57
121B 4 horns.	151-42

MIXER AMPS

104B, 6 chann, 120W PA.	331-47
102, 120W, graphic PA.	191-37
102'80, 80W, graphic PA.	181-62
103T, 200W, Slave.	255-87
111, 120W, graphic Slave.	175-00
111 80, 80W, graphic Slave.	162-12
112, 120, 120W.	184-92
112.80 80W graphic.	175-00
115, 80W combo	256-83
115 R 80W, combo with Hammond reverb.	308-28
115, 120, 12	

260S 260 Stereo	
Booster 120W/ch	
stereo slave	259-62
400B 400 Booster	
200W slave	240-25
800B 800 Booster	
400W slave	333-25
CS800 Commercial	
Power Amp stereo	
400W/ch	480-50

Mixers	
600 Mixer 6 ch mono	259-62
600S 600 Stereo	
Mixer 6 ch stereo	
facilities	313-87
800S 800 Stereo	
Mixer 8 ch stereo	
facilities	480-50
900 Mixer 9 ch mono	333-25
1200 Mixer 12 ch	
mono	406-87
1200S 1200 Stereo	
Mixer 12 ch stereo	
facilities	736-25
2400F Festival Mixer	
24 ch full prof unit	3487-50

Public Address Speakers Enclosures	
210 2 x 10" Col. each	73-63
410 4 x 10" Col. each	116-25
1210TS 1 x 12" + 1 x 10" + 3 x Tweeters	
Col. each	135-62
412 4 x 12" Col. each	139-50
1210T 2 x 12" + 2 x 10" + 3 x Tweeters	
Col. each	178-25
215H 2 x 15" Hyperbolic Hn Cab.	248-00
1510T 2 x 15" + 2 x 10" + 3 x Tweeters	
Cab. each	271-25
115HT 1 x 15" Hyperbolic Hn	
2 x Tweeters Vocal	
Proj. each	217-00
215HT 2 x 15" + 2 x Hyperbolic Hns	
2 x Tweeters Vocal	
Proj. each	333-25
SPI Spider Bin 1 x 15" + Radial Hn	
Theatre Type encl. each	372-00
T300 Bank of 3 Twtn	58-13
T12 Radial Bank of 12 Tweeters each.	166-62

Ancillary Public Address Equipment	
MO Monitor Amp 130W	186-00
112TS Monitor Wedge Cab 1 x 12" + 2 Tweeters each.	135-62
72 Spider 22 High Efficiency Hn Driver	73-63
A1 Adaptor for above	7-75
A2 ditto.	11-63
A3 ditto.	13-95
PMH Peavey Microphone High Imp.	56-58
PML Peavey Microphone Low Imp.	56-58
BMH Peavey Ball Microphone High Impedance.	56-58
BML Peavey Ball Microphone Low Imp.	56-58

RESOSOUND

S81/M Cardioid med mic.	42-55
S91/H Condenser mic	52-87
S91/L-M Condenser mic.	52-87
UDI-H Cardioid mic.	28-00
UDI-M Cardioid mic.	28-00
RGP71 Super Cardioid mic.	24-00
ECON Omni-direc. mic.	12-85
Cabaret Exec mic.	356-40
TX100.	174-96
TX100 (Gold mic. transmitter).	174-96
TX100 (Gold mic. transmitter).	174-96
RXA Receiver w. aerial.	166-32

PA	
Horn l/p.	
4820 25W.	56-00
4820/T 25W.	65-50
SU25 Driver 25W.	23-50
SU25T 25W.	32-25
SA6205 Spark dia-phragm.	4-33

ROCHFORD

Studio Combo.	321-84
100 AP Top.	175-77
150 AP Top.	225-99

V 100 Bass Top.	159-03
V 150 Bass Top.	211-68
Std. Lead Cab.	237-70
D/L Lead Cab (w. horn).	286-25
Bass Cab.	254-45
2 x 15 Gauss Bass Cab	351-00
1 x 18 Gauss Bass Cab	264-60

ROOST

AMPLIFICATION (Valve)	
50W 2 Chann overdrive fac.	99-45
50W 2 chann integral reverb.	128-65
110W 2 ch.	119-32
110W 2 ch w. r.v.b.	142-25
150W 2 chann overdrive fac.	132-58
150W 2 chann integral reverb.	162-04
150W PA 6 chann indiv echo controls	175-37
150W Slave	110-48
Session Master 50W comb 2 x 12"	172-30
Session Master as above w reverb.	199-31
SM100 100W combo.	202-29
SM100R w. r.v.b.	229-29
SM104 100W combo.	267-24
SM104R w. r.v.b.	294-22
8 chan mixer	150-66
2 x 12" 100W.	85-79
2 x 12" 120W.	102-53
4 x 12" 200W.	136-43
4 x 12" 400W.	166-98
1 x 12" 30"/60"/90"/stage monitors pr.	98-77
1 x 15" 100 Folded hn bass bin.	127-99
2 x 12" 10W + hn.	228-08
1 x 15 100W + hn.	228-43
1 x 15 as above w. 50W hn driver.	181-56
Radial Flare add on hn. 50W.	120-01
As above but 100W.	142-29
Prices ex covers	

ROSE-MORRIS

MARSHALL	
Instrument Amp Tops	
1959 100W Lead.	198-50
2203 100W M/Vol.	198-50
2068 100W Artist.	210-00
2098 100W Trans Lead.	169-00
1992 100W Bass.	198-50
2099 100W Trans Bass.	169-00
1986 50W Bass.	154-95
1987 50W Lead.	154-95
2204 50W M/Vol.	154-95
2048 50W Artist.	161-50
7205 100W Slave.	137-15

Instrument Cabinets	
1982-82B 120W 4 x 12.	170-95
1960-60B 100W 4 x 12.	156-50
1935-35B 100W 4 x 12.	156-50
1979-79B 200W 4 x 15.	221-35
2095-95B 100W 2 x 12.	156-50
2065-65B 125W Powercel	178-90
2064-64B 100W Powercel	153-30
2045 60W 2 x 12.	93-35
1990 100W 8 x 10.	156-50
2049 60W Artist.	132-30
2069 120W Artist.	161-10
2052 125W Powercel	214-00
2056 250W Powercel	367-35
2120 100W Bin w/ Horns.	161-70

Combo Amplifiers	
2200 100W Super Trans.	251-95
2077 100W 4 x 12 Bass.	274-40
2078 100W 4 x 12 Ld.	274-40
2040 50W Artist Combo.	239-85
2201 30W Trans Ld.	131-20
2202 30W Trans Bs.	131-25
2199 30W 2 x 12.	140-90
PA Amps & Mixers	
2003 100W 6 Ch Amp	219-20
1985 50W 4 Ch Amp.	154-95
2071 6 Ch Mixer	77-10
2205 100W O/P T/X Slave.	132-10
2050 9 Ch Mixer Mono.	374-50

Extra Channels.	On app
2070 12 Ch Mixer Stereo.	1207-50

To avoid unnecessary repetitions, certain abbreviations are frequently used in our listings: electric - elec; custom - ctm; semi-acoustic - s/ac; organ - org; professional - pro; standard - std; acoustic - ac; folk - fk; bass - bs; string - str; de luxe - d/l; jumbo - jbo; piano - pno; left hand - l/h; scale - sc; case - cs; banjo - bjo; monitor - mt.

Extra Channels.	On app	500 d/l.	219-42
2051 250W Slave.	217-15	650 pro.	282-20
2125 8 ch r.v.b mixer amp.	234-35	650 combo.	282-20
PA Cabs & Bins		Sharmette	290-08
2097 pr 8 x 8 125W.	194-00	900 pro.	358-91
2043 pr 2 x 10 2 x 12 200W.	273-30	900 combo.	358-91
2047 pr 1 x 10 1 x 12 100W.	180-00	2200 d/l.	305-87
2056 250W Powercel Bin.	367-35	2200 pro.	299-87
2057 HF Vitavox Hn.	229-25	2200 combo.	299-87
2120 pr Reflex c/w Horns 200W.	323-40	2000 pro.	363-40
2121 100W Slave Monitor.	201-55	2000 combo.	363-40
2122 30W Slave Monitor.	144-35	2000 d/l.	371-15
212 350W Monitor.	75-55	5000 GT.	475-73
2126 Bass bins	119-50	5000 GT combo.	475-73
		2300.	473-49
		3000.	543-37

S.A.I. (EX. VAT)

Disco Units		VA302 E6 Vcl Master	804-60
Maverick disco.	144-00	Separate Units:	
Disco IVS.	189-00	VA302 E6-C Control Console.	492-48
Disco IVSP.	210-00	VA300-S Speaker Col	170-64
Disco IVSP dual dcks.	237-00	VA301-S Monitor	
Stereo disco.	270-00	Speaker.	123-12
Amps		VA305-HF Speakers.	76-68
50W twin ch.	85-00	PM300E6 Booster Amp.	204-12
50W slave.	81-00		
FC 150 slave.	96-00		

Cabinets		DAVE SIMMS MUSIC PRODUCTS (EX. VAT)	
Eliminator w. horn.	264-00	August Amplification	
Eliminator w. horn.	168-00	PA 100 4 ch.	119-99
Mini Elim. w. horn.	164-00	2 x 12 PA Cols prs.	154-40
Mini Elim. w. horns.	144-00	2 x 12 PA Hn Cols prs	172-50
15"	188-00	2 x 12 PA Cols prs.	99-99
2 x 12 + 2H.	237-00	1 x 12 PA Cols pr.	119-25
2 x 12 std.	144-00	2 x 12 Inst. Cab.	82-25
1 x 12 + 1H.	144-00	"V" 4 x 12 Inst. Cab.	140-00
Tweeter box.	39-00	1 x 15 Folded Hn Bin.	145-00
18" hn.	252-00	Add on Hn pr.	64-80
Mini bass cab.	102-00	Full-mix PA 100.	149-99
Super lead cab.	96-00	Power slave 125 amp.	94-50
		1 x 15 Super bin w hn	167-00
		1 x 15 Mini bin.	124-30
		1 x 15 Super mini bin.	145-80

SELMER

SOLID STATE		SOLA SOUND	
7980 15 SS Combo.	46-00	Reverb mixer.	45-20
7981 Super Reverb 30 Combo.	139-00	6-ch mixer.	37-79
7982 Lead 100.	129-00	Graphic equaliser.	45-20
7983 Bass 100.	109-00	Mighty Atom amp.	27-90
7984 Slave 100.	85-00	Compact 10.	41-85
7610 Futurama 3 Combo.	26-50	Sola 30W amp.	89-64
7985 PA 100.	175-00	Buckaroo 7W amp.	33-13

VALVE		SOUNDOUT (EX. VAT)	
7404 Treble "N" Bass 100 SV.	145-00	Series IIIa, mono.	267-00
7402 Treble "N" Bass 50 SV.	129-00	Series III, mono 170W	330-00
7403 Treble "N" Bass 50 SV Rev.	149-00	Series IIIa, stereo	375-00
7408 PA100/6 SV Rev	189-00	Series III, stereo 170W.	495-00
7407 PA100/4 SV.	159-00	Series VI.	246-00
		Series VIIa.	186-00
		SP 18 pre amp.	135-00

SPEAKERS		Loudspeakers	
7990 S412 3 x 12".	169-00	HE1C, 1 x 12, 50W.	60-00
7991 S212H 2 x 12" hn.	129-00	HE2C, 2 x 12, 100W.	93-00
7992 S115 1 x 15".	135-00	DL3, 100W F/rng.	183-00
7993 S2H Add on dbl	81-00	DL6, 100W F/rng.	108-00
7994 S115A 1 x 15".	229-00		
7451 TV-35 PA Col.	55-00		
7450 TV-20 PA Col (pair).	75-00		

SHARMA

ORGAN SPEAKER CABINETS	
500.	177-24

SIMON KING MUSIC

2 x 12 Inst. cab. 75W	77-00
2 x 12 PA cols pr. 100W.	148-00
4 x 12 PA cols split prs 200W.	293-00
4 x 12 inst. cab. 150W.	135-00

SISGO

120 100W PA.	529-00
126 200W PA.	723-31
Revolving organ cabinets:	
SM/30 70W Leslie.	377-00
SM/100 70W.	624-00
SM/300 120W Leslie.	856-00
SM/3000 200W.	1163-00

SOUNDCRAFT

16/2 mixer.	1000-00
12/4 mixer.	1500-00
16/4 mixer.	1800-00
Soundcraft/Court Acoustic PA's prices on application.	
Options arranged	
SPII 50W hn.	30-00
SPIV 100W hn.	51-00

SPERRIN ELECTRONICS

Disco MK VI.	204-12
Light Unit, 4000L.	59-00
Amplifiers:	
100W 4V.	79-00
100W 2-chn.	89-00
100W 2-chn w r.vrb.	114-00
Lighting screen.	79-92
Disco Mk VI mixer	81-00
Cabs:	
PA 200 2 x 12" cols.	77-76
PA 100 1 x 12" cols.	42-12
PA 2 x 12" empty.	38-88

STRAMP

2100-A, 100W amp top.	213-60
2120-A, 120W amp top.	199-30
3120-A, 120W, 4-chn amp, top.	192-30
SL100, 120W slave amp.	127-90
SL200, 240W slave amp.	177-90
MPI0, 10-chn mixer	577-15
MP-16, 16-chn mix.	1427-90
EX-2 Cross-over.	113-60
K-85 Power Baby combo.	265-45
K-95 Bass Baby combo.	285-00
2050-BB, 100W cab.	163-60
2100-BB, 200W cab.	206-60
2100-BB, 100W bs cab.	213-60
370-B 70W horn p.a. cab.	142-15
3140-BH, 140W hn p.a. cab.	186-45
3140-B 140W p.a. cab.	156-45
3200-B, 120W bass horn cab.	427-90
H-50, 70W tweeter horn.	156-45
H-100 120W tweeter horn.	227-15

TYAS	
Minimix 4 mono.	58-32
Minimix 4 stereo.	81-00
PS 70.	84-24
PS 125.	129-60
PS 250.	194-40
PS 125/125.	205-20
Modular mixer.	POA
CABS	
112S.	37-80
H2S.	64-80
H52.	45-36
SF/15.	129-60
TF/15.	129-60
HF1.	113-40

TURNER (EX. VAT)

1 x 15 Bs Hn.	180-00
2 x 15 Bs Hn.	340-00
1 x 12 Mid Ring. Hn.	160-00
2 x 12 Mid Ring. Hn.	280-00
1 x 10 Mid Ring. Hn.	150-00
Rad. Hn. - VHF	
Tweets.	300-00
Wedge 12" ATC + Hn.	220-00
Wedge 12" ATC + Diff Hn.	320-00
Wedge 12" Gauss + Diff Hn.	400-00
Hexagonal Mt.	230-00
A200 Ster. power amp.	245-00
B300 Pro. Power amp	260-00
A300 Pro. Power amp	350-00
A500 Pro. Power amp	480-00
TPS 12/2 mixer.	1740-00
TPS 16/2 mixer.	2125-50
TPS 20/2 mixer.	2500-00
TPS 24/2 mixer.	2875-00
TPM 10/2 mixer.	1931-25
TPM 16/2 mixer.	2562-00
TPM 20/2 mixer.	2981-25
TPM 24/2 mixer.	3400-00

S-W

20001 Vocal Blender.	220-00
12070 PA 100W with reverb.	159-00
12072 PA 100W amp.	139-00
12071 AP 100W amp.	139-00

Belden Multiway Cables.....	on app
Cannon Pigs—Stg. Boxes.....	..
Gauss Spkrs.....	..
JBL Spkrs.....	..

VITAVOX (EX. VAT)

Thunderbolt CN480.....	520.00
Bass Bin CN308.....	655.45
6200 Bitone Repro.....	471.45
Major Bitone CN343.....	579.65
15 in. Loudspeaker.....	105.90
S.2 Pressure unit.....	148.00
S.3 Pressure unit.....	121.00
H.F. Horn CN157.....	65.55
4kHz Horn CN463.....	50.45
10 cell Multicell Hn CN123.....	299.80
500 Dividing Ntwrk. 2205/531.....	37.80
CN129. Hn.....	550.30

VOX (EX. VAT)

AC30.....	232.50
AC50.....	132.17
Speaker Enclosures:	
FB118.....	111.96
FB215.....	116.62
FB212.....	93.30

W.E.M.

Copicat Echo.....	83.50
Clubman.....	47.00

Westminster.....	52.00
Westminster key-board.....	52.00
Westminster bass.....	59.00
Dominator 30.....	130.00
Dominator 50 lead.....	160.00
50 Keyboard.....	165.00
50 Amp Top.....	100.00
GX 40.....	87.00
GX 100.....	110.00
AX 40.....	87.00
AX 100.....	110.00
GX200.....	185.00
AX200.....	185.00
Dominator Mk III.....	88.50
Dominator Bass.....	98.00
Power Musette.....	88.50
Halle Cat Echo.....	250.00
Slave Power Stage 100.....	95.50
Slave Power Stage 200.....	170.00
Bandmixer 100 Mk II.....	140.00
Reverbmaster.....	210.00
Audiomaster Mk I.....	298.00
Audiomaster Mk 2.....	350.00
Pre-mixer IV.....	46.50
Super Dual 12.....	80.00
Super 40.....	80.00
Starfinder 100 Bass.....	95.00
Starfinder Twin 15.....	115.00
Starfinder Super 80.....	125.00
Super Starfinder 200.....	160.00
Aggressor.....	130.00
1 x 12" w/vol control.....	45.00
1 x 12" w/vol control.....	55.50
2 x 10" w Horn.....	62.00
Club System.....	80.00
4 x 10".....	65.00
6 x 10".....	100.00

Club 2 x 12".....	65.00
Band System.....	95.00
Band 2 x 12".....	82.00
Foot Monitor.....	105.00
4 x 12" A Super.....	98.00
Intruder.....	145.00
X39.....	285.00

WHITE

INST AMPLIFIERS	
LW50 w sustain 70W.....	139.50
LW100 w sustain 120W.....	158.55
CM30 Combo w reverb.....	213.00

P.A. AMPLIFIERS	
PA100 6 ch PA amp 100W.....	122.49
PA150 6 ch A amp 150W.....	168.99
PA200 6 ch PA amp 200W.....	189.00

POWER SLAVE AMPLIFIERS	
PS100 100W.....	106.92
PS150 150W.....	119.43
PS250 250W.....	148.50
PS300 300W (st.).....	184.22

INSTRUMENT ENCLOSURES	
A2004 x 12" 200W.....	157.68
A150 1 x 15" fidd hn bs enc 150W.....	216.63
A150H as A150 w mid range hn.....	269.73
A250 1 x 18" fidd hn bs enc 200W.....	277.50

P.A. ENCLOSURES	
S50 1 x 12" 60W.....	59.85
S100 2 x 12" 120W.....	84.82
S150 1 x 15" w H.F. hrsns 100W.....	174.21
S200 4 x 12" 240W.....	157.65
M50 1 x 12" monitor 60W.....	61.74
H50 H.F. twin horn.....	66.45
Projector 100 1 x 15" 2 hn.....	154.50
Projector 200 2 x 15" 3 hn.....	258.00

CONCERT RANGE PA ENCLOSURES

B12 1 x 12" Mid rge hn 200W.....	196.20
B15 1 x 15" Bs hn 200W.....	240.12
B30 2 x 15" bs hn 400W.....	398.58
H100E Radial horn 30W.....	136.23
H100V Radial horn 70W.....	187.23
T70 H.F. horn 70W.....	171.48
L100 36" horn 70W.....	314.85

MONITOR ENCLOSURES

M100/12 1 x 12" MWedge 100W.....	370.71
M100/15 1 x 15" M200/15 1 x 15" Multi wedge 200W.....	184.98
Mon Horn "A" Mid/H.F.....	21.78
Mon Horn "B" Ext.....	58.68
MIXING DESKS	
D8 Mono 8 ch.....	185.79

D8 D-L Mono 8 ch.....	229.80
D16 St 16 ch.....	870.00
D24 St 24 ch.....	1275.00

WING (EX. VAT)

TRAYNOR	
Combs:	
YGM-3 30W rvb.....	114.00
YGM-4 40W rvb.....	132.00
YGL-3 Twin rvb 90W.....	252.00
YBA-2B Bs mate 30W.....	114.00
YBA-450W, 15" spkr.....	177.00

Amplifiers:	
YBA-1 50W, bs.....	108.00
YRM-1 50W ld w/rvb.....	132.00
YBA-1A 100W bs.....	138.00
YGL-3A 100W head-rvb/trem.....	168.00
Monoblock 325W bs/lb.....	243.00

Speaker Systems:	
YS-15P 15" ported bs.....	99.00
YT-15 2 x 15" ld/bs.....	120.00
YF-10 4 x 10" ld/bs.....	120.00
YC-810 8 x 10" bs.....	150.00
YC-610 6 x 10" ld.....	138.00
Y-2122 x 12" ld.....	108.00
YF-12 4 x 12" ld.....	150.00
YCV-188 1 x 18" Vega cab 300W.....	132.00
YCV-212 2 x 12" Vega cab 200W.....	174.00
P.A. Amps:	
YVM-3 P.A. rvb 30W.....	99.00

YVM-4 4-ch w/rvb.....	150.00
YVM-6 6-ch w/rvb.....	234.00
P.A. 100W slave.....	99.00

P.A. Speaker Systems:	
YSC-2 4 x 12" cols (pr).....	144.00
YSC-3 4 x 8" cols (pr).....	114.00
YSC-8 6 x 8" cols (pr).....	180.00
YSC-9 15 x 12" x hn cabs (pr).....	438.00
YM-1 Mtr cabs (ea).....	63.00
YSC-7A Cols (pr).....	216.00
YSP-1 Sibilance Projector (ea).....	57.00

ZOOT-HORN (EX. VAT)

All prices available on appl.	
BB 1 x 15" bin.....	TBA
BB 2 2 x 15" bin.....	"
FB 5 mon. 75W.....	"
FB 6 mon. 150W.....	"
MB 1 2 x 12" ATC.....	"
MB 2 2 x 12" Gauss.....	"
HUB driver+hn.....	"
ST203 Super drivers.....	"
CB15 1 x 15" bass enc SD18 1 x 18" bass enc SFI 4-way PA cab.....	"
Modular custom mixers.....	"
Electronic crossovers.....	"
Studio consoles.....	"

PERCUSSION INSTRUMENTS

D. H. BALDWIN

GRETSCH

4027 Rock 'n Roll.....	TBA
4029 Avant Garde.....	"
4028 Black Hawk.....	"
4015 Name Band.....	"
4025 Progressive Jazz.....	"
4002 One Nighter.....	"
Plus.....	"
4007 One Nighter.....	"
Plus.....	"

Snare:

4160G, 14 x 5.....	"
4160, 14 x 5.....	"
4157, 14 x 5.....	"
4153, 14 x 6.....	"
4109, 14 x 5.....	"
4102, 14 x 5.....	"
4105, 14 x 5.....	"
4190, 14 x 6.....	"
4191, 14 x 6.....	"
4192, 15 x 8.....	"
4193, 15 x 8.....	"
4105, 14 x 5.....	"

Bass Drums:

4259, 26 x 14.....	"
4260, 28 x 14.....	"
4262, 20 x 16.....	"
4263, 32 x 16.....	"
4264, 34 x 16.....	"
4265, 36 x 16.....	"
4271, 26 x 14.....	"
4272, 28 x 14.....	"
4273, 30 x 16.....	"
4274, 32 x 16.....	"
4275, 34 x 16.....	"
4276, 36 x 16.....	"
4110, 22 x 14.....	"
4111, 24 x 14.....	"
4115, 26 x 14.....	"
4117, 28 x 14.....	"
4244, 18 x 14.....	"
4249, 20 x 14.....	"
4247, 22 x 14.....	"
4269, 24 x 14.....	"
4271, 26 x 14.....	"
4272, 28 x 14.....	"

Tom Toms:

4415, 12 x 8.....	"
4416, 13 x 9.....	"
4420, 14 x 10.....	"
4421, 15 x 12.....	"
4417, 1 x 14.....	"
4418, 16 x 16.....	"
4422, 16 x 18.....	"
4419, 18 x 16.....	"
4423, 18 x 18.....	"
also in walnut	

Cymbals

K. Zildjian and Ajaha price being revised	
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BOOSEY & HAWKES

BEVERLEY COMPLETE OUTFITS	
Panorama 21.....	292.95

Panorama 22.....	398.41
Panorama 24.....	343.16
Galaxy 18.....	242.72
Galaxy 21.....	256.11
Galaxy 24.....	259.46

AVEDIS ZILDJIAN CYMBALS

(Prices for all types except Swish and Pang as stated) (Available in Types and Weights as Catalogue)	
7386 B.....	17.17
7387 10".....	20.09
7389 12".....	25.44
7390 13".....	28.38
7391 14".....	34.32
7392 15".....	37.25
7393 16".....	39.59
7394 17".....	42.61
7395 18".....	48.55
7395S 18" Swish.....	56.16
7399 19".....	51.47
7396 20".....	56.16
7396P 20" Pang.....	65.03
7396S 20" Swish.....	60.94
7400 21".....	62.61
7397 22".....	70.92
7397S 22" Swish.....	79.43

AVEDIS ZILDJIAN 'BRILLIANT' CYMBALS

(Prices for all types except Swish and Pang as stated)	
7387B 10".....	24.86
7390B 13".....	33.15
7391B 14".....	39.01
7392B 15".....	41.35
7393B 16".....	44.37
7394B 17".....	47.29
7395B 18".....	52.56
7395S 18" Swish.....	61.52
7396B 20".....	61.52
7396BS 20" Swish.....	69.48
7396BP 20" Pang.....	69.48
7397B 22".....	71.15
7397BS 22" Swish.....	83.70

AVEDIS ZILDJIAN HI-HAT CYMBALS

7390HH 13".....	56.75
7391HH 14".....	68.63
7392HH 15".....	74.50
7393HH 16".....	79.19

C.B.S. ARBITER (EX. VAT)

ROGERS	
Outfits:	
Studio X.....	1333.00
Londoner V.....	804.95
Ultrapower VII.....	1184.20
Starlighter IV.....	725.40
Londoner Super 10.....	744.00
Starlighter Super 10.....	678.90
Headliner IV.....	590.55
London VI.....	894.35
Londoner VII.....	1057.10
Ultrapower VIII.....	1267.90
Drums:	
Dynasonic snare 5 x 14".....	131.75
Dynasonic snare 6 1/2 x 14".....	134.07

Superten snare 6 1/2 x 14".....	97.65
Powertone, 14 x 20 bs.....	158.10
Powertone, 14 x 22 bs.....	217.00
Powertone 8 x 12 t.t.....	71.30
Powertone, 9 x 13 t.t.....	75.95
Powertone, 10 x 14 t.t.....	83.70
Powertone, 12 x 15 t.t.....	93.00
Powertone, 16 x 16 t.t.....	114.70
Powertone, 16 x 18 t.t.....	130.20
Powertone, 18 x 20 t.t.....	179.80
Powertone bongoes.....	75.95
Powertone timbales brass.....	195.30
Powertone timbales copper.....	195.30

Accusonic timpani

20 inch.....	469.65
Accusonic timpani 23 inch.....	496.00
Accusonic timpani 26 inch.....	598.30
Accusonic timpani 29 inch.....	620.00
Concert Tom-Toms:	
8".....	43.40
10".....	48.05
12".....	51.15
13".....	54.25
14".....	62.00
15".....	71.30

Thrones:

Samson.....	31.00
Paiste Cymbals and Gongs:	
2002:	
13" Hi-Hat Sound Edge.....	81.54
14" Hi-Hat Sound Edge.....	88.97
15" Hi-Hat Sound Edge.....	94.48
13" Hi-Hat.....	56.46
14" Hi-Hat.....	58.06
15" Hi-Hat.....	64.96
16" Crash, Med/Ride.....	37.21
18" Crash, Med/Ride.....	44.70
20" Crash, Med/Ride.....	55.33
22" Crash, Med/Ride.....	70.89
24" Crash, Med/Ride.....	85.34
18" China type.....	59.02
20" China type.....	74.86
8" Bell cymbal.....	29.07
11" Splash cymbal.....	34.53

Formula 602:

13" Hi-Hat Sound Edge.....	81.54
14" Hi-Hat Sound Edge.....	88.97
15" Hi-H atSound Edge.....	94.48
13" Hi-Hat.....	63.78
14" Hi-Hat.....	68.01
15" Hi-Hat.....	76.13
16" Hi-Hat.....	43.64
17" Thin.....	48.96
18" Thin.....	52.34

19" Thin.....	59.83
20" Thin.....	65.23
22" Thin.....	83.51
24" Thin.....	100.45
18" Flat Ride Med.....	59.08
20" Flat Ride Med.....	75.02
18" China type.....	59.08
20" China type.....	61.81
No. 1 Seven Snd. set.....	25.60
No. 2 Seven Snd. set.....	30.36
No. 3 Seven Snd. set.....	51.90
No. 4 Seven Snd. set.....	59.08
No. 5 Seven Snd. set.....	59.08
No. 6 Seven Snd. set.....	59.08
No. 7 Seven Snd. set.....	75.02

Joe Morello Hi-Hat:

17" Joe Morello.....	88.97
18" Joe Morello.....	51.81
20" Joe Morello.....	59.08
22" Finger Cymbals.....	75.02
22" Dark Ride.....	5.82
Cup Chimes with stand.....	123.78
Dixie Cymbals:	
14" Hi-Hat.....	

XXK926.....	717-05	6314/PF 24" Bs.....	677-00		
XXK946.....	822-25	6314/SF 24" Bs.....	728-00		
XK925 rosewood.....	1078-45	6314/PNP 24" Bs.....	642-00		
XK9212 Sound mchn.....	1354-25	6314/SNP 24" Bs.....	642-00		
Snare-Drums:					
D565 14" x 5 1/2".....	89-40	6324/PW 24" Bs.....	529-00		
D566 14" x 6 1/2".....	96-10	6324/SW 24" Bs.....	571-00		
D561 Acrylic.....	89-40	6324/PFW 24" Bs.....	529-00		
Bass drums:					
G318 18" x 14".....	103-70	6324/SFW 24" Bs.....	571-00		
G370 20" x 14".....	115-15	6324/PF 24" Bs.....	603-00		
G322 22" x 14".....	126-45	6324/SF 24" Bs.....	633-00		
G324 24" x 14".....	150-35	6324/PNP 24" Bs.....	568-00		
Tom-toms: (single-headed)					
T706 6" x 5 1/2".....	55-50	6324/SNP 24" Bs.....	610-00		
T708 8" x 5 1/2" Set.....	55-50	6332/PFW 22" Bs.....	494-00		
T710 10" x 6 1/2".....	51-65	6332/SFW 22" Bs.....	525-00		
T712 12" x 8".....	54-90	6332/PF 22" Bs.....	557-00		
T713 13" x 9".....	54-90	6332/SF 22" Bs.....	589-00		
T714 14" x 10".....	63-55	6332/PNP 22" Bs.....	531-00		
T715 15" x 12".....	85-30	6332/SNP 22" Bs.....	562-00		
T716 16" x 14".....	86-30	6342/PW 22" Bs.....	440-00		
Tom-toms: (double-headed)					
T722 12" x 8".....	54-90	6342/SW 22" Bs.....	468-00		
T723 13" x 9".....	54-90	6342/PFW 22" Bs.....	440-00		
T724 14" x 10".....	63-55	6342/SFW 22" Bs.....	468-00		
T625 15" x 12".....	71-40	6342/PF 22" Bs.....	496-00		
T734 14" x 14".....	86-05	6342/SF 22" Bs.....	524-00		
T736 16" x 16".....	86-30	6355/PNP Concert			
T738 18" x 16".....	112-25	Tom-Toms.....	429-00		
Snare drum stands:					
Z5554.....	52-30	6355/SNP Concert			
Cymbal stands:					
Z5224.....	34-40	Tom-Toms.....	468-00		
Z5227.....	16-40	Snare Drums:			
Z5228.....	69-70	6356 Cust Metal			
Z5229.....	34-40	Snare 5 x 14".....	51-00		
Cymbals:					
Zymbol.....		6357 Cust Brass			
Z1002 12".....	6-10	Snare 5 x 14".....	71-00		
Z1003 13".....	7-20	6358 Cust Brass			
Z1005 14".....	10-55	Snare 6 1/2 x 14".....	71-00		
Z1009 18".....	19-25	Accessories:			
Z1011 20".....	21-75	6360 Bs Drm Pedal.....	25-75		
Turko:					
Z2002 12".....	11-80	6361 Hi-Hat stand.....	31-75		
Z2003 13".....	13-55	6362 Cymbal floor			
Z2005 14".....	16-90	stand.....	16-00		
Z2006 15".....	19-40	6363 Snare Drum			
Z2007 16".....	22-50	stand.....	18-25		
Z2009 18".....	29-45	6364 Cymbal Boom			
Z2011 20".....	38-40	stand.....	30-75		
Z2013 22".....	48-95	6365 Drummer's			
Zyn:				Stool.....	39-50
272 12".....	4-80	PEARL MAXWIN			
274 14".....	7-40	Outfits:			
275 15".....	8-80	6400 Stage-705 22"			
276 16".....	10-40	Bs Drum.....	245-00		
278 18".....	14-85	6401 Stage-704 22"			
268S 18" sizzle.....	15-75	Bs Drum.....	218-00		
280 20".....	16-90	6402 Studio-504 22"			
269S 20" sizzle.....	17-30	Bs Drm.....	199-00		
282 22".....	20-25	6403 Studio-503 20"			
HORNBY-SKEWES				Bs Drm.....	126-00
HOSHINO				Snare Drums:	
HSD500.....	325-00	6410 Snare Drum Kit			
HSD500T.....	425-00	5 x 14, 12".....	36-75		
HM1000.....	160-00	6411 Metal Snare			
HCTB.....	275-00	Drum, 5 1/2 x 14".....	31-00		
HM300.....	151-50	6412 Wood Snare			
HK600M.....	44-00	Drum, 5 1/2 x 14".....	27-75		
KNELLER				6413 Wood Snare	
POWER DRIVE (EX VAT)				Drum, 5 1/2 x 14".....	23-50
Stool.....	19-11	Accessories:			
Cymbal stand.....	16-43	6420 Bs Drm Pedal.....	12-00		
Boom cymbal stand.....	22-23	6421 Hi-Hat Stand.....	13-00		
Snare drum stand.....	19-11	6423 Cym Floor Std.....	7-25		
Hi-hat pedal.....	26-04	6424 Snare Drm Std.....	8-25		
Double bass drum		TOSCO CYMBALS			
pedal.....	46-50	14" Hi-Hats.....		38-00	
NORLIN				15" Hi-Hats.....	40-00
PEARL DRUM OUTFITS				16" Crash Ride.....	23-00
6300/PFW 22" Bs.....	873-00	18" Medium Ride.....	33-00		
6300/SFW 22" Bs.....	952-00	20" Medium Ride.....	39-50		
6301/PFW 24" Bs.....	907-00	ORANGE			
6301/SFW 24" Bs.....	984-00	Single drum kit.... To order			
6302/PFW 22" Bs.....	623-00	Double drum kit.... To order			
6302/SFW 22" Bs.....	678-00	PREMIER			
6302/PF 22" Bs.....	688-00	Incl. VAT			
6302/SF 22" Bs.....	742-00	Snare:			
6302/PNP 22" Bs.....	653-00	31, 14 x 5 1/2".....	54-72		
6302/SNP 22" Bs.....	708-00	33, 14 x 5 1/2".....	64-92		
6304/PFW 24" Bs.....	638-00	35, 14 x 5 1/2".....	68-25		
6304/SFW 25" Bs.....	693-00	36, 14 x 6 1/2".....	70-96		
6304/SFW 25" Bs.....	704-00	37, 14 x 5 1/2".....	57-43		
6304/SF 24" Bs.....	759-00	1002, 14 x 5 1/2".....	33-70		
6304/PNP 24" Bs.....	666-00	1005, 14 x 5 1/2".....	34-25		
6304/SNP 24" Bs.....	722-00	1035, 14 x 5 1/2".....	52-58		
6312/PFW 24" Bs.....	557-00	1036, 14 x 5 1/2".....	56-36		
6312/SFW 22" Bs.....	546-00	1180, 14 x 4".....	29-83		
6312/PF 22" Bs.....	633-00	1182, 14 x 5 1/2".....	31-11		
6312/SF 22" Bs.....	671-00	2000, 14 x 5 1/2".....	73-66		
6312/PNP 22" Bs.....	603-00	2001, 14 x 5 1/2".....	70-33		
6312/SNP 22" Bs.....	643-00	2002, 14 x 5 1/2".....	74-20		
6314/PFW 24" Bs.....	591-00	2003, 14 x 5 1/2".....	68-00		
6314/SFW 24" Bs.....	642-00	2004, 14 x 6 1/2".....	87-60		
ORANGE					
Single drum kit.... To order					
Double drum kit.... To order					
PREMIER					
Incl. VAT					
Snare:					
31, 14 x 5 1/2".....	54-72	340.....	34-25		
33, 14 x 5 1/2".....	64-92	342.....	33-70		
35, 14 x 5 1/2".....	68-25	345.....	34-25		
36, 14 x 6 1/2".....	70-96	346.....	52-58		
37, 14 x 5 1/2".....	57-43	1036, 14 x 5 1/2".....	56-36		
1002, 14 x 5 1/2".....	33-70	1180, 14 x 4".....	29-83		
1005, 14 x 5 1/2".....	34-25	1182, 14 x 5 1/2".....	31-11		
1035, 14 x 5 1/2".....	52-58	2000, 14 x 5 1/2".....	73-66		
1036, 14 x 5 1/2".....	56-36	2001, 14 x 5 1/2".....	70-33		
1180, 14 x 4".....	29-83	2002, 14 x 5 1/2".....	74-20		
1182, 14 x 5 1/2".....	31-11	2003, 14 x 5 1/2".....	68-00		
2000, 14 x 5 1/2".....	73-66	2004, 14 x 6 1/2".....	87-60		
2001, 14 x 5 1/2".....	70-33	2005, 14 x 12".....	85-73		
2002, 14 x 5 1/2".....	74-20	101.....	69-51		
2003, 14 x 5 1/2".....	68-00	2020.....	77-61		
2004, 14 x 6 1/2".....	87-60	2021, 14 x 14 1/2".....	71-58		
2005, 14 x 12".....	85-73	Outfits (w/out cymbals)			
101.....	69-51	202 w 20" BD.....	357-48		
2020.....	77-61	B202 w 22" BD.....	358-73		
2021, 14 x 14 1/2".....	71-58	D202 w 24" BD.....	369-52		
PEARL DRUM OUTFITS					
6300/PFW 22" Bs..... 873-00					
6300/SFW 22" Bs..... 952-00					
6301/PFW 24" Bs..... 907-00					
6301/SFW 24" Bs..... 984-00					
6302/PFW 22" Bs..... 623-00					
6302/SFW 22" Bs..... 678-00					
6302/PF 22" Bs..... 688-00					
6302/SF 22" Bs..... 742-00					
6302/PNP 22" Bs..... 653-00					
6302/SNP 22" Bs..... 708-00					
6304/PFW 24" Bs..... 638-00					
6304/SFW 25" Bs..... 693-00					
6304/SFW 25" Bs..... 704-00					
6304/SF 24" Bs..... 759-00					
6304/PNP 24" Bs..... 666-00					
6304/SNP 24" Bs..... 722-00					
6312/PFW 24" Bs..... 557-00					
6312/SFW 22" Bs..... 546-00					
6312/PF 22" Bs..... 633-00					
6312/SF 22" Bs..... 671-00					
6312/PNP 22" Bs..... 603-00					
6312/SNP 22" Bs..... 643-00					
6314/PFW 24" Bs..... 591-00					
6314/SFW 24" Bs..... 642-00					

To avoid unnecessary repetitions, certain abbreviations are frequently used in our listings: electric-elec; custom-ctm; semi-acoustic-s/ac; organ-org; professional - pro; standard - std; acoustic-ac; folk-fk; bass-bs; string-string; de luxe-d/l; jumbo-jbo; piano-pno; left hand-l/h; scale-sc; case-cs; banjo-bjo; monitor-mt.

D204.....	519-19	269S 20" sizzle.....	17-31	
304.....	434-68	272 12".....	4-82	
B304.....	435-94	272P 12" pair.....	9-64	
D304.....	446-73	273 13".....	6-15	
305.....	471-86	273P 13" pair.....	12-30	
B305.....	473-11	274 14".....	7-39	
D305.....	483-90	274P 14" pair.....	14-75	
308.....	505-91	275 15".....	8-79	
B308.....	507-16	275P 15" pair.....	17-59	
D308.....	517-95	276 16".....	10-41	
604.....	417-88	278 18".....	14-85	
B604.....	419-14	280 20".....	16-92	
D604.....	429-92	282 22".....	20-24	
605.....	497-38	Super Zyn:		
B605.....	498-63	354 14".....	24-78	
D605.....	509-42	354P 14" pair.....	49-57	
606.....	626-37	355 15".....	27-05	
B606.....	628-87	355P 15" pair.....	54-11	
D606.....	650-45	356 16".....	29-70	
717 w 20" BD.....	572-26	358 18".....	34-43	
717 w 22" BD.....	573-51	358S 18" sizzle.....	35-37	
D717 w 24" BD.....	584-30	360 20".....	39-54	
808 w 20" BD.....	779-37	360S 20" sizzle.....	40-48	
B808 w 22" BD.....	781-88	362 22".....	49-37	
D808 w 24" BD.....	803-45	ROSE-MORRIS		
1030 20" BD.....	328-87	LUDWIG		
B1030 22" BD.....	331-71	Outfits:		
D1030 24" BD.....	334-56	2001 Octaplus.....	1360-00	
1031 w 20" BD.....	214-46	2005 Quadraplus.....	905-00	
B1031 w 22" BD.....	218-32	993 Pro Beat.....	890-00	
1033 w 20" BD.....	255-88	990 Deluxe Classic.....	630-00	
B1033 w 22" BD.....	259-74	989 Big Beat.....	735-00	
Bass Drums:				
124, 28 x 17".....	89-67	985 Rock-Duo.....	935-00	
126, 26 x 17".....	89-06	964 Super Big Beat.....	750-00	
127, 18 x 15".....	65-53	975 Triple Tom.....	855-00	
130, 20 x 17".....	73-66	1001 Rock Machine.....	760-00	
125, 24 x 17".....	85-73	1007 Smoke 'n Fire.....	780-00	
132, 22 x 17".....	74-91	2007 OverDrive.....	930-00	
1150, 20".....	61-94	2003 Power Factory.....	1070-00	
1152, 22".....	64-78	Snare Drums:		
1154, 24".....	67-63	410 Supersensitive 5".....	152-00	
1170, 20 x 15".....	48-61	411 Supersensitive		
1161, 20 x 17".....	54-51	6 1/2".....	156-00	
1171, 20 x 17".....	48-98	400 Supraphonic 5".....	100-00	
1172, 22 x 15".....	52-29	402 Supraphonic 6 1/2".....	103-00	
1163, 22 x 17".....	56-71	404 Acrolite.....	75-00	
1173, 22 x 17".....	52-84	405 Piccolo 3".....	92-00	
1175, 24 x 15".....	57-09	Stands and Fittings:		
142.....	84-89	201 Speed King Pedal.....	35-00	
144.....	93-65	205 Ghost Pedal.....	50-95	
166.....	112-85	1130 Tubular Hi-Hat		
Timbales:				
531, 13 x 14 x 6.....	96-34	stand.....	43-15	
532, 13 x 14 x 6.....	89-06	1374 Tubular s/d stand		
531C.....	98-41	stand.....	32-90	
532C.....	91-13	1405 Tubular cymbal		
Tom-Toms:				
112.....	29-97	stand.....	28-95	
113.....	32-68	1410 Tubular boom		
114.....	39-32	stand.....	40-80	
115.....	45-37	1020 Tubular throne.....	31-35	
116.....	48-06	Orchestral Drums:		
118.....	50-77	942 12 x 8 Tom Tom		
333.....	48-70	Super Classic.....	66-39	
340.....	53-48	944 13 x 9 Tom Tom		
342.....	45-37	Super Classic.....	69-39	
345.....	63-87	946 14 x 10 Tom Tom		
433, 13 x 9".....	48-49	Super Classic.....	70-91	
435, 14 x 14".....	56-80	947 15 x 14 Tom Tom		
436, 16 x 20".....	68-87	Super Classic.....	75-45	
440, 14 x 10".....	48-06	948 14 x 14 Floor		
442, 12 x 8".....	39-96	Tom Tom Super		
444, 14 x 9".....	45-37	Classic.....	90-53	
446.....	62-22	950 16 x 16 Floor		
448, 18 x 16".....	28-23	Tom Tom Super		
443, 13 x 8".....	67-65	Classic.....	99-55	
1333.....	33-11	952 18 x 16 Floor		
1340.....	35-00	Tom Tom Super		
1346.....	47-29	Classic.....	114-67	
1435, 14 x 14".....	39-78	954 20 x 18 Floor		
1441, 12 x 8".....	20-63	Tom Tom Super		
1442, 12 x 8".....	26-15	Classic.....	134-29	
1445, 16 x 16".....	33-51	497 6 x 5 1/2 Melodic		
1446, 16 x 16".....	41-43	Tom Tom.....	30-16	
1448, 18 x 16".....	43-09	488 8 x 5 1/2 Melodic		
Cymbals:				
Zyn:				
268S 18" sizzle.....	15-24	489 10 x 6 1/2 Melodic		
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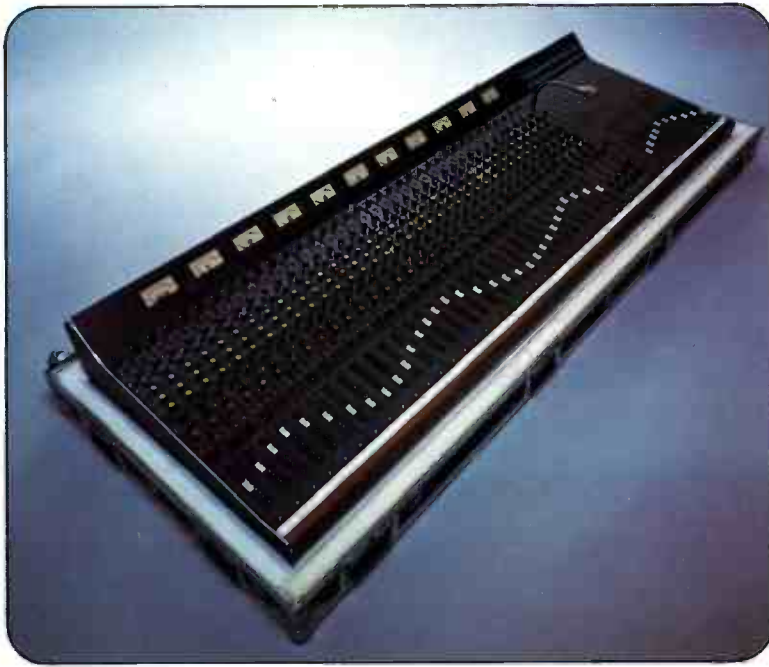
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