

Feature

Switched on vintage synths

Rick Wakeman ... Keith Emerson ... Jon Lord ... and now, N. RAMA LOHAN, the man who simply can't get enough of vintage synthesisers. Here, we launch the first of a multi-part series on his analogue travails.

There seems to be plenty to rejoice today. Technological advancements have reached a zenith, eliminating manual labour to an extent where all we really need to do to sustain our daily existence is eat, visit the toilet when necessary and sleep. Well, of course we've left some out but these are our basic living requirements.

Everything else can be operated by a machine, literally! Handphones that dial from voice commands; cars that drive themselves; and toilet facilities that clean you up after you've done the deed. Yes, life is good.

It's just as good if you're a musician, too. Today, a tiny piece of electronic hardware is capable of providing all the facilities of a professional recording studio. And then there are groove boxes that provide ample



ALL-TIME CLASSIC: The Minimoog is regarded as the greatest achievement in synthesiser design and has been used by countless musicians between its production period of 1970 to 1981.

ADOL

supply of rhythms, all ready for the production of your next hit song (This is really how some hit songs have been composed).

Then there's modelling technology, a concept that makes a piece of electronics behave, sound and operate like numerous coveted instruments from the past. You'll find this kind of new-fangled software in all the latest guitar and keyboard products.

But for every leap into the future, we seem to take one step back. We have to ask ourselves why we pay huge sums of money for something cutting edge when all the product is

trying to do is sound like something from the past. Welcome to the retro revolution.

Many – if not most – modern records feature the sounds of vintage instruments. There's something timeless about those sounds. And while a substantial portion of recording artistes are relying on modern modelling tools, a great number of them insist on using the real McCoy. Ask any vintage nut why and he'll tell you that it's not just the sound, but the touch, feel and look of these instruments that takes a user from being motivated to inspired.

Among all the vintage instruments that have resurfaced, it's been vintage keyboards that are more apparently absent. Why, you ask? It isn't too difficult to resurrect an old tube guitar amplifier and it's even simpler to get a classic guitar back to playing specs but with an analogue synth, there are many more considerations for a technician.

First, in its prime, analogue synthesis existed for about two decades. It took a while for the

technology to be fine-tuned, but once it was, it quickly buckled under the pressure of what digital had to offer – convenience, exceptionally low maintenance (or none, at all) and consistent results.

It was Yamaha's FM synthesis synth, the DX7 that conclusively sounded the death knell for the analogue beasts of yore. Some of the best – like Roland's Jupiter range, Moog Music's Memory and Minimoog, ARP's 2600 and Odyssey, Sequential Circuit's Prophet 5 and Oberheim's OB series – caved in under the pressure of incessant requests for crystalline sounds.

Apparently, during the DX7's reign in the 1980s, the only radio station that allowed you escape from listening to this ubiquitous synth was the classical station.

Digital extended the possibilities of synthesis and reached a peak in the early 1990s.

Today, we see a change in the winds, as there seems to be renewed interest in analogue synths. Pay close attention to current music and you'll catch many of those old classics doing what they do best (see *Synthetic tunes* below).

Moving hand in hand with this resurgence is digital's quest to emulate the ageing analogue synths. All this spells good news for musicians looking to incorporate the sweet sounds of analogue synthesisers.

There is a hitch with these ageing beauties, though – repair and restoration work.

It's only fair that an instrument touching 20 years of its life requires a tune-up and some repair work, but locating the right people for this job is akin to looking for the proverbial needle in a haystack. You have to remember that the people who



KILLER COMPETITION: Back in the 1970s, the ARP Odyssey rivalled the Minimoog for the accolade of the best lead synthesiser.

were repairing these synths in their heyday have long since retired or have just focused their expertise elsewhere. Restoring an analogue synth is way more labour-intensive because unlike digital – where components are more modular and usually just changed when there is a problem – parts for these analogue "dinosaurs" barely exist anymore. So, an entire section is not substituted, only what needs to be replaced.

In the following weeks, *AudioFile* will bring you a three-part interview with the biggest vintage synth supplier in Europe, RL Music a company world-renowned for its dedication in restoring and resurrecting some of the darlings of the analogue era. Proprietor Richard Lawson roped in a close associate, Kent Spong of Kent Spong Restorations, to give us the clearest possible picture on vintage synths, and why they have become popular again. Lawson and Spong also expound on how they undertake restoration work and what users can do to prolong the life of their beloved analogue babies.

Set the controls

SETTING your eyes on an analogue synthesiser for the first time is like looking at the controls of a space ship. In this brief glossary, we've attempted to help you get a handle on some of the jargon and some of the functions of an analogue synth, how they operate and how they ultimately affect the sound.

VCO (Voltage-Controlled Oscillator) – the tone generation portion of a synthesiser, whose frequency can be changed by altering the amount of voltage being sent to its control input.

DCO (Digitally-Controlled Oscillator) – digital signals are used to set the pitch and waveform.

Sub Osc (Sub Oscillator) – half an oscillator, usually designed to add lower frequencies.

Waveform – a signal, either sampled or periodic, being generated by an oscillator.

Filter – removes certain frequencies from a waveform.

VCF (Voltage-Controlled Filter) – allows its cutoff frequency to be changed by altering the amount of voltage being sent to its control input.

Frequency cutoff – the point at which the filter kicks in and starts filtering.

Resonance – a major controllable parameter, which boosts the amplitude of the frequencies around the cutoff point.

HPF (High Pass Filter) – allows high frequencies to pass through, resulting in bright sounds.

LPF (Low Pass Filter) – attenuates frequencies above cutoff point, causing a sound to lose its brightness.

BPF (Band Pass Filter) – passes a band of frequencies both above

and below the cutoff point and attenuates the others.

VCA (Voltage-Controlled Amplifier) – a device that responds to a change in voltage at its control input by altering the amount of gain of a signal being passed through it.

LFO (Low Frequency Oscillator) – an oscillator especially devoted to sub-audio applications, used to create vibrato, tremolo, trills and so on.

EG (Envelope Generator) – controls the volume of a sound during its production, usually categorised in four different stages of attack, decay, sustain and release (ADSR).

PW (Pulse Width) – the percentage of a complete pulse wave, which it spends in the "up" portion of its cycle.

PWM (Pulse Width Modulation) – a change in the width of a pulse wave's duty cycle.

Portamento (Glide) – a function in which the pitch slides smoothly from one note to the next instead of jumping over the intervening pitches.



PUSHING THE ENVELOPE: Sliders are used for the Kawai Synthesizer 100-F's envelope generator section.

PERHAPS one of the names most synonymous with synthesiser technology is Dr Robert Moog (pronounced mogue), the man behind one of the most influential synths ever made, the Minimoog. But Moog's foray into synth technology didn't start with the beloved Minimoog. It began with large modular synthesisers, huge machines that looked more like a telephone operator's patch bay.

The 1970s was the era of the monophonic synthesiser, instruments that only allowed for a single note to be sounded at a time. Some of the classic machines from that period include ARP's 2600 and Odyssey, EMS VCS3 and, of course, the Minimoog.

The Minimoog struck a chord with rock musicians of the time, especially the progressive rock movement in the UK. Legendary keyboardists like Rick Wakeman, Keith Emerson and Manfred Mann rarely left home without their Moogs. Just listen to Wakeman's *The Six Wives Of Henry*, Emerson's work with Emerson, Lake and Palmer, and Mann's Earth Band classic *Solar Fire*, to hear what the Minimoog is all about. Having said that though, the Minimoog also saw active duty with different genres of musicians.

ARP's Odyssey appealed to a similar crowd and to the fusion circle. The 2600 was Joseph Zawinul's (of Weather Report

Synthetic tunes



HANDS ON: Keith Emerson of Emerson, Lake & Palmer pounds on his Hammond C3 organ while his monstrous Moog modular system (behind organ) awaits its turn.

fame) weapon of choice. *Heavy Weather* typifies his employment of that synth. Herbie Hancock relied heavily on his Odyssey, especially on albums like *Head Hunters* and *Thrust*. But the Odyssey was also an instrument that was responsible for some pop

nuggets like Abba's *Gimme! Gimme! Gimme!*. Remember that synth intro riff? That's an ARP Odyssey!

By the late 1970s, manufacturers were beginning to dabble in polyphonic synths (which allow more than one note to be played simultaneously) and by the early 1980s, some of the best, like Roland's Jupiter 8, Yamaha's CS-80, Moog's Memorymoog, Oberheim's OB-Xa and Sequential Circuit's Prophet 5 were all kings of the hill. Every synth pop band during this period would've relied on any one (or more) of these instruments. Listen to Duran Duran, Frankie Goes To Hollywood and Howard Jones for the sound of a Jupiter 8. Try Prince and Rush to treat your ears to an OB-Xa, or just put on Van Halen's *Jump* and Simple Minds' *Don't You (Forget About Me)*. Hall & Oates were big fans of the Prophet 5 while The Cars took the Memorymoog straight to the top of the pop charts.

Today, vintage synths can be heard on countless recordings, from dance (Jamiroquai, N.E.R.D, OutKast) to rock (Lenny Kravitz, Maroon 5, Wilco). Keep your ears cocked, and chances are, you'll hear a lot more than you thought you would.