



Luthiers' Fancies

with Joh Lang

Langcaster Guitars' Pickup Kitsets

Since 2002 Langcaster guitars have been handcrafted in Titirangi, Auckland, by Amsterdam-born inventor and luthier **Joh Lang**. Although his guitars have familiarly classic body shapes, they are totally different in all manner of ways, from the wood to the electronics. Each guitar body can take up to two years to complete, and obviously end up being quite expensive (up around \$3000), so Joh needed to come up with some other ideas. Langcaster guitars include low-impedance pickups and a built-in overdrive, and in 2006 Langcaster introduced the world's first guitar with built in digital delay and chorus. These days it is kitset packages of his Ultimate Lo pickups for Strat and Les Paul guitar models that keep things ticking over, as Joh himself reports.



I first started making guitars in 2002 and have been working as a luthier in Auckland since then. It was the use of 35,000 year old swamp kauri wood for the bodies of our Stratocaster-and Telecaster-shaped guitars that initially set Lancaster Guitars apart. I came to the idea of using swamp kauri after a friend, who makes tables out of kauri recommended the material to me, and our guitars have since gained some great reviews around the world.

Actually it's the roots of these enormous and ancient trees that are used, because the root is the densest part and also, once cut, has the most intricate patterns which give the guitars the look they're known for. It is really high density wood and perfect for the construction of guitars – but does have lots of odd-shaped holes that need to be filled with clear epoxy – which, I think, actually

enhances the exotic and individual appearance of each guitar.

Another important feature of Langcaster Guitars is the use of my own low impedance humbucking pickups are called Ultimate Lo. The advantages of using a low impedance pickup are higher fidelity and lower noise. Ultimate Lo pickups give a wider frequency than others and are so clean you can plug your guitar directly into a studio desk without a DI box, or into any amp or PA, with long cables and great results.

After looking for the perfect pickup for my guitars I realised that apart from slight differences in wire size, all pickups are pretty much the same, so I began trying to design my own pickup



my own low impedance pickups as another difference. Low impedance pickups aren't new, but they've never really been popular. The output of Jim Burns' 1961 Ultra Sonic pickups and the 1972 Les Paul Recording guitars were both average, they still had output resistance of 600 to 1000 Ohms and required a transformer.

After a year, lots of money and trying any pickup I could get my hands on, I thought I would try my own way. I found that after 100 tries it sounded worse than number one, and all the books and theory on pickups are the same. Reading about what Gibson did years ago with their low impedance pickups I decided to take it even further.

I came up with the Ultimate Lo® pickups which really do have low impedance – a mere 120 Ohms. They are wound with a much heavier gauge of wire, with only a tenth the normal number of turns, making inductance a hundredth that of a conventional pickup. As a bonus they are also much more resistant to corrosion and damage.

I had managed to create a pickup with all the fidelity and low noise advantages of a low impedance pickup, but the output was so high that a separate buffer amp was needed.

The solution was the Ultradrive®, an integrated tube sounding overdrive circuit that has been more years in development. A low impedance buffer amp on a printed circuit board follows the tone and overdrive stages. There's no level shifting at the input so the signal is centred at zero, giving a consistent and smooth overdrive. Low order harmonics are produced which sound like a good valve

that was not only original, but created

the best possible sound. I decided to try designing

an amplifier. It can all be controlled from the guitar with a clean/overdrive switch and an overdrive intensity control.

Langcaster guitars are handmade by me, and my son Danny, and we can only finish around 20 bodies a year. It takes up to a year to prepare the kauri bodies to be ready and once this is done it takes roughly three weeks to assemble a guitar.

In 2005 I decided to develop a pickup kit for sale with ultra low impedance pickups and overdrive sold separately. A standard kit for 6-string guitars sells for US\$290, including freight. We first introduced the Langcaster Ultimate-Lo three-pickup Strat kitset and it was an instant success.

Of course we soon started getting requests for a kitset to fit in Les Paul housings. After initially planning to use a mounting plate, in the end I decided to develop a new pickup with humbucker dimensions to fit Les Paul type guitars.

The Ultra-Lobucker® kits come in a box with the components set in a wooden display in a logical way. We include a conventional three-way toggle pickup selector switch for Les Paul-type guitars, and also a Strat-type selector switch as used by Ibanez and other manufactures. A pre-wired electronic harness means easy installation, and also prevents wrong soldering to the PCB board.

The kits are entirely made here in my workshop by hand, by me. The individual parts are shipped in from around the world and assembled here and at the moment I am shipping them all over the world, mostly to North America and Europe, but also to South America and Asia.

Selling the kits allows me to continue to make guitars, however I really do it purely for the love. As a business Langcaster wouldn't make enough money to function alone. It's my passion for trying to build the best guitar I can that keeps me doing it.

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