FRETS OF THE FUTURE?

THIS ELEGANT INSTRUMENT FROM SWEDISH GUITAR MAKER MICHAEL SANDEN PROMISES BETTER TUNING THROUGH TEMPERED FRETS. **TIM SLATER** IS INTRIGUED

Michael Sanden is a Swedish-born guitar builder who studied the art of acoustic guitar construction in the USA before returning to his native Scandinavia. Sanden's fine steel- and nylon-strung guitars enjoy a fervent cult following among some of the region's finest guitarists, and word of Sanden's skill has seen the softly spoken Swede's fame gradually extend further afield. Sanden's name will doubtless become more familiar to GB readers in due course, but for now the shapely form of the Sanden JRB-m represents a rather fitting introduction.

Ostensibly a modified version of the classic dreadnought design with a tighter, higher waistline, this guitar's real talking point is the unique fret design, which is said to eliminate the compromise between tempered and pure tuning (see box on page 72 for a more detailed explanation) that has frustrated guitarists since the design of the modern guitar was established nearly 200 years ago.

This guitar is fitted with the unique 'True Temperament' fret system system, with specially designed 'wobbly' frets that are said to maintain perfect tuning all the way up the fingerboard. True Temperament was developed by a small company based in Stockholm, and Sanden is one of the few people officially licensed to use the system on his instruments, such is the high regard held for his work. True Temperament frets are an optional extra on every Sanden instrument. They don't come cheap, but it is nevertheless an interesting approach to solving the age-old dilemma of keeping an 'imperfect' instrument like a guitar perfectly in tune.

BODY & NECK

This may look more like a cutaway version of a Grand Auditorium-style guitar, but Michael Sanden claims that the model's roots are very firmly planted in the traditional dreadnought style. Sanden took his influence for this design from master guitar builder Bozo Padunavac, under whom Sanden studied in America during the early 1980s. "He had a dreadnought kind of shape where he'd moved the waist up a little bit, which he called 'bell-shaped'," Sanden explains. "When I started to make my own guitars I took that shape and I rounded it up even more. I kept the waist higher than a standard dreadnought but the depth still remains the same."

Michael Sanden has very clear feelings about the materials he uses on his guitars. He prefers his timbers traditional and the quality has to be top-notch. Sanden travels to America , Europe and Britain to source the various woods used for his guitars, and this instrument features a high-quality Sitka spruce top found near Seattle in America's Pacific Northwest, while Indian rosewood forms the guitar's back and sides. The internal bracing uses a traditional 'X' pattern, with individual struts that are sanded or 'tuned' to find the optimum resonant point and allow the Sitka spruce top to really sing.

The pale Honduran mahogany neck features some fine details including a single elegant black pinstripe running dead centre all the way up from the neck heel to the volute, which is there to strengthen the vulnerable area where the headstock tilts back away from the main neck shaft. The headstock angle itself is another interesting detail that offers insight into Sanden's particular interests as a guitarist in his own right.

A self-confessed fan of alternate tunings – with DADGAD in particular being a favourite – Sanden builds his guitars with a slightly steeper headstock angle than specified by many standard designs in order to compensate for the slacker string tension of lowered alternate tunings. "A lot of my customers want to tune their guitars down," Sanden says. "One of the reasons my guitars are suited to alternate tunings is because I have a zero-fret and my head angle is a little bit steeper than normal. I increase the angle of the head to keep the pressure on the zero-fret and keep the intonation right so they work better for different kinds of tunings. Normally a headstock pitch is between 15 and 17 degrees and mine are around 20 or 21 degrees."

The neck dimensions offer a pleasing combination of robustness and playability. It is definitely a meaty chunk of timber and, while the overall feel leans more towards the

GBINFO

SANDEN JRB-M

PRICE:	£3,150 (as reviewed)
BUILT IN:	Sweden
SCALE LENGTH:	648mm (25.5 inches)
NUT WIDTH:	44mm (1.73 inches)
STRING SPACING AT NUT:	37.5mm (1.48 inches)
TOP:	Sitka spruce
BACK & SIDES:	Indian rosewood
NECK:	Honduras mahogany
FINGERBOARD:	Ebony
FRETS:	21 medium True Temperament (plus zero fret), silicon bronze
BRIDGE:	Brazilian rosewood
STRING SPACING AT BRIDGE:	52.5mm (2.1 inches)
ELECTRONICS:	B-Band A1 preamp & undersaddle transducer
MACHINEHEADS:	Schaller, gold with ebony buttons
WEIGHT:	2.25kg (5lbs)
FINISHES:	Natural high-gloss
CASE:	Hiscox hard shell case included
LEFT-HANDERS:	By special order
OPTIONS:	Without True Temperament frets (£2,600)

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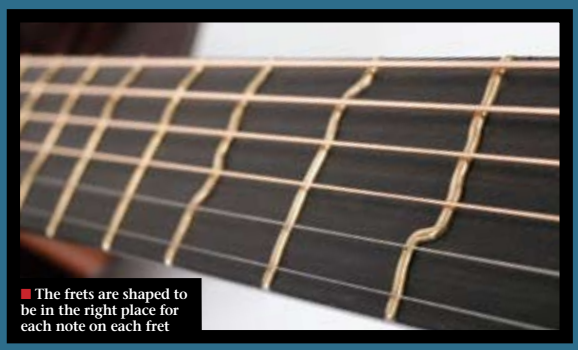
TEMPER, TEMPER!

THE TRUTH ABOUT TRUE TEMPERAMENT



The frets are shaped to be in the right place for each note on each fret

Guitarists are often frustrated when they try to tune a guitar so that open chords and barred chords both sound completely in tune.

With any standard guitar, regardless of whether it is an expensive, hand-built work of art or a budget-priced bash-box, tuning involves a certain degree of compromise. The straight frets are arranged at regular divisions of the overall scale length to provide a 12-tone equal-tempered scale. In practice, however, factors like the gauge, mass and height of the strings come into play, and this theoretically perfect system produces imperfect results – tune your guitar so that the open E-major chord sounds perfectly in tune, and the open A-major chord is likely to sound slightly out of tune.

The True Temperament fretting system (see www.truetemperament.com for more information) addresses this problem by changing the shape of each fret to 'tune' each individual note, removing the need to compromise. Michael Sanden explains why the True Temperament system appeals to him: "I always try to get my guitars to sound as good as possible. Without interfering with your style of playing, True Temperament is more or less dead accurate in whatever tuning you play – you play a C chord and then a D chord and it sounds completely clean. Normally, everything is a little bit 'off' – it's 95 percent good if you are lucky! This system works all the way up the neck. That's what convinced me to offer this as an extra option if you order a guitar. One of the most noticeable things about this system is the way that the chord decays. On a standard guitar, the notes kind of interfere with each other, but with this guitar the wave is just the same on all of the notes. When you listen really carefully you can hear that the decay is really nice – the notes are more sympathetic. It gives the guitar a different kind of sound from the standard guitars that we build, but its an intriguing one. I think that this could go either way: either all guitars in the world will have it in five years or it will be one of those things that you can add if you need it to be really, really accurate.

"We've also experimented with how far we can detune the guitar before it goes out of tune," Sanden explains. "If you take a tuning like DADGAD, it works really well, but if you go below C, you're gonna get in trouble. Within the range of normal guitar playing, if you tune it down a little bit it works really well, its no problem."

The soundhole rosette is beautifully hand-crafted

relatively easy playability demanded by most modern guitar players, this still feels like an instrument built for habitual acoustic guitarists who are used to digging in and working a little bit harder. This guitar doesn't feel like a typical Takemine or Taylor that you can sling around you neck after dumping your electric for a few songs and barely notice the difference. It feels a lot more serious and consequently less forgiving – you'd better have your acoustic chops in good order or you may well end up stumbling. Perhaps the slightly increased string tension contributes to the muscular playing experience.

The fingerboard is a thick slab of top-quality ebony but it's those strangely shaped bronze frets that grab your attention from the word go. Even the abalone butterfly inlay at the 12th fret pales into the background beside these curious-looking slivers of metal. The idea behind the undulating shapes is to vastly improve the guitar's intonation way beyond what is possible with the standard straight frets that we are all familiar with. The process is called 'Dynamic Intonation' and compensates for every single note on the neck so that each one is completely in tune.

The quality of build and finish is very impressive and, while this isn't an ostentatious-looking guitar by any means, everything about it nevertheless conveys an air of quality. The soundhole rosette features handcrafted concentric rings of herringbone and black pinstripe encircling a beautiful-looking circle of crushed abalone. The herringbone trim encircling the sound hole and the entire circumference of the sitka spruce top looks as though it is made using individual marquetry rather than a pre-formed strip, and the overall effect is very impressive.

Off-the-shelf cosmetic trimmings can't hold a candle to this level of quality. There is even a transparent scratchplate on the top to help ward off damage from fingernails or picks.

ELECTRONICS

The Sanden JRB-M is fitted with a B-Band undersaddle transducer and A1 preamp. The preamp is driven by a single 9V battery housed in a small pouch inside the guitar and the end-pin doubles as the guitar's jack socket. The A1 system is B-Band's entry level preamp, but Michael Sanden states that he actually prefers it over the company's range of more elaborate systems due to the purity of its amplified tone.

There are no EQ sliders or tone controls at all. The only control is a very simple rotary volume dial that's positioned just inside the sound hole. Its easy to reach to make volume adjustments, but that is all the player can do beyond employing separate EQ from a PA system or dedicated acoustic guitar amplifier. However, there's a strong argument for letting the mix engineer (who is in a better position to judge what's needed than the player on stage) worry about the EQ. And avoiding making a big hole in the side of an acoustic instrument to fit a bulky preamp can really only be a good thing.

SOUNDS

At first strum, the JRB-M sounds very bright and shimmery, and you don't immediately notice just how much low-end the guitar puts out until you wonder why your chest cavity is vibrating like a bell every time that you dig into the bottom strings! The impressive balance between the high mid-range and bass reminds us of an old-fashioned Martin acoustic, but the bite and clarity of the high notes sounds more modern, possibly because the guitar is brand-new and hasn't had time to settle properly yet.

DETAILS

QUALITY BUILD AND DYNAMIC TONES COMBINED WITH PRECISE TUNING

The headstock is set at a steeper angle to increase string tension for lowered tunings

An elegant-looking abalone butterfly inlay graces the neck around the 12th fret

The unusually shaped bridge is sculpted from high-quality Brazilian rosewood

GBOPINION

SANDEN JRB-M

GOLD STARS

- Great tones
- User-friendly electronics
- True Temperament frets really work

BLACK MARKS

- Electric players may find playing hard work

IDEAL FOR...

Exacting acoustic guitarists, especially those using alternate tunings

The high notes have a nice crisp 'ping' and the sustain is very smooth. Hard strumming doesn't seem to compress the sound too much and even a fairly heavy right hand sees the guitar projecting well without overly compressing or 'distorting', despite the abundance of punchy mid-range.

Clusters of finger picked notes sound complex rather than cluttered, and the guitar's superb dynamic range makes it easy to monitor what is going on and make subtle changes to pick or finger attack. Indeed, the JRB's dynamic range is one of its main selling points. Play quietly and you can still hear every individual note clearly. Dig in and the guitar adopts a more aggressive tone which could almost be described as 'funky', especially when dealing with the lower registers, which have an almost sexy guttural quality when the player really starts to give it some welly.

Plugged in, the tone is equally warm and easy on the ear. The comparatively simple B-Band system doesn't clutter or mask the sound with gimmicky EQ settings. The B-Band tone is very true to the guitar's true acoustic sound, which is good news given there is no facility to modify the sound beyond changing the volume.

So, do the True Temperament frets work? In a word, 'yes'. Open and barre chords no longer clash and even the notorious open E-major chord sounds sweeter, without the slightly unpleasant effect that often occurs when the in-tune open G string suddenly goes sharp when it becomes a G-sharp at the first fret. On alternate tunings, like DADGAD and open D, the improvement is even more noticeable, with fretted notes high up the neck remaining in tune with the open strings. And those 'wonky' frets don't compromise playability in any way at all and don't require any change in playing technique.

GBRATINGS

SANDEN JRB-M

BODY & NECK	
ELECTRONICS	
PLAYABILITY	
SOUNDS	
VALUE FOR MONEY	
GBVERDICT	

GBCONCLUSION

GREAT TUNING, GREAT TONE

The Sanden JRB-M is a guitar we'd describe as a 'grower'. While it isn't the slickest-playing acoustic we've ever strummed, its complex, earthy tones have the power to gradually seduce the player and its not long before you find yourself returning to it again and again. As addictions go, this isn't one you'll be in any hurry to kick.

The benefits of the True Temperament fret system are tangible and it is a genuine improvement, if not truly essential – we think that a similar guitar fitted with conventional frets should provide a similar level of satisfaction to many players. However, if you're a real perfectionist when it comes to tuning, you must try this system out. This is an expensive guitar but it is built by somebody with an impressive level of skill, and if a potential owner has the talent to match their fiscal resources, then they will have an instrument that they can be truly proud of. GB