

Virtual perfection

Owen Mortimer introduces the latest self-playing piano from Steinway & Sons – SPIRIO | *r*

The Steinway Spirio represented a major leap forward in piano technology when it was unveiled in 2015: a self-playing grand piano with access to an unparalleled library of performances by leading artists, past and present. In many cases the audio experience can be enhanced with video footage, synchronised with the instrument to seem as if the artist is right there with you. At the flick of a few switches, any lucky Spirio owner can be transported through time to attend a legendary performance such as Horowitz's 1968 Carnegie Hall recital, Glenn Gould playing Bach or Duke Ellington essaying *Satin Doll*.

To be clear, these aren't conventional recordings: each track comes alive in its full acoustic splendour, performed by a Steinway & Sons grand piano. As Steinway senior vice-president Eric Feidner explains: 'Spirio is a high resolution recording format. We measure physical activity on the piano in high resolution, then convert this information into a data file that's streamed to the piano for playback. That data file format is proprietary and there's a lot of special stuff that goes into making it sound so realistic. Our goal is to make each Spirio performance virtually indistinguishable from the original recording.'

The high resolution format developed by Steinway offers up to 1,020 dynamic levels and 256 incremental pedalling positions to achieve this goal. According to Feidner, 'the figures are interesting, but they're not the real story.' What makes Spirio unique is the company's

deep experience of working with world-class artists. The development of the system has seen hundreds of artists record thousands of hours of music. 'This process began in 2014,' says Feidner, 'and has allowed us to build unparalleled sensitivity into our recording

and playback facility. An artist might play a very soft trill with a particular type of pedalling, for example, and our engineers will listen to ensure it plays back *exactly* as the artist recorded it. If it doesn't, we will fine-tune the software until the result is right. That's what makes the big difference for us: it's not just a file format or sampling rate, it's about musical development.' The Spirio catalogue currently comprises over 3,000 pieces.

Although Spirio can be played just like any other Steinway piano, until now the system has only offered playback. That's where Spirio *r* comes in: the '*r*' stands for 'recording', allowing users to create their own tracks. A tablet-operated editing suite provides tools for post-production, bringing each performance as near to perfection as possible.

Lang Lang has taken a strong interest in Spirio *r* and launched the instrument in China, leading a public masterclass in 2019 that showcased the system's capabilities. 'At some level it seems very simple: it records and it plays back,' says Feidner, 'but watching Lang Lang with an instrument at this level of capability, we saw how a student and teacher can use it to stand back and listen to themselves playing. Doing that offers a completely different auditory experience from a conventional lesson or masterclass.'

The editing suite also includes innovative features. Feidner explains: 'There's never before been an editing facility like this, at any time in the piano's evolution – it allows you to visualise what's happening. For example, it's not previously been possible to visualise pedalling. The only comparable data format that exists for music editing is MIDI [Musical Instrument Digital Interface] and when it comes to pedalling, MIDI is essentially binary – either on or off. But being able to see the whole curve of what's happening with the pedals moving up and down is a revelatory experience. This has huge potential application in teaching, allowing an artist to show their students how to use the pedal through visualisation.'

The Spirio *r* recording facility is instantaneous, making it a great tool for composers and improvisers. It also allows a soloist to play a duet with themselves – a facility jazz pianist Bill Evans could have used to great effect if it been around when he made his multi-tracked 1963 album *Conversations with Myself*. 'An improvisation is a moment in time which happens and is instantly gone,' says Feidner, 'but now you have the opportunity to hear it again and analyse it, not just as an audio recording but physically. The data is all in there.' Steinway's high resolution format

The Spirio *r* editing suite allows users to visualise each aspect of their performance



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