Glow girl, glow...

Ken Kessler talks tubes with EAT's Jozefina Lichtenegger at her Czech HQ

RIGHT: Close-up of a KT88 tube's glass envelope after the top has been sealed by glass-blower Kveta Perglerova. The EAT logo has been applied and the tube is awaiting finishing and insertion of internal parts

A couple of decades ago, there was a panel discussion held at one of the hi-fi trade shows about women in audio. It was obviously inspired by and addressing a feminist agenda, but it was, too, a celebratory expression of female achievement in the most male-dominated industry one can imagine outside of monasteries, gay bars and illegal dog fights. So sparse was the female presence in hi-fi, of both professionals and enthusiasts, that outside observers often likened the audiophile world to other 'creepy' milieux, such as *Star Trek* fandom.

Twenty or so years later, little has changed. The women present then were few in number, if seriously high-powered, while many are still active, including Sheryl Lee Wilson of Wilson Audio, Transparent's Karen Sumner and others working at executive level.

ATTRACTED TO VALVES

Perhaps most impressive is the fact that – although the number of women participating in audio hasn't increased by much – those involved today run their own companies, such as Gabi van der Kley of Crystal. Silencing male chauvinists, a number of them, including Eveanna Manley (Manley Amplifiers), Heike Becker (AudioValve), and Eunice Kron (KR Audio), not only possess strong engineering backgrounds but are also attracted to... valves.

RIGHT: Jozefina Lichtenegger photographed at 2014 CES with a selection of EAT's latest valves

Just over a decade ago, when the supply of new valves was chaotic but burgeoning, Eastern European tubes were making a stand against then-inferior (but plentiful) Chinese valves. From the Czech Republic, a new line of superior valves appeared under the VAIC name. Costly, hand-built but undeniably desirable, they made a few waves amid a flood of new, high-end tubes that included valves from Russia, as well as US sources including a revived Western Electric and, from the musical instrument sector, Groove Tubes.

Alesa Vaic's eponymous brand no longer exists, but its quality tube ethos lives on because of the peerless tenacity of one Jozefina Lichtenegger, née Krahulkova. At the time, in the late 1990s, as Alesa Vaic's sister-in-law, she represented VAIC, the company, in the West.

> 'By May 2006, Jozefina was in a position to purchase Tesla'

NO-BULL ATTITUDE

She wasn't taken seriously when she first arrived. She was young and spoke with a charming, but heavy, accent that Hollywood couldn't better for portraying one of Yeltsin's comrades. But her boundless enthusiasm and no-bull attitude was in marked contrast to the jaded cynicism of the high-end industry and within five years, having mastered five languages and learned how to deal with male chauvinism like a younger, less-strident Germaine Greer, she would establish EAT (European Audio Team) to make the valves she once sold as VAIC.

The tubes would be followed by something no-one could have foreseen: Jozefina would oversee the creation of a sublime all-tube phono stage, and would create a range of superb turntables. She would even perfect the 'flat' tonearm that showed so much promise when originally dreamed up by NAD.

Still too young to possess gravitas beyond her success and her intelligence, Jozefina is now 'establishment'. Her brand is taken seriously, always present at major shows, and represented by 'A-list' distributors. With EAT's release of new models increasing markedly, doubling in three years, we visited her valve factory in Litovel, near Prague.

Jozefina recounts her growth in the audio industry as relatively uneventful, more cognisant of the learning curve for important matters than of industry politics. Her background in audio, prior

to learning about valves from the ground up with VAIC, was limited to a passion for classical music. Having been exposed to high-end hi-fi by Vaic, she found it interesting enough to pursue as a career.

ALESA VAIC

Recounting her 16 years in audio, Jozefina explained that, in 1998, she started to work with Alesa Vaic, who was part of an audio scene then established in the Czech Republic. This is not the place to recount the tale, but Jozefina explained that the area had a small but active audio community – the area also included JJ valves – at the heart of which was the late Dr Kron, whose KR Audio still makes radical valve amps under the aegis of his widow [*HFN* Aug '13].

With Kron producing tubes as well as amplifiers, the culture was established, and Alesa Vaic and the company VAIC were part of it.

At the time that she first got into the audio business via VAIC, Jozefina was studying for an MBA at the University of Economics in Bratislava, so it was natural for her to gravitate toward sales. By this time, VAIC had built up a reputation for rectifiers and triodes, its mainstays being the 300B, 52B and 32B. Within a few years, having absorbed all she could about the 'art' of making valves, in an atmosphere with continuity back to the 1950s, changes in both the political climate of the country and her family life inspired Jozefina to set up on her own.

She had already amassed a roster of customers who wanted her to supply tubes, as Alesa was drifting out of the business. Jozefina says she wasn't actually employed by VAIC, but 'helping out as part of the family.' In 2003, she made her first contact with the company Tesla Vrsovice, with a long history of valve manufacturing, and which had only the 300B and a Gold Lion-inspired KT88 in production.

'I started to buy and sell KT88s and 300Bs, which they produced for me.' By May 2006, she was in a position to purchase Tesla and take over complete control of the entire production of both valve types. The owner of Tesla wanted to retire,

ABOVE LEFT: Valves burning in before fitting of base and pins, connected via alligator clips

ABOVE RIGHT: Martin Orna seals valves with a blowtorch, securing the vacuum

BELOW LEFT: Assorted machinery left over from the original Tesla factory, believed to date from the 1950s

BELOW RIGHT: A bank of modern test equipment devised by Martin Orna

which was the reason he decided to sell the company, despite it being in the midst of a valve 'boom'.

'Tesla was situated in the centre of Prague when he sold it to me. I moved the entire manufacturing facility from its original site in Vrsovice to Hloubetín, north east of the city.' She also kept the skilled crew of employees, adding a young tube wizard, to create the triumvirate that now hand-fashions every EAT valve, using both vintage equipment and heavily-modified test gear dedicated to its own products.

ASTONISHING WOMEN

Retaining these links to the Tesla days are two astonishing women who possess the skills one might have thought died out when the likes of MO Valve shut its doors. Kveta Perglerova actually terrified me with her handling of a blowtorch: British 'elf'n'safety' fanatics would have her imprisoned in moments.

I watched Kveta convert 2m-long raw glass cylinders, of which there were many boxes ⟳

leaning against a wall, into the valves' glass envelopes. Her primary task is good, old-fashioned glass-blowing, that blowtorch used to heat the glass to the necessary malleability after she cuts the long extrusions to length.

Next to her work space was an old-fashioned wooden stool, which had the same patina as a bar counter where countless drinkers had rested their cigarettes. The burn marks in this case came from the still-lit blow-torch, which she nonchalantly rested on its seat between uses. The action was mind-boggling, as if showing two-fingers to a health inspector.

GLASS BLOWING

Like a maestro in Murano, she blows the glass stems and glass envelopes for the valves in the old-fashioned way, with lung-power through a mouthpiece. She hand-rotates each glass envelope, producing absolutely faultless domes at the top of each valve's envelope, where she closes the cylinders, shaping them as well for the bulges of the relevant valve. She also burns the EAT logos into the glass and prepares the black valve bases with their gold-plated pins, to accept the complex innards.

ABOVE LEFT: **Finished glass envelopes ready to be fitted with the internal structure**

ABOVE RIGHT: **These are the raw glass cylinders sourced from an outside supplier, awaiting cutting to length**

BELOW RIGHT: **Kveta heating the glass before blowing to seal the end**

BELOW LEFT: **Miluse Rösslerová assembling the internals by hand 'with a watchmaker's skills'**

Assembling the internals is handled by her long-time co-worker, Miluse Rösslerová, who builds the entire active component of every valve: the grids, anodes, cathodes, the lot. Jozefina is quick to point out that Miluse's skills are not unlike those of a master watchmaker because valve assembly involves working with ultra-fine parts at exceptional levels of precision, especially in terms of alignment. Miluse was also inspecting the arrival of a shipment of EAT Cool Dampers when I visited.

> "We listened until 2am, just comparing the components"

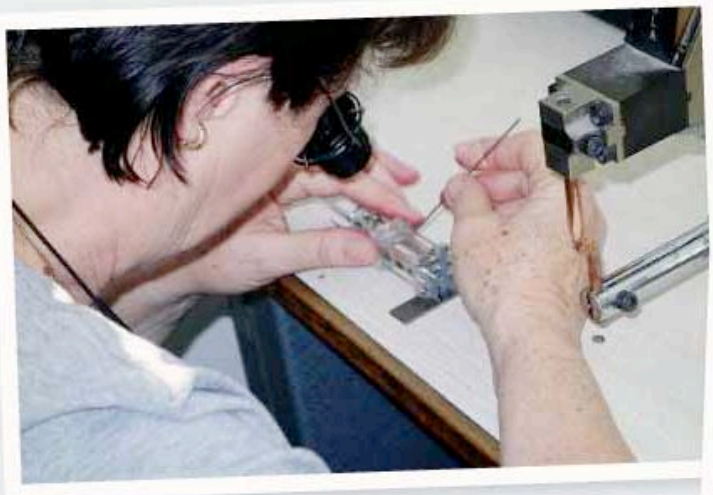
Completing the trio is young blood Martin Orna, who does all the design work and development, including the devising of new machinery, developing new tooling and adapting test equipment as required for the manufacturing process. He has university degrees in both chemistry and electronics.

Martin takes the completed valves and tests them numerous times, first without the black bases or pins attached, then after fitting. All valves are measured, burned-in and measured again. He also matches every pair or quartet of valves after extensive measurement.

FORTUITOUS MEETING

EAT's tubeworks, which occupies a number of large rooms in a multi-storey building houses sufficient machinery to expand, but a natural limitation for producing valves of this calibre will always be finding workers with the right skills. EAT also supplies new-old-stock Czech-made ECC88 and ECC803S signal tubes, outsourced to EAT specification, and these new-old-stock Czech tubes are used in the E-Glo.

In 2003-2004, with her business growing, Jozefina began searching for distributors, among them Absolute Sounds in the UK, and



Music Hall in the USA. When looking for a distributor to handle nearby Austria, she met Heinz Lichtenegger. This would prove to be doubly fortuitous, firstly because he owns Pro-Ject, which would eventually be the enabler of EAT's growth into another area – turntables and electronics – and secondly because Heinz would eventually marry her.

Both are happy to explain how they have created 'battle lines' to delineate between the two companies, for Jozefina's EAT and Heinz's Pro-Ject are most definitely separate brands and do not share distributors nor sales networks. The connection beyond the conjugal is that Pro-Ject manufactures EAT's Forté, E-Flat and C-Sharp turntables and the E-Glo phono stage, for which there are no direct equivalents in Pro-Ject's catalogue [see 'Investigation', *HFN* Aug '14.].

IRREPRESSIBLE SMILE

Jozefina, like Heinz, is overburdened with too many new ideas. Certainly, she's maintaining the production of 300B and KT88 valves, within the constraints of hand-manufacture and the demands it imposes, while turntables and tonearms have become the dominant product line.

'The main reason I'm here,' she say, 'is my passion for music. Classical – every week Heinz and I attend concerts. The other day, my New Zealand distributor was here, and we were listening to the system until 2am, just comparing the components Heinz and I have at home.' Said with her irrepressible smile, reminding me of the joy that gets us into audio in the first place, she makes you wish more women made the decisions in the high-end audio industry.

ABOVE: Finished valves awaiting testing and matching; sets are prepared as both pairs and quads for absolutely identical values

ABOVE RIGHT: A young Jozefina in 2002, then representing VAIC abroad thanks to her command of English, seen here with the 300B

RIGHT: Anode/Cathode assembly at mid-stage of production. The entire unit has been assembled by hand

EAT: KEEPING A TRADITION ALIVE

Jozefina, though as pro-active as one can be, acknowledges the role of fate in the saga of EAT. Her sister's then-marriage to Alesa Vaic and meeting Heinz Lichtenegger are the most obvious manifestations, but there are parallels to Heinz's discovery of a turntable factory about to close, which led to the birth of Pro-Ject.

'The valves I chose were already in production,' she says, 'and fortunately they were the two most in-demand output tubes: the KT88, based on the Gold Lion, and 300B. Basically, these still are the most important valves for hi-fi enthusiasts.'

Promoting her tubes – which typically sell for £500 per matched pair of KT88s, or £400 for a 300B – was not easy. 'It was difficult to explain because, in some cases, people didn't want to believe that we really were hand-producing the tubes. They wanted to believe we were having them made by a big company like JJ and relabelling them. But the more clever customers – trade and private customers – understood the difference in quality in the sound of my tubes.

'I explained how we always use expensive materials – the anodes use 99.98% pure nickel – and that we produce gold-plated grids and so on. And while there's a lot of money spent inside the valves, it's also the collected knowledge of the people who work for EAT.

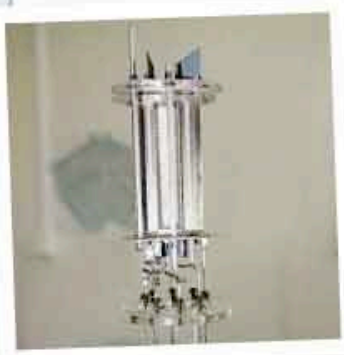
'When I took over the factory, I took the people with me, craftswomen who have a lifetime of experience – these are the only jobs they have been doing for the whole of their lives. You need the experience. You can't produce a tube from a manual.'

> "'We make around 2000 KT88s and 2000 300Bs a year"'

Making the transition to turntables was smooth because of Heinz. 'When the first Forté was shown, it was so well-received that one thing led to another. It was natural that we would follow turntables with a phono stage, because we had access to Pro-Ject's electronics factory in Slovakia.

'We have been concentrating lately on turntables, but now that is up and running, we are renewing our efforts in promoting the valves. I have to approach people again the way I did ten years ago and remind them of what we are actually doing. We make around 2000 KT88s and 2000 300Bs a year. It takes a long time to finish one tube, checking the measurements the integrity, the vacuum.'

As for the future, Jozefina hints at very little, save for the possible appearance of a state-of-the-art, all-tube headphone amplifier. 'Maybe a streamer, maybe a CD player.' She's also attuned to the need to maintain and grow a workforce in the valve works.



'Our main guys are very young, and we have already started training candidates because the ladies want to retire. It is still possible to find people who can work with glass. Different schools in Prague train people who can do these jobs. Czech people want to work; this is our main advantage. You don't need to micromanage them, or control them. They are honest, hardworking people.'