

The Other Choice

PART 1

CH PRECISION C1, D1, A1 AND WILSON BENESCH A.C.T. ONE EVOLUTION

Despite the enormous variety of products, a certain amount of 'sameness' has crept into the top echelons of the High End. A movement that most appropriately resembles the only available colour of the T-Ford. But how to convert this statement to audio products? Simple: if I would ask you for the sound of a random current High End product, attributes like 'transparent, fast, clean, well delineated and controlled' will probably be mentioned first. O.k. for those... But now you are visiting a live concert and again are asked to describe the 'sound'. You don't know...? Well, that's exactly what I am referring to and that proves quite definitely that true realism is something profoundly different than 'Hifi'. Swiss company CH Precision and British Wilson Benesch approach this discrepancy in a completely different and especially uniquely individual way, with a very surprising end result!

In this first part, I will be explaining the backgrounds of the reviewed products from both companies. I will try to find out what these costly products could add to the 'killing' competition in an overcrowded market. In the second part I will delve into the individual products and several listening sessions will have to bare witness to the true capabilities and added value of those. But first I would like to garner your attention for the history and ideas of both CH Precision and Wilson Benesch.

CH Precision - Company History

For this interview, Raphael Pasche from CH Precision has taken the honours to answer some questions. Raphael has been one of five top designers in this fast growing technologically proficient brand. *Dear Raphael, not many people will be familiar with CH Precision. Would you be so kind to tell the readers in short where you are coming from and what is your goal?*



'Of course and with pleasure Werner! As you seem experienced in the audio business, you might have heard of Anagram Technologies and Goldmund. CH Precision can be seen as the follow-up and ultimate integration of these two brands. Not surprising if you realize that the two founders and owners - Florian Cossy and Thierry Heeb - have worked with Goldmund since mid-late nineties. Florian was responsible for pre- and power amp circuit design, whilst Thierry was developing the appropriate software and algorithms of the digital products. Thierry's prior job was with



the Swiss army, where he used to be a cryptanalyst.

Florian and Thierry have been friends since secondary school. Both were and are very ambitious and were determined to set up their own company. In 2000 they managed to make this a reality and Anagram Technologies was born. This company was known very rapidly for their innovative technologies.

CH Precision was created in 2009 by Florian, quickly joined by Thierry. CH Precision was founded after both friends were approached by a pool of influential audio distributors who said: "we have followed your journey and we know your credentials, please do create your own

high-end brand and we'll distribute you". After discussions, the CH brand was born and it has gone from strength to strength ever since!

Custom design for every user

What IMO is very typical for CH Precision, is the sheer number of configureable settings within the products. Those can even be set with a tablet across a local network. Is there a deeper thinking behind this and why such a big role for the tablet in a rather conservative audiophile world?

'The approach for our products is to combine a well designed, slick and luxurious enclosure - with as little



buttons on the front panels as possible - with a sophisticated engine able to deliver the highest performances under all sorts of conditions and finally a way to configure all this as conveniently as possible. We provide different types of parameters:

- A. The usual (basic) features, like source selection, volume control, play, pause, stop, etc.
- B. Customization parameters, like colour of the display, input renaming, etc.
- C. Last but not least and very importantly, the CH units contain a set of audio related parameters. For example, the use of the global feedback ratio and the input gain settings allows an excellent coupling of our amplifiers to the connected loudspeakers. Another example could be the setting of the upsampling digital set of filters in the C1.

The CH Control App on your tablet will grant you access to all the parameters of all units from a single page. On top of it, you do not need to move away from your settee to alter a parameter, you can fine tune your system directly from the listening sweet spot. Finally, for people streaming music, the App allows to browse your music library contained on a NAS drive!

Modular construction

Why did you choose a modular design? Could you tell me the thoughts behind this and the advantages?

'We adopted a modular philosophy as it gives us and our customers much more flexibility. A customer can tailor his unit to his system needs. He or she can also alter/upgrade his/her system later on without having to replace the unit, as new cards can be added or swapped later. If for example in the future a new

digital standard becomes the de-facto standard, we can develop a new board that can easily be retrofitted into a customer's unit in effect making our units future-proof. This means a bigger life span of the unit, which is good for both us and our customers and good for the environment.

The modular approach is also prominent in our amplifiers, where we provide 5 different amplifier modes (stereo, bridge, passive and active bi-amplification and monaural) all selectable from the front panel.

The L1 also holds a type of modularity, where a stereo version would be sitting in one L1 enclosure while the dual monaural (8 channels) or the dual monaural extended (16 channels) versions use two enclosures. Each versions can be coupled to X1 external supply units, providing even more modularity.'

The advantages of speed

Companies like Spectral Audio and Soudation - like CH Precision - all favour High Speed designs. What are the benefits and are there any disadvantages as well?

'High speed design means (at least) two things: wide frequency response and high slew rate. The main advantage of having a wide frequency response is that it keeps the group delay constant for as long as possible. This ensures that the phase relationship between various frequencies of an audio signal is kept as identical as possible before and after having been through the unit. In order for music to sound as natural as possible, the phase relationship (and by mathematical extension the group delay) of the signal mustn't be altered. High speed design allows it. We talk of

the audio domain being between 20Hz and 20kHz. This is right from a level point of view, but from a phase point of view, if the amplifier frequency response was only 100kHz, we would see that the phase (associated to the low pass filter forming the bandwidth of the device) would start rolling off far below 100kHz, well into the audio range mentioned above.

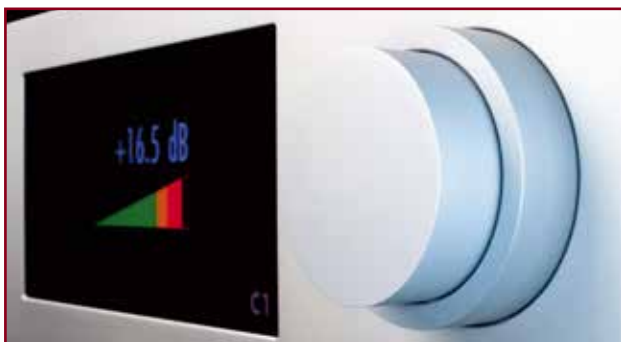
The slew rate is just as important as wide bandwidth. As you know, the slew rate is the maximum rate at which a device can respond to an abrupt change of input level. A low slew rate would mean that a transient signal would have the abrupt change impaired, to be avoided at all costs.

The main disadvantage of high speed designs is that they are more susceptible to RF perturbations which means it is a much tougher job to ensure that RF perturbations would disrupt the unit, both from a functioning and from a qualitative/performance point of view.'

Similarities between CH Precision and Wilson Benesch

Wilson Benesch is using CH Precision when designing their new models. Are Wilson Benesch loudspeakers used in developing CH Precision products? Is there a common vision behind the designs of both companies?

'Yes there is! We believe that we share a fair amount of common ground, especially in the way we approach our designs, working them from the ground up. Both companies have developed their own technologies in their respective fields, not relying on other's technologies, but working to develop their own. Examples of Wilson Benesch's home grown technology has to be in the way they produce and



have harnessed the benefits of carbon fibre and how they take advantage of it in their loudspeakers as well as the development of their own drivers. As far as we are concerned, we could mention our amplifiers' bias regulation system or the adjustable global feedback ratio to fine tune the coupling of the connected loudspeakers to the amplifier.

Most importantly, the total dedication and the strive for perfection drives both companies' ethos. Besides, we believe that both brands components put together work superbly well. And finally, we have developed a strong friendship over the years! All of that combined and the compatibility of our range of products has led us to assist each other and we decided to become mutual distributors for the other in our respective countries (Switzerland and the United Kingdom)!

Future

What can we expect from CH Precision in the future?

'As far as the near future is concerned, we are currently working on a few projects that we will exhibit at the High End Munich show later on this year. I can already reveal that Munich will see a new addition to the '1' series range of products - the I1 - an integrated amplifier with analogue, digital and streaming capabilities.

On the medium and long term basis, we are working on new technologies and also refine current technologies that we are going to implement in the next generations of products. I could tell you more about it but then I would have to kill you... Hahaha!

Wilson Benesch - Company history

After Raphael, it is time for Wilson Benesch owners Craig and Christina Milnes and their son Luke.

Dear Milnes family, thanks for taking the time despite your busy schedule to cooperate with my story. I would like to take the opportunity to ask some questions about your company and especially the new A.C.T. One Through many evaluations and further research,



we reached all new and deep insights into the way different materials behave sonically. The year 1994 was a milestone for the company, when we were able to present the first Wilson Benesch loudspeaker system with carbon fibre: the A.C.T. (Advanced Composite Technology) One.

The official introduction of this revolutionary product took place in 1995 during the High End show in Frankfurt, where the floorstanding A.C.T. One was met with much amazement and awe. This created a solid base for our brand and level of quality and we never stopped refining our production methods and technologies further and further!

New Geometry series

Could you briefly point out the main

differences between the 'old' Odyssey range and the more costly and advanced Geometry Series?

'Whilst the Geometry Series may have a familiar design dialogue to the preceding reference line - the Odyssey Range - the reality is that the new Geometry Series has been optimized and totally redesigned from the ground up.

Advances have been made in the materials used in the construction of the Geometry Series. All MDF components have been replaced with superior materials, such as the alloy baffle which we manufacture entirely in house, being CNC-machined to a tolerance of 0.01 mm.

The Tactic II Drive Unit has evolved through Advanced 3D Finite Element **■■NEXT**

Flux Analysis with the Sheffield Hallam University. This has not only improved the output of the drive unit by around 2dB, but more critically we have made significant advances in the dynamic behaviour and control of the dynamic parts.

Of course it is not purely about power... The success of these designs as a whole is in the small details that we as a manufacturing company can iteratively adjust. Next to technological achievements, such as the 'Troika' system and 'Semisphere' tweeter, much time, money and effort has gone into even better fit and finish and the use of the right materials. Very precisely machined parts ensure a better fit and an extremely consistent end product. This precision was simply unobtainable when the Odyssey models were introduced.'

From original A.C.T. to the A.C.T One Evolution

Could you outline the main steps in climbing up from the A.C.T. to the new A.C.T. One Evolution?

'The development of the A.C.T. line has taken place iteratively since the dawn of Wilson Benesch's first loudspeaker, the A.C.T. One, which was launched in 1994. Much like the 5-Series to the BMW marquee, the A.C.T. loudspeaker line has become a brand ambassador and the emissary of our company's design credo.

Thus, the goal with the new A.C.T One Evolution, like those before it, was to deliver many of the technological advances that Wilson Benesch has made since the A.C.T.. Examples of these advances can be seen throughout the design, from new drive technology, to how this drive technology is deployed in innovative topology such as the Troika System. This technology, along with the refinements in the design of the foot, represent trickle-down technology taken directly from the reference loudspeaker in the Geometry Series, the Cardinal.

Key parameters in this concept are our Troika low-mid configuration and the revolutionary Semisphere hybrid soft dome tweeter, borne from one of the longest R&D projects undertaken in the company's history. It has been developed through many years of work with some of the finest tweeter designs available, including the ScanSpeak design and of course the Murata Piezo 'Sphere' used in the C60.

However you only have to look at the Semisphere in cross section to appreciate that the design is a total departure from anything seen before. It is entirely unique... The Semisphere features a CNC machined front plate that perfectly matches the requirements of the Hybrid Silk-Carbon Dome. The dome is based on soft dome technology, but enhanced using carbon fibre. Various types of carbon fibre, carbon nanotubes and even graphene were

investigated, but the best solution was found in which we have implemented. Although it has extended frequency response, it sounds natural, open and none fatiguing and integrates perfectly with the Tactic drivers. Add to that the extremely low mass of the voice coil and the extremely powerful NdFeB magnetic material.

The Troika System is all about coherency in the mid range. When the tweeter is at the centre of the radiated field it provides a more convincing image of the original sound field of the recording and sound is more natural.

Human hearing has evolved to be most sensitive within the mid band and the brain is able to determine more information about what you are hearing and the location of the sound etc. in this range than any other frequency band. So naturally this formed a critical part of our R&D program in the development of the Troika system.

Troika is a word derived from the Russian meaning 'group of three' and from this you can elucidate the group as the two drive units either side of the tweeter that sits at the heart of the Troika system. In the A.C.T. One Evolution, the upper midrange drive unit runs wide open with no crossover, whilst the lower midrange / bass driver has a stripped down first order crossover. The result is the kind of natural presentation and wide-open sound staging the characterizes the Geometry Series.'



New tonal balance

When I'm listening to the A.C.T. One Evolution, I perceive a tonal balance which is smoother and much fuller and powerful in the bass and lower midrange than before. Has this been a conscious decision, or is it mainly due to the selected design parameters?

'You are absolutely correct in every respect. Naturally we voice all our loudspeakers over many months during development. This is a very personal thing and you are correct that the A.C.T. One Evolution is a little fuller in the bass as the previous designs. That smoothness in the tonal balance can be attributed to the Troika System. But the improvement in the overall presentation can be experienced right across the Geometry Series, where the new drive technology delivers superior sound right across the frequency bandwidth.'

Collaboration with CH Precision

Why have you chosen CH Precision to work with and what makes this brand so special in your opinion?

'Whilst CH Precision is a relatively new company, it must be remembered that the engineers behind CH Precision have decades of experience and have been part of some innovative design work. This kind of knowledge and experience cannot be overlooked and it is very rare in any industry.'

In fact, our products were being partnered across the world before Wilson Benesch and CH Precision formally started working together. Synergy is crucial in any audio system and when we finally met with Florian Cossy, we found for ourselves that the synergy between the systems was exceptional.

The CH philosophy "add nothing, remove nothing" aligned directly with our own. We use carbon fibre composites and complex geometry to eliminate cabinet colouration as much as possible and allow the speaker to disappear within the sound stage. This way the loudspeaker delivers the music as the artist intended, just as if the performance took place before you, rather than the artist plus loudspeaker!

The other important element that played a role at the time when we formed our partnership, at least from our perspective, was the fact that we had just launched our reference loudspeaker, the Cardinal. As discussed previously, the Troika system in this – and subsequent – designs eliminated the need for a complex crossover design. Furthermore, it coupled the midrange drive units directly to the amplifier with no crossover elements in the chain. The need for a high-end amplifier such as the A1 was never greater. A design such as the Cardinal or the A.C.T. One Evolution really lets a phenomenal amplifier such as the A1 really excel!

Future

What can we expect in the future from Wilson Benesch?

'The foundations of Wilson Benesch have been laid upon a consistent commitment to reinvestment in fundamental R&D and manufacturing expertise and capability. Over three decades we have established both an internal design - engineering team and also an external team of scientists and engineers that work collaboratively with this team. The people are at the forefront of their respective fields and this is what allows us to realize what we feel are extraordinary products.'

Wilson Benesch is, and always has been, about the long term not the short term. The business is a vertically aligned technology and manufacturing company. Safe to say, the emerging technologies of today, many of which are well documented as "transformational to the world we know", much like carbon fibre was and is, are already integrated with the Wilson Benesch designs of tomorrow.

The Future is Carbon.'

Conclusion

With these words, this first part ends and I am fully busy to transcribe my experiences and listening impressions to paper, or better said: computer screen. What I can already tell you, is that the beauty of these products is more than skin deep. Technological quality is never a coincidence and both CH Precision and Wilson Benesch are capable of gaining my utmost respect with these beautiful next generation products.

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