

Superpower Wanted! Dead Or Alive... Thomas Prescher Answers

Q1) Thomas, you bring us some of the most complicated timepieces and even... "most active", but I never heard you talking about the needs of energy. Was it an additional problem in a watch such as the Triple Axis? If yes, why?

It is THE problem! A watch like the TAT has about 400 spare parts and the train of gear is longer than a normal one. In addition to that we have all the parts of the carriage which are part of the train of gear. It even becomes more serious that this weight of the carriage is at the end of the gear near the balance where developers try to reduce any weight. Look at the form of an escapement wheel. When developing my first multiple axis Tourbillon I tried to add force but it did not work. Finally I realized that it is not possible to have impulse. Acceleration yes, but no impulse. It was like trying to give a tank the same acceleration then a F1 car. The solution was a constant force mechanism. I am using a modified Janeret system. The escapement wheel is turning free around the axis of the escapement wheel pinion. The two are connected by a small hairspring. To avoid that the hairspring is turned around the axis a pin is fixed to the axis and blocking the wheel after around 90°. The force of the barrel is now turning the pinion 90° before it is blocked by the closed escapement and the pin. If the escapement now opens the little spring is turning the relatively light wheel, before the escapement close again. Then the gear follows and recharges the little hairspring. And here we go it works!

Q2) Watch companies like DeWitt and recently IWC with their Portuguese Sidérale Scafusia emphasise the invention of constant energy modules to reach a flat amount of delivered energy at least for a period of time. What's your opinion about?

De Witt uses a modified Janeret system. It is a bit different from my system but much more similar to the original one using the different accelerations of different weight. It can be seen in the Chronomorphilia magazine about constant forces. I am not up to date what IWC is using.

It makes sense especially for movements with long power reserve. It equalizes the power curb and makes the beat rate more regular.

Q3) You had a great experience (I know) with history mechanical timepieces designed for precision, of a recent past like Zenith Cal. 135 and of Centuries ago like John Arnold's English marine Chronometer. Mixing the tradition with the present, by your opinion which is the best way and how a movement has to get the right power, for the balance spring and for all the other functions?

Indeed I have restored a lot of the pieces of art of very well known historic watchmakers. I learned that all of them were great artists with very different styles and interpretations of watchmaking. In terms of extreme chronometry all of them used only hour minute second indication and tried really every technique to make the rate better. Some succeeded some not. Today it is somehow funny to see that the problem cannot be solved seriously. The more functions the more force is used sometimes at the same time sometimes at different times of the day. This influences the amplitude and so the beat rate. A good solution is the constant force as near as possible to the balance. Eg the escapement wheel.