

Notes on Caring for Your Omega Constellation: 1

The Fast-Running Movement



Clean, well-serviced Calibre 561 movement from an Omega Constellation

The movement in your vintage Omega Constellation is an engine - a micro-mechanical marvel of amazing design and precision that operates under very fine tolerances. As soon as something interferes with the fine margins under which your movement performs, it will tell you by misbehaving in some way.

Unlike in children, or indeed adults, signs of misbehaviour in watches aren't necessarily a bad thing, because this is the way a watch 'communicates' and tells you that it is in need of some attention. In this series of ad-hoc essays on interpreting the language of misbehaving movements, we will first explore those which give you the hurry-up.

No mechanical movement will ever keep time like its Quartz counterparts. That said, a well looked-after and serviced Constellation movement of the 1950s or 60s can be expected to run within plus or minus 10 seconds a day. Achieving COSC standards of an average daily rate of minus 4 to plus 6 seconds is not unheard of in vintage calibre Omegas, but this depends on a number of factors including the degree of parts wear, user wear patterns, quality of lubrication and regulation.

Vintage Constellations either feature RG or Swan neck regulators which allow the watch to be advanced or retarded to a margin of around 25 to 30 seconds. Thus, for a watch that is running fast or slow within the parameters of the regulator, you shouldn't worry too much about the condition of the movement. If you are a tad concerned, a watchmaker can place your watch on a watch-timer and produce an array of reports, but generally, if your watch is performing within the above limits there is not much cause for alarm. Besides, there are some simple ways that you can influence the performance of a movement without touching the regulator:

- ❖ If you want the watch to gain a few seconds a day, take the watch off at night and place it dial up
- ❖ If you wish to lose a few seconds a day, stand the watch vertically with the crown down
- ❖ If you want to shed a few more seconds, stand the watch vertically and have the crown facing up

If the watch is still within its service period (between three to five years depending on frequency of wear) and its gaining or losing within the margin of the regulator, you can ask your watchmaker to regulate it to finer tolerances, or if you have the dexterity and tools you can do the job yourself. For example, you may apply a

small screwdriver to a RG regulator and shorten or lengthen the hairspring, which, correspondingly, will cause either a fractionally shorter or longer return on the oscillation. (This is probably the reason we see so many burred screws in RG regulators where the heavy hand of an amateur can be seen).

In Swan neck regulators, you will notice a screw at the side of the balance cock that exerts pressure on the 'lever', and a guard spring (which looks like a swan's neck) that exerts a counter pressure against the lever. This allows the movement to be retarded or advanced to very fine tolerances.

But, if the movement is operating outside of the parameters of simple regulation, it is time for you to listen to what it is telling you.

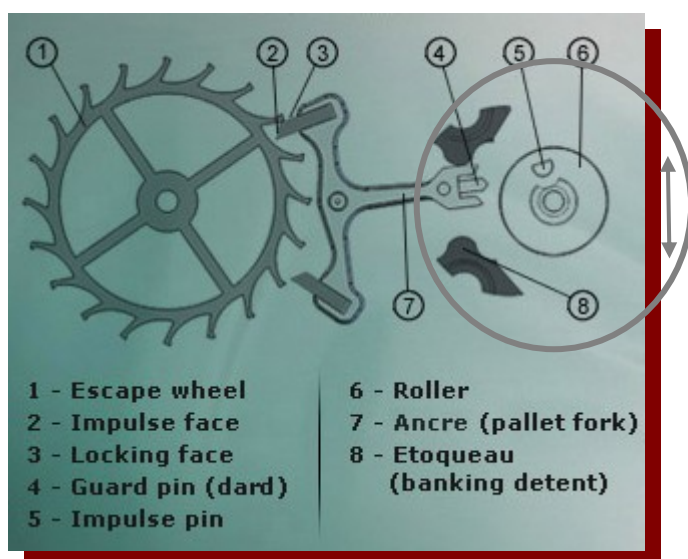
The Contradiction of the Fast-Running Movement

There are a number of reasons why your watch could be running more than 30 seconds a day fast, all of which should alert you to the necessity of a visit to a watchmaker. Lets first look at the most extreme cause.

If your movement begins to speed up considerably over time, then you'd best heed the warning it is giving you. Optimistically, it is making a plea for a complete service: dis-assembling, cleaning and oiling. At worst, it is communicating more serious pathology such as parts wear or damage. Either way, it is most likely telling you that it is losing 'power'.

It seems contradictory that a watch that increasingly speeds up is in fact suffering from power loss, because our normal experience of things is that power loss generally causes mechanical contraptions to slow down, and on occasions it does, but the opposite is also the case. Consider it this way: if the oil has crystallised, coagulated or vaporised and there is dirt or dust in the movement, then the power delivered to the escapement will probably diminish. The escapement, the very heart of the watch, will react to this loss of power in its own unique way.

It is the job of the balance and escape wheel to control the amount of energy that is released through the drive train from the mainspring (the series of wheels that transfers the power in the mainspring through to the escapement). The power is conveyed to the lever and transmitted to the balance. So, metaphorically, the escape and balance wheels are like a couple of turnstile attendants, making sure that only one person gets through the turnstile at a time.



The balance oscillates (moves to and fro) at intervals and causes the release of the escape wheel by means of a pin that enters a fork attached to the lever (shown opposite). It receives a small shot of power that maintains the 'swing' of the balance when the escape wheel slides over the inclined faces of the lever as soon as it is released from its 'locked' position. The lever provides both the locking position and the impulse or kick.

While, effectively, the balance is in charge because it influences the running rate by unlocking the escapement at determined intervals, there is a perfect synergy between it and the escape wheel.

Now, if there is power loss, the 'shot of power' coming through the system is weaker and therefore the balance will not move to and fro (oscillate) to the extremes it would do in a healthy movement. This, in turn,

causes lower amplitude or, in layman's terms, the number of oscillations increase beyond the normal 19800 per hour standard for vintage Omega Constellation movements. Hence the escapement locks and unlocks more frequently and the watch runs faster.

It is not uncommon for movements that have remained unserviced for long periods of time to run at least a couple of minutes an hour fast. In these cases, the movement is crying out for immediate attention. But, if your watch is gaining from 30 seconds to a couple of minutes a day, it is most likely communicating to you that it at least needs a service.

Sticky Hairsprings

On occasions, a sticky hairspring will cause your watch to run faster. The causes of sticking hair springs are various: a spot of oil on the hairspring, gooey detritus, or, 'sweating, to name three. In the case of Nivarox hair springs in Omega watches, there is a coating on the hairspring to prevent sticking, however over a long time the coating may wear and cause the hairspring to stick. In these cases, two or more coils may stick together in certain positions while breathing normally in other positions. The effect of this is to make the hairspring shorter and therefore cause the balance wheel to oscillate above the standard frequency, thus increasing the rate at which the power shot is delivered. The result is a faster running movement.

Again, this calls for a visit to your watchmaker and, at least, cleaning of the hair spring.

Magnetism

With Glucydur balances and Nivarox hair springs, many vintage Omega Constellations are not particularly susceptible to the effects of magnetic fields. However, the escape wheel, pallet fork and some other components are not made from these materials and, while made from relatively magnet resistant alloys, it is certainly possible for a strong magnetic field to cause some residual magnetism of these parts. The effects, as revealed on a modern watch timing machine, show some very untidy traces on the printout.



Typical and inexpensive movement de-magnetiser

It takes only a speck of dust to stop a well-made movement, and it doesn't take much earthly force to throw a movement out of whack. If the pallet and escape wheel become slightly magnetised, attraction forces between these magnetised parts can cause very similar effects to a movement that has lost power. The amplitude of the movement decreases and the beat rate correspondingly increases. When parts of a movement are magnetised you will often observe an extremely variable performance bordering on manic.

It is a very simple process to de-magnetise a watch and any competent watchmaker can do it in a matter of seconds. However, it pays not to jump to the conclusion that your watch has become magnetised, as most people would not encounter such strong magnetic fields in daily life.