Technically Advanced

QP discovers that jumping minutes, jumping seconds, grasshoppers, tractors and horological Toblerones enliven a nervous Baselworld.

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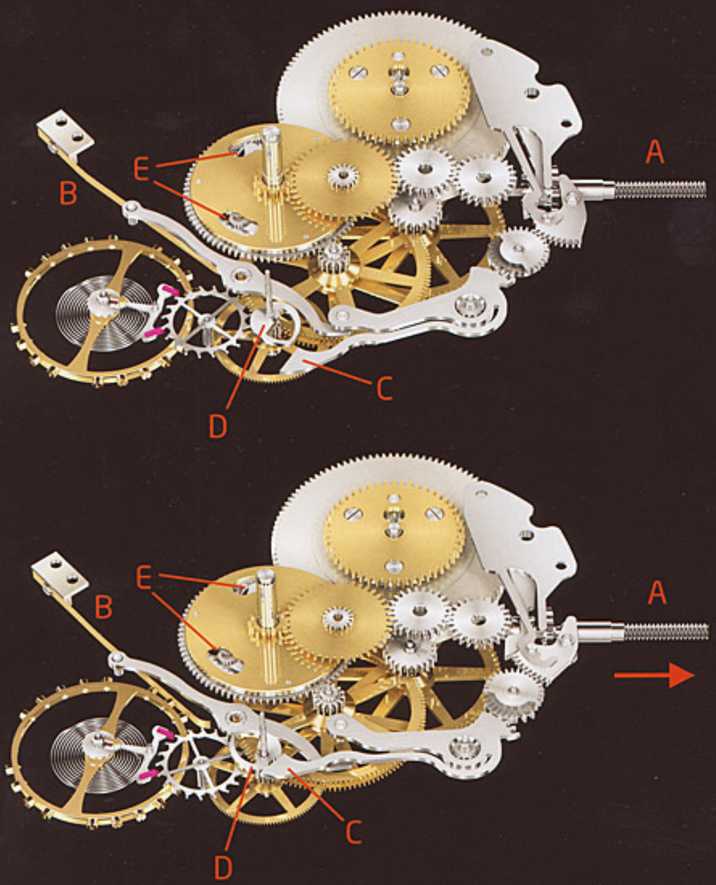
Baselworld 2009 opened on a sombre note. At the international press conference François Theobald, Chairman of the Swiss Exhibitors' Committee, announced that Swiss watch exports for January and February were down 23% on the same period last year. He suggested that there would have to be "a return to traditional values". When asked by your somewhat bemused QP correspondent, which 'traditional values' had been allowed to slip in recent years, he confessed with extraordinary frankness that: prices had been exaggerated, after sales servicing too long delayed and customer aspirations had been left unmet!

Over the last 5 years, prior to the recent down turn, sales had risen 70%. The buoyant market had not been price sensitive and the "exaggerated prices" that this encouraged will not be easy to retreat from without annoying existing customers. From the merchandise on offer, there was not much sign of financial difficulty at Baselworld. Although some watch journalists noted a decline in the quality of the canapés, the watches, which of course have longer lead times, still showed the imagination of their designers and the confidence of their marketing departments. Each brand visited claimed that the recession would be bad for others, but that there were special reasons why they would be OK.

There were complications: from the very useful (Glashütte Original's Senator Chronometer), to the risible, but entertaining, (Pierre Deroche's TNT Royal Retro). Others included a delightful French insect from Chronoswiss, a (literally) striking chronograph from Christophe Claret and a rather similar Opus 9 from Harry Winston. We also saw new digital displays by Urwerk and MCT. Traditionally, innovative young watchmakers have clustered at the AHCI stand at the far end of the watch halls, but this sector has now been augmented by 'The Watch Factory', a grouping of a dozen "Cutting Edge Creators" in a deluxe tent at the edge of the Messeplatz. There was even an interesting bit of credit crunch bling!



The upper picture shows the handset mechanism in the Glashütte Original 'Senator Chronometer' when the watch is running. In the lower picture the crown at **A** is pulled out into the handset position. There are two things to notice: the leaf spring at **B**, which had been held away, is released to press against the balance wheel to stop the watch; the hammer **C**, has moved in to press on the heart-shaped cam **D**, and rotate the seconds arbor so that the hand attached to it (not shown) will point to 60. Looking more closely at the images you can see how the chain of gears and levers at the lower right brought this about. Note also that the chain of gears leading across the centre of the images, from the crown to the central arbor, which carries the minute hand, is engaged in the lower view. Another important feature of this watch is revealed by the cutouts at **E** (not in the actual watch). These glimpse at the interior of the mechanism carrying the minute hand show us part of an internally toothed wheel with 60 triangular teeth and a jumper spring which ensures that, during setting, the minute hand can only move in one-minute jumps. When the watch is started again by pushing the crown in, presumably on a time signal, the seconds hand starts from 60 and the movement of minute hand will remain locked to its rotation.

Forging ahead

Glashütte Original has now added a 'Chronometer' to its classic Senator series. Each watch comes with a performance certificate from the Glashütte Observatory. Unlike the Swiss COSC, which tests an isolated, stripped down movement, the German system tests the complete watch 'as marketed', with any complications in place. For those who take timekeeping seriously the new model has a couple of convenient new tricks. When the crown is moved into the time-set position, not only does the seconds hand jump to 60 (as in a chronograph), the minute hand moves to the nearest minute marker and can only be moved in whole-minute jumps during time-setting. In operation, after the crown is pushed in, the seconds and minute hands remain in register, so that whenever the seconds hand reaches zero the minute hand is precisely on a minute marker. This may seem a small point, but it is not easy to achieve with other watches. A small aperture in the power reserve dial indicates day or night; another convenience when re-setting if the watch has been allowed to run down. With a large date display, this is about as useful as a watch can get without splurging on a perpetual calendar.

Gerd Rüdiger Lang celebrated the 25th Anniversary of Chronoswiss, his new factory, and the ability to produce his own movements, with the 'Sauterelle'; whimsically named for its jump-seconds hand. To show their grasp of French, people immediately started referring to its "Grasshopper Escapement". That however is a device invented by John Harrison in the 18th century and has no part to play in this watch. The insect is simply associated with the jumping of the seconds hand.

The classic dial of the 'Senator Chronometer' by Glashütte Original hides some really useful complications. As well as a hacking feature (stopping the watch and moving the seconds hand to 60 when the crown is pulled out), during time-setting the minute hand moves in one-minute jumps and remains synchronised with the seconds hand when the watch is started again. There is also a night/day dot at the bottom of the power reserve dial, which helps to ensure that the instant change of the large two digit date display takes place at midnight rather than midday.

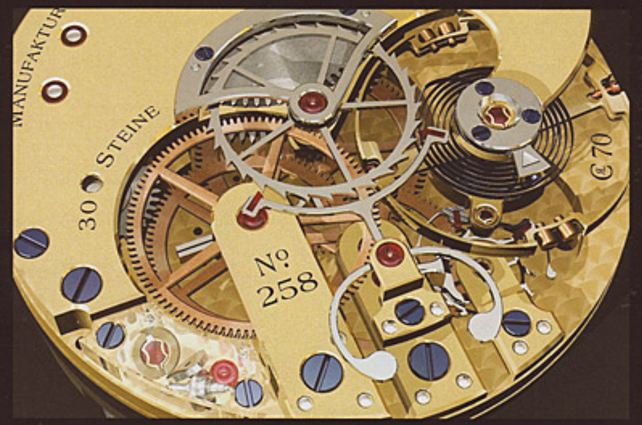
In many ways the Sauterelle, developed entirely 'in-house', is a classic "Watchmaker's Watch". Its large, slow-beating (2.5 Hz) balance is actually quite light, requiring very little power. It is 'free-sprung', being regulated by recessed timing weights. Both the escape lever and the lever releasing the jump-seconds, are poised by 'moustaches'; another classic touch. There is, however, a lot of modern engineering skill included in the mechanism; friction has been reduced to a point where only a very weak mainspring is required. The resultant reduction in wear and tear should reduce the attention required. When it does need the services of a watchmaker, he (or she) will find a cache of important spare parts stored on the movement plate.

Christophe Claret has always kept a low profile as far as the consumer is concerned. For twenty years he has made complicated movements - minute repeaters, perpetual calendars, orbiting tourbillons and so forth - on behalf of a number of high-end Swiss brands. To celebrate his anniversary, however, Claret has produced the DualTow, a watch with his own name on the dial, or where the dial would be if it had one.

The DualTow is "a single button planetary gear chronograph with tourbillon". The chronograph operates by a completely new and particularly clever mechanism, a planetary gear system - a form of differential, which eliminates the problems of engagement found in traditional chronographs. The stepwise rotation of the column wheel produces a response in the levers controlling the chronograph functions, reminiscent of a high-kicking chorus-line, although Claret describes it as resembling "flower petals fluttering in the breeze"! Each time the chronograph button is pressed a gong chimes, but I have yet to mention the most obvious feature of Claret's creation.

The time, in hours and minutes, is displayed by numbers advancing on two rubber belts, moving like tank tracks. This extraordinary watch serves to showcase Claret's creativity and technical skill. The combination of case metals and colours provide,

The long slender seconds hand and prominent outer seconds ring emphasise the main feature of the new 'Sauterelle' by Chronoswiss; it has jumping seconds. It behaves therefore like a quartz watch, a development some will find perverse, but jumping seconds mechanical watches were very popular in the 19th century. A version is also available with a Regulator Dial. Note the 'Made in Germany' insignial, a new feature for Chronoswiss.



The movement of the Sauterelle is the first to be made completely 'in house' at the Chronoswiss factory, just outside Munich. At first sight the watch appears to have two escapements, but the central feature is not an escapement, it is the control mechanism for the 'jumping' or 'dead' seconds hand. The lever carrying the pallets, which block and unblock the seconds wheel, is balanced by curved arms. A more delicate 'moustache' can be seen on the escape lever below the balance wheel. Here it joins the pallets to balance the fork (hidden by the balance centre). The seconds lever is moved by a cam on the escapewheel. Note, lower left, a useful supply of spare parts (not normally visible) is stored on the watch plate under a bridge. The large 2.5 Hz balance is 'free sprung', i.e. regulated by timing weights.

The 'DualTow', marking Christophe Claret's 20th anniversary, indicates hours and minutes on rotating rubber belts. It is a single button tourbillon chronograph with the hands and associated mechanisms supported by a transparent sapphire bridge. The chronograph is operated by a column wheel, levers, and a unique system of planetary gears. The rear view shows the peripheral gong struck by a hammer near the top of the movement, which sounds each time the chronograph pusher is pressed.

'Opus 9', by Jean-Marc Wiederrecht and Eric Giroud for Harry Winston, indicates the hours and minutes with red mandarin garnets on chains of baguette diamonds. As each garnet moves off the scale near the top of the dial, another appears at the bottom.

Above & middle: MCT made its debut at Baselworld with a new type of 4 by 3 hour digital display. The hour numerals are on sets of triangular bars at the 3, 6, 9 and 12 o'clock positions. Minutes are indicated by a hand moving around a crescent dial. As shown, it is 9:21. When the minute hand reaches 60, the crescent will flick 90° anti clockwise so that the minute hand points to zero and the 10 at the base of the dial is revealed. Before they appear again, the bars showing the 9 will have rotated 120° to present the number 1, the 10 will later become a 2, and so on.

selectable on a special website (www.dualtow.ch), could make each of the 68 watches available virtually unique. Collectors who manage to acquire one will probably not mind that they have to guess the minutes between the fives and tens and that chronograph seconds will be hard to approximate if the event ends when the seconds hand is pointing towards the corners of the rectangular dial.

By a strange coincidence, a matter of 'ideas in the air', or careless talk at a horological watering hole, the Claret system of time display is mirrored in Harry Winston's Opus 9. Instead of the rubber belts with numerals moving past fixed indicators, there are two chains studded with 33 baguette-cut diamonds, interspersed with the occasional red mandarin garnets, which move past fixed linear arrays of digits. There are in fact three garnets evenly spaced around each chain to point to the hour and minute markers. As one garnet disappears at 12 or 60, another comes into view at the bottom of the dial. This apparently simple mechanism requires a great deal of skill in its execution. The stones must be perfectly matched in weight and the chains and settings very flexible if the limited power of the watch movement is to be able to drive it.

As always in the Opus series, Harry Winston gives full credit to those involved. The watchmaker is Jean-Marc Wiederrecht, and the designer, Eric Giroud (who, incidentally, has also been involved with MCT, MB&F, Peter Speake-Marin and Tissot). An interesting additional piece of information provided at Baselworld was that Frédéric Garinaud, the watchmaker responsible for last year's Opus 8, has successfully redesigned Opus 3, it now works! Examples will soon be delivered, at the price quoted in 2003, to the very patient collectors who originally placed orders.

It was good to have an opportunity to handle Urwerk's sleek, black (non-hairy) 'Tarantula', reviewed in QP 35. It is light, relatively small and very wearable. The time is easily read at an oblique glance, making it socially subtle and an excellent driver's watch. This new model retains Urwerk's, now traditional and probably unique, rate adjusting screw in the case back. This allows the wearer to adjust the rate by up to 30 seconds per day; a great convenience as the rate of a mechanical watch changes as the lubrication of the escapement deteriorates between services.

Further along in the Fair's new "Watch Factory" section was the dramatic, though slightly difficult, 'Sequential One', by new exhibitors, MCT (Manufacture Contemporaine du Temps). Like the Tarantula, Sequential One has a 4 x 3 hour display, but whereas the Urwerk has 3 hours on each of 4 rotating discs, which move around the dial, the MCT creation shows 3 hour numerals in each of 4 fixed locations around the dial.

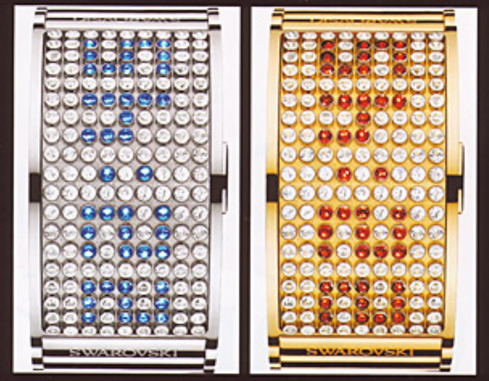
The hours are shown on the faces of a set of triangular bars; hence the Toblerone connection. Minutes are indicated by a hand moving around a 0 to 60 crescent. As illustrated, the time displayed is 9:20. The clever bit is that when the minute hand moves around the crescent to reach 60, the crescent flicks 90° anticlockwise, revealing the 10 already displayed at the bottom of the dial, and putting the minute hand at zero. The not so clever bit is that the hours progress anticlockwise, with 3, 6, 9 and 12 appearing in their conventional positions, but the others seem rather oddly placed: 7 and 11 are at 3; 2 and 10 at 6; 1 and 5 at 9 and 4 and 8 at 12.

Perhaps fortuitously, glass sparkle makers Swarovski chose this year for the Basel debut of its new watch range. Mention of quartz watches in QP maybe a little déclassé, but one model, the D-Light is technically interesting. It is a broad pavé bracelet of faceted crystal, concealing a quartz movement. As in the LED watches of the 1970s, at a touch of the hidden crown, an array of diodes lights up for a few seconds to display the time digitally. In this case the diodes illuminate individual crystals. In a useful up to date twist, the system, which does not need batteries, is charged by induction, by simply placing the bracelet on its 'charge box' when necessary. Swarovski has provided an economical form of 'bling' for those who are now finding the real thing out of reach.

But what about the amusing complication referred to? A new brand, with a long Swiss pedigree, Pierre DeRoche, has succeeded in replacing the simple seconds hand with: 6 hands, 6 geared sectors, 6 springs, 12 wheels and 36 jewels. The result is the TNT Royal Retro, where six retrograde hands around the periphery of the dial take it in turns to trace out 10 seconds of time. The effect is said to be of a relay race with the time measuring task being passed from hand to hand; a difficult thing to describe, and even more to observe, without a smile.

Even in hard times, which may well get harder, in spite of 'green shoots' said to be already appearing across the Atlantic, Baselworld still manages to provide plenty of material to fascinate, and perhaps lure, watch lovers. At the end of the fair the Swiss Exhibitors' Committee reported: "The signs are that the industry is returning to normality, rather than experiencing a really serious slowdown".

The 'TNT Royal Retro' by Pierre DeRoche may seem a complication too far. It replaces a centre seconds hand with at least 64 additional components. The task of displaying the seconds is split between 6 retrograde hands, the operative hand being indicated by a red flash on the dial. As one hand completes 10 seconds it flicks back and the next one starts; seconds pass around the dial in a relay.



Most of the time the 'D-Light' by Swarovski is a bracelet paved with glittering glass crystals. The bracelet contains a quartz movement and coloured diodes a located behind particular crystals so that, when the crown is pressed, they light up for a few seconds to show the time. The power supply can be recharged inductively by simply placing the bracelet on its charger box as required - perhaps every 3 months.

Further Information: www.baselworld.com