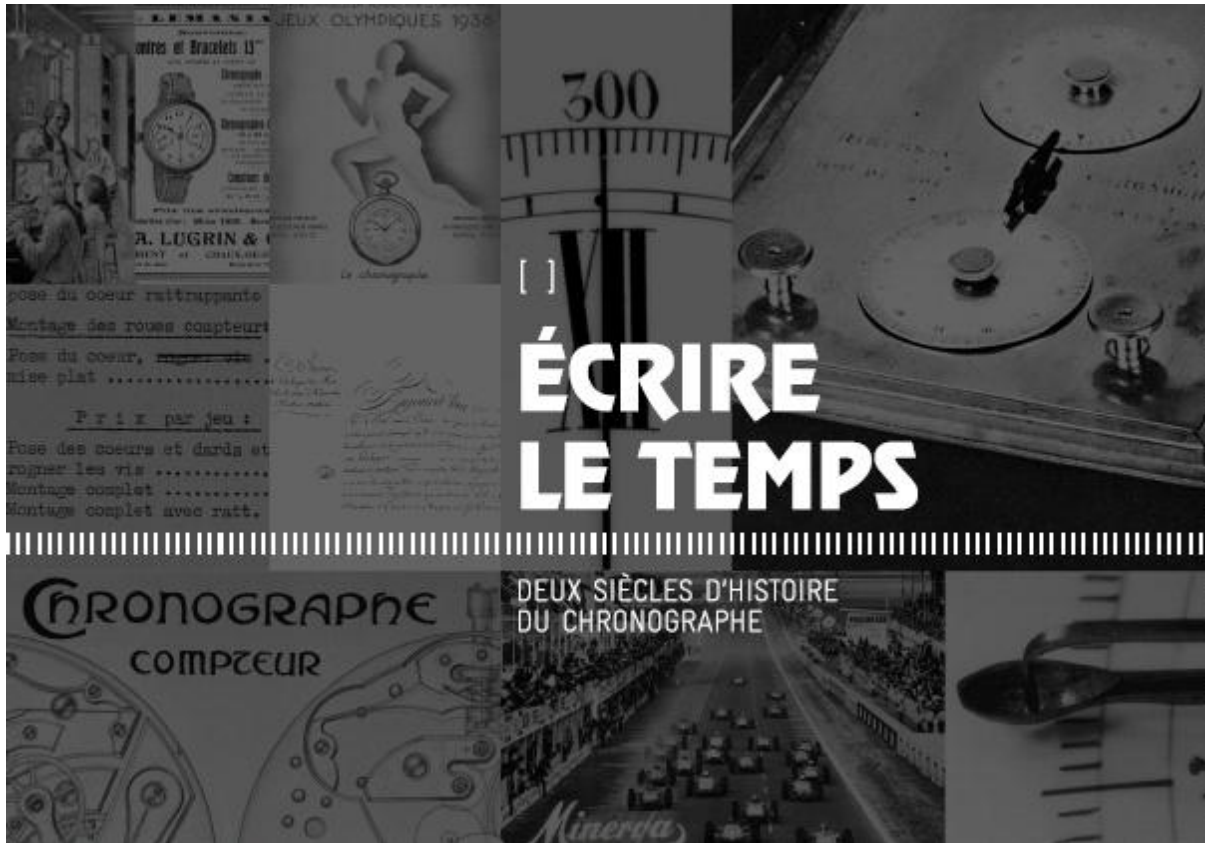


MUSÉE INTERNATIONAL  
D'HORLOGERIE

LA CHAUX-DE-FONDS · SUISSE

PRESS RELEASE



EXHIBITION FROM 7TH APRIL TO 2ND OCTOBER 2011  
TUES – SUN 10AM – 5PM

Exhibition sponsored by Montblanc through its Fondation Minerva de  
Recherche en Haute Horlogerie



L'HOMME ET LE TEMPS

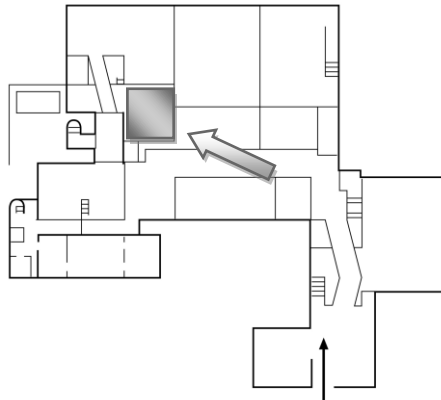


## 1. The exhibition

The first retrospective of one of the most widely appreciated complications in watch-making, this exhibition relates the history of the chronograph from its beginnings to this day, its technological development as well as the generalisation of its use.

## 2. The situation of the exhibition

Integrated into the exhibition areas of the museum, this exhibition is to be found on the platform, in a transition zone to reach the upper area.



An imposing monolith develops the history and technical development of the chronograph in 16 points. Displays inserted in the monolith present the most important references testifying this history, whereas 10 surrounding displays elaborate particular themes and show the chronographs in relation to these.

- I. The precursors
- II. Nicolas Mathieu Rieussec and the horse races
- III. Pocket chronographs, Vallée de Joux and Geneva
- IV. Pocket chronographs, Montagnes neuchâteloises, St Imier and Bienne
- V. From the pocket to the wrist
- VI. Wrist chronographs, 1933-1950
- VII. Wrist chronographs, 1950-1980
- VIII. Movements
- IX. Automatic chronographs and with complications
- X. The chronograph today



Presentation model of exhibition (Polygone)

### 3. Some milestones

1821: Nicolas Mathieu Rieussec (1781-1866), watchmaker by appointment to the french King, timed a horse race on the Champ de Mars in Paris on the 1st September using a device of his own invention. By pushing a button each time a horse crossed the finish, a fixed hand deposited a drop of ink onto a white enamel dial, Nicolas Rieussec had just written time for the first time thanks to his chronograph.



Chronograph von Nicolas Rieussec (Koll. MIH)

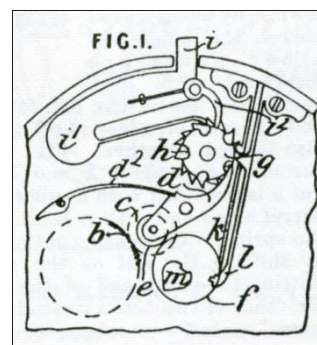


Chronograph by Nicolas Rieussec (coll. MIH)

The chronograph very soon stopped writing time, but it was to be improved to allow its calculation as accurately as possible, participating not only in the precision of the calculation of the duration of scientific experiments, but also of results of sports competitions of all kinds.

The main feature of the chronograph is to have a system to measure an intermediate period of time, parallel to a traditional time system.

1844: Patent filed for the device allowing the resetting of the seconds hand. Thanks to the Swiss watchmaker, Adolphe Nicole, established in London, the chronograph acquired the functions which are still valid today: start, stop and reset.



The chronograph then had an additional central seconds hand (la trotteuse) as well as often separate minute and/or hour counters to calculate the duration.

By means of a push-button, the chronograph could be started, stopped and reset.



At the beginning of the 20<sup>th</sup> century, the chronograph, like other watches, was adapted to be worn on the wrist.



Photo taken from the works of Breitling The Book, 2009.

However, it was not until 1933 that chronographs were available fitted with double push-buttons which made it possible to make measurements continuously, to stop the counting, to hold a measured time while, at the same time, resetting the chronograph hand and sweep hand to zero.

G. LÉON BREITLING S.A., MONTBRILLANT WATCH MY., LA CHAUX-DE-FONDS (SUISSE)

**NOUVEAUTÉ**

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SPORTS  
FOOT-BALL ETC.  
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POUR L'INDUSTRIE

N° 100  
CHRONOGAPHE-COMPTEUR 16"  
QUALITÉ SOIGNÉE  
„BREVETÉ“

LE SEUL  
CHRONOGAPHE-COMPTEUR BRACELET  
À DEUX POUSSOIRS  
OFFRANT  
UN MAXIMUM  
D'AVANTAGES  
D'UTILITÉ, ET  
DE PERFECTION

SYSTÈMES BREVETÉS SUR CALIBRES 14", 14 1/2", 15", 15 1/2" & 16"  
CHRONOGAPHE-COMPTEUR BRACELET PERMETTANT LE CALCUL EFFECTIF DU TEMPS DE TOUTES OBSERVATIONS  
ARRÊT FACULTATIF DE LA GRANDE TROTTEUSE — REMISE A ZÉRO INDÉPENDANTE — PEUT SE LIVRER AVEC COMPTEUR 45 MINUTES

In 1936, the flyback (retour en vol) system improved the chronograph even more, showing its usefulness in aviation. It made it possible to reset the timing in progress to zero, and to start another one instantly, by pressing and immediately releasing the reset push-button. This function was appreciated by pilots as it was

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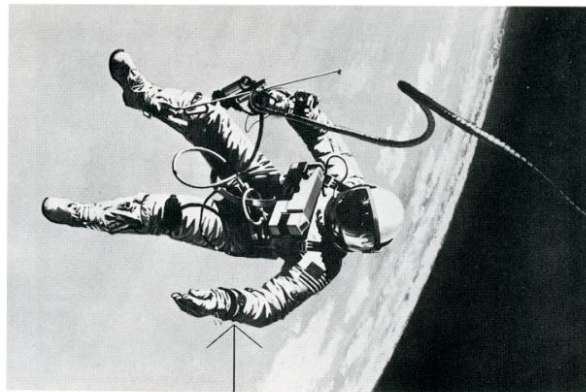
really time-saving, the function «flyback» makes it possible to reset the chronograph hand just by pressing the bottom push-button, whereas, without it, three manipulations would be necessary for this operation. The chronograph hand immediately restarts from zero for a new count. It is Longines who filed a patent for this function in 1936.

In 1969, the first self-winding chronographs made their appearance and from this point on, the most important watch brands were to develop different calibres.



Automatic Chronograph Zénith El Primero, calibre 400 manufactured from 1987. Photo Zénith.

In 1969, when NASA chose the Omega Speedmaster for Neil Amstrong and Edwin Aldrin it brought a Swiss chronograph to the moon.



**Le premier astronaute américain sorti dans l'espace portait cette Omega**

**Testés par la NASA, les chronographes Omega Speedmaster de série équipent les astronautes du programme Gemini.**

Pour cette promenade historique de 21 minutes à 180 km d'altitude, la NASA prit des précautions inouïes. Ainsi, le scaphandre spatial est-il composé de multiples couches de tissus synthétiques et coûte plus de 20 000 dollars. En effet, dans de telles conditions d'apesantour, la moindre fuite serait fatale à l'astronaute dont le sang entrerait en ébullition. Souvenons-nous également que cette promenade s'effectua à 27 000 km à l'heure, soit 6000 fois plus rapidement que celle d'un piston terrestre!



ST 105 012 «Speedmaster», Chronographe automatique à quartz, automatique de série, 1957

**A l'extérieur du scaphandre...**  
La seule modification apportée par la NASA à l'Omega Speedmaster fut le bracelet. Aucun n'était assez long pour entourer le poignet du scaphandre! Aucun autre changement ni au boîtier, ni au mécanisme. La montre supporte des températures inhumaines ainsi que le vide quasi absolu (un demi milliardème de la pression atmosphérique au niveau du sol).  
Depuis cet exploit, les chronographes Omega Speedmaster font partie de l'équipement standard des astronautes Gemini.

**Mais revenons sur terre.**  
D'où provient une telle robustesse Omega? D'un ensemble d'avantages qui font la qualité Omega: la nature des métaux utilisés, les 1427 contrôles de fabrication surmontés par toute Omega, la fluidité de l'huile (à Pt. a. 2000 le titre) qui lubrifie

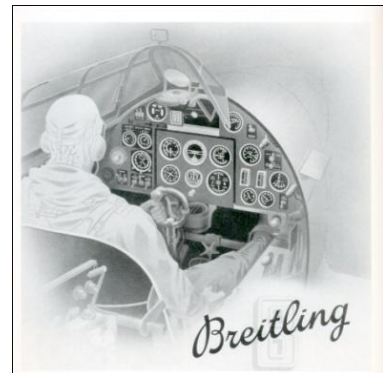
chaque Omega et, surtout, les soins infinis des horlogers Omega.  
**Et revenons à votre Omega.**  
A l'Observatoire de Neuchâtel, au dernier concours de précision, magnifique tir groupé d'Omega, 8 pièces classées sur les 10 premières.  
Pour la première fois également, les Bureaux Officiels Suisses de contrôles décernèrent à une série continue de 100 000 mouvements automatiques Omega (du numéro 24 410 000 au numéro 24 509 999) le titre de chronomètre avec mention «Résultats particulièrement bons».  
Pour la 11<sup>e</sup> fois, le chronométrage des Jeux Olympiques est confié à Omega - Mexico 1968. Une telle accumulation de faits, authentiques, vérifiables, est pour vous la certitude de choisir ou d'offrir avec Omega ce qui se fait de mieux... et de plus garanti dans 100 pays.



#### 4. The chronograph and timing

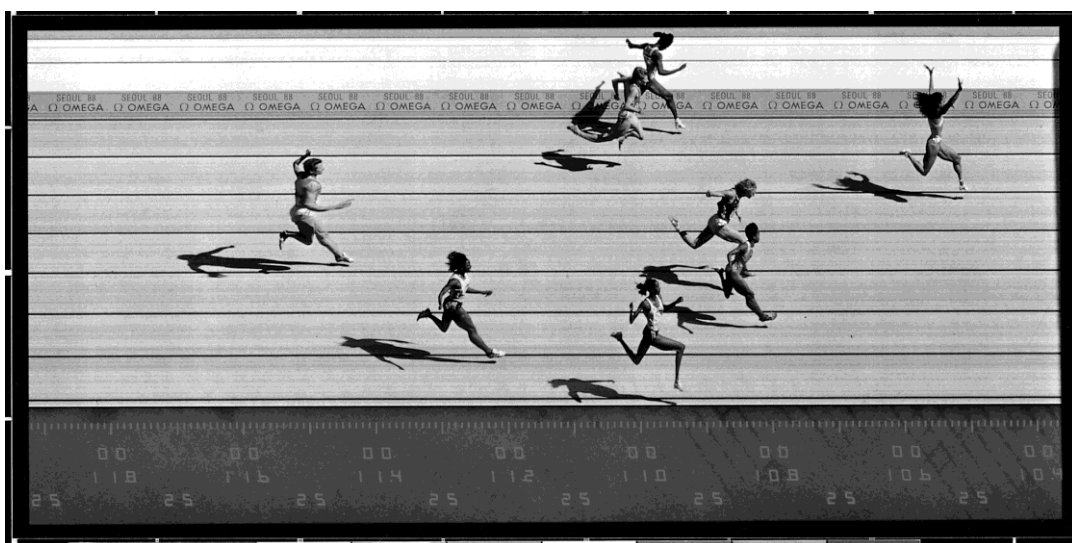
A misuse of language, timing, the precise measurement of the duration of races or sports events (chronométrage), was used with reference to the stopwatch (chronomètre), a highly accurate timekeeper fitted with a seconds hand and whose accuracy tested during different tests is recognised by an official organ in Switzerland, by the COSC (Contrôle officiel suisse des chronomètres).

However, since Rieussec's inking-chronograph, it is the chronographs which have measured the duration of sports events: from running to bobsleigh or car racing and which were to prove, among other things, essential to aviation.



Collection of Omega Museum, Bienne

In 1946, with the introduction of the photo-finish system, manual timing makes way for technological development.



Photofinish of the final of the women's 100 m, from the 1988 Seoul Olympic Games. Coll. Omega Museum, Bienne.

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## 5. Chronograph and precision

In order to increase the precision of these timekeepers, watchmakers applied numerous improvements, to the movements and also to the display, but they worked particularly to increase the oscillations of the balance wheel. A chronograph whose balance oscillates at 18'000 alternations per hour provides a reading accuracy of 1/5th of a second, the seconds hand performing 5 jumps per second.

## 6. Electronic and quartz chronographs

Chronographs have also been subject to the technological changes of electronic timekeepers. The need for an important source of energy delayed the marketing of these products; after a tuning-fork chronograph (based on the tuning-fork calibre Mosaba ESA 9210) which came out in 1972, the first quartz chronograph was launched in 1975; it was the Heuer Chronosplit, with mixed LCD and LED display.



Chronograph Mosaba Swissonic 100, 1972. Koll. MIH.

## 7. Today

The revival of the chronograph occurred in the 1980s. At first it was developed from existing calibres, then, with the strengthening of mechanical watches in the new millennium, new calibres appeared, linking the chronograph with numerous complications.



## 8. Montblanc Nicolas Rieussec Chronograph Anniversary Edition



Montblanc pay tribute to the invention of the chronograph in 1821 by means of its Montblanc Nicolas Rieussec Timepieces and assert their commitment to the Musée international d'horlogerie of Chaux-de-Fonds with the realisation of an exhibition relating the history of the chronograph, from its origins to this day.

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## 9. Organisation committee

Management of the project	Jean-Michel Piguet, Deputy Curator Musée international d'horlogerie
Exhibition commissioners	Henry-John Belmont Sebastian Huber Gaëlle Jeanrenaud Florence Kirkorian Reinhard Meis Jean-Michel Piguet
Scientific consultant	Joel Pynson
Press and communication	Nicole Bosshart Musée international d'horlogerie  Violante Avogadro di Vigliano Florence Kirkorian Katharina Ueltschi Montblanc
Scenography	Polygone, Publicité et communication sàrl, La Chaux-de-Fonds

The Musée international d'horlogerie is deeply grateful to the official and anonymous lenders.

### Private collections

Monsieur Gisbert L. Brunner

Musée d'art et d'histoire, collections d'horlogerie et d'émaillerie, Genève

Musée d'horlogerie, Château des Monts, Le Locle

Musée Patek Philippe, Genève

Montblanc Montre SA, Le Locle

Fondation Minerva de Recherche en Haute Horlogerie, Villeret

Musée Audemars-Piguet, le Brassus

Musée Tag Heuer, La Chaux-de-Fonds

Musée Girard Perregaux, La Chaux-de-Fonds

Galerie du Patrimoine, Jaeger LeCoultre, Le Sentier

Rolex Patrimoine, Genève

Zénith Patrimoine, Le Locle

Officine Panerai, Neuchâtel

[For the total contents of the texts of the exhibition and pictures: [mih@ne.ch](mailto:mih@ne.ch)]

La Chaux-de-Fonds, April 2011

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