

2019 NAWCC Ward Francillon Time Symposium: Time Made in Germany

By Keith Lehman (PA)

Carl Sagan once said, “You have to know the past to understand the present.” This is certainly true when it comes to appreciating the art and science of horology. It is interesting that in 2019, the world’s leading horological institutions and scholars decided to gather, examine, and celebrate the horological achievements of the German-speaking regions of Europe. Germany, of course, boasts a proud history of cultural and scientific advancements such as the Brandenburg Concertos, The Haber-Bosch Process, and the Neuschwanstein Castle. Leading figures like Johannes Kepler, Ludwig van Beethoven, and Albert Einstein loom large as German representatives on the world stage of overachievers. Germany also boasts of its share of famous horologists such as Peter Henlein, Ferdinand Adolph Lange, and Sigmund Riefler. Why then all the fuss about Germany’s biggest contribution to horology?

From September 12 to 15, the 2019 NAWCC Ward Francillon Time Symposium, held at the Germanisches Nationalmuseum in Nuremberg, Germany, dared to answer this question. I was pleased to join the 200 attendees and enjoyed lectures from 13 experts who explored 700 years of German horology. The event was coordinated by Bob Frishman, NAWCC Symposium Chair, Fortunat Mueller-Maerki, Initiator of the Nuremberg Symposium, and Josef Stadl, President of the Deutsche Gesellschaft für Chronometrie. The presentations were given in German but English translations were provided on headsets by live interpreters.



An assortment of mechanical pocket watches from Sotheby's London.

The published presentations are available in either English or German in the companion book, *Time Made in Germany: 700 Years of German Horology*. Unlike past Symposiums that were video recorded, this Symposium is beautifully and professionally recorded in a book—no electricity required. It is an incredible resource for anyone remotely interested in the topic of German horology and is available for purchase online at the NAWCC Store (nawcc.org).

This article reflects the sequence of events and highlights of the Symposium, in addition to some personal insights gained along the way.

Thursday, September 12, 2019

SYMPOSIUM OPENING AND WELCOME

Bob Frishman: What is the James Arthur Lecture?

The evening began with welcome and administrative announcements by the hosts: the Germanisches Nationalmuseum (GNM), the City of Nuremberg, the National Association of Watch & Clock Collectors, Inc. (NAWCC), and the Deutsche Gesellschaft für Chronometrie (DGC). Bob Frishman, NAWCC Symposium Chair, spoke about the legacy of clock maker and collector James Arthur. The James Arthur lecture was given by scholar and GNM Curator of Historic Weapons, the History of Medicine, and Scientific Instruments, Thomas Eser, who presented the unfortunate history of the famous Henlein watch. Acquired by the GNM in 1897, this watch, believed to be created by Peter Henlein, was once considered the world’s first pocket watch. Henlein was a famous metalworker and horologist



Exterior of the Germanisches Nationalmuseum (GNM) in the City of Nuremberg.

who lived from 1485 to 1542 in Nuremberg, Germany. Doubts had always hovered around the authenticity of the watch but, up until recent advancements in technology, could never be affirmed. Ultimately, the watch was found to be a fake, likely made not long before it was purchased. The lecture served as a cautionary tale of how the promise of antiquity can blind even the most honored institutions and renowned scholars.

Friday, September 13, 2019

EARLY MECHANICAL CLOCKS

Markus Marti: The Earliest Monumental Astronomical Clocks in Central Europe, With Special Focus on the Clock in Bern

The first lecture of the morning was given by Markus Marti, who is the officially appointed Time Setter for the city of Bern, Switzerland. Marti discussed the historical origins, functions, and remaining locations of Europe's large-scale astrolabes and astronomical clocks. Dating back to the 14th century, astronomical clocks were first developed in Italy, with Germany and the rest of Europe following shortly thereafter. The clocks, typically commissioned by churches, were made more as public reminders to honor God than to keep accurate time. Naturally, these clocks were based on the geocentric models adopted by the Roman Catholic Church that the Earth was the center of the Universe. As the Galilean heliocentric model slowly replaced this misconception, construction of astronomical clocks fell out of favor and ended around 1600.

Heike Zech: Revisiting the Burgundy Clock: Research History and New Perspectives

GNM Department Head for Decorative Arts, Dr. Heike Zech, presented on one of the GNM's crown jewels—the

Burgundy clock. The design of this famous 15th century table clock was inspired by the two-tower Gothic design of churches. It is considered one of the greatest examples of early timepieces. Zech examined the history, acquisition, and technical aspects of the clock and discussed the past and present efforts to determine its authenticity.

CLOCKS OF THE RENAISSANCE AND BAROQUE

Günther Oestmann: Clocks From Nürnberg and Augsburg and in the 16th and 17th Centuries

After a short coffee break, master clock and watch maker Dr. Günther Oestmann discussed the rise and fall of Augsburg's and Nuremberg's dominance in clock-making. He described how the political stability, access to precious resources, as well as preservation and appreciation of scientific discoveries in the 15th through the 16th centuries were clear causes of the ascension. Another factor was that horology was a free craft in Nuremberg and was not regulated by the guilds. During this German golden age of horology these two cities made incredibly complicated and beautiful horological works. The 17th century brought much upheaval and change to these cities as the very factors that made them successful receded. Augsburg and Nuremberg eventually fell behind the technological advancements in England, France, and Switzerland.

Karsten Gaulke: On Minutes and Seconds: The Significance of Timepieces for Determining the Positions of Celestial Bodies at the Observatory of Landgrave Wilhelm IV of Hessen-Kassel from 1560 to 1589

Karsten Gaulke, Director and Chief Scientist at the Astronomisch – Physikalischen Kabinett und Planetarium in Kassel, discussed how the planetary clocks of Jost Bürgi were used by astronomers Landgrave Wilhelm IV and



Fortunat Mueller-Maerki, Initiator of the Nuremberg Symposium, and Josef Stadl, President of the Deutsche Gesellschaft für Chronometrie.



Bob Frishman, NAWCC Symposium Chair.

Christoph Rothmann to create some of the most accurate astronomical observations of their time. Gaulke explained in detail the methods employed in their observations along with images of the star charts and tables the men created. Gaulke also brought with him a working model of an armillary sphere as a visual guide to better understand the calculations presented in the lecture.

Eduard Saluz: The Work of the So-Called “Clerical Clockmakers”

Eduard Saluz, Director of the Deutsches Uhrenmuseum in Furtwangen, gave a presentation on the lives of 10 “clerical clockmakers” and the timepieces they created. Eight of the men were Catholic friars, one a layman, and another a Protestant minister. They all created impressive astronomical clocks and mechanical models of the universe, many of which can be viewed in museums throughout Europe. Because of their relationship to the church, they had the freedom, resources, and time to create their timepieces.

MASS PRODUCTION OF CLOCKS

Reinhold Krämer: The Cottage Clock Industry in the Black Forest Region Until the Middle of the 19th Century

For the last presentation of the day, historian and ethnologist Dr. Reinhold Krämer provided a historical perspective on the Black Forest clock industry. Rather than focusing on the different types of clocks produced or technical specifics, Krämer examined the economical, agricultural, and geopolitical factors that led to the boom, and eventual bust, of the industry. Another focus was the people who lived in the region. Krämer discussed the life and business of the Kirners, a family who professionally painted clock dials (also known as shields). Through subsequent generations the Kirners established a lucrative enterprise becoming, what we might see today, as a glimpse of the rising middle class.

Saturday, September 14, 2019

MASS PRODUCTION OF CLOCKS

Gisela Lixfeld: The Black Forest Clockmaking and the American Challenge (1850–1914)

Geographer, ethnologist, and former Head of the Municipal Museum of the City of Schramberg, Gisela Lixfeld started off day two of the 2019 Time Symposium. Lixfeld’s presentation examined the conflict between German and American clock-making industries beginning in the late 1800s. Connecticut

mass-produced clocks began to threaten the dominance that the Black Forest clock makers had enjoyed for centuries. Lixfeld examined how each region of the Black Forest dealt with this challenge, describing accounts of German corporate espionage, ingenuity, and reinvention.

Reinhard Reichel: High-Quality Pocket Watches Made in Glashütte

Mechanical engineer and former director of the German Watch Museum in Glashütte, Reinhard Reichel gave a presentation on the 175-year history of the watch and clockmaking industry of Glashütte, Germany. Reichel examined the highly successful production methods of watchmaker Ferdinand Adolph Lange. He discussed the evolution of the timepieces created by Lange, starting with their early, more basic movements, and ending with highly complicated ones. Despite suffering severe economic and ideological restraints under Russian occupation, Lange’s success led to the rise of other watch and clock makers in the region, firmly planting Glashütte as one of the most famous horological regions in the world.

Artur Kamp: Low-Cost Timepieces Made in Ruhla

After a short coffee break, Ruhla industry veteran Artur Kamp, who serves as Chairman of the Museum Advisory Council of the Ruhlaer Clock Museum and of the Förderverein Uhrentradition in Ruhla, discussed the industrial roots and horologically robust region of Ruhla in central Germany. The heavily wooded and iron-ore-rich region of Ruhla was known for its weapon and armor production for centuries. As technological and political winds changed so did Ruhla. The region moved to the production of cutlery, then tobacco pipes, then to music boxes, and finally to watch-making. Like the region of Glashütte, Ruhla’s industry was stifled under the occupation of Russia but later rebounded after Germany’s reunification. Ruhla’s infrastructure and familiarity with the use of interchangeable parts and the division of labor led to a long tradition of watch-making that continues to this day.

Johannes Graf: The German Horological Industry in the 20th Century

We returned from lunch to Staff Historian of the Deutsches Uhrenmuseum in Furtwangen, Dr. Johannes Graf’s, panoramic examination of the political and economic factors of the rise and ruin of German watch and clock makers during the 20th century. Germany’s horological industries went rapidly from small cottage-run operations to large-scale factories within a short time. Naturally the repercussions of two disastrous World Wars



Thomas Eser, GNM Curator of Historic Weapons, the History of Medicine, and Scientific Instruments.

affected the country's horological output, but there were other economic factors as well. Much like their American counterparts, German manufacturers struggled as the popularity and cost-efficiency of quartz movements gained momentum and led to the near evaporation of their industry.

PRECISION HOROLOGY

Bernhard Huber: The Engineer of Precision: The Pendulum Clocks of Sigmund Riefler

Moving from the mass production of clocks to precision horology, physicist and mathematician Dr. Bernhard Huber shared the life and achievements of Sigmund Riefler. It is ironic that Riefler, who is considered one of the greatest clock makers to have ever lived, was not a trained horologist. Rather, he studied mathematics, geodesy, physics, electrical engineering, and astronomy. Clock-making was a hobby that he and his father shared. His passion for timekeeping, brilliant scientific mind, and his family's wealth gave Riefler the time and resources to create some of the most accurate mechanical timepieces ever made.

Andreas Bauch: The Time of Physicists: Timekeeping at the Physikalisch-Technischen Bundesanstalt (PTB)

Sigmund Riefler was a harbinger of who would become the next leaders in timekeeping. Physicist Dr. Andreas Bauch explained the history and development of the quartz, atomic, and optical clock, led not by watch and clock makers but by physicists and engineers. These clocks hopelessly surpassed their mechanical predecessors in both accuracy and cost, becoming the institutional timekeepers of the 20th century. Although the first invention of these clocks was not done in Germany, Bauch explained the work of German scientists that made them possible.

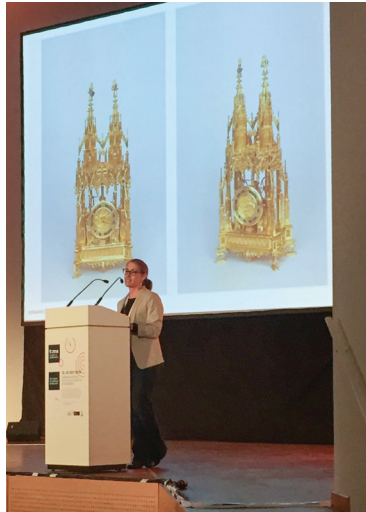
WHAT WAS GERMANY'S BIGGEST CONTRIBUTION TO HOROLOGY?

The Symposium concluded with a panel discussion that examined Germany's biggest contribution to horology. The panelists were:

- James Nye, President of the Antiquarian Horological Society, London, UK
- Dieter Matthes, Gentleman Scholar and Expert on Early German Clocks, Nuernberg, Germany
- Johannes Altmeppen, DGC, Moderator of the Final Podium Discussion, Germany

- Fortunat Mueller-Maerki, Initiator of the Nuernberg Symposium, and Program Chair, representing the NAWCC (USA)
- Josef Stadl, President of the Deutsche Gesellschaft fuer Chronometrie, Nuernberg, Germany

There was much to consider after absorbing two full days of German horology. The clocks, cottage industry, and culture of the Black Forest were considered. The scientific and horological masterpieces of the Bavarian Empire and the horological works of Peter Henlein and Sigmund Riefler were recalled. Germany's rivalry with America in the mass production of clocks was also revisited.



Dr. Heike Zech, GNM Department Head for Decorative Arts.

The most significant revelation, however, was that most products made in Germany were consumer driven. As trends changed, so did German culture. It blended and adapted to global demands, hence contributing to a global clock and watch culture. It was concluded that ultimately, Germany's contribution to horology is up for us to decipher. Certainly, the Time Symposium and its companion book will provide us with fuel for many more years of research and discovery.

After the panel discussion, a reception followed in the spacious lobby of the GNM. Drinks were served while a costumed troupe of musicians entertained the crowd with medieval songs. A dinner was then served in the

Nuremberg Charterhouse. Inside the ancient vaulted Gothic walls of the former abbey, attendees enjoyed a wonderful multi-course dinner while the musicians performed. After dinner we said our goodbyes and took with us a wealth of new knowledge to share with the rest of the world.

THE 2020 NAWCC WARD FRANCILLON TIME SYMPOSIUM

With the 2019 Symposium behind us, Bob Frishman, NAWCC Symposium Chair, has set plans for the next Symposium, "Horology 1776." The event will take place in Philadelphia, PA, at the Museum of the American Revolution, October 1-3, 2020. The Symposium will focus on timekeeping, timekeepers, and clock-making during the American War of Independence, not only from an American perspective but also from the English, French, and Hessian viewpoints. Participants will learn of the constant and vital role of timekeeping as well as the active roles of clock makers such as David Rittenhouse in the birth of the new republic. Visit www.horology1776.com for updates and information.