



**South London Branch
British Horological Institute**



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Newsletter No. 563 FEBRUARY 2026

Branch No 25. Founded 1978

NEWSLETTER CONTRIBUTIONS

The contributions for 2026 are coming in steadily with more than 60% already paid. If you received a renewal form with this newsletter please complete and return to me with payment. I have posted membership cards to those who have paid.

George Daniels Dinner

Our annual George Daniels Dinner will be held on Monday 23rd March 2026. As usual, Alan Westgate is organising the dinner which will be held at the Addington Palace Golf Club. The menu and booking form is enclosed with newsletter. These must be returned to Alan by mid February. (address on the form)

**FREE ADVERTISING FOR
BRANCH MEMBERS**

If you wish to place an advert in our newsletter, contact Bill :-
01543 506195 or electricwilliam@gmail.com

www.slbbhi.co.uk

*Meetings are held on the 1st Thursday of each month
At The White Hart Barn (Godstone Village Hall)
Godstone Surrey RH9 8DT at 7.30 p.m. for 8 p.m.*

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**GEORGE DANIELS
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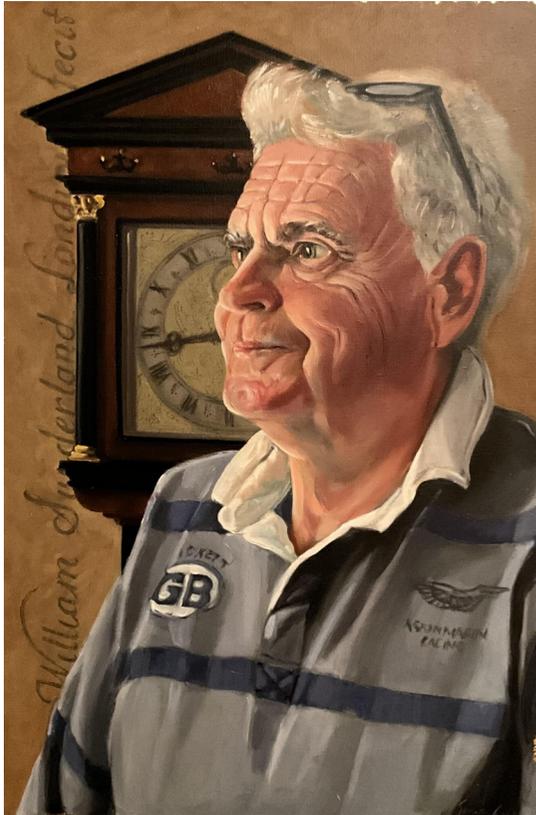
“Work is a necessity for man. Man invented the alarm clock”.
Pablo Picasso

**NEXT MEETING
5th FEBRUARY
Mr William Sunderland**

“Clockmaker and Collector Extraordinaire”.

I met William and Josephine on the Clockmakers outing to Holland last October, organised by The Master and his wife, Robert and Linda Wren. William was the first person to greet me, and he wanted to know my connection with Horology and I him. Not more than three minutes had passed, and I had filled in details of a miniature lantern clock he had and where it resided. William has had a lifelong passion with clocks and an “expensive” meeting with the well-respected clockmaker John Hooper, gave him a starting point, the humble Lantern Clock. He wanted to collect early clocks. He was fascinated by pre pendulum clocks and the early introduction of the pendulum into horology.

As a clockmaker I know it is difficult to find good examples, there are many pitfalls associated with clocks from 'the golden age' but William managed to navigate himself around these. A chance meeting with Chris Lowe of Richards of Burton provided the solution. Chris took him under his wing



teaching him and over ten years turning the collector into a restorer and clockmaker. Owning an early Romer/Huygens pendulum clock was prohibitively expensive, one by Salomon Coster being sold in 2007 by Christies Amsterdam for £425,000. **Solution, make your own.**

William worked with engineering in the motor and print industries. So, in 2022 inspired by his hero's, self-published a hard cover book with fantastic colour prints.

The Collection Domestic Clocks 1450 -1800. Not only will he bring some of his clocks which he will talk to us about but copies of his book.

All monies received from the sale/revenue of the book will be in aid of the MS Society.

back bracket. This enabled the larger horns to be fitted to machines without damaging the diaphragm pick up needle and records. Louder volumes had only one method of damping and the phrase "put a sock in it" evolved literally from putting a sock in the sound horn. Reproduction quality evolved with the diaphragms, which we're mainly of two different types. The first ones were made from Mica the latter ones used pleated aluminium and have more complex sound box designs. The importance of changing the needle in the diaphragm was discussed. The recommended period is to change the needle every time the record is played.

Horological crossovers occur with Garrard Engineering and Manufacturing Company Ltd. which specialised in the manufacture of gramophone motors before it started making clocks in the Swindon factories. The Garrard company produced one of the most symbolically used turntables right up until the 1970s. Similarly, many Swiss companies were producing parts and motors for the gramophone industry. These could be bought by manufacturers to be cased up into their own machines.

This was both a very informative and entertaining talk. Tim could have gone on explaining his passion for much longer but after some very good question and answer session, including why most records were 78 RPM, where do you get your mainsprings, how they are lubricated and installed, a fine bottle of South London Branch lubrication was presented to him with resounding applause. Members were then able to freely examine the collection of machines that Tim had brought along with him. My thanks go to Andrew Gayler for asking Tim to come and speak to us, also showing us his collection.

gramophone evolved as a practical black, brown box with the horn in the lid, making machines useful for soldiers and in mobile situations. Tim played us “Wake up John Bull” on the Decca label and “Take Me Home to dear old Blighty” sung by Flori Thorpe.

Tim explained the recording studios acoustic setups and methods for orchestral sounds before electronic microphones and amplification. Large horns collected and mechanically focused sound into a diaphragm that physically moved a stylus to cut grooves in wax or metal. The orchestra or artists having to be arranged around the frequency dynamics of the studio and the proximity of the recording horn. He played two recordings of Peter Dawsons “The Floral Dance” to illustrate before (acoustic) and after (electronic) reproduction as the 1925 shift to electronics dramatically expanded the frequency response and more clarity to recordings was achieved.

Tim, who is a big fan of HMV products, told us the story of the famous “His Masters Voice” painting, which was Francis Barraud’s dog, Nipper, listening to a Phonograph. Its acquisition by the Gramophone Company with subsequent alterations to the painting (swapping an Edison Phonograph for a Gramophone Company machine) and the company’s legal battle for branding. The image became central to the Gramophone Company and HMV merchandising identity. The Gramophone Company’s legal attempt to monopolise the term “Gramophone” failed in 1910 nonetheless HMV effectively exploited the Nipper image. The company’s mergers and later association with Columbia and other companies ultimately led to become EMI.

With acoustic machines, a greater volume was to be had with the larger horns. The HMV logo shows the sound horn suspended on a long tone arm. With this Configuration to use a larger horn more pressure would be exerted onto the needle and diaphragm which would result in damage. In 1904 a big innovation occurred with introduction of the

MEETING HELD 4th December 2025.

Tjeerd Bakker

Clockmaking in the Royal Household: The Vulliamy Legacy

Approximately fifty members enjoyed festive mince pies and socialised before Trevor Keast, our chairman, started our George Daniels Memorial Lecture with the customary health and safety warnings and reminding us that Alan Westgate needs the filled in Menu sheets returned to him for the George Daniels Memorial Dinner ASAP, please.

Tjeerd is very passionate about his horology and opened his talk with telling us about the impressive scale of the Royal Collection, which spans over a million objects, including 1,600 clocks. Among these, 18 are turret clocks mainly crafted by the Vulliamy family. These were not merely timekeeping devices but machines that represented the pinnacle of technological innovation of their time.

The Vulliamy family’s Royal appointment, dating back to 1773, positioned them as premier clockmakers to the British monarchy. Their work spanned multiple royal residences, including Carlton House, Buckingham Palace, the Royal Pavilion in Brighton, Windsor Castle, Osbourne House and Kensington Palace.

Benjamin Lewis Vulliamy was particularly noteworthy for his approach to clockmaking. One of his most significant contributions was an innovative turret clock escapement mechanism that allowed a limited rotation of palettes to the pin escape wheel. This design, documented in a 1799 order book, and used on Vulliamy No. 578

.demonstrated a sophisticated understanding of mechanical efficiency. By allowing palettes to rotate slightly (approximately three degrees), Vulliamy reduced friction points and wear, a revolutionary concept for his time. *See Saunier's Treatise on Modern horology, plateXI.* But this also has a Teak wooden box surrounding the mechanism. Teak, which has superior qualities in standing up to the elements, had to be specially sourced from the Royal Navy.

Tjeerd illustrated the challenges faced by clockmakers of the era. For instance, the Carlton House turret clock, ordered by Justin Vulliamy and installed by Benjamin Vulliamy from Thwaites costing £108, I think there was a little extra to pay for the addition of dead-beat pallets with small recoil. This suffered significant damage from steam in the scullery, which found a way in through the weight shafts, causing extensive rusting. In 1826 rather than simply replacing the clock, Benjamin Lewis Vulliamy, critical of his father and grandfather's choices, proposed and executed an extensive repair, replacing components and addressing the environmental issues.

Similarly, clock No.352 was commissioned for Buckingham House in 1799, striking the hours and displaying the time on four cast iron dials. This was an enormous commission, and the specification is one of the first use of Vulliamy's special pallets, this clock underwent multiple modifications. Initially created for the stables in 1815, it was later relocated to Hampton Court and adapted to suit. Tjeerd notes that Vulliamy's movements required more drop for the weights so subsequently more pulleys were used. Changing architectural designs and Royal requirements meant this movement was superseded and is now stored. (D.O.E. 2004). Vulliamy worked closely with prominent architects of his time, like Henry Holland and John Nash, adapting his clocks to fit evolving royal spaces such as transforming the circa 1818 Royal Pavilion dials in Brighton for use on Buckingham Palace in 1849.

Emerging around 1902 is the longest living standard recording medium, variations of it remained in production well into the 50s and the 1960s recording popular singers notably Billy Williams with his "Father Papering the Parlour" recording the repertoire of vaudeville style entertainment. Opera singers did not want to stoop so low as to make recordings until Enrico Caruso, the Italian tenor did. He was the first rock star his voice loud and clear, lent itself dramatically to the new recording media becoming a million seller. This legitimised others to follow, even dictating their own price for their own label, for example Nelly Melba.

In the early 20th century, technical innovations and various formats persisted. Cylinder machines were still being sold. Edison quickly responding with innovations, trying to preserve his niche market, a 4 minute "Blue Amberol" cylinder machine, made of more durable celluloid, improved the format's longevity and quality. We heard the "Tale of the Lonesome Pine" recorded twenty years before Laurel and Hardy covered it. However, cylinders required distinct reproducers with narrower styli and more fiddly operation. So, despite nominal technical advantages, disc user friendliness and manufacturability prevailed. As Berliner's discs initially the 7-inch disc with its one and a half minutes duration and later the longer playing 10 inch and 12-inch variety making longer recordings, started to carry recording on both sides. They were cheaper to manufacture and mass-produce, simpler to store and to play. Early records manufactured before World War One, we're mainly pressed in Prussia, until geological political events disrupted those supply chains. Labels impressing quality mattered for the collectors. Early Berliner discs were impressed with the date in the wax. Later shellac records used paper labels. The Great War produced practical design innovations, The "Trench" model, a portable

Early competitor "Graphophone", which was the improvement upon the Edison phonograph by Alexander Graham Bell and associates, including his cousin Chichester Bell, and Charles Tainter, to create a dictation machine, experimented with wax on cardboard tubes. These grapho-phones and Columbia's commercial efforts to create direct competition with Edison's phonograph, meant the early marketplace was fragmented using different materials, tinfoil, wax, or celluloid in cylinder-based formats. Tim played us an early graphophone Columbia model circa 1903 of how the higher frequencies of sound such as bells could be heard very distinctly and lower tones less-so. We heard a recording of the "Teddy Bears Picnic" with an artist growling into the recording horn like a bear. Prior to 1925 the physical recording of sound was conducted acoustically, standing the orchestra or artists in front of a large horn which recorded the sound. Interestingly the violin could not be heard so well and a phono fiddle, an instrument with a horn attached to a violin was invented. The playing times were commonly 2 minutes.

Edison suffering financially, was not too happy and created the home phonograph. We listened to a recording circa 1908 of "John Dunn put your trousers on" on cylinder.

Emile Berliner, a German immigrant and inventor, affiliated with Bells company, developed the concept of cutting a spiral groove into a flat disc rather than around a cylinder. The flat disc offered clear manufacturing advantages. The master disc could be used to stamp many copies enabling the true mass production. Recording techniques of speaking or playing into a horn with cylinder phonographs meant that if several copies were required, repeated recordings would have to be carried out. Berliner's early 7-inch discs, which are distinguished by not having paper labels, circa 1897, played about 1 1/2 minutes although soon superseded by larger 10-inch and 12-inch 78 RPM discs.

Vulliamy was also critically aware of international horological developments. His travels to France in 1825 and 1827 revealed the advanced state of French turret clockmaking, which he believed was far superior to British practices. This exposure influenced his subsequent innovations.

The lecture provided insights into the economic value of these clock-making projects. Turret Clocks were enormously expensive investments:

- The Windsor Castle clock Vulliamy No.1000 in 1829 cost 561 pounds, 3 shillings, and 6 pence. This was the Quadrangle clock with Vulliamy's new box iron frame. It was installed during the reign of George the IV when extensive restoration to the exterior of the castle took place. This movement replacing the one made by Joseph Knibb in 1677. The additional bells cost 374 pounds

- A clock for the Royal Mews Vulliamy No. 900 in 1826 cost 322 pounds and 9 shillings

These figures represent significant investments, highlighting the importance placed on precision timekeeping in royal establishments.

Perhaps most remarkable is the longevity of these clocks. Benjamin Lewis Vulliamy confidently claimed that with proper care, his clocks could last 500 years. The lecture provides evidence supporting this bold assertion, with some clocks running for decades with minimal maintenance.

A French horologist, Henri Robert, noted in 1850 that a Windsor Castle clock had been running for seven years without complete dismantling, describing its preservation as "truly remarkable."

The Vulliamy family represented more than just clockmakers; they were innovative engineers, materials scientists, and artists. Their work transcended mere timekeeping, creating intricate machines that were technological marvels of their era.

As Tjeerd concludes, these "machines" were not just functional objects but marvels that stood the test of time. They were repeatedly repurposed, relocated, and adapted, continuing to serve royal households long after their original buildings were demolished.

Tjeerd's lecture highlighted several key innovations:

1. Materials Innovation: Vulliamy experimented with advanced materials, including:

- Gun metal (a copper alloy with low zinc content) for pivot bearings
- Teak wood for clock cases, sourced through special arrangements with the Navy Board
- Slate for precision dials with sunk hour figures and gilded ornamentations

2. Structural Improvements: The development of the "box frame" design for turret clocks, which increased wheel stability and improved power transfer.

3. Precision Engineering: Vulliamy clocks were designed with extraordinary attention to detail, such as high-tooth-count to the wheels and carefully manufactured precision-made mechanical components.

The story of the Vulliamy family is a testament to British craftsmanship, innovation, and the enduring pursuit of mechanical perfection.

Follow Royal Collection Trust <https://www.rct.uk> for more information.

This was an extensively researched and well-prepared lecture and after questions we thanked Tjeerd in our customary manor with some clock oil and applause.

Duncan Greig.

Last Month's Meeting Tim Weeks the "Gramophone Guru".

Our first lecture of 2026 was on the 8th of January, and our speaker was Tim Weeks who is known as the "Gramophone Guru" from The Repair Shop.

Our chairman Trevor reminded us again that Alan Westgate requires your George Daniels dinner menus to be returned to him, filled in by the end of February. The George Daniels Dinner will take place on Monday the 23rd of March. The guest of honour being David Cottrell. We look forward to his talk in December. "The Double Lever escapment, reworking the original Daniels Co-Axial".

Trevor then told us the sad news that Andy Palmer, who used to be a student in Jame's class, suddenly died before Christmas. We had a one-minute silence to remember him.

On a slightly lighter note, Tjeerd Bakker and his wife Rebecca welcome their first born on the 28th of December, a little girl. Congratulations.

Tim Opened his lecture reminding us how it is so easy to hear recorded music everywhere we go, or even on demand and how easy it is to hear the artists of today. Imagine if we could have recorded Mozart or even Shakespeare in their time. In 1877 Thomas Edison, accredited with the invention called the Phonograph, is said to have noticed that the lumps and bumps on his fingerprints traced by his fountain pen may encode sound. Edison first experimented with tinfoil wrapped around a drum and produced a device that inscribed hill and dale vertical striations onto a surface. By Christmas he had recorded "Mary had a little lamb" onto a cylinder. The idea was not so much as an entertainment device but to store telephone messages from the recent invention of Alexander Graham Bell. Hence the name "Phonograph". Lack of volume from the phone stopped the device recording properly.