



# South London Branch British Horological Institute

Newsletter No. 549 CHRISTMAS 2024

*Meetings are held on the 1st Thursday of each month*

*At The White Hart Barn (Godstone Village Hall)*

*Godstone Surrey RH9 8DU at 7.30 p.m. for 8 p.m.*

INSIDE THIS  
ISSUE

NEXT MEETING

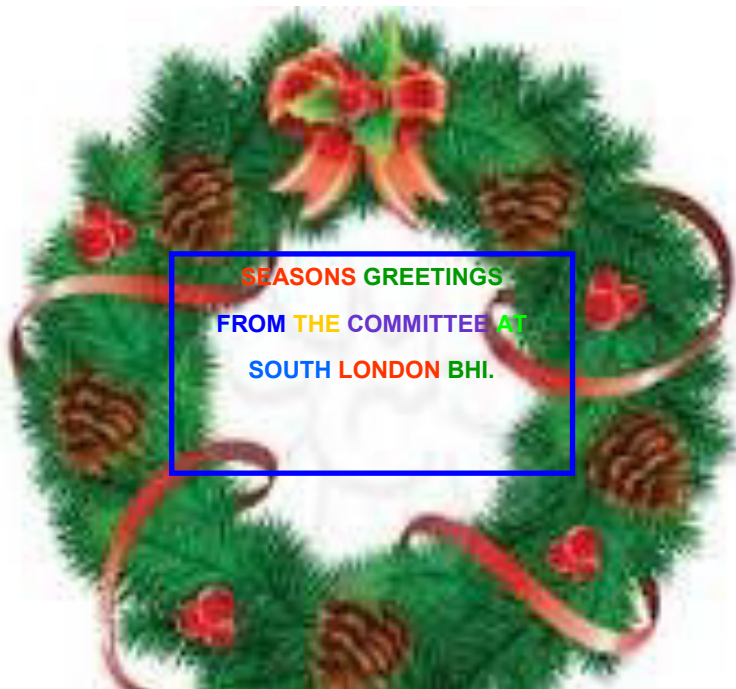
LAST MONTH'S  
MEETING

CHAIRMAN'S  
MESSAGE

2025  
MEMBERSHIP

[www.slbhi.co.uk](http://www.slbhi.co.uk)

"One can never have enough socks. Another Christmas has come and gone and I didn't get a single pair. People will insist on giving me books." **J. K. ROWLING**



**Next Month's Meeting at the White Hart Barn  
George Daniels Memorial Lecture.**

**5<sup>th</sup> December 2024. 7:30 pm for an 8 o'clock start.**

**Tobias Birch.**

**'Thomas Mudge and William Dutton,  
A Perfect Partnership'.**

For our annual George Daniels memorial lecture we welcome Tobias Birch, who gained an interest from his grandfather, Burton Bass at a very young age and received a distinction at West Dean College in 1989 at the age of nineteen. Toby was inspired with an article by George Daniels in 1981 titled "Thomas Mudge the complete horologist". George Daniels article finished by saying that Mudge's beautiful constant force timekeepers were a monument to his patient labours and the inspiration to each succeeding generation of aspiring horologists. Daniels felt that Thomas Mudge's invention of the lever escapement, which continues to be used today, combined with his love for the horological arts, produced so many original beautiful clocks and watches that made Daniels choose Thomas Mudge as the freeman of the Clockmakers' Company who added the most to the prestige of British horology. William Dutton was also a highly skilled clockmaker and somewhat overshadowed by the great Thomas Mudge.



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William produced some of the finest clocks and watches of their time. Both men were apprenticed to George Graham and formed a partnership in 1765. Thomas Mudge, due to ill health and his ambition to make seagoing clocks was able to confidently leave his business partner and friend William Dutton to run his business in London and moved to Plymouth with his wife Abigail and two sons. Tobias has handled some of the most magnificent and rare masterpieces over the last 35 years, being a highly respected dealer, with BADA and LAPADA accreditation. Yet he started working at the bench with his grandfather many, many years ago, and is a highly skilled clockmaker, conservator. The love of what he does, with high quality work and workmanship is reflected in the items he deals with. He is both an assistant tutor at West Dean and a Liveryman of the Clockmakers' Company.

Duncan Greig.

## **REPORT ON NOVEMBER MEETING**

### **Gordon Hoare.**

#### **The idiosyncrasies of working on chronometers.**

Despite our evening clashing with the Dingwall Beloe lecture at the British Museum, the South London Branch enjoyed a good turn out to welcome BHI member, Gordon Hoare, who used to attend the Sussex Branch. Before our meeting, branch chairman Trevor Keast announced that the Kent branch had been formally disbanded and closed. So, we welcome any members from the Kent Branch who wish to attend and contribute to our meetings.

Gordon started his lecture with an apology to all crafts people at our meeting as in his own words "I'm just a self-taught mechanic and clock meddler". Not a 100% true Statement as Gordon has had some extremely fine teaching from excellent BHI professionals along the way. Like many of us, Gordon has been brought up in an era of "Meccano", working

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with mechanical things and the old adage “if you broke it you mended it”. His father, who served in the Royal Engineers, obviously passed on many of his mechanical abilities. At an early age Gordon enrolled as an apprentice in a drawing office – and at about the same time as he found his grandfather’s pocket watch in pieces in the loft. Gordon was able to learn from speaking to other horologists and experimenting with his own practical abilities quite rapidly. I think this must have been the point where he realised that he had the horological virus and although marriage and family took up a lot of his time, he still treasures this watch and his earlier mode of transport, his motorbike. He reads avidly from all horological books and despite professional recommendations, got involved in anything and everything. His first chronometer was a pocket chronometer which had a broken balance pivot, and he later discovered, after researching, there was a very important piece missing, the spring detent. Beyond his capabilities this led him to finding an excellent watchmaker, in Hailsham, whom he later discovered had worked at Herstmonceux castle. The estimate to repair this iconic pocket watch, circa 1857, was an incredible amount for young draughtsman's apprentice to afford, at that time, but Gordon had to have it done, and the two years that it took may have given him the opportunity to save some money to pay for it. The horological virus was becoming more infectious in him and having a chronometer led him to the Maritime Museum with the Royal Greenwich Observatory and the famous Harrison chronometers. Gordon eloquently explained the basis and need for finding longitude, and how these machines evolved. H4 having the eventual solution with a light fast balance. Gordon also covered how the standard spring detent box chronometer evolved with its gimbaled mounted mechanism, lockable, to stop meddling from those who were unauthorised. Gordon then went to tell us the tale of his first boxed chronometer, a 1910 Johannsen made near the Tower of London and the reasons why. This chronometer had a remarkable history which Simon Davidson and Gordon were able to research, and it was used at some point not only for surveying India, but how it went on to play an important part in the Second World War, serving on three different vessels. We learned of the Bombay incident of 1944, thankfully this chronometer did not serve on that particular ship. This chronometer’s life was not over yet as it went on to serve on an aircraft carrier before finally being taken off charge in 1970. Gordon was hooked with horology, and as an

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chronometer did not serve on that particular ship. This chronometer's life was not over yet as it went on to serve on an aircraft carrier before finally being taken off charge in 1970. Gordon was hooked with horology, and as an engineer studied frictional rest escapements, wondering why the cylinder watch escapement is considered of low precision, yet, when these principals were applied to the dead beat escapement it is considered Observatory Standard. This encouraged him to study the detached chronometer further. He praises Thomas Mercer who was pioneer in making as many parts in house as possible and with the move to St Albans, Mercers created a work environment specifically for the manufacture of chronometers, which started the creation of a more industrial process. He goes into an explanation of how some manufacturers chose the direct pull system on the Fusee for their manufacturing and some prefer the reverse fusee giving us the reasons of how, and why, it theoretically reduces the load to the pivots of the centre wheel. As an engineer he was able to express how the chronometer incorporates the best and the worst engineering features that you would find, but despite all this he is fascinated by the chronometer, and he chose to buy more. Robin Thatcher, who was the charge hand at Herstmonceux castle, heard of what he was up to and offered his help, he said you don't want to buy just any oil to do one chronometer so he kindly donated the correct oils and along with friend Roger Stevenson, who many of you would have heard of, being one of the most important watch makers at Frodsham's, assisted him and compiled a lubrication chart for working on chronometers. So, he embarked on dismantling and cleaning his third chronometer. Following the advice of removing all power from the mainspring and tying the 4th wheel, to stop any remaining power from the maintaining spring, damaging components. Enthusiastic with his success he bought a fourth machine from Indian ship breakers. This was to add valuable lessons to his collecting - get the vendor to pack the chronometer properly, listen to the advice of others, and do not take shortcuts. Gordon praised Jonathan Betts for his book Marine Chronometers at Greenwich, researching the complete collection, a mammoth task, learning that most

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manufacturers outsourced components standardising the design. Gordon's next two chronometers were Mercers survey machines for land use. The first was in a robust utility box and fitted with electrical contacts. This makes an electrical circuit every second but on the last second of the minute there is a gap so a pause in the signal. Many of these were fitted with an experimental balance and did not produce the desired accuracy due to the faulty batch of the hairspring material that was bought in having minute hairline cracks. The second machine being of centre seconds. This is achieved by offsetting the chronometer but gives enormous problems due to the winding and setting mechanism having extra gears on a sub plate as you cannot wind through the dial. The cold war saw the Russians patrolling in the Tupolev TU-95. The Russians worried that a nuclear attack would destroy all electrical equipment on board, therefore equipped these aircraft with a portable timekeeper mounted on springs not gimbles and a thermostat to start a little heater inside the box when the temperature dropped at high altitude. These had been converted from detached escapement to club tooth lever and it was interesting to see the milled surface on the plates where the changes had taken place. Next was a Glashutte which although arrived before the correct packaging could be specified arrived relatively undamaged. When the movement was dismantled for inspection, it was found to have a broken barrel arbor which Gordon deduced had occurred because of its design and production. The steel of the arbor was dead hard and brittle so when the inner hook was forced into the arbor it resulted in a small crack which eventually grew and split it in two. The Glashutte had a steel strip which worked as the fusee chain. Gordon proceeded to give examples of how chronometers can fail, one being the pivots of the balance being too soft, or someone doing a "creative" repair shortening the balance pivot. In both instances a new staff was fitted. Gordon came to the Hamilton Type 21 a lovely instrument with its ovalizing balance and compensated hairspring and rationalising the effects of different timing weights on the rim of the balance in different positions. It was

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interesting on how they constructed the detent, Mercers were the only other to redesign the detent for simpler production in 1937. A brief touch on Wempe who used a plastic resin painted to look like bronze on the chronometer bowls and how these can crack. Mercers also painted the bowl, but it tended to turn green with handling. Many boxes tend to lose the lids because it was found inconvenient to open for every reading. An unusual item was a four orbit Chronometer. Gordon has only seen one example by Hamilton and this one by Kirova, (The First Moscow Watch Factory). They were produced in very limited quantities apparently to overcome the possible confusion when navigating nearer international dateline. The additional under dial work on this instrument doesn't match the good quality of the original movement. Although not strictly a chronometer, by the English definition of having a detent, the Hamilton type 22 chronometer deck watch, was reckoned at the time, by many, to be the most accurate quantity produced lever watch, due to its ovalizing balance. It was also cheaper to produce, and could be repaired by watch repairers, rather than chronometer craftspeople. Newer quartz technology took over the position of these portable navigation instruments, leading to the closure of the watch and clock technician's department at Herstmonceux in 1976, and now more recently we are more reliant upon global positioning satellites, (GPS). Nearly everybody carries a smart phone around with them these days, and that is due to the progression of these instruments and the need for accurate time keeping. Now we can navigate to pinpoint accuracy, instantly.

After a brief question and answer session Duncan thanked Gordon for his knowledgeable presentation, remarking, that in no way is Gordon an amateur.

Duncan Greig

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[www.slbbhi.co.uk](http://www.slbbhi.co.uk)

## **A Message from The Chairman Branch Membership Fees for 2025**

As we move into a new membership year, the South London Branch Committee has been working very hard to maintain the low fees we provide to our members. Postage costs have become one of our principal outgoings in the past few years and unfortunately it is unsustainable to continue mailing out the monthly newsletter within our current fee structure.

In an effort to keep the cost of membership at the current price of fifteen pounds per year it has been decided that members that wish to receive a paper copy of the newsletter posted to their home address will be charged an extra surcharge of fifteen pounds per year. I will list the options below:

- 1/ SLBBHI membership with electronic (email) copy of the newsletter £15.00
- 2/ SLBBHI membership with paper posted copy £30.00

For those members that cannot receive email, a number of freely available printed copies will be provided at the check in desk at our regular monthly meetings.

Please complete the attached membership form and send to the address on the form with your cheque. If you pay by bank transfer could you please complete a form for our records.

### **January Branch Meeting 2025 – Moved to 9<sup>th</sup> January 2025**

**\*\*IMPORTANT\*\* - CHANGE OF VENUE**  
**\*\*IMPORTANT\*\* - CHANGE OF DATE**

The venue for the January meeting 2025 will be held at the Soper Hall in Caterham. This is due to refurbishment works being undertaken at the White Hart Barn on their kitchen.

The date of the meeting will also be moving from the usual first Thursday to 9<sup>th</sup> January 2025 to avoid close proximity to New Years Day.