

The Arts Society Sussex
West Dean College FdA Historic Craft Practices - Clocks
Summer term report for Stephen Loader
2018

Tutor Report

During the Summer Term, all of Stephen's practical work has continued to demonstrate an extremely high level of applied skills with the ability to learn quickly and apply techniques fluently. This has been clearly evident in all work completed.

A clear and methodical approach to mechanical problems is always put into practice, and the long term implications of interventions are always carefully considered. Techniques used are, without exception, well planned, sophisticated and imaginative with exceptional attention to detail. Confident use of tools and machinery have also been evident throughout.

A high level of personal initiative has continued since the beginning of the programme.

Malcolm Archer, Clocks Subject Tutor

Student Report

My current project which has been my main project this year is a clock which is missing what is known as a pull quarter repeater mechanism. It dates from the eighteenth century when lighting in the home was limited, as a result it was difficult to see the time on a clock dial. This clock would have had a mechanism which would sound the hours and quarters on a series of bells when a chord was pulled. This project presents a significant challenge in working out the missing mechanism, drawing it out and recreating it. It is teaching me many skills which will be valuable in the future.

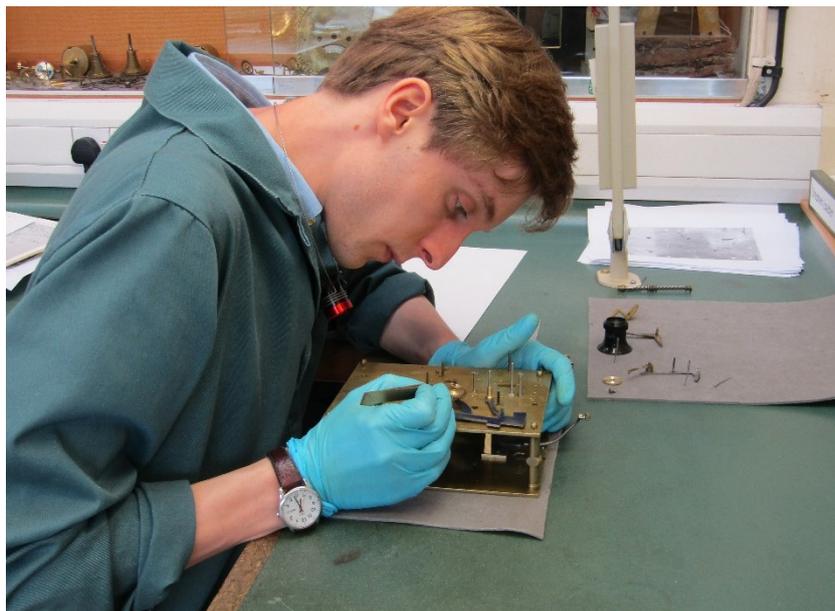


Figure 1 Testing some of the pull quarter repeater components.

To date I have produced numerous sketches and drawings to help lay out how the proposed components will interact with each other. I have then made components which have adapted and in some cases been remade as the project has developed. The reason for this is because it is difficult to know from the beginning of the project, exactly how the mechanism functioned as there are many variants of pull quarter repeater mechanisms. As a result, once a certain stage has been reached, the historical evidence from original components continue to question and show how it originally functioned and so its design has changed accordingly whilst I am making it. So far, the design has changed and developed three times. This has been a very valuable process during the project as it has given me exposure to three different types of these mechanisms. I have also researched other types when I was searching for inspiration from other mechanisms. To date, I have completed approximately sixty to seventy percent of the project.

As part of the course, we have been required to write about a horological subject, either technical or historical which would be suitable for publishing in a horological journal. I chose to write about my findings from an experiment which I carried out during the making of wheels (large brass gears) and pinions (small steel gears) for the pull quarter repeater mechanism. Commercially available cutters are available when cutting the teeth when making wheels and pinions. The issue when using them is that the profile they produce differs to what is found in historic wheels and pinions. I decided to experiment with finding a satisfactory method for producing homemade cutters which can be made to produce a tooth profile close to historic examples. I was pleased with the end result and found a good method which I would like to continue to improve on.

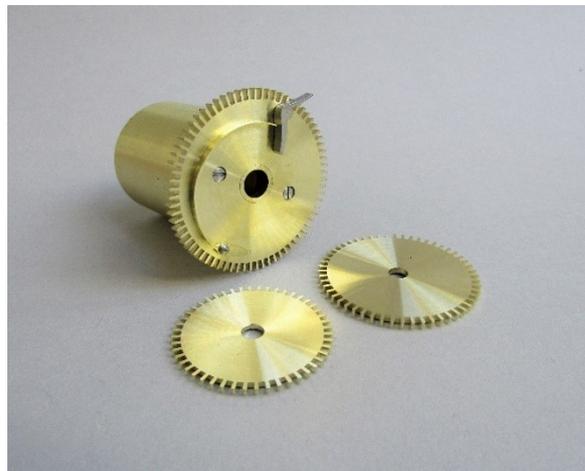


Figure 2 Three wheels with their teeth cut.



Figure 4 Close up of wheel tooth profile.



Figure 3 Close up of pinion tooth profile.

My plans for the future remain to eventually set up self-employed. I would particularly like to work on marine chronometers and design and make new clocks. I intend to work a number of years for a Clockmaker to gain the further valuable experience and knowledge required before setting up a business.

During the holiday periods, I have spent some time gaining some work experience with a well-established clock and watchmakers. This has provided me with an insight into the day to day environment of employment in Horology. I have attended a number of external lectures to broaden my learning and to network with clock and watchmakers. I gave a presentation to two horological societies, the AHS and BHI. I spoke about my results from experimenting with different methods for producing homemade wheel and pinion cutters. Something which I hadn't expected was the encouragement to network within the horological circles. I believe this has been valuable as it has helped to meet with other horologists, some of whom could be potential employers. Networking has also helped to put our work into a broader context by meeting others with their own projects. We have also visited some commercial workshops and museums which has given us an insight into the environment of a commercial horology environment and workshops. These opportunity's to talk with them has given us the chance to ask questions about advice and what to expect from this profession.

I am extremely grateful for the funding support I have received. It has enabled me to study at West Dean College and gain a broad range of teaching and experience which I otherwise would not have had exposure to. It has allowed me to work towards a fulfilling and rewarding career which I intend to continue to develop. Being supported to study at West Dean has provided me with the essential skills and experience I need to take the next steps in my career.