

Henry Sully's Life Story - Chapter 6 PARIS (Part II)

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SULLY IN PARIS (1718-21 - Part II) - Draft

This is the sixth chapter in the story of Henry Sully¹: following his arrival in Paris in 1715-16, where he quickly made a name for himself in horological circles and within the scientific community, he was given a chance to play an important role in the establishment and management of horological factories in Versailles, and later, Saint Germain en Laye. This episode marks a high point in the life of Sully, and is told here in some detail. Also discussed in this chapter will be Sully's important role in the creation of the Société des Arts in Paris, in 1718.

INTRODUCTION

In the previous chapter, we learned about Sully's arrival in Paris, to where he followed his patron the Duke of Arenberg. Through the Englishman William Blakey, maker of steel springs for watches and clocks, Sully was introduced to and befriended Julien Le Roy, a most able Parisian *horloger*. They exchanged knowledge and collaborated on a new type of watch, which Sully presented to the Académie royale des Sciences in 1716. Later that year, Sully made a second presentation to the Académie, on his development of a marine clock to determine longitude at sea. Subsequent to this, the Regent awarded Sully a pension which was delivered to him by John Law, who was close to the Regent at that time, and involved in the management of financial affairs in post-Louis XIV France. This led to the creation of a horological manufacture in Versailles, led by Sully during its creation and first year of operation. In order to provide the necessary workers for the factory, Sully went to London to convince around 60 qualified horological workers to relocate to Versailles.

SOCIÉTÉ DES ARTS

Upon returning to Paris after his mission in London, and as the preparations for the factory in Versailles were underway, Sully played an important role in a newly-found organization entitled *La Société des arts*, created in 1718. After some years, this society gradually ceased having its meetings and eventually faded away, only to be started up again, also with Sully playing a leading role, in 1728 (the last year of Sully's life). The early story of the *Société des arts* thus overlaps with a busy period in Sully's life (the horological factories), which will be described in considerable detail in the following section.

¹ Henry Sully (1679 – 1728) was born in Somerset England, trained as a watch-clockmaker in London, and spent most of his adult life on the Continent (the last 12 years in and around Paris), where he wrote several influential books and memoirs on horology (in French), and directed two short-lived watchmaking factories. He worked diligently for over 20 years to produce a working marine clock to measure longitude, which alluded him to the end.

Since this is an important part of Sully's life which has not been described in detail until recently by Paola Bertucci², it is important to spend some time understanding this Society, how it came to be, and who some of its important members were. In Bertucci's excellent book, one learns about the distinctions between *savants*, artisans, and *artistes*. Learned individuals (or *savants*), were often members of the prestigious *Académie royale des sciences*, founded in Paris in 1666 (in many ways emulating the creation of the Royal Society in London, in 1662). These included mathematicians, astronomers, surveyors, physicists, cartographers, botanists, zoologists, and other "scientists".

In the mechanical arts (of which horology is part) *savants* in the Académie felt it their right and obligation to provide direction, even though they were not themselves able to fabricate anything, to the artisans whom the academics felt could not be expected to think of innovative designs or inventions. However, some practitioners in the artisanal trades considered themselves more than just craftsmen who constructed what had already been designed before, but rather saw themselves as innovators in their own right, able to not only understand the underlying theoretical foundations of their art, but to also come up with novel or more advanced ways to construct machines such as clocks and watches.

It was in part to promote their enlightenment and visionary qualities that these so-called *artistes* decided that it would be beneficial to have an organization that would allow them to discuss and share ideas about the various areas of their expertise, to further more innovation and better techniques and practices. Thus, the need for an information sharing and dissemination entity was delivered in what was eventually called the *Société des arts*. The name was used to intentionally distinguish it from the more theoretical and "science-based" nature of the *Académie des sciences*. Members of the *Société* saw it as a complementary organization consisting of great practitioners of arts not directly falling under the purview of the *Académie*.

Horological luminaries like Julien Le Roy, and Henry Sully, had regularly presented some of their innovative designs to the *Académie*, whose members had provided useful critical review of these inventions, and direction to the *artistes* for further improvements or refinements. But these horologists and other *artistes* felt that they deserved their own organization to discuss and cross-pollinate innovative ideas in the mechanical arts, thereby contributing to the competitive success of France against other nations (e.g. England, Holland, Germany) involved in producing commercial products in similar trades.

It is not surprising then, to find Sully and Julien Le Roy identified³ as two of the likely first members of the *Société*. Also included on that list of early participants are: Henri Enderlin (another watchmaker); the aforementioned steel spring maker William Blakey; Henri Liébaux (a geographer and map maker); the mathematician and lecturer Jean-Baptiste Clairaut; and possibly Thomas Germain (the royal goldsmith).

The Société gathered for discussions in a room at the Louvre in Paris, and was led the *abbé* Jean-Paul Bignon (1662-1743), an ecclesiastic, scholar, writer, and former librarian to Louis XIV.

² Bertucci, Paola, *Artisanal Enlightenment, Science and Mechanical Arts in Old Regime France*, Yale University Press, New Haven, 2017.

³ Bertucci op.cit. p. 89

Little documentation exists that explain the objectives and activities of the *Société*, which appears to have been short-lived during its first incarnation, during the Regency period. However, an anonymous booklet⁴ printed in London in 1722, aiming to generate support for the creation of a similar society in London, offers some insights and are discussed in Bertucci's book. The author of the booklet stated that the proposal was indeed based on the *Société*, the regulations of which were used as the basis for the Chamber of Arts. Who that author was is unknown, but given that two members of the *Société* were Englishmen Sully and Blakey, and that John Law was likely aware of its existence in Paris, one can presume there may have been a connection there. As we shall see, Sully himself was back in London after the closing of the horological factories, around 1721, so he may well have tried to setup a similar organization to the one he had helped create in Paris in 1718. Whoever the author of the booklet was, the initiative did not succeed in securing the support and financing needed to create and support the proposed Chamber of Arts. Thirty-two years later, in 1754, the Royal Society of Arts was finally created in London, and embraced similar principles and objectives.

The pamphlet's author described the *Société des Arts* (and envisioned English Chamber of Arts) as associations of likeminded *artistes* aiming at improvement of their arts and the "bettering of posterity". Not only were members encouraged to create new inventions, but also to preserve the new-found technical knowledge by publishing some of these findings for future artisans and *artistes* to learn and benefit from, in their own work. Although the *Académie des sciences* in Paris, and the Royal Society in London, did publish the majority of their deliberations, presentations, and findings (in part through funding provided by royal assent and support), the *Société des arts* did not seem to publish much of anything in and of itself, or at least, those documents have not come down to us. Certainly, many of their members (Julien Le Roy and Henry Sully being notable examples) separately published some of the memoirs that they presented to the *Société*⁵.

Some years after the *Société des arts* had ceased to function as an entity (after its resurgence in 1728, where it saw many other members join its ranks, from many different areas of human endeavour), the preservation of knowledge in writing would await full realization in France through Diderot and d'Alembert's *Encyclopédie, ou dictionnaire raisonné des sciences, des arts et des métiers*, published in France between 1751 and 1772, with contributions from many writers, known as the *Encyclopédistes*. But the *Société des arts*, in a visionary way, had laid the groundwork and promoted the cross-pollination of information and techniques of the liberal and especially the mechanical arts, that was to bloom under the inspired guidance of Diderot and d'Alembert. For the domain of horology in particular, Henry Sully was certainly one of the inspiring and driving forces behind the sharing of best practices and innovations, and his book *Règle artificielle du temps* would inspire a generation of eighteenth French horological writers (Allexandre, Thiout, Lepaute, Jodin, Berthoud, etc.). As Julien Le Roy wrote about him⁶:

I saw him, full of enthusiasm, go door to door preaching to [Parisian] clock- and watchmakers how to reach perfection in their art, and encouraging them by his speeches and advice to perfect themselves continuously.

⁴ *Three letters concerning the forming of a society, the be call'd the Chamber of Arts*, London, 1722.

⁵ Several of Julien Le Roy's memoirs to the *Société* are included in the 1737 edition of *Règle artificielle du temps*.

⁶ *Règle artificielle du temps* (1737) pp 381-382.

After Sully's unfortunate death in 1728, soon after he had helped restart the activities of the *Société*, Julien Le Roy was to assume the roles of Director (1729-30) and Treasurer (1732)⁷. Le Roy (and a few other member *horlogers*, including his brother Pierre-François) also used the dials of some of his clocks (which were on display in famous mansions or palaces), to highlight his participation in the *Société*, and therefore provide a bit of awareness to this organization.



Figure 1 - Dial from Julien Le Roy cartel ca. 1730

A short time after his death in 1759, an engraving was produced by Pierre-Etienne Moitte from a life portrait of Julien Le Roy painted some time earlier, by Jean-Baptiste Perroneau. Julien's sons probably commissioned the engraving, so that they and other family members and friends would have a reminder of the likeliness of the illustrious *horloger*. Below the portrait are inscribed words that underline the importance that had been placed on both his being a watchmaker to the King, and director of the *Société*.



Figure 2 - Caption from Julien Le Roy portrait

⁷ Bertucci op. cit, p. 228

HOROLOGICAL FACTORIES

A. VERSAILLES

The story of Sully leading not one, but two horological factories in France, needs to be told in some detail. It marks a high point in his life, financially speaking, where he finally found himself able to earn a lucrative livelihood to support his family, without being dependent on the generosity of aristocratic benefactors. Alas, this period of comfortable independence was brief, lasting three years at the most (1718-1721). And when it ended, Sully was forced to leave the Continent and return to England, which can be seen as a major step backward in his life.

Following his success in the “new watch” initiative described in the previous chapter, coupled with a subsequent presentation to the *Académie* on his marine clock design, Sully’s reputation as a man to be recognized in horological circles was established with further men of power and influence, in Paris. The Regent accepted the recommendation of influential supporters of Sully to fund the Englishman 1500 livres annually (an amount sufficient to support himself and his family) to continue his horological developments

According to Le Roy⁸, the Scottish financier John Law⁹, who was playing an increasingly important role in the financial affairs of France through his influence with the Regent, “*was charged to deliver the funding himself, and had gone to see [Sully] on this occasion. Works that he saw in his house, the keenness of mind that he noticed in his discourse, joined to all the good that he had heard about him, and made him believe that he would be very well suited to lead a horological factory*”.

So according to Le Roy’s recollection, John Law delivered the news of the Regent’s pension to Sully personally, and subsequently offered Sully to lead the development of a horological factory in Versailles, and assume the role of its director.

Law also spearheaded and financed other factories in France at that time, using English workers and expertise, in areas which included metalworking, glassmaking, foundry-workers (at Chaillot), and woolen manufacturing (at Charlaval). Some of these other disciplines lent themselves better to establishing factories in France, as they had been carried out in manufacturing centres for quite some time. Harris¹⁰ estimates that the number of English workers (and family members in some cases) brought over to work in the French factories funded by Law would be well over 200.

⁸ Règle (1737), p. 389

⁹ John Law (1671 - 1729) was a Scottish economist served as Controller General of Finances of France under the Duke of Orleans.

¹⁰ J.R. Harris, *Industrial Espionage and Technology Transfer*, London, 1998



Figure 3 John Law 1720 by Alexis Simon Belle

It cannot be overstated that the idea of creating a watchmaking “manufacture” at Versailles in 1718, was a bold and historical initiative. Nothing of this sort had ever been attempted before, anywhere on the Continent, or in England. And no attempt to do this again around Paris would resurface until many decades later, in 1786¹¹ (this later attempt also failed after a few years).¹²

According to *Le Nouveau Mercure*¹³, the idea of setting up a factory was Sully’s:

In February 1718, Mr. Sully conceived the design created the project of an establishment aiming at placing horology on a better footing than it has been to date in France (...) He addressed himself to Mr. Law, for him to make the proposal to His Royal Highness the Duke of Orleans, Regent. This prince approved it and charged Mr. Law to assist Mr. Sully in executing his project. (...) The objective of this establishment is the good of the State, advantaging French horlogeurs (watch-clockmakers), Masters as well as workers, and the perfection of horology. (...) An assortment of the best English workers in every branch of horology were brought into France at great cost, established in Versailles in Royal houses with considerable benefits, to make their stay more comfortable, and attract

¹¹ Dequidt, op. cit. p. 184

¹² Eventually in Beaucourt (North-Eastern France, not far from the Swiss border) in 1772, Frédéric Japy (1749-1812) created a successful factory based on his machine-tools, which produced most of the parts to create clock movements, and revolutionized the industry. Eventually, this resulted in increased mechanized and factory-based clock and watchmaking during the nineteenth century, which saw its apotheosis in the large American watchmaking factories of companies like Waltham, Elgin, where raw materials came in at one end, and thousands of finished watches came out the other end.

¹³ *Le Nouveau Mercure*, Janvier 1719, p. 141 (Journal de Paris section)

others that could later be needed. Also employed are good French workers that are willing to comply with the rules of the establishment. Young people are also brought in to learn all aspects of horology, to whom is taught both the theory and practice of the art. This establishment is thus both a factory able to produce objects of the current standards of beauty and perfection, and an academy able to instruct skilled and intelligent workers for the future.

One can assume that the reporter for the *Mercure* had spoken to Sully himself to get the necessary details about the new factory, so it's perhaps not surprising that Sully be identified as the originator of the idea and design for the manufacture. Interesting as well is the indication that "the best English workers in every branch of horology" were brought over to work in the factory. Having worked in his youth for many years in Charles Gretton's clock- and watchmaking shop in London, Sully was obviously well aware that not only trained watchmakers were needed, but also workers who produced all the necessary parts (cases, glass, wheels, springs, screws, decorations, etc.) that were typically assembled by the watchmakers in building the watch.

Indeed, the construction of watches had for at least 100 years been based on a considerable division of labour. As Rees¹⁴ wrote a hundred years after the Versailles factory experiment: "*when the demand for pocket watches became so great as to render the manufacture an object of commerce, the consequent division of labour was soon found to facilitate the execution; and each branch of the trade had its appropriate tools and artisans; so that thousands of families have at length been employed and maintained by their respective manipulations.*" Rees goes on to list twenty-one principal workers engaged in completing a watch in London, in addition to the basic movement, provided by places like Prescott, Lancashire.

Most of the twenty-one specialty workers listed by Rees would not work within the confines of an individual watchmaker's shop (Gretton's shop, for example, where Sully had spent his apprenticeship and worked as a journeyman, had at most five or six workers at any one time)¹⁵. Rather, these specialists would have their own individual small workshops throughout London, where they would carry out their work (engraving, case-making, enamel dial making, chain and spring making, gilding, glass-making, etc.) on watches-in-progress, which were then "finished" and sold by the watchmaker in his shop.

The division of labour was very similar in French watchmaking. Ferdinand Berthoud, in his two volume *Essai*¹⁶ on horology, has a different list coincidentally also numbering twenty-one specialties. At the time that Sully was living and working in Paris, there were many more than the 72 *horlogers* (watchmakers) allowed by the statutes regulating this community. In 1781, a list of *horlogers* working in Paris and suburbs totaled around four hundred names.¹⁷ It is probably a good guess that around 1720, that number would have been somewhat smaller, but probably over 200. As in London, some of these shops would have been small (two or three workers) and others larger (ten workers or a bit more). Added to this number were thousands of

¹⁴ Rees, *The Cyclopaedia*, London, 1819-20

¹⁵ Radage and Weiner, *Through the Golden Age*, Vancouver, 2016.

¹⁶ Berthoud, Ferdinand, *Essai sur l'horlogerie*, Paris, 1763, pp. xl-xvij

¹⁷ Dequidt, *Horlogers des Lumières*, 2014, p.148

small shops specializing in producing all the parts and carrying out all the ancillary work described in Rees and Berthoud.

Another interesting detail in the quote above from *le Nouveau Mercure* is the reference that any French worker hired would need to be “willing to comply with the rules of the establishment”. Generally speaking, the manner and discipline with which horological workers carried themselves in English shops may have been different (more strict, less relaxed perhaps) than in French shops. Several French watchmakers at that time and in the decades that followed complained about the challenge in finding excellent workers for their shops.

John Raymond Harris (1923-1997), an English historian who worked at the University of Birmingham, produced a fascinating and well-researched book entitled “Industrial Espionage and Technology Transfer”. It was published soon after his death, and was the fruit of years of painstaking research in various governmental archives in England and France. In the first two chapters, Harris discussed in great detail the initiatives of the French government, led by John Law, to attempt to bring English technology to France. The horological factory established at Versailles, entrusted (according to Harris) by Law to Henry Sully for setting it up and administering it, provides enlightening details about Sully during this important period of his life.

In Harris¹⁸, one also reads about Englishman John Holker, who had been brought over to start a factory of linens in the English style, in Rouen, a few decades after the Versailles factory. The passages below may offer some insights into the comments above about the “rules of the establishment”. They also suggest that the example provided by English workers in both the Versailles and Saint Germain en Laye horological factories, may in fact have helped form a new generation of French horological workers, who were later able to apply their newfound techniques and improved approach to watchmaking, when they found work in French horological shops in Paris and elsewhere. In this way, Sully’s horological factories may have had a greater and more lasting impact on French horological work than the relative short duration of the manufactures themselves would suggest.¹⁹

[Holker] was surprised by [French workers] lack of drive in continuing to rely on manual labour without introducing inventions which might substitute for it. But this seemed almost the norm among the *bas people* in France, in contrast with the English artisan class, who were imbued with activity and industry. Like nearly all contemporaries [Holker] thought that taxes and dues contributed to poverty among French workers [...] Anxieties about these things lowered men’s spirits, torpor became an infectious disease. The English workman was in relative comfort, well fed, working in freedom and able to dispose of the produce freely: “These amenities in life can have a greater influence on spirits than either air or climate”.

The choice of Versailles for location of the horological factory was no doubt a conscious attempt to position the products of this establishment to the courtiers and affluent French citizens who

¹⁸ Harris (1998), p. 68

¹⁹ This point about the lasting value to French horology of Sully’s manufactures, has been quite rightly raised by several horological writers over the decades which followed.

had frequented the royal palace built by Louis XIV. Orangerie street led to the garden at Versailles palace which featured thousands of orange trees in planted pots, hence its name. The buildings selected to house the workers and all their horological equipment were located at 14-18 Orangerie Street²⁰. Numbers 14-16 were a pair of Hôtels²¹ that had belonged to Desloutis, who had managed the furnishings of Louis XIV's buildings. Number 18 had belonged to the aristocratic Courtanvaux family, who had also owned a large castle in the countryside.

These Hotels on Orangerie Street were possibly empty at the time, given that the Versailles palace sat empty and was mostly abandoned by the Court, which relocated under the Regent to Vincennes and then Paris, following the demise of Louis XIV. It would remain abandoned and neglected until Louis XV re-established residence there in the 1722. Therefore, the Hotels on Orangerie Street were more than likely vacant and available for Law to use for establishing the horological factory there.²²

Prior to Harris' book, knowledge about Sully and the horological factories was limited to Julien Le Roy's rather lengthy description (no doubt obtained through his numerous discussions with Sully during their long acquaintance), which is featured in the 1737 edition of Règles, in a section starting on page 381, entitled "Memoir to serve the history of horology from 1715 to 1729". Le Roy recalled that²³ "[Law] communicated to [Sully] his plan, and had him leave secretly for London, from where he brought back a number of clock/watchmakers, among which were some very good ones. They were all put up at Versailles, in the Hotel des Louis, Orangerie Street or thereabouts, and built a horology manufacture, which lasted about two years." Most estimates provided by English and French sources put the number of workers at 60-70, and these workers were also invited to bring their families with them and provided with lodging. Le Roy recalled that it had required great expense for Sully to make the 60 London workers "leave their place of work and come to a Roman Catholic country", pay their debts and for all their lost time, "make their living conditions so good that their wives did not complain about having come to France".

²⁰ J-A. Le Roi, *Histoire des rues de Versailles*, Versailles 1861, p. 489

²¹ Hôtels were privately owned luxurious homes built for affluent and influential people who wanted a residence in Paris, (or in this case Versailles) usually in proximity to the Palace or areas where nobility and aristocracy abounded.

²² All these buildings have long been replaced and an elegant four-story residential building now occupies that part of the street.

²³ Règle (1737), pp. 390-391

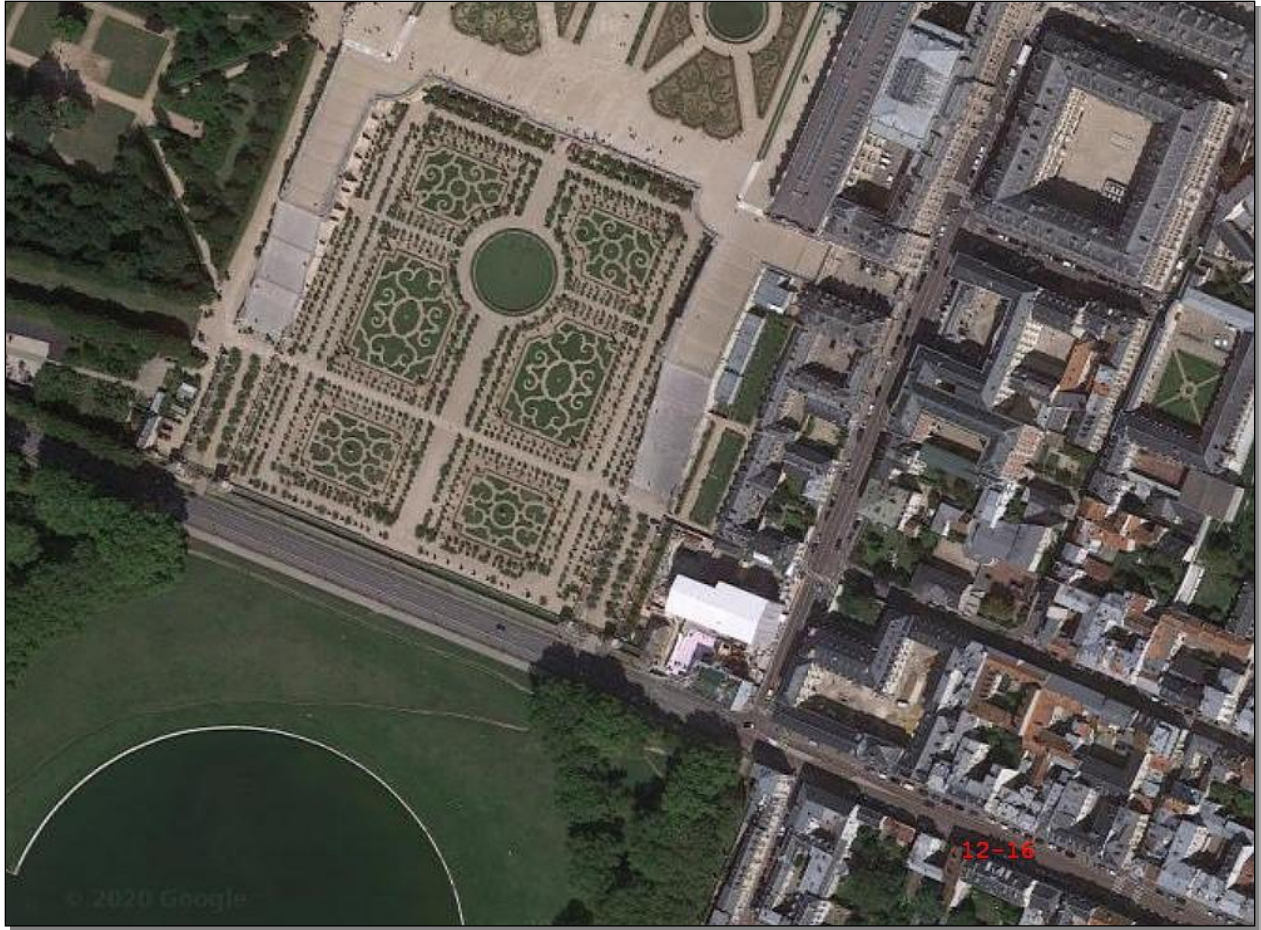


Figure 4 No.12-16 Rue de l'Orangerie, Versailles

One could wonder what experience and abilities Henry Sully possessed, to be entrusted with establishing and running a complex horological factory in Versailles. As previously indicated, he was a convincing speaker and no doubt had a strong vision and ideas about the benefits of such a factory (and teaching academy for young French workers aspiring to a career in horology). He had completed a lengthy apprenticeship in London under Charles Gretton on Fleet Street. Gretton's formidable output over the years and managed a busy shop employing several workers assigned to the various tasks associated with manufacturing and repairing various types of watches and clocks.

Therefore, Sully would have had a very good idea about what tooling, equipment, supplies, and manpower were required to produce quality timepieces. The factory at Versailles would have been on a considerably larger scale, admittedly, but the basic steps and worker specialties required to manufacture quality watches (and clocks, possibly) were well known to him, and this would have helped him in his trip(s) to London to hire appropriate and sufficient English horological workers to join him at Versailles.

According to Harris²⁴ the British government was concerned about the loss of British skills to foreign countries, most notably Russia and France. Russian workers were often sent to apprentice in England, learn the trades, and then go back to Russia where they would train others. In the case of France, the close proximity and ease of access promoted the emigration of skilled English workers in numerous trades (watch-makers, glass-makers, metalworkers, locksmiths, hinge-makers, etc.). An English Bill was drawn up by Parliament, and quickly made Act by royal assent on 18 April 1719²⁵. During the preparation of the Bill, the Company of Clockmakers of London had petitioned the government, representing not only themselves but “hundreds more in Great Britain”, claiming that many trained English horological workers were enticed to emigrate to France.

The Act provided penalties for anyone enticing any skilled worker, including clockmakers or watchmakers, to go abroad, and allowed fining and even imprisoning the enticers, and any worker going abroad to work or train others, or was already abroad, had to return to England in six months, once warned. Harris writes that Sully was sent by Law to England in the Spring of 1718 to find and bring back scores of horological workers. It also appears that he may have been tasked with finding suitable people to head up the various manufacturing establishments that Law was proposing to build in France. Thankfully for Law and Sully, the horological workers and families were brought over before the English Act became law in 1719, which meant that they were not subject to the fines and imprisonment measures of the Act. However, the provision to require workers to return to England suggested that the workers were not going to be able to work in Law’s factories forever.

A couple of entries from the British Journals of the Board of Trade and Plantations follow, offering interesting insights about the issue of English workers in France. The first quote refers specifically to Sully (Sally) of Versailles, who appeared to have been involved quite early in setting up some manufactures. The second one, two years later, suggests that some workers were longing to return to Britain.

November 1718: Letter from Mr. Secretary Craggs inclosing several copies of letters relating to British manufactures set up in France.

A letter from Mr. Secry. Craggs dated yesterday, referring to the Board the copy of one from Sir William Blackett, dated at Newcastle, the 1st inst. and of another dated the 19th of Oct. last at Versailles, and signed Sally, relating to the establishing several manufactures, particularly of iron, in France by British artificers, was read, together with the said copies of letters; whereupon ordered that copies of the said letters be sent to Mr. Attorney, Mr. Solicitor General and to Mr. West for their opinion, how far His Majesty is empowered by law to put a stop to his subjects going out of this kingdom and exercising their arts in foreign countries, and to oblige such as may be abroad to return.

November 1, 1720: English Artificers in France.

²⁴ Harris op cit Chapter 1

²⁵ 5 George I, chapter 27, A.D.1718 “An Act to prevent the inconveniences arising from seducing artificers in the manufactures of Great Britain into foreign parts”. The manufactures targeted included “wool, iron, steel, brass and other metals, clockmakers, watchmakers, and divers others”.

A memorial from William Tidmas, relating to several English artificers being decoyed into France, and praying to be recommended for employment in the Excise, whereby he may have an opportunity to discover them, was read; whereupon ordered that the said Tidmas be acquainted, it will be proper for him, as their Lordships advised him the 23rd of September last, to apply to a Secretary of State and endeavour to have such persons apprehended and prosecuted according to Law, as he can prove to be concerned in those evil practices.

Another couple of players in Law's schemes for establishing English-led factories in France, are the already mentioned William Blakey, and Henry Sully's own brother Richard. Blakey, as was mentioned before, was a steel spring-maker and had been in France for some time before Sully's arrival in 1716, whereupon he had introduced Henry to Julien Le Roy, leading to their collaboration and long friendship. It was natural that he be called upon by Law (and Sully) to participate in the initiative, being asked to lead a steel manufacture at Horfleur. The mainsprings and balance springs needed for Sully's horological manufactures would have come from Blakey's factory.

Richard Sully was mentioned earlier in the chapter dealing with Henry Sully's origins in Bicknoller. As was indicated, a parish record in Bicknoller lists a "Rich Sully", baptised on 30 June 1677, whose father is identified as "Rich Sully". This may well be Henry's older brother Richard, who was 2 years older than Henry, and may have moved to London for work some time before Henry himself went there for his apprenticeship in Gretton's horological shop. It is not known what Richard Sully's family situation of livelihood were, but it would be natural for young Henry, being tasked by Law to go find suitable workers in England to join the manufactures being created in France, to solicit the help of his older brother, who may well have had business experience to contribute.

According to the research by Harris, Richard Sully had started in an "enticer" role, to identify and arrange for English workers to go to France. In the records, someone described Richard Sully thus: "a very faithful, trusty and bold fellow, as well as crafty and cunning"²⁶. Later, he became an inspector for the steel and glass works setup at Harfleur. Richard also seems to have played a key role when it became time to close down the factories and return all the workers to England. According to Harris, Henry later claimed in a deposition, that he and his brother had ensured that "there remains now not the shadow of any one of the manufactures established by English hands in France".

It has been written that at the factory, "they melted a prodigious quantity of *louis d'or de Noailles* [a gold coin] minted in 1716, to make cases and dials for their watches. Since then, watches, tobacco boxes, and canes with gold pummels became so common that the most common individuals, even senior servants, wore them."²⁷

Setting up a new factory in Versailles would have been a formidable task. However, given the financial support for this undertaking provided by the Regent through John Law, money would

²⁶ Harris, op. cit., p. 18

²⁷ Pierre Narbonne, *Journal des règnes de Louis XIV et Louis XV*, Versailles 1866, p. 54

not have been an object, at least at the beginning. The chosen building(s) on rue de l'Orangerie would have retrofitted over a period of weeks or a few months: adequate window lighting if not already present was essential to watch and clockmaking; floor space for workbenches to accommodate a few dozen workers; tooling needed for all the necessary tasks. Workers from London would have likely come with at least some of their own personal hand tools, which would have allowed them to start work immediately. Other tools would have been bought from French suppliers. Sully had built a remarkable machine to cut wheel teeth, so probably contributed some of his tool-making knowledge to equipping the workshops. Supplies would have been obtained in sufficient quantities from the usual local or regional suppliers (brass, steel, glass, gold, silver, etc.).

Manufacturing watches at the time required the contribution of numerous specialized tradesmen (as much as 60), so in addition to the horological workers brought over from England, that manufacture probably relied on provision of some or many of the parts from other specialized craftsmen located in Versailles or nearby Paris, and possibly the workers in the manufacture primarily assembled and fine-tuned the watches and clocks that were produced. It is not known what proportion of the output were watches, but it likely consisted the majority of production.

Another important consideration was the need to provide adequate lodging for the English workers, and especially for their families, since some were enticed to come to France on the promise of excellent living conditions for their families. As indicated earlier, there was likely no lack of vacant large houses in Versailles, after Court had relocated to Paris after the death of Louis XIV. Several of those houses could have been commissioned by Law and made available for workers and their families to set up living quarters. Heat, water, food, and all necessary items needed for a comfortable life would have needed to be provided on an ongoing basis, to keep the families happy living in France. One can only assume that Sully had help and was not saddled with all those ancillary responsibilities. People in Versailles were likely hired to see to those domestic needs of the workers and of their families.

Sully would have had his hands full, as Director of the factory, to ensure that the workers had the necessary space, tools, direction needed to do what was asked of them: to consistently produce timepieces of sufficient quality to compete with ones coming out of London shops, which was after all one of the main reasons for setting up this manufacture. Given all he had written previously on how to ensure quality in watch construction, one can presume that he carried out quality control functions whenever needed, and that as director of the factory, he would have endeavoured to establish some of his principles and ideals in the way that the timepieces were produced.

Language may have been an issue, and Sully may well have had to play role of interpreter between the two linguistic groups from time to time.

During the same period, John Law funded the creation of other factories in France which relied on English workers brought over to teach the French their techniques for manufacturing textiles, steel, glass, hardware, etc. However, horology is a very complex and intricate manufacturing process, usually requiring apprenticeships of seven or eight years to train proficient workers. Making a new factory comprised of experienced and less-experienced workers, speaking two

languages, achieve success in mere months, was a formidable challenge. Time would tell whether Sully would be able to make it all work, to the satisfaction of those who financed the initiative.

Le Roy continues his story²⁸:

Mr. Sully, who had set up the manufacture, became its director; most of the noblemen went there to shop for watches; he was lodged in a way that was appropriate to receive them: it was the most prosperous period of his life; a steward, servants, a “chaise roulante” [horse carriage], funds he administrated, all was there to give him pleasure. It seemed to me, in those happy times for him, that I shared his fortune, by the welcome that he gave me when I would visit his manufacture on holidays. I heard that it was during this time, feeling confident in his situation, that he thanked the Duke of Arenberg for the pension he had given him, and regularly paid him until then.

Indeed, after the sacrifices Sully had made after leaving London, repairing watches for several years on the continent, raising a sizable family and losing his first wife, he must have felt that he had finally “arrived”, and at almost 40 years old, found the path that would give him the financial independence and stability he needed to support his second wife and children, and to pursue his horological innovations and aspirations. The directorship of the Versailles factory was obtained in part through his influential contacts and benefactors, but also his own reputation and engaging personality, and he relished in the comfort and pleasure that came with the position. No doubt he enjoyed entertaining rich customers in his luxurious apartments, in which he would proudly show and sell the timepieces coming out of his factory. So confident did he feel about his present situation, that he decided to dispense with the Duke of Arenberg’s generous pension, which had allowed him to live and care for his family for several years. He would come to regret the loss of that income as future events would suggest.

Some references to the Versailles horological manufacture claim that there may have been a school attached to the facility, to teach young Frenchmen the craft of watch/clockmaking: “[it was] at the same time as being a factory, it was an academy ready to train skillful and intelligent workers for the future”²⁹. Certainly, the factory required unskilled labour in addition to the skilled workers brought over from England, and young local workers would have had an opportunity to learn rudiments of horological work. Also, it is probable that French horological workers (*horlogers*) would also have been hired to work alongside their English counterparts. This would have promoted a healthy exchange of knowledge and experience (language issues permitting) between the horological traditions of the two nations. In this sense, the horological factories headed up by Sully promoted skills and knowledge assimilation by French workers, which would benefit the French horological industry for years after the collapse of John Law’s factories.

In 1720, a year after creating the Versailles factory, John Law dismissed Sully as its director, and replaced him with James Reith, the assistant director, whom Le Roy suggested had been “secretly making deals” (i.e. undermining Sully behind his back). Le Roy recalls:

²⁸ This and other Le Roy quotes in this chapter are from *Règles* (1737), pp. 381-409

²⁹ *Le Nouveau Mercure*, Janvier 1719, p. 141 (Journal de Paris section)

Back in Paris in a furnished hotel, [Sully] became dangerously ill; the sadness in seeing his fortune vanished, made his recovery a lengthy one. A great nobleman who knew him [Arenberg? Rémond?] spoke in his defense to Mr. Law who softened his stand toward him, and gave him some shares that were worth around 12,000 livres in today's [1737] money. An hour after having received this further proof of the generosity of his benefactor, he sent for me to come dine with him, shared his joy with me, and told me about the steps he would take to better ensure his situation in the future.

To further exacerbate Sully, Le Roy recalls that a short time later:

"...in a single day, Mr. Reith, director of the Versailles manufacture, by a fortuitous circumstance, became quite wealthy. Disgusted with having to continue to spend money on the manufacture, Mr. Law withdrew his involvement, and through an act of amazing generosity, gave to Mr. Reith all the funds that existed therein, in horology and other things; a present that was worth at least 40,000 écus in today's money."

No reasons are given by Le Roy for Sully's dismissal and replacement by his assistant Reith. As indicated earlier, this manufacture was a bold and vast undertaking, with many different technical and human aspects that needed to work harmoniously to ensure success. It is hard to imagine how anyone, let alone someone like Sully who had never before led anything of this magnitude, could have fully satisfied the expectations of John Law and of the Regent. Still, the Versailles factory kept working for some time after Sully's departure, but the writing was on the wall. A watch signed "James Reith Versailles" in the V&A collection shows that the factory was producing high quality watches in the English style.



Figure 5 - Watch signed James Reith Versailles (V&A)

B. SAINT GERMAIN EN LAYE

In the meantime, and in the brief period left before Law's system would come crashing down, Sully had started taking the steps to improve his situation once again. Le Roy, who wished his friend had opted for a more traditional way to make a living as an *horloger*, recalls:

But his guiding star soon took over from the resolution he had formed: once he got comfortable again, he went back to ways to perfect horology; and he chose among those that came to mind, to propose to the Maréchal Duc de Noailles to establish a manufacture at S. Germain which, becoming a rival to the one at Versailles, would produce among the workers of either one, a competition and emulation that would be advantageous to perfecting the resulting works.

Clearly, Sully wanted to show Law (and Reith) that he hadn't been the one to blame for the struggles of the Versailles factory, by leading up another one. Le Roy continues:

Not only did the nobleman accept the proposition: he did more, helping Sully, by ordering the establish of laboratories [...], and did even more than could be expected from a great nobleman, who knows how to come down from his superior knowledge to that of the arts, loving them, and helping and protecting those who distinguish themselves by their talents.

With such great help by his protector, Mr. Sully moved into a fairly large house in S. Germain, furnished it, and inside there were many workers whose work he could observe himself, and occupied some of them to continue the construction of a wheel-cutting machine, very ingeniously designed, and on which I saw cut great watch pillars with ease and great precision. This machine would undoubtedly have been one of the most perfect of its type, if he could have finished it with the investment and the perfections which he had set for himself. I won't give here its description, as this would stray me too far from my subject.

The wheel cutting machine mentioned by Le Roy is probably a refinement of the one he had seen in Sully's Paris apartments in 1716, when he had visited him shortly after they met. An engraving of it is featured in many horological books of the eighteenth century.

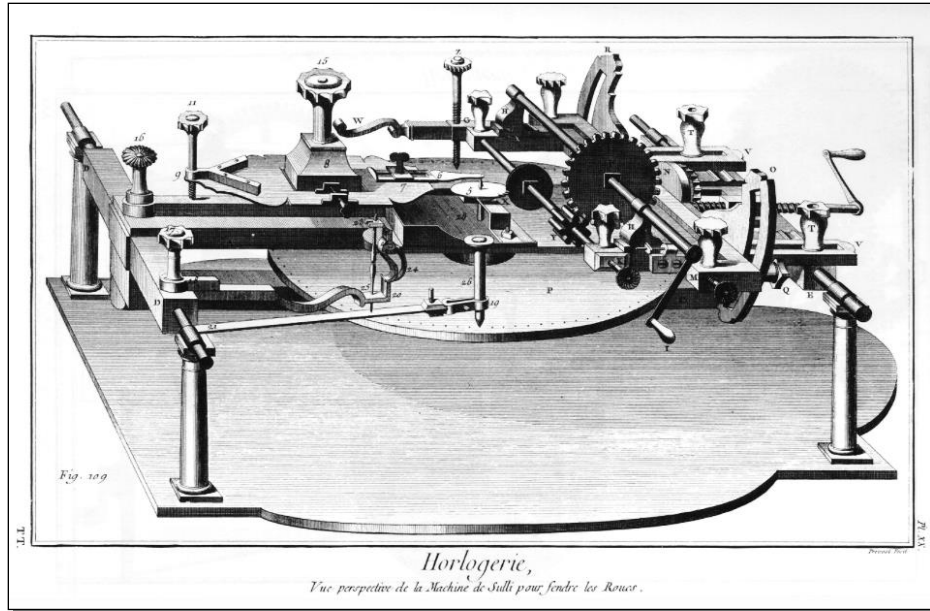


Figure 6 Sully's wheel cutting machine

Sully's patron for the watchmaking manufacture in Saint-Germain-en-Laye (a small community about 19 kms from Paris, and the birthplace of Louis XIV) was Adrien Maurice (1678-1766), the Duke of Noailles, a French nobleman and soldier. The Duke was president of the Council of Finances from 1715 to 1718, and two years later headed up the Justice Chamber that pursued many financiers who had brought further economic hardships to France. One of these financiers was John Law, whose initiatives in France are said to have impoverished or ruined 10% of the French population, notably rich investors. Ruined himself, he had to flee France at the end of 1720, under protection of the French Regent, and eventually lived in Venice.



Figure 7 - Duke Adrien-Maurice de Noailles (1678-1766)

The Duke of Noailles was not very favourable of Law's schemes (which had benefitted from the support of the Regent), and the idea of creating a horological factory which would compete with Law's own factory in Versailles, may have been a key factor in going ahead with Sully's proposition.



Figure 8 Château Saint Germain en Laye 17th century.

The château that had belonged to Louis XIV (before he moved definitely to Versailles) was provided to James II of England and his retinue, after he was forced from England in 1688. Many supporters of the exiled Stuarts, referred to as Jacobites, remained at the Château, and only left in 1793, following the French revolution. Certainly, the presence of English nobility in Saint Germain would have advantaged the presence of a horological factory, with Englishman Sully as its leader and chief salesman. However, it is possible that the Saint Germain factory, in contrast with the one in Versailles, would have focused on construction patterns and designs more aligned with the French than with the English school of watch and clockmaking.

Note: This author was alerted too late about a clock for auction in England, in March 2022. It was signed on the movement by Henry Sully, from his time heading up a manufacture at Saint-Germain en Laye. The author regrets not having had an opportunity to acquire this item, which would have been an important acquisition for his research on Sully's life and works. Also in the sale, from the same original owner, were four editions of Sully's "Règle Artificielle du Temps" (including one in German).

This clock was of typical French Louis XIV and on the movement is clearly engraved "*Sully a St. Germain en Laye*". It seems to support the possibility that under the support of the Duke de Noailles, the Saint Germain factory may have focused on producing timepieces in the French, rather than the English style.



Figure 9 - Sully clock from Saint Germain ca. 1720-21

Le Roy continues his story:

The horlogers of the manufacture, some of whom were drawn from Paris, London, and Amsterdam, worked on his timepieces, both clocks and watches. They did not lack encouragement or advice from him, to surpass the products of Versailles; and the two manufactures, excited by the mutual emulation, tried to surpass each other during about a year.

In leading the two manufactures, Sully undoubtedly endeavored to impart to the workers (from England, France, and the Netherlands) his philosophy and approach to watch-making, ensuring quality of construction throughout. The knowledge transfer between and among the workers from different countries resulted in an enrichment of skills and technique in French horology, which was to elevate the quality of its production for decades to come, well after the manufactures had been closed.

There were also financial hardships in France at that time, some of them exacerbated by John Law's experiments with central banking, printed money, and overseas investments, all came crashing down in 1720, and he was forced to flee the country. Regardless of how well or poorly administered were the horological and other "English" factories created by Law on French soil, the crash (referred to as the Mississippi Bubble) left Sully and all the workers he had brought from England, in financial limbo. The English government was also placing increasing pressure on workers who had gone to France, to return to England. Le Roy continues his story:

Times changed, and Mr. Law left. Money became scarce, and reserved for basic life needs, was no longer used to buy watches: the manufactures suffered across the entire Kingdom, especially the one of Mr. Sully, whose limited funds were quickly spent in paying skilled workers, whom he had working on diverse timepieces that were too exquisite and took too long to make.

In this situation the directors of both manufactures were quite uncertain about what they should do, and for different motives; one, because he could no longer provide the funds necessary to maintain the S. Germain manufacture up and going; and the other, because he wanted to bring his fortune with him outside the Kingdom, being alarmed at rumours of government investigations, which seemed to be suggested to him because of the indifference given in Versailles to English horlogers.

An interesting alternative perspective on the Versailles factory (and possibly on the Saint Germain en Laye factory as well), is provided by Jacques Savary de Bruslons (1657-1716) in his massive work entitled “*Dictionnaire universel de Commerce*”, first published in 1723, then in an expanded edition in 1741. This book catalogued in a detailed manner the commerce that occurred all over the known world at that time, what products were made where, how they were made, and the commerce of these goods and products between the various nations, with an emphasis on the French kingdom understandably. His work, partly based on his father’s before him, became one of the key reference sources for Diderot and d’Alembert in elaborating their *Encyclopédie* in the following decades.

In this posthumous book, those who came after him to update and complete the manuscript for publication in 1723, offered an interesting description on the manufacture of watches in Versailles, which provides different perspectives to what has been mentioned in other writings, notably Julien Le Roy³⁰. The following excerpt from de Bruslons’s book describes the factory thus (in the 1741 edition):

L’on commença en 1719 une fabrique de montres Angloises à Versailles. L’on avoit fait venir pour cet effet les meilleurs ouvriers; tout étoit Anglois jusqu’au Directeur [Henry Sully]. Cette fabrique fit d’abord grand bruit, tout sembloit favoriser sa réussite, proximité utile à tout égard, soit pour faire faire les ouvrages tels qu’on les souhaitoit, soit pour faire racommoder ce qui pourrait y manquer; soin que l’on prenoit de publier que cette fabrique étoit composée des plus experts ouvriers; en effet l’on ne peut contester qu’ils ne fussent habiles. D’ailleurs l’on n’avoit rien épargné pour faire réussir cette fabrique, jusques à employer ce qu’il y avoit de plus habile à Paris pour graver & pour cizeler leurs boîtes de montres. Le commerce de l’horlogerie de Paris sembloit devoir être anéanti par cette double facilité d’avoir des montres Angloises : cependant cette fabrique tomba d’elle-même avant l’année révolue de son établissement, par la seule prévention françoise que ces montres ne venoient point d’Angleterre. L’Horlogerie de Paris s’est toujours soutenue & se soutiendra sans doute par l’exactitude avec laquelle les habiles Horlogers travaillent sans cesse à en augmenter la réputation & à la perfectionner, soit en cherchant tous les moyens d’approcher de la parfaite justesse, soit en faisant faire à leurs ouvrages toutes les opérations que l’on peut souhaiter pour

³⁰ Règle (1737), pp. 389-399

l'utilité. En effet nos pendules ont toutes les perfections souhaitables; celles d'Angleterre n'ont pu balancer leur réputation; au contraire, les nôtres sont portées au plus haut degré, surtout par celles que l'on a faites à Paris novissime suivant les équations, &c. Et à l'égard de la justesse des montres, il faut convenir que les Anglois eux-mêmes ne l'ont pas encore trouvée, puisqu'on promet chez eux une récompense considérable à celui qui la trouvera, pour parvenir à la connoissance des longitudes qui leur est si nécessaire pour la navigation.

Translation: An English watch factory was started in Versailles in 1719. The best workers had been brought over for this purpose; even the Director was English [Henry Sully]. This factory started with great fanfare, everything seemed to favour its success, useful in all regards, either to have the desired timepieces constructed, either to repair whatever might be lacking; great care was used in publishing that this factory employed the most expert workers; and indeed, one cannot say that they weren't skillful. Moreover, nothing had been spared to allow this factory to succeed, including hiring the ablest workers from Paris to engrave and decorate the watch cases. The Parisian horological sector seemed threatened by this double way to obtain English watches [i.e. from direct imports from London, or coming out of the Versailles factory]; however this factory failed within the first year of its creation, by the French disdain that those watches did not come from England. Parisian horology has always sustained itself, and will no doubt continue to do so by the precision with which able *horlogers* work ceaselessly to improve its reputation and to perfect it, either by looking for ways to reach perfect accuracy, or in making their works do all the operations that could be desired for usefulness. In fact, our clocks have all desirable perfections; those from England have not lived up to their reputation, ours are taken to the highest degree, especially those recently made in Paris following equations [of solar time] etc. And regarding the accuracy of watches, one must conclude that even the English have not yet found it, since they promise a considerable prize to whoever would find it, to allow determination of longitudes which is so necessary for navigation.

There is a lot to unpack in this quote from the *Dictionnaire universel du commerce*. Firstly, it describes the factory, launched in 1719, as consisting entirely of excellent English workers, right up to the Director, who we know was initially Henry Sully. More interestingly, the suggestion is that the watches coming out of the factory being essentially of English design and construction, they would further put pressure on actual French watches, already challenged by the considerable import of English watches, which were deemed to be superior to what was made in France following the departure of so many Huguenot watchmakers in the late seventeenth century (after revocation of the Edict of Nantes by Louis XIV). According to the authors of this text, the creation of the Versailles factory served mainly to produce English watches on French soil, which would allow French buyers to at least buy watches made in France, therefore not sending all that capital to the English market.

Following this, the authors suggest that the factory fell of its own accord during its first year, not because of it produced watches of insufficient quality, or because it was mis-managed, but because French buyers were not interested to buy English watches that were not actually made in England. And that the Parisian horologists supported each other in their efforts to improve and

perfect French watches, thereby increasing the reputation of French horology and encouraging French buyers to increasingly favour French timepieces as opposed to ones historically acquired from England.

The truth about why neither the Versailles nor the Saint Germain en Laye horological factories lasted more than a year or two at the most, is quite complex, combining many socio-economic dimensions, some of which have been alluded to in this section. But the section in de Bruslon's book adds an interesting contemporary view that, whether in fact grounded in solid evidence, nevertheless adds a useful perspective to add to the understanding of these commercial failures.

Interestingly, de Bruslon's book refers to the English not having yet created portable timepieces with sufficient precision to allow determination of longitude at sea. As has been mentioned earlier, and will be described in more detail in a later chapter, Henry Sully had been pursuing this elusive goal of designing an effective and reliable marine timekeeper, from his early discussions with Wren and Newton as a young man, around 1703.

It is quite probable that Sully continued working on his designs throughout his time in Paris, Julien Le Roy had already seen signs in Sully's dwelling back in 1716³¹. Possibly Sully reserved a workbench at Versailles and Saint Germain where he could work on improving his ideas, with the help of one or two of the ablest workers.

As Sully was completing his fifth or sixth year living in or near Paris, he could look back on significant accomplishments that had been crammed into that short time: marrying his second wife; meeting and collaborating with Julien Le Roy; making two presentations to the *Académie royale des sciences*; revising and publishing a second edition of his influential book; co-founding the *Société des arts*; leading two short-lived horological factories; and continuing to improve his design for a marine timekeeper.

Once the factories had been forced to close down, Sully was compelled by the English authorities to repatriate the workers (and their families) he had brought over from England just a few years before. He was finally obliged to relocate to England as well, opportunities for him having at least temporarily dried up in France (following the debacle of the John Law financial regime). Certainly, what had started with great optimism and excitement only a few years before, had turned into a major disappointment for Henry Sully. And the father of a family of several children found himself out of a livelihood, no longer supported by a rich nobleman (Arenberg) and likely not received a government pension he had been granted for a while. As he arrived in London, he faced an uncertain future in a country he had left fifteen years before to seek fame and fortune in Continental Europe. Fortune had been tantalizingly close but had finally eluded him. He would still aspire for fame and a place in the pantheon of remarkable horologists, but unbeknownst to him, time was no longer on his side.

While in London Sully took up again, with renewed vigour and determination, his lifelong project of producing a working marine timekeeper. The story of this next important transition in Henry Sully's life will be told in the following chapter.

³¹ *Règle* (1737), p. 386