

SAMUEL SAUNDERS

A Study of a London Sundial Maker - Part 2

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Nordiska Museum Ring Dial (RD1)

The equinoctial ring dial from the collection of Nordiska Museum in Stockholm (Fig. 6, left) is signed "S. Saunders Londini Fecit", the form that by itself suggests Samuel Saunders I to be the maker of the dial. This is further supported by a number of features:

- font detail of the capital letters 'S', with its arc-shaped decorative serifs, a feature that is present on the horizontal sundial in Segovia (HD3),
- reduced *fleur-de-lys* marks in the form of three inward-directed arrows, which follow the half hour marks in the Spanish horizontal dial's inner time ring,
- script style of Roman numerals, matching exactly the one used on all previously discussed horizontal dials.

The dates of the summer and winter solstices, read from the label of the central bar, indicate that the dial was made for Julian calendar, and can be dated before 1752, when the Gregorian calendar was officially adopted in England.

It is also worth noticing that another *fleur-de-lys*-like mark, resembling a grass wisp, is engraved on the bracket of the dial (Fig. 6), which also marks 5° intervals on the meridian's ring latitude scale (the side not visible in Fig. 6).

Butterfield Dial (BD)

Let us make here a little side jump to another interesting dial, of Butterfield type. The instrument was auctioned by Bonhams in 2009 and is currently in the private collection of an established researcher. The dial (Fig. 7) is made of brass in an oval shape, measuring respectable 95 × 72 mm. It is fitted within a restored, quite worn mahogany case, which may be original.

It is engraved with three time scales, the two inner with Arabic numerals for latitudes of 41° and 48° and the outer, main one with Roman numerals, for latitude 51° 32'. The specific latitude implies that the dial was not standard line production, but a custom made, nobility commission of the London citizen.

Both the numerals on the dial and the description of the directions within the oversized compass, decorated with a complex rose, are inward facing – which is in line with the

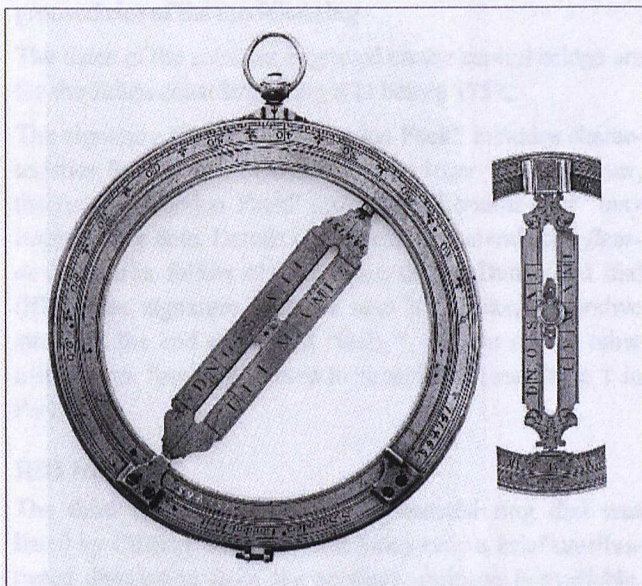


Fig. 6. Equinoctial sundial (RD1) from the collection of the Nordiska Museum, Stockholm, on the left side and the central bridge of the ring dial from the NMS (RD2) one the right. Size of dial's images proportional to scale. Both dials share 0.5° latitude scale and the same engraving style of the months' initials. The comparison of the engraving styles of the numerals, as well shape and details of central bridges, points to the Nordiska Museum dial as the earlier one, probably from the beginning of Saunder's career. Photos: Stockholm Nordiska Museum (left) and National Museum of Scotland (right).



Fig. 7. Butterfield sundial (BD). Notice the two types of *fleur-de-lys* marks that are typical for the Saunder's portable instruments. Photo courtesy of Bonhams.

French Butterfield dials, but interestingly contrary to those made by Rowley. The back of the dial does not have engraved list of locations with their latitudes, as it is typical for French dials.

The central, decoratively engraved area of the dial on both sides of the gnomon foot is surrounded by a signature "S. Saunders Londini Fecit." The serifs of all the 'S's exactly copy the detail of the Segovia horizontal dial; the same is true for the *fleur-de-lys* marks of the main hour ring, engraved in the form of inward-directed arrows. The *fleur-de-lys* of the inner hour rings duplicate the 'grass wisp' shape known from the bracket and meridian ring of Nordiska Museum ring dial (RD1).

Compared with previous instruments attributed to Samuel Saunders I, an interesting development of the engraving style of the Arabic '8' can be noted, evolved from double ovals to a pattern typical for Parisian Butterfield dials.

National Museum of Scotland Ring Dial (RD2)

The second Saunders' signed equinoctial ring dial is in the collection of the National Museum of Scotland in Edinburgh (Fig. 6, right). The inventory description dates it ca. 1760, and attributes it presumably to Samuel Saunders II, compass-maker to the Admiralty at London's Deptford Dock.

The dial has a different system of latitude adjustment compared to that of Nordiska Museum dial (RD1). The latter has a screwed suspension rim within which the meridian ring rotates, while the NMS dial's bracket moves in the grooved rim of the meridian ring.

The dates of the solstices engraved on the central bridge are for the Julian calendar, dating it to before 1752.

The signature "S. Saunders London Fecit" includes characteristics for Saunders I details of the letter "S". However, the use of "London Fecit" instead of "Londini fecit" may imply a later date. Details of the Arabic numerals and *fleur-de-lys* marks follow closely those of the Butterfield dial (BD). The signature includes also a tail-like, decorative stroke at the end of a word "fecit_", present on the other instruments firmly attributed to Saunders I (see Table 1 in Part 1).

RD3 Ring Dial

The third identified Saunders' equinoctial ring dial was listed by Christie's in 1994 and today only a brief un-illustrated description from the auction catalogue is available. The dial was incomplete – it lacked its bridge. The recorded signature "S. Saunders Londini Fecit" and a diameter of 152.5 mm – similar to the Nordiska Museum dial (RD1) – suggest Samuel Saunders I as the maker.

Chinese Palace Museum Plane Table (PT)

The plane table (Fig. 8) from the collection of Chinese Palace Museum in Beijing includes an azimuth dial and is, along with the Segovian horizontal dial, worthy of further

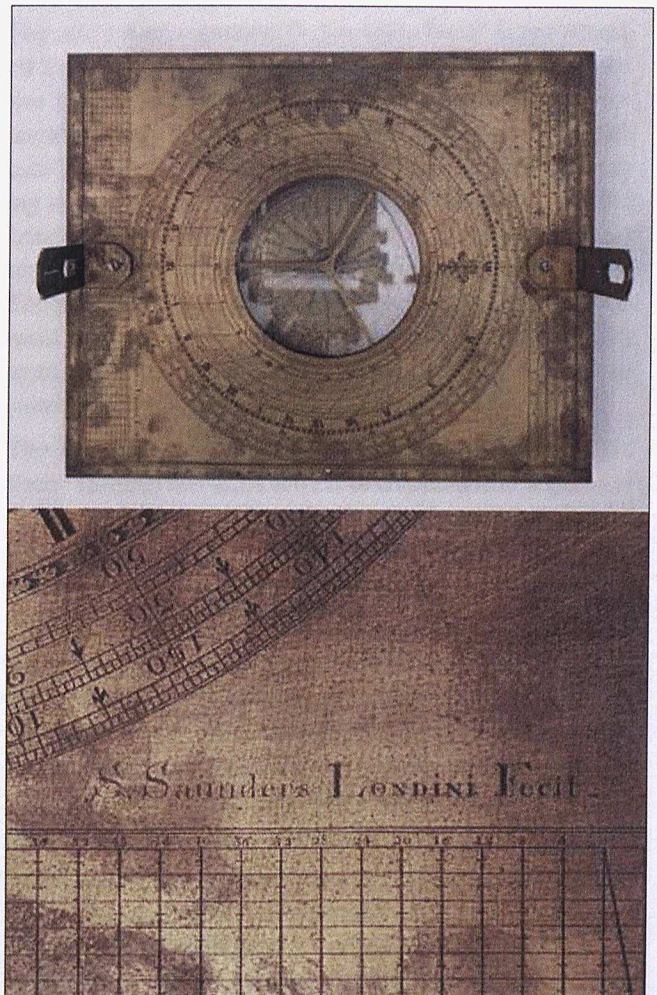


Fig. 8. Plane table (PT) from the collection of the Beijing Palace Museum. Top view and detail of the signature, Arabic numerals and *fleur-de-lys* marks. Photo courtesy of the Beijing Palace Museum.

study by an expert. The provenance of this instrument in Beijing Museum is interesting in itself – maybe it made its way far east as a commission from East India Company?

The plane table, complete with tripod stand and dial with vertical sights, includes: 32-point compass, an azimuth sundial, and an azimuth scale as well as other surveying scales along its perimeter. The form of maker's signature on the instrument: "S. Saunders LONDINI Fecit" and distinctive 'S' and 't' letters are characteristic for Saunders I. Also, the Arabic numerals match his standard script style. The *fleur-de-lys* follow the 'grass wisp' like shape known from the ring (RD1) and Butterfield dials (BD).

Other Instruments

Other recorded instruments signed by Saunders include: two drawing instrument sets (IS1, IS2), a circumferentor (CF), a sector (SC) and a mariner's compass (MC). Illustrated documentation was obtained only for one of the instruments sets (currently in a private collection) and a circumferentor offered at Bonham's sale in 2009.

The shagreen cased and gilt decorated instrument set (IS1) is a craftsmanship masterpiece containing various silver,

ivory and steel instruments. It was presented at the exhibition *Compass and Rule: Architecture as Mathematical Practice in England, 1500–1750* by the Oxford Museum of the History of Science and Yale Center for British Art in 2009.⁹ The importance for this study is the fact that it includes two signatures – one on the rule and the other on the inner side of the case cover (see Fig. 9).

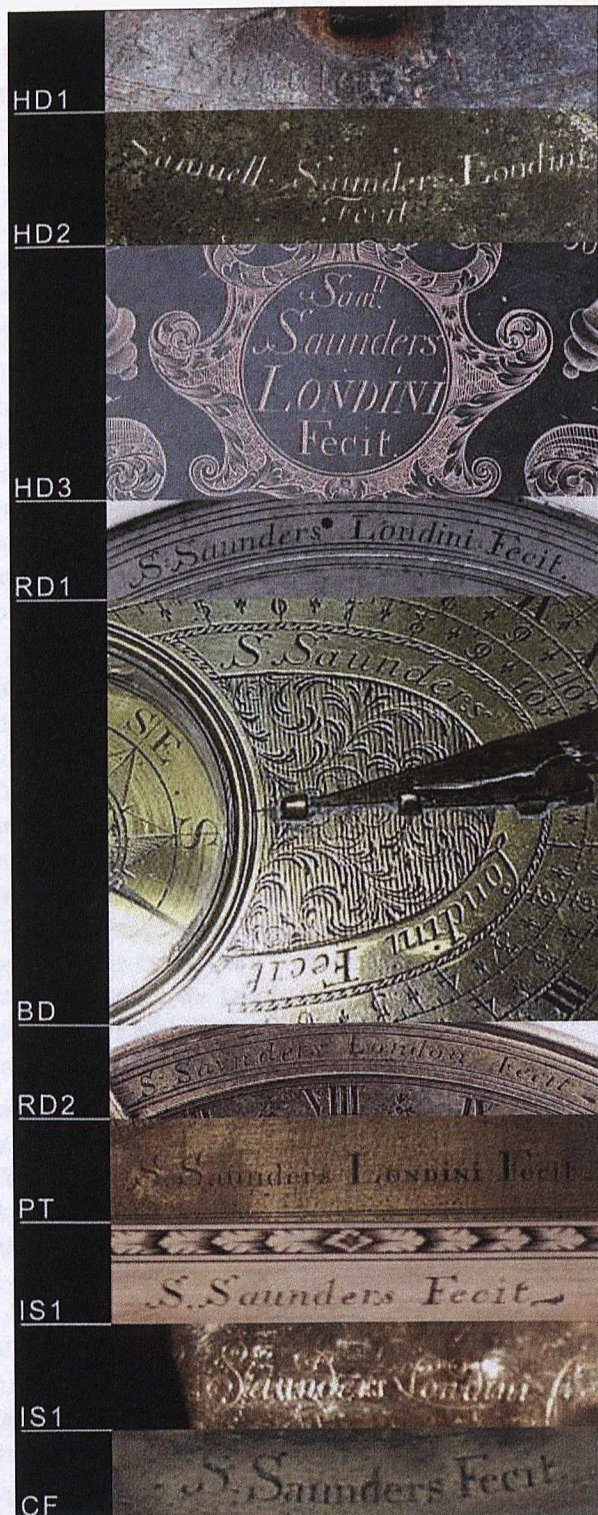


Fig. 9. Samuel Saunders' signatures on selected instruments. The instruments are identified according to the first column of Table 1. Notice the characteristic flourishes of letters 'S' and 't', as well as the double 'll' on HD2 and HD3 dials.

The rule's short signature "S. Saunders Fecit" features capital letters 'S' with its arc-shaped serifs and 't' with decorative stroke. Both features, coupled with style of Arabic numerals already known from the previous instruments, indicate Samuel Saunders I to be the maker. But most interesting is the floral script of the second signature "S. Saunders Londini Fecit" on the inner side of the case. This fancy script has no analogies in previously discussed instruments. The presence of two different signature styles on one instrument gives an important clue to the researcher that dating instruments based on script differences only may not be suitable for this maker.

The circumferentor's (CF) short signature "S. Saunders Fecit" features this same full set of characteristic features of 'S' and 't' letters and Arabic numerals style of Samuel Saunders I. Another feature that points to this maker is the extensively decorated, floral compass rose, which might be regarded as his trademark.

For the last three instruments listed in the Table 1, the collected data was not sufficient to establish the maker. The Webster database, following E.G.R. Taylor,¹⁰ suggests that the mariner's compass (MC) was made by Samuel Saunders II, which seems very likely given his position of a Master Compass Maker to the Admiralty.

In the conclusion of above survey it has to be stressed that both script style of Arabic numerals and formal features of time interval markings used by Samuel Saunders I are not specific only to his workshop. Similar features can be found on some instruments of other London makers from the first decades of the 18th century including Rowley, Wright or Culpeper, just to mention just three. What makes the attribution of studied instruments to Samuel Saunders I more trustworthy is the combined characteristic set of features on instruments (signature, script, markings); similarity to other early 18th-century sundials by other makers and support from historic sources coupled with EoT data that was obtainable for some of them. Some variations to the engraving style on instruments seem to represent a natural aesthetic evolution of the maker during four decades of his career, together with influence of other contemporary makers and probably some individual input from the apprentices who most likely were engaged in the instruments' creation.

Saunders' Tree of Knowledge

Samuel Saunders I received instructions first from Jonathan Roberts of Broderers' Company, to whom he was bound on 5 February 1699, then on 4 October 1703 he was passed to John England (Instrument Maker to Queen Anne) of the Stationers' Company. On 14 June 1708 he was freed by Patrimony in the Masons' Company. Saunders is thus an interesting example of a maker that passed training in two guilds and continued his professional activity in the third one through a family link, and where he had educated 10 apprentices, including known a sundial maker, John Fowler (Table 2).

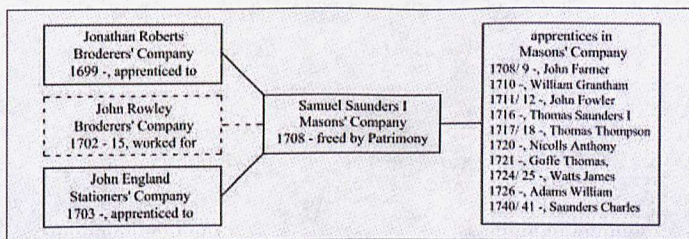


Table 2. Samuel Saunders I tree of knowledge.

M.A. Crawforth suggests that, together with the lack of new apprentices in the Broderers' Company around 1730, the guild's chain of knowledge and craftsmen was transferred to the next generations of London instrument makers only by those who passed it to another companies, like Samuel Saunders.¹¹ It is interesting then to examine which features of Saunders' instruments represent Broderers' style and come from his first training, and which from the other at the Stationers'.

Unfortunately, no instruments by the first master (Jonathan Roberts of the Broderers) are available for comparison. Also, the reasons for changing master and Company are not known, although it is suggested by Crawforth that such transfers could have been a result of the incompatibility of the master and his apprentice or in order to improve skills and gain knowledge that could not be learnt from the first master.

Instruments by Samuel Saunders have few visual similarities with the ones by his Stationers' master John England in the collections of the Oxford Museum of the History of Science Museum (OMHS) and the Whipple Museum in Cambridge. The Nordiska Museum equinoctial ring dial, for example, has similar shape of a central bridge and pin-hole slide to England's dial from the OMHS and both also share similar design of all the *fleur-de-lys* marks. However, John England's Arabic numerals style is more simplified, typical rather for his late 17th century analemmatic and horizontal dials made for Trinity Observatory (ca. 1703) as well as his double horizontal dial (ca. 1700),¹² are of very different design standards compared to Saunders'.

Interestingly, the most visible influence on Saundser's craftsmanship is that of John Rowley (of the Broderers' Company) who wasn't his master but with whom Saunders is believed to have had a close working relationship and for whom he worked between 1702-1715.⁶ Of the many common features with Rowley's instruments, the most evident include: signature forms, most *fleur-de-lys* marks, the use of the chapter ring with 'geographic' noon times on horizontal dials, script style of Arabic and Roman numerals, aesthetic similarities of gnomon designs, rich floral decoration and overall engraving quality.

The above indicates that the thesis put forward by Crawforth on the passing of knowledge between companies is supported by Saunders' case. However, even though the Broderer's chain of knowledge was passed to a different company by Saunders, it happened not as a direct result of his earlier apprenticeship at the Broderer's but due to the

later and prolong employment by Rowley – the influential member of this Company.

Conclusion

It is satisfying for the author that, starting with only a couple of recorded instruments and questionable attributions of them in some of the registers, it was ultimately possible to identify with high level of certainty ten instruments as being made by Samuel Saunders I and a further one, based on a written description, with high likelihood.

Furthermore, considering the relatively short period of study and limited access to the printed English sources, it is obvious that there should be more unrecorded instruments by this fine, though largely unknown maker.

The number of instruments attributed to Samuel Saunders is not a surprise and seem adequate to the size of his workshop, which must have been considerable, taking into account the relatively large number of ten apprentices that he had educated during his professional career. The activity of the Saunders' workshop is further confirmed by a preserved advertisement.¹¹

It is interesting that none of the instruments for which any illustrated documentation was obtained was crafted by any of the other masters bearing the same name – Samuel Saunders II or III. Hopefully, further studies of existing museum inventories, combined with new acquisitions and auction sales catalogues will provide some information on their works.

The research performed for the needs of this article has allowed the updating of the inventory description of the equinoctial dial in Nordiska Museum in Stockholm. The description of the similar dial in the National Museum of Scotland, in my opinion inappropriately dated ca. 1760 and attributed to S. Saunders II, is pending verification in light of this short study. The Webster database of the Adler Planetarium seems to incorrectly attribute most gnomonic instruments to the S. Saunders II and also requires an update. Also, biographical sources on Samuel Saunders I can be enriched with information on his instruments of exquisite quality and beauty.

Finally, after this lengthy prelude and with my archives cleaned up a little we can proceed – in a future *Bulletin* – to a proper article on two restorations, historic and recent, of Samuel Saunders' horizontal sundial (HD2).

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