

## The maritime and hydraulic engineering heritage of Simon Stevin – the Da Vinci of the Low Countries



The motto of Simon Stevin ‘What appears a wonder is not a wonder’ perfectly illustrates the enlightened attitude of this Flemish intellectual jack-of-all-trades (°1548 Bruges, †1620 The Hague). From this point of view it was the task of the scientist to name or explain the inexplicable. In this manner Stevin fit in seamlessly with the renaissance ideal of the ‘homo universalis’, perfectly personified by Leonardo Da Vinci. An element that distinguishes Stevin from many of his contemporaries is that he was constantly trying to test practically feasible projects against the theories he formulated, theories he developed on the basis of his very broad knowledge of existing literature (starting with Archimedes) and concepts. In view of these elaborate lines of thought and practical examples Stevin’s achievements in the maritime and hydraulic engineering field are not only impressive but also (too) little known.

Born and raised in Bruges, Simon Stevin moved to the Northern Netherlands when he was about 30 years old. He became a friend and adviser of Maurits of Nassau, Prince of Orange, and played a fairly important role in the economic boom of the Northern Netherlands. During his entire career he remained true to his origin by always signing his works as ‘Simon Stevin of Bruges’.

Stevin was a brilliant mathematician with a special talent for applying his theoretical knowledge to all kinds of problems in the fields of architecture, hydraulics, surveying, fortress construction etc. He was also a pioneer in expressing all his finds in everyday language and in inventing new words for all kinds of technical concepts. As Stevin worked in the Netherlands for almost his entire life, his publications (mainly on sluices, dyke construction, dredging techniques and pump systems), which could be read directly by workers and technicians alike, undoubtedly contributed to the success of the Dutch in managing hydraulic constructions.

Thanks to his passionate plea for the introduction of a decimal system in ‘De Thiende’ (In English: The Tenth) for coins, linear measurements, surface measurements and measurements of capacity, he is considered one of the scientists who prepared the development of the computer. And when a decimal coin system was introduced in the United States in 1792, specific reference was made to a translation of the work of Stevin. Other remarkable achievements include his essay on the impossibility of constructing a perpetuum mobile (“t eeuwig roersel”) and the invention of the spabijhou, literally ‘spade-axe-pick’, the predecessor of the army spade that can be converted into a pickaxe. Even in the field of modern leisure activities we owe something to Stevin: the invention of the land yacht is attributed to him

(picture: [http://nl.wikipedia.org/wiki/Afbeelding:Simon\\_Stevens\\_zeilwagen\\_voor\\_Prins\\_Maurits\\_1649.jpg](http://nl.wikipedia.org/wiki/Afbeelding:Simon_Stevens_zeilwagen_voor_Prins_Maurits_1649.jpg)).

Especially important for the marine world is his publication on

navigation called **De Havenvinding** (1599; in English: **Position Finding**). This was the first detailed (Dutch-language !) manual for steersmen to reach a certain port without knowledge of the geographical longitudinal position of the ship. He elaborated his navigation methods in more detail in **Wisconstige Gedachtenissen** (1605–1609; in English: **Mathematical Memoirs**). These titles as well as many of his other works were soon published in most European languages, which certainly contributed to the huge maritime expansion of Europe in this period.

Stevin is also considered the inventor of the bulkhead and contributed to the development of dredging techniques for ports.

More detailed information on the life and work of Simon Stevin can be found on the internet. (a good introduction can be found at [http://en.wikipedia.org/wiki/Simon\\_Stevin](http://en.wikipedia.org/wiki/Simon_Stevin) and the reissue of his publications on navigation with an English translation can be found in the OMA archives: <http://www.vliz.be/vmdcdata/imis2/imis.php?module=ref&refid=107108>).



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**Stevin, S.** (1599). *De Havenvinding*. Tot Leyden, In de Druckerye van Plantijn, By Christoffel van Ravelenghien, Gesworen drucker der Universiteyt tot Leyden, M.D.IC. Met Privilegie.

**Stevin, S.** (1605-1609). *Wisconstige Gedachtenissen*, Inhoudende t'ghene daer hem in gheoeffent heeft Den Doorluchtichsten Hoochgeboren Vorst ende Heere, Maurits, Prince van Oraengien, Grave van Nassau, Catzenellenbogen, Viand, Moers, etc. Marckgraef vander Vere, ende Vlissinghen etc. Heere der Stadt Grave ende s'landts van Cuyc, St Vyt, Daesburch, etc. Gouverneur van Gelderlant, Hollant, Zeelant, Westfriesland, Zutphen, Utrecht, Overyssel etc. Opperste Veltheer vande vereenichde Nederlanden, Admirael generael vander Zee etc. Beschreven deur Simon Stevin van Brugghe. Tot Leyden, Inde Druckerye van Ian Bovwensz.]

