The Sound Toll Registers Online Project, 1497-1857

Erik Gøbel[1]

The famous Sound Toll Registers, which are preserved at the Danish National Archives, are of great interest to scholars because they describe shipping and trade along one of the early modern world's most important routes. The Registers contain information about every vessel that sailed in or out of the Baltic from 1497 to 1857, a total of about 1.8 million passages.[2] They thus comprise a unique source with enormous potential for research in maritime history. Indeed, the United Nations Educational, Scientific and Cultural Organization (UNESCO) has included the Sound Toll Registers in its prestigious "Memory of the World" Register, a list of unique documents, archives and library collections of exceptional importance for world history.[3]

Although many researchers have utilized the Sound Toll Registers,[4] it is expensive to travel to Denmark to consult them or to purchase them on microfilm.[5] While summary statistical tables were published in the twentieth century, these only cover the period 1497-1783.[6] Now, however, a Dutch

[1]The author wishes to thank Professors Lewis R. Fischer, Jan Willem Veluwenkamp (University of Groningen) and Daniel P. Hopkins (University of Missouri-Kansas City) for useful comments on an earlier draft which was presented at the 21st International Congress of Historical Sciences in Amsterdam in August 2010.

[2]This essay is a revised version of Erik Gøbel, "Øresundstolden og dens regnskaber 1497-1857," *Handels- og Søfartsmuseets Årbog 2010* (forthcoming).

[3]*Denmark and UNESCOs Memory of the World Register* (Copenhagen, 2006), 52-55.

[4]For a recent selective bibliography comprising more than 500 titles, see Ole Degn (ed.), *Tolden i Sundet: Toldopkrævning, politik og skibsfart i Øresund, 1429-1857* (Copenhagen, 2010), 589-617.

[5]See Moran Micropublications, www.moranpublications.nl/mmp119.htm.

[6]Nina Ellinger Bang and Knud Korst, *Tabeller over Skibsfart og Varetransport gennem Øresund, 1497-1660* (3 vols., Copenhagen, 1906-1933); and Bang and

project called Sound Toll Registers Online is entering all the material into a database which will be made available on the internet gradually between 2011 and 2013.[7] The intention is to make this information easily accessible and to facilitate new research.

This essay will first discuss the history of the Sound Toll, followed by a section on the Registers and finally a description of the Sound Toll Registers Online project. It will also demonstrate how the information in the Registers can be used, especially with regard to shipping.[8]

The Sound Toll

The Sound Toll was introduced in 1429 by the Danish King Erik VII as a transit duty paid by all vessels passing through the Sound (between modern-day Denmark and Sweden), which for practical purposes was the only way in and out of the Baltic. At that time Denmark controlled southern Sweden, and the Sound consequently fell within Danish territorial waters. King Erik erected a castle at Elsinore, at the northern entrance to the Sound, to enforce the collection of the toll. Despite protests from foreign shipowners, the kings succeeded in forcing them to pay the Sound Toll (the Hanseatic towns, however, were exempt). In this early period the amount levied as a rule was one rose nobel per vessel passing Elsinore.[9] Later in the fifteenth century, a number of Dutch cities were also granted freedom from the duty. At the time, a commodity duty on salt, wine and copper was also introduced. The amounts charged were not large, but in the long term it was important that the seafaring nations came to recognize the right of the Danish kings to levy the Sound Toll.

Another turn of the screw came in 1548 when the so-called "hundred money" was introduced. This was a duty of one percent on the value of all commodities and had to be paid by the "unprivileged" nations – Scotland, England and France – in addition to the ship toll. Because of many increases, especially in the first half of the seventeenth century, the cargo toll became by far the most important source of income in the Sound Toll Registers.

Korst, *Tabeller over Skibsfart og Varetransport gennem Øresund, 1661-1783 og gennem Storebælt, 1701-1748* (4 vols., Copenhagen, 1930-1953).

[7]See www.soundtoll.nl.

[8]Unless otherwise indicated, this paper is based upon Degn (ed.), *Tolden i Sundet* and the standard works on Danish customs history: Mikael Venge, *Fra åretold til toldetat: Middelalderen indtil 1660* (Copenhagen, 1987); Henrik Becker Christensen, *Protektionisme og reformer, 1660-1814* (Copenhagen, 1988); and Henrik Fode, *Liberalisme og frihandel, 1814-1914* (Copenhagen, 1989).

[9]This was an English coin that contained 7.8 grams of gold.

In 1638, for instance, the ship toll was increased by one-third, the cargo toll was multiplied four-fold for several commodities and a duty of eighty percent was imposed on saltpetre. As a result, the total annual sums from the Sound Toll increased from 223,000 *rix-dollars* in 1635 to 499,000 *rix-dollars* in 1641. The Netherlands, the dominant seafaring nation of the time, protested, and after Denmark lost a war with Sweden and the Netherlands the Dutch were granted most-favoured-nation status; this meant that its shipmasters were only obliged to produce their shipping documents at Elsinore but that Danish customs officers were not allowed to search the ships. At the same time, the rates of duty were drastically reduced for all nations, so in the years 1645-1649 the average annual yield of the Sound Toll fell to only 125,000 *rix-dollars*. Thereafter, both shipping and the yield increased gradually. In 1707, for example, seventy-seven percent of the sums collected came from the cargo toll; fifteen percent from a wine duty; seven percent from light duty (justified by the expense of establishing and maintaining lights in Danish waters); and one percent from other kinds of duties.[10]

The Sound Toll was a very important source of income for Denmark. From 1497 to 1857 the 1.8 million ships passing through the Sound paid a total of eighty-six million *rix-dollars*. The Danish historian Ole Degn has converted this to €11.5 billion in today's currency. In the late seventeenth century, Sound Toll revenue comprised around 4.5 percent of the total income of the Danish state; in the 1730s it was about 6.5 percent; and in the 1780s about eight percent. For long periods in the first half of the nineteenth century it made up about ten percent of national revenue.

The levying of cargo tolls at Elsinore at first was shrouded in considerable secrecy because these tariffs were not made public. In 1641 and 1645, however, the Danes were forced to publish specific tariffs for English and Dutch cargoes, while commodities not mentioned were to be charged a one percent *ad valorem* duty. These rules gradually came to apply to all nations and were almost unchanged until 1842, when a moderate tariff more in keeping with the times was introduced. At the same time, a fixed and more transparent system of levying the Sound Toll was put into place.

Customs clearances at Elsinore became more complicated and time-consuming as the burthen (carrying capacity) of ships and the diversity of commodities increased, especially after the introduction of steam. Many complaints were raised both about the toll and the loss of time (often a day or two) occasioned by having to stop at Elsinore. Nonetheless, even after losing control of the provinces to the east of the Sound, Denmark succeeded in maintaining the Sound Toll despite the increasing prevalence of international economic liberalism.

---

[10]Sound Toll Registers, 1707.

In the 1830s, a new maritime power, the United States, began to complain about the Sound Toll, deeming it unreasonable and outdated. Other major seafaring nations, including Prussia and Great Britain, supported the Americans. Despite introducing a general reduction in the tariff in 1842, Denmark soon had to accept the elimination of the Sound Toll. The annual yield at that time was 2.5 million *rix-dollars*, and at an international conference in Copenhagen in 1856, the world's seafaring nations agreed to make a once-and-for-all payment to Denmark of 33.5 million *rix-dollars* in indemnification. The Sound Toll was abolished on 1 April 1857.

The Sound Toll Registers

The Sound Toll Registers comprise more than 700 volumes with almost 250,000 million pages that occupy around sixty linear metres of shelf space. Most of the volumes are protected by leather bindings and are neatly written. The Registers were created at the customs house in Elsinore in order to document the amounts levied on vessels and cargoes passing the Sound.

The Registers are preserved for the years 1497, 1503, 1528, 1536-1548, 1557-1558, 1560 and 1562-1569, and then in a practically unbroken series from 1574 to 1857. The only notable gaps in this almost 300-year series are in 1632 and 1634, when conditions at the customs house were temporarily chaotic, and the period from August 1658 to June 1660 due to war with Sweden. Each annual Register includes a summary of the receipts and, in the early period, a record of expenditures. Vouchers were as a rule discarded.

The types of information recorded and the arrangement of the Sound Toll Registers changed quite a bit between 1497 and 1857. The three oldest volumes registered only in a very cursory way the names and home ports of shipmasters passing through the Sound and the toll paid. For example, an entry from 1497 read: "It[em] Gert Rolluffs[en] aff Camp[en] gaff 1 nobell" (Gert Rolluffsen of Kampen [a port in the Netherlands], paid one nobel). In the Registers for 1635 to 1645 it can also be determined if the unprivileged Dutch, northwest German, Scottish, English and French vessels carried cargoes or sailed in ballast, and to what size category the laden ships belonged – less than thirty lasts, between thirty and 100 lasts or more than 100 lasts. After 1557 the shipmasters were grouped according to their home ports, and the port of departure and the date on which a ship passed Elsinore were registered – in addition to the types of information already mentioned. In 1562, the light duty based on the cargo carried was introduced, and after 1567 cargo toll had to be paid. It thus became necessary to itemize each cargo in the Registers. From 1669 the shipmaster's intended destination was also registered.

All this information was recorded in the Sound Toll Registers from 1669 to the end in 1857. The wording of entries was always as depicted in the example for an eastbound Dutch vessel shown in table 1.

Table 1
Eastbound Voyage, 1688

Jan Dirichsen Brower of Vlieland, from Amsterdam bound for Stettin			
200 lbs.	Soap		18 Shillings
200 lbs.	Cheese		8 Shillings
40 lbs.	Cinnamon		14 Shillings
800 lbs.	Rice	½ Dollar	12 Shillings
200 lbs.	Madder		9 Shillings
400 lbs.	Rubber		18 Shillings
200 lbs.	Almonds		18 Shillings
600 Dollars worth of	Smallwares	3½ Dollars	12 Shillings
	Ballast		
Light duty		2 Dollars	
Cargo toll		6½ Dollars	12 Shillings
Total		8½ Dollars	12 Shillings

Note: Madder is a dyestuff. There are forty-eight shillings in a dollar.

Source: Sound Toll Registers, 22 June 1688.

A typical example from a later period is an entry for a Scottish shipmaster on his way out of the Baltic with a cargo of grain (see table 2).

Table 2
Westbound Voyage, 1854

D. Paterson of Inverness, from Stettin bound for London		
3205 Bushels Wheat	44 Dollars	24 Shillings
Pacotille	1 Dollar	37 Shillings
Cargo toll	42 Dollars	35 Shillings
Light duty	4 Dollars	24 Shillings
Burden 227 tons.		

Note: *Pacotille* is a personal deduction for the shipmaster.

Source: Sound Toll Registers, 2 November 1854.

For certain periods it is possible to get some information about the burthen of vessels. After 1536 the Registers categorize the size of some western European ships; laden ships were divided into three categories (see above), while those in ballast were only recorded as either smaller or larger than 100 lasts.[11] Between 1632 and 1644 so-called "lantern money" was levied at a rate of two shillings per last, which allows us to calculate the burthen. In

[11]Bang and Korst, *Tabeller...1497-1660,* I, 5.

some cases customs officials registered supplementary information about the vessels. Between the early 1660s and the late eighteenth century the type and/or burthen of many Swedish and Danish vessels were included. In the late eighteenth century, however, the type of vessel was no longer recorded. After 1842 the ship's burthen was listed regardless of nationality.[12]

Various cities and nations were treated differently throughout the centuries. The picture is rather complicated, but right from the start a number of Hanseatic towns were exempt from the Sound Toll. This privilege was later extended to the Dutch, and Swedish cargoes were exempt until 1720. At times, England, France and the United States were also treated as privileged nations. Every nation, on the other hand, had to pay the modest light duty, including the Danish king's own subjects, who otherwise did not pay the Sound Toll. This means that all shipping through the Sound can be found in the Registers.

As a rule, however, the Registers do not mention the names of ships; an exception is that the names of most Swedish vessels are mentioned between the 1660s and 1709.[13] From 1591 onwards, the accounting period of the Registers was the calendar year. In the sixteenth century, payment was made in many different currencies, of which rose nobles, engelots and gold *guilders*[14] were most prominent. Most, however, paid in Danish *rix-dollars*.

Shipping through the Sound

The Sound Toll Registers have been used by both Danish and foreign historians because the Sound was one of the world's most important shipping routes, connecting large markets in western Europe (Amsterdam and London) with the Baltic (Danzig, Liebau, Riga, Narva, St. Petersburg and Stockholm), where essential bulk goods such as grain and timber were produced and where commodities from western Europe and elsewhere were in great demand.

A general view of trends in shipping can be established simply by counting the number of vessels passing through the Sound on their way in or out of the Baltic. The growth in world trade is mirrored in the general increase in shipping activity over time. Until the mid-sixteenth century the annual average was fewer than 1500 passages, whereas by the 1840s and 1850s it had increased ten-fold. The largest number of annual passages occurred in 1847 when it amounted to 21,538, or almost sixty a day. Within this general trend

[12]Burthen was also registered in the so-called "Shipping Lists" (*Skibslistebøger*) at the Elsinore Customs House, 1807-1857. A detailed inventory of the archival groups in the customs house can be found in Degn (ed.), *Tolden i Sundet,* 579-587.

[13]The names of all ships are registered in the *Skibslistebøger*, 1830s-1857.

[14]The engelot was an English coin containing about 5 grams of gold. The *guilder* was a Dutch coin containing 2.5 grams of gold.

were short-term variations caused by wars or other conditions that influenced international relations and shipping. The negative influence of the Great Northern War (1710-1719) and the Napoleonic wars can be seen in figure 1.

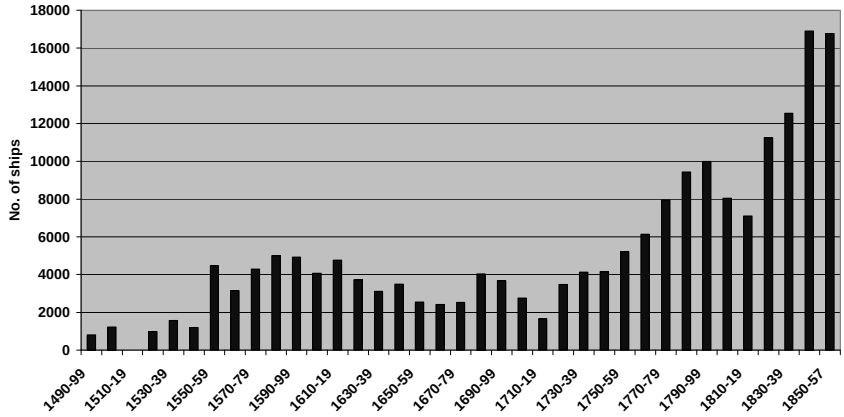

Figure 1: Ships' Passages, 1497-1857 (annual averages)

Note: Only a few years of the Registers prior to 1560 have been preserved.

Source: Calculated from Ole Degn (ed.), *Tolden i Sundet: Toldopkrævning, politik og skibsfart i Øresund, 1429-1857* (Copenhagen, 2010), 142.

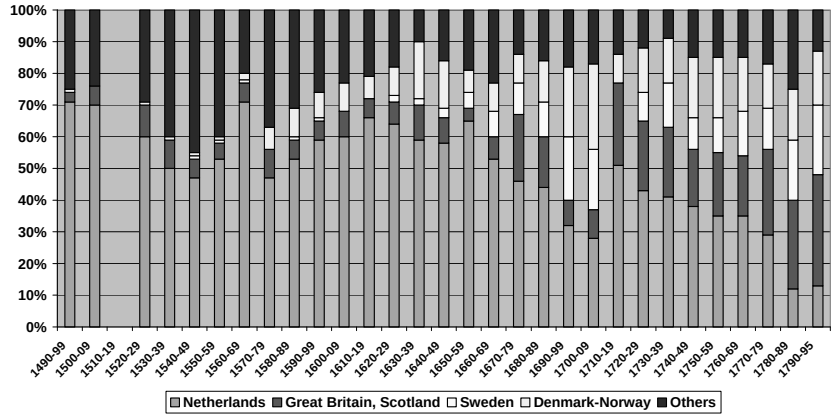

Figure 2: Share of Passages by Various Nations, 1497-1795

Note: See figure 1.

Source: Calculated from Degn (ed.), *Tolden i Sundet*, 149-150.

Ships' passages can be categorized according to many different criteria, including the home ports of shipmasters (see figure 2). It is remarkable that just a handful of nations accounted for a large proportion of shipping. In the Middle Ages the Hanseatic towns played a very prominent role, but from the sixteenth to the late seventeenth century more than half of the ships sailed under the Dutch flag – at times their share amounted to eighty percent of all shipping through the Sound. During the "golden century" of the Netherlands, Baltic trade was so important that the Dutch called it the "mother of all trades." Through most of the eighteenth century the Netherlands continued to play an important role, but between 1833 and 1838 its share decreased to only six percent.[15]

Another very important nation was England (after 1707, the United Kingdom). Its share increased steadily through the sixteenth, seventeenth and especially the eighteenth century to almost a third of all shipping, a level it maintained through the mid-1830s. After the Napoleonic wars the Dutch maintained their reduced share, as did the Scandinavians (although the proportion accounted for by Swedish, Norwegian and Danish vessels varied), but the big new player was Prussia, which consistently provided between one sixth and one-seventh of all passages through the Sound (see table 3).

Table 3
Ships' Passages, 1815-1850 (percentages)

	1815-1824	**1825-1834**	**1835-1844**	**1845-1850**
Netherlands	7	7	7	8
England	32	34	26	30
Prussia	14	17	18	14
Sweden	16	10	9	11
Norway	8	10	12	13
Denmark	8	7	8	7
Others	15	15	20	17

Source: Adolph Frederik Bergsøe, *Den danske Stats Statistik* (4 vols., 1844-1853), II, 378-379.

Besides analyzing shipping by nationality, it is possible to determine where the ships sailed from and where they were bound. This has been done at fifty-year intervals between 1583 and 1833 for both eastbound and westbound passages in tables 4 and 5.

[15]Calculated from C.F. Holm, *Bidrag til Sundtoldens Historie* (Copenhagen, 1855; reprint, Copenhagen, 1975), 182.

Table 4
Eastbound Shipping Arrived from (percentages)

Arrived from	**1583**	**1633**	**1683**	**1733**	**1783**	**1833**
Denmark	1	4	1	2	1	2
Norway	17	11	10	11	9	13
Sweden	1	3	7	11	15	3
England, Scotland	6	12	16	19	31	47
NW Germany	11	4	6	4	4	4
Netherlands	56	55	45	40	21	17
France	4	9	10	9	7	7
Portugal	5	1	3	2	4	2
Others	1	1	2	2	8	6
Total passages	2731	1750	2196	2299	5738	5360

Note: Includes shipping of all nations. Totals are annual averages.

Source: Calculated from Nina Ellinger Bang and Knud Korst, *Tabeller over Skibsfart og Varetransport gennem Øresund, 1497-1660* (3 vols., Copenhagen, 1906-1933); Bang and Korst, *Tabeller over Skibsfart og Varetransport gennem Øresund, 1661-1783 og gennem Storebælt, 1701-1748* (Copenhagen, 1930-1953); and Sound Toll Registers 1833, ten percent sample.

Table 5
Westbound Shipping Arrived from (percentages)

Arrived from	**1583**	**1633**	**1683**	**1733**	**1783**	**1833**
Lübeck, Mecklenburg, Stralsund	10	8	4	4	4	5
Pomerania, espec. Stettin	3	6	4	7	3	5
West Prussia, espec. Danzig	63	36	22	21	8	13
E Prussia, especially Königsberg and Memel	10	17	13	8	32	23
Riga	5	10	17	10	13	16
Estonia, especially Narva	0	2	10	13	3	2
Saint Petersburg	-	-	-	6	8	15
Sweden	1	5	14	17	11	12
Denmark	5	12	11	10	9	7
Others	3	4	5	4	9	2
Total passages	2640	1846	2165	2284	5564	5644

Note: See table 4.

Source: See table 4.

Most of the eastbound vessels had departed from Dutch ports, which until the late seventeenth century comprised almost half of the total. By the late eighteenth century, however, English and Scottish ports had become the most important, and their importance increased thereafter. A considerable portion of the eastbound shipping through the Sound had departed from Swedish or Norwegian ports. In westbound traffic the importance of the Hanseatic towns as ports of departure declined significantly and was replaced by ports in the eastern Baltic, such as Königsberg (today's Kaliningrad) in East Prussia, and especially St. Petersburg. Quite a number of ships also departed from Swedish ports east of the Sound or from Danish ports south of Elsinore.

A fact that often surprises people today is that for all practical purposes shipping came to a standstill in the winter because shipowners and shipmasters were reluctant to run the risk of serious damage to vessel, cargo or crew in northern European winters. Moreover, it was often impossible to sail because of ice. Figure 3 shows the seasonal variations at Elsinore in the first half of the 1750s, which were fairly typical years. Often no shipping passed the Sound in January and February, whereas traffic peaked in June, July and August. This pattern lasted to the end in the 1850s.

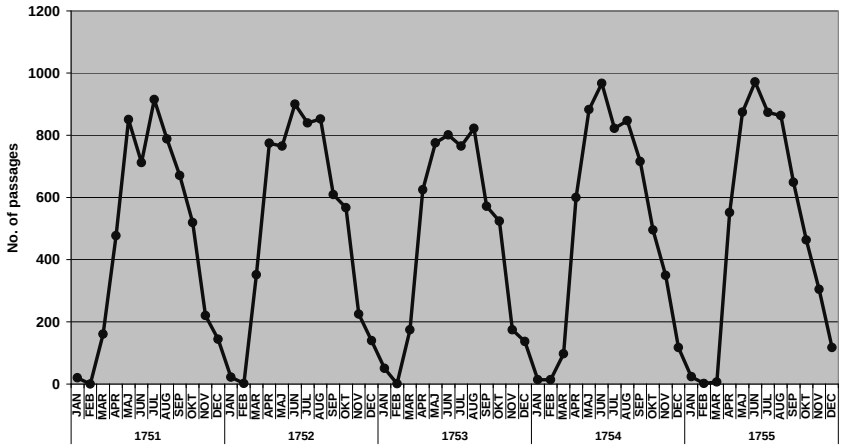

Figure 3: Passages per Month, 1751-1755

Source: Calculated from the Sound Toll Registers, 1751-1755.

During the great freeze of 1600-1601, a Rostock vessel passed through the Sound on 15 January 1601 *en route* from Bremen with a cargo of

flour and beer, but this was the only ship in the first quarter of that year.[16] Another example was the winter of 1709-1710, when ships passed by Elsinore until 2 January 1710, after which shipping was obstructed by ice up to seventy centimetres thick. The next vessel did not arrive at Elsinore until 21 April 1710.[17] As late as the winter of 1837-1838, when the Sound was frozen from mid-January, this was a great problem for shipping. Only thirteen ships passed through in January and February 1838 of the year's total of 13,983.[18]

Another kind of seasonal variation was the distribution of voyages laden or in ballast. When shipping commenced after the winter pause, large eastbound fleets in ballast were recorded bound for the Baltic. The first half of 1740 can serve as an example.[19] Only ten vessels passed Elsinore in the first two weeks of January before ice closed the Sound until mid-March. Most of the first ships after the thaw came from the Netherlands. From 23 April to 3 May 158 eastbound Dutch vessels passed through the Sound; the next flotilla, comprising 213 ships, cleared between 19 and 23 May; and a third and fourth group of 196 and 214 vessels, respectively, passed by in June. Besides these 781 vessels, only fifty-nine other eastbound Dutchmen passed Elsinore. During that same half year, 358 westbound Dutch vessels passed, the first on 13 April. The largest number of eastbound vessels from the Netherlands in a single day was registered on 29 April when 177 ships were cleared, eighty-two of them in ballast. The greatest number of passages in a single week took place between 21 and 27 June when 449 (sixty-four per day on average) passed through the Sound. Almost half were Dutch, but there were also two British fleets, both containing thirty-six ships. Although the customs officers had to attend to many vessels, their task was eased because ships in ballast only had to pay the light duty, most at a fixed rate of two *rix-dollars*. Of the almost 17,000 Dutch ships passing Elsinore from 1784 to 1795, thirty-two percent were in ballast, five percent were partly in ballast and sixty-two percent were fully laden.[20] If the wind was favourable, the stop at Elsinore Roads would take perhaps a couple of hours for vessels in ballast.

---

[16]Sound Toll Registers, 1601. See also C.I.H. Speerschneider, *Om Isforholdene i danske Farvande i ældre og nyere Tid. Aarene, 690-1860* (Copenhagen, 1915), 75.

[17]Sound Toll Registers, 1709 and 1710; and Speerschneider, *Om Isforholdene,* 85-86.

[18]Sound Toll Registers, 1838; and Speerschneider, *Om Isforholdene,* 113-114.

[19]Sound Toll Registers, 1740.

[20]These figures were derived from Hans Christian Johansen, *Shipping and Trade between the Baltic Area and Western Europe, 1784-95* (Odense, 1983).

In the later period the volume of traffic became even more intense. In the first half of 1839, for instance, 281 cargoes had to be cleared in a single day (25 April), and in the hectic days from 9 to 12 June a total of 659 ships were cleared.[21] Later in the season the same vessels would return from the Baltic with full cargoes, and the stream of westbound cargoes was three times larger than the flow eastbound.

Having looked at more general trends, we can now turn to some more closely focused studies using the Sound Toll Registers. First, let us examine two late eighteenth-century shipmasters, one who made regular sailings and the other whose appearances were more unpredictable. The first master was Broer Nannings from Amsterdam (see table 6) who specialized in carrying lumber from the port of Narva (in the Gulf of Finland in what is now Estonia). On his eastbound voyages he almost always sailed in ballast.

Table 6
Broer Nannings' Voyages, 1784-1788

Date	From	To	Cargo
May 1784	Ostend	Narva	Ballast
July 1784	Narva	Amsterdam	Balks, spars
May 1785	Amsterdam	Narva	Ballast
June 1785	Narva	Amsterdam	Balks, spars
July 1785	Amsterdam	Narva	Ballast
August 1785	Narva	Amsterdam	Balks, spars
May 1786	Amsterdam	The Baltic	Ballast
June 1786	Narva	Amsterdam	Balks, spars
August 1786	Amsterdam	The Baltic	Ballast
August 1786	Narva	Amsterdam	Balks, spars
May 1787	Amsterdam	The Baltic	Ballast
June 1787	Narva	Amsterdam	Balks, spars
May 1788	Amsterdam	Narva	Vinegar, French and Portuguese wine
June 1788	Narva	Amsterdam	Balks, spars

Source: Derived from Hans Christian Johansen, *Shipping and Trade between the Baltic Area and Western Europe, 1784-95* (Odense, 1983).

The information in the Sound Toll Registers can of course often be supplemented by other sources. For example, in the archival records of shipmasters in Amsterdam we discover that Broer Nannings at this time commanded the ship *Hendrik en Nicolaas*. It was owned by Frederik van der

[21]Sound Toll Registers, 1839.

Valk en Ten Nuijs and Comp.; it had a crew of sixteen, whose names and wages are also listed.[22]

An example of a master with a less regular sailing schedule was Vitje Jelles, a shipmaster from Riga (in today's Lithuania). His more varied shipping pattern is shown in table 7.

Table 7
Vitje Jelles' Voyages, 1784-1787

Date	**From**	**To**	**Cargo**
May 1784	Amsterdam	Riga	Cheese, plums, rock candy, smallwares
July 1784	Riga	Zieriksee	Bar iron, hemp
September 1784	Middelburg	The Baltic	Ballast
October 1784	Riga	Bruges	Linseed, fine flax, yards, ship's masts
May 1785	Amsterdam	Riga	Cheese, tobacco, groceries
July 1785	Riga	Middelburg	Bar iron, hemp
September 1785	Middelburg	The Baltic	Smallwares
December 1785	Riga	Bordeaux	Oats, fine flax, iron, hemp, tow
January 1786	Amsterdam	Riga	Smallwares
June 1786	Riga	Amsterdam	Linseed, hempseed
August 1786	Bordeaux	Riga	Rice, sugar, coffee, French wine and brandy, wine vinegar
December 1786	Riga	St. Martin	Planks, beams, deals, spars, boat's masts, yards
May 1787	St. Martin	Riga	Salt
July 1787	Riga	Amsterdam	Wood ash, hemp, tow
October 1787	Amsterdam	Riga	Figs, grits, rock candy, coffee, tobacco, cotton yarn
December 1787	Riga	Ostend	Balks, wainscot

Note: St. Martin is an English port; Zieriksee and Middelburg are Dutch ports.

Source: See table 6.

These two shipmasters were chosen more or less at random from among thousands of their colleagues in either tramp trades or quasi-liner services. A number who reflected similar patterns, as well as many who fell between these two extremes, can be found in the Sound Toll Registers.

---

[22]Stadsarchief van Amsterdam, Archief van de Waterschout (toegangsnummer 38). I thank Dr. Jeroen van der Vliet for this information.

Trade

After the introduction of a cargo toll in the 1560s, cargoes were specified in the Registers.[23] An example from the end of the period involved W. Shepherd of Hull, whose 376-ton ship passed Elsinore on 19 October 1853 *en route* from his home port to St. Petersburg.[24] On this occasion he carried 256,000 pounds of cotton, 13,500 pounds of cotton yarn, 10,000 pounds of steel, ninety-six ship pounds (28,800 pounds) of linen, 5200 pounds of chestnuts, forty-six tons of coal, fifty tons of lead and unspecified merchandise worth 5034 dollars.

Before 1783 more than 1000 different commodities were mentioned in the Registers.[25] If we examine the twelve-year period just after that date, we discover that the most frequent organic goods imported into the Baltic were herring, wine and brandy, sugar, coffee and tobacco.[26] Most of the herring came from the west coast of Sweden, while the most important origin of the wine was Bordeaux. The dominant inorganic commodity was salt from England and Portugal. In the opposite direction came great quantities of tallow and various animal fats (for lighting, lubrication and soap manufacturing), linseed, wheat and rye. The grain was exported most often from Königsberg to Amsterdam. The dominant inorganic commodities were iron from Russia and Sweden and potash (used in the bleaching process in the textile industry). Flax and hemp were also significant in westbound trade, but even more important were timber and wood products (the Registers dealt with 111 different wood products). Timber came mainly from Stockholm, Gävle, Helsingfors, Viborg, St. Petersburg, Narva, Riga, Memel (Klaipeda) and Danzig. This distribution of goods remained almost unchanged until the abolition of the Sound Toll.

There was little balance, however, between the volume of commodities that passed the sounds in each direction. In a typical year like 1740, eastbound vessels paid tolls of 148,000 *rix-dollars*, while those heading west paid 258,000 *rix-dollars*. In 1707 the Dutch alone paid 12,000 *rix-dollars* on their way into the Baltic, compared to 20,000 *rix-dollars* on their way out.[27]

---

[23]For the years 1773-1856 the *Vareregistre fra Nord- og Østersøen* (commodity records kept in Elsinore) may also be consulted. See Klas Rönnbäck, "The Sound Toll Chamber Commodity Records. Estimating the Reliability of a Potential Source for International Trade History," *International Journal of Maritime History,* XXII, No. 1 (2010), 229-238.

[24]Sound Toll Registers, 19 October 1853.

[25]Bang and Korst, *Tabeller...1497-1660,* IIA, 608-620.

[26]Johansen, *Shipping and Trade,* 98-114.

[27]Sound Toll Registers, 1707.

The imbalance was because eastbound ships often sailed in ballast, while as a rule they were well laden on their return journey. This pattern changed, however, by the nineteenth century. In 1851-1853, the annual average totalled 1,183,000 *rix-dollars* for eastbound shipping and 921,000 for westbound.[28] In the 1720s, for example, forty percent of all eastbound vessels sailed in ballast.[29] Among westbound voyages, however, only six percent were in ballast. The difference was even more dramatic for the Dutch: only one-half of one percent of them sailed out of the Baltic in ballast. Most westbound vessels in ballast were Danish or Swedish ships in the coasting trade.

Among the dominant commodities, there are scattered examples of some extraordinary cargoes. For instance, in 1526 a vessel from Bergen passed through with 180 seamen aboard; these were probably sailors for the Royal Danish Navy in Copenhagen. On several occasions mercenaries came from England, as did a considerable number of guns, but another English ship carried such inoffensive goods as thirty-six pairs of silk stockings and twenty-five silk bed jackets. Another common commodity was pen quills from the Baltic. In 1534 the customs officer in Elsinore bought a little green parrot and a guenon for the Danish king from a passing ship for twenty-three gold *guilders*. From Spain, in addition to large quantities of salt, there were exotic goods such as almonds, rice, raisins, pepper, lemons, figs, chestnuts and cork. When the Swedish king Charles XII was killed at Frederikshald in Norway in 1718, an obelisk was sent from Denmark to be erected as a monument.

Source Value of the Sound Toll Registers

Since the Sound Toll Registers were a customs account concerned with revenues, their value as a historical source must be carefully weighed. Is the information in the Registers correct? Are all passages included? Is information about the cargoes reliable?

Regarding shipping, most historians agree that the passage of every ship through the Sound in the period in question can be found in the Sound Registers. It was almost impossible to pass Kronborg Castle and the royal guard ship at Elsinore without being observed; if a shipmaster somehow succeeded in doing so, he would probably be exposed when he passed through the Sound again in the opposite direction. While one might choose to pass through the Great Belt instead, this was so difficult to navigate that few masters did. There was also a guard ship in the Great Belt, and the same toll had to be paid as in the Sound. The third Danish strait, the Little Belt, with

---

[28]Marcus Rubin, "Sundtoldens Afløsning," *Historisk Tidsskrift,* VII, No. 6 (1905), 242-243.

[29]Bang and Korst, *Tabeller...1661-1783,* I, 60-71.

winding channels and strong currents, was not really an alternative.[30] A way to avoid the Danish straits came in 1784 when the Schleswig-Holstein Canal was opened to enable small vessels to pass from Tönning on the North Sea to Kiel on the Baltic.[31] Canal traffic, however, never became of any real importance.

Eighty-five percent of all traffic through the Great Belt was comprised of Danish ships in the coastal trade. In the first half of the eighteenth century an average of only 502 vessels per year used the Great Belt while an average of 3291 passed through the Sound.[32] Of 486 shipmasters passing through the Great Belt in 1725, 319 were Danes, 103 Norwegians and three Swedes; sixty-one were from northern Germany. The most frequent ports of departure were Lübeck and Bergen.[33] In the 1850s shipping through the Great Belt amounted to only about 2000 passages a year, chiefly by small vessels carrying grain to Norway and England. The toll revenue from the Great Belt and the Little Belt together equalled only a couple of percent of the Sound Toll revenues.[34]

The Sound Toll Registers, supplemented when necessary by the Belt toll registers, are an excellent source for shipping into and out of the Baltic. They are more problematic, however, for cargoes. Fraud was not difficult because customs officers generally did not search vessels. Instead, clearance was based on the official ship documents and cargo manifests. But customs officials were aware of the possibility of fraud and if suspicious would board a ship, as happened with about a third of the 1442 vessels that passed Elsinore in 1753. To take an example from a different year, when Benjamin Stevens of London anchored in Elsinore Roads on 24 June 1738 on his way from London to Riga he declared that his ship was in ballast.[35] Suspecting fraud, a customs officer boarded the vessel and found eighty-two ship pounds of vitriol, thirteen ship pounds of tin, a case (and twenty-five *rix-dollars*) of window glass, a

---

[30]Toll registers from the Great Belt are preserved for 1701-1748 and 1850-1857 and from the Little Belt for 1816-1857.

[31]Aage Rasch, *Ejderkanalen* (Åbenrå, 1978).

[32]Aksel E. Christensen, "Der handelsgeschichtliche Wert der Sundzollregister. Ein Beitrag zu seiner Beurteilung," *Hansischen Geschichtsblättern,* LIX (1934), 61-65.

[33]Thomas B. Bang, "Øresundstolden," in Bering Lisberg (ed.), *Danmarks Søfart og Søhandel fra de ældste Tider til vore Dage* (2 vols., Copenhagen, 1919), I, 759-760.

[34]Adolph Frederik Bergsøe, *Den danske Stats Statistik* (4 vols., 1844-1853), II, 376-377.

[35]Sound Toll Registers, 24 June 1738.

barrel of beer and diverse small wares valued at 104 *rix-dollars*. The officer no doubt felt satisfied when he entered the amount of twenty-three *rix-dollars* and twelve shillings that the treacherous Englishman was obliged to pay. By comparing information from the Sound Toll Registers with other sources, such as port books or customs accounts from the port of departure or destination, historians have demonstrated that in some cases some or all of a cargo was not entered in the Registers even though it is known that the vessel passed through the Sound.[36] The extent of this, however, is unknown.

Information in the Sound Toll Registers concerning the cargoes must therefore be treated with caution for it is not complete. On the other hand, it provides a fair picture of the goods exchanged between the Baltic and the rest of the world. Evidence in the Registers is probably correct but not complete.

Modern Editions of the Sound Toll Registers

International interest in the research potential of the Sound Toll Registers led in the 1890s to a Danish project to produce tabular summaries of the information in the Registers. A complete edition of all the material about the 1.8 million passages in the Registers was impossible then and for a long period thereafter.[37] The enormous manual work of excerpting and tabulating the data was directed by the historian Nina Ellinger Bang (1866-1928) and after her death by the economist Knud Korst (1894-1962). The efforts resulted in the publication of seven volumes totalling 4000 large format pages published between 1906 and 1953 under the collective title *Tabeller over Skibsfart og Varetransport gennem Øresund, 1497-1783*.[38] All the tables are divided chronologically into pre-1660 and 1661-1783, and for each period there are separate volumes for shipping and cargoes. Tables on traffic through the Great Belt are included for the period 1701-1748.

It is important to note that the Sound Toll Tables, as this comprehensive publication is called, only contain summary tables, which means that data about a specific shipmaster, vessel or cargo are not included. The editors also decided to exclude information about destinations. A further limitation is that the Tables end at 1783, when the work had to be stopped due to a lack of

---

[36]Classic examples are Aksel E. Christensen, *Dutch Trade to the Baltic about 1600: Studies in the Sound Toll Register and Dutch Shipping Records* (Copenhagen, 1941); and Pierre Jeannin, "Les comptes du Sund comme source pour la reconstruction d'indices généraux de l'activité économique en Europe (XVIe-XVIIIe siècle)," *Revue historique,* No. 231 (1964), 55-102 and 307-340. A more recent example is Johansen, *Shipping and Trade*.

[37]See, for example, Christensen, "Der handelsgeschichtliche Wert," 138.

[38]See note 6.

resources. The Tables include details on all commodities only every tenth year; for intervening years only the most important goods are found. A scanned version of the Sound Toll Tables is available on the internet.[39]

Soon after it was published, the Tables were criticized because Bang erroneously believed that the home port in the Registers referred to the vessel rather than the shipmaster, which in fact was the case. Another criticism was that the detailed information in the original Registers could not be rendered easily in the rigid format of the Tables, especially for commodities, where interpretation by the editors was unavoidable. Despite such limitations, the Tables are well known and have been used by numerous scholars all over the world. Some even believe that the Sound Toll Tables is a proper source edition and that the original Registers do not contain any further information.

With the advent of electronic data-processing, new possibilities for handling large quantities of information became available. The Sound Toll Registers were perfectly suited for such treatment because they provide systematic information ready for use. The Danish economic historian Hans Christian Johansen (born 1935) took the initiative in the early 1970s to establish (using coding sheets and punch cards) a database containing all information about the 118,933 ships and cargoes which passed through the Sound between 1784 and 1795. Johansen analyzed the voluminous data in 1983 in his book *Shipping and Trade between the Baltic Area and Western Europe, 1784-95*; he also provided many detailed tables on a set of microfiche included with the book. Johansen's database is available on application to the Danish Data Archives, while a revised version can be found on the internet.[40]

Sound Toll Registers Online

Work now underway in the Netherlands aims to create a database with all the detailed information on the 1.8 million ship's passages recorded in the Sound Toll Registers between 1497 and 1857.[41] The initiative was taken by the University of Groningen (represented by Jan Willem Veluwenkamp) and by Tresoar, the Frisian Historical and Literary Centre in Leeuwarden (Siem van der Woude) in cooperation with the Danish National Archives (Erik Gøbel). The financing for this ambitious project is entirely Dutch: the Netherlands Organi-

[39]See www2.tresoar.nl/digicollectie/item.php?object=10&item=1. French translations of column headings and other Danish words can be found in Bang and Korst, *Tabeller...1661-1783,* I, 473-477.

[40]The archival identification is "Øresundsundersøgelsen, 1784-1795" (DDA-0038). For the internet database, see www.let.rug.nl/welling/sont/johansen.htm.

[41]More information can be found at the project's website at www.soundtoll.nl, where the resulting Sound Toll database will be located.

sation for Scientific Research in the Netherlands has granted €1.2 million, the University of Groningen and Tresoar together have added €0.3 million, and a number of Frisian cultural foundations have contributed €0.2 million.

The data entry is being carried out at a so-called "social workplace" in Nijmegen where around fifty people work under the supervision of Dutch historians. The computer screens are double the normal width so that on the right hand side a scanned image of an entry in the original Sound Toll Registers can be seen, while on the left side there is an input template with fields for the various kinds of information (date, shipmaster's first name, his surname, home port, port of departure, cargo items, amounts paid, etc.). The original Danish text is transcribed letter by letter into the relevant fields, after which the data are checked and corrected.

On the surface, it might appear that with correct transcription all the problems would be solved. This, however, is not the case. One central problem is standardization. In order to enable researchers to use the enormous amount of data it is necessary to standardize it to a certain degree – to allow searches, for example, for a certain type of good or a specific port, no matter how it was spelled in the original source. In the Sound Toll Registers the customs officers spelled the Swedish port of Kalmar in many different ways, including Kalmar, Calmar, Calmer and Kalmer. The differing spellings are always retained in the transcription, but to all of them is added a code that indicates that all refer to the same port.[42] The same holds true for Kristiania, Christiania, Kria and Oslo, which are all the same place. The standard code for Kalmar is "234KAM," for Kristiania "103KRI." In a separate table all codes are linked to the standard term (e.g., Kalmar or Kristiania) to enable a user to select all voyages bound for a certain port or shipmasters from a specific port, no matter how this place name was spelled in the Registers.

Another problem is that different geographical places may have identical names. Bergen, for instance, is a port in Norway, but four places in the Netherlands and even more in Germany are also called Bergen. In such cases information in the same or other entries about cargo, shipmaster or location east or west of the Sound (which is inherent in the arrangement of parts of the Registers) must be analyzed to ascertain which Bergen is meant. To facilitate use, the code for every place includes a number, indicating to which region or nation it belongs. This categorization will allow an overview of the many individual bits of information and facilitate queries about regions and countries. This is accomplished quite easily: all English place names have code numbers between 631 and 679, for example, which place them together in a category called "England," Scottish ports fall between 601 and 629 and those in Ireland between 680 and 689 (for instance, "680LEI" for Leith).

[42]This is in accordance with the system designed by Hans Christian Johansen.

In the same way, all goods are categorized, so that, for example, all the various timber products are identified as such and can be searched and analysed separately. A few old names of commodities cause trouble because we simply do not know what they mean. Fortunately, this seldom occurs. Much more difficult are the old units of measure, especially if these are to be converted to modern metric units. The Registers often record quantities in lasts, but the meaning of a last differed depending on what commodity was being measured and what nation took the measurement.

At present, the plan is for the Sound Toll Registers Online to be freely available on the internet at the end of 2013. The web address is www.soundtoll.nl, where both the database and a number of search and statistical tools will be found. For every entry in the database there will be a link to a scanned picture of that entry in the original Registers so the source can be seen and the transcription confirmed.

Although it is impossible to avoid all errors in data entry, a semi-automated checking routine allows obvious mistakes to be detected and corrected. This involves things like incorrect sums of the tolls paid or data placed in the wrong field. In addition, random sampling and, if necessary, revision raises the quality.

Research into the Sound Toll Registers so far has been limited almost completely to the period prior to 1795. But the Sound Toll Registers Online will open the subsequent era up to 1857 for research. What was until recently considered an impossible task – namely, a complete edition of the Sound Toll Registers, 1497-1857 – is now being realized in a way that will allow researchers around the world direct access to this unique source. Thanks to this project it will be possible to carry out analyses of enormous quantities of information, with an eye both to broad surveys of general trends in international trade over time and to micro-studies of individual shipmasters, the seafaring history of an individual port or the importance of specific kinds of commodities. Additional examples include studies in economic history (customs service, tariff systems, growth and decline of ports), the history of technology (vessels, burthen), cultural history (consumption patterns, fashions), the history of language (mercantile terminology, personal and place names) and environmental history (sailing seasons).

In short, the Sound Toll Registers are a unique source, and the Sound Toll Registers Online will be a unique tool for the scholarly investigation of shipping and trade between the Baltic and western Europe, the wider Atlantic and the rest of the world between 1497 and 1857.